Sun WorkShop 6 update 2 Installation Guide

Forte Developer 6 update 2 (Sun WorkShop 6 update 2)

Sun Microsystems, Inc.
901 San Antonio Road
Palo Alto, CA 94303
U.S.A. 650-960-1300

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Important Note on New Product Names

As part of Sun's new developer product strategy, we have changed the names of our development tools from Sun WorkShop™ to Forte™ Developer products. The products, as you can see, are the same high-quality products you have come to expect from Sun; the only thing that has changed is the name.

We believe that the Forte™ name blends the traditional quality and focus of Sun's core programming tools with the multi-platform, business application deployment focus of the Forte tools, such as Forte Fusion™ and Forte™ for Java™. The new Forte organization delivers a complete array of tools for end-to-end application development and deployment.

For users of the Sun WorkShop tools, the following is a simple mapping of the old product names in WorkShop 5.0 to the new names in Forte Developer 6.

Old Product Name	New Product Name
Sun Visual WorkShop™ C++	Forte™ C++ Enterprise Edition 6
Sun Visual WorkShop™ C++ Personal Edition	Forte™ C++ Personal Edition 6
Sun Performance WorkShop™ Fortran	Forte™ for High Performance Computing 6
Sun Performance WorkShop™ Fortran Personal Edition	Forte™ Fortran Desktop Edition 6
Sun WorkShop Professional™ C	Forte™ C 6
Sun WorkShop™ University Edition	Forte™ Developer University Edition 6

In addition to the name changes, there have been major changes to two of the products.

- Forte for High Performance Computing contains all the tools formerly found in Sun Performance WorkShop Fortran and now includes the C++ compiler, so High Performance Computing users need to purchase only one product for all their development needs.
- Forte Fortran Desktop Edition is identical to the former Sun Performance WorkShop Personal Edition, except that the Fortran compilers in that product no longer support the creation of automatically parallelized or explicit, directive-based parallel code. This capability is still supported in the Fortran compilers in Forte for High Performance Computing.

We appreciate your continued use of our development products and hope that we can continue to fulfill your needs into the future.

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Figures

Tables

Before You Begin

Sun WorkShop 6 update 2 Installation Guide gives instructions for how to:

- Install the Sun WorkShop™ 6 update 2 software development tools
- Obtain and install the licenses for those software development tools
- Use the Fortran licenses
- Remove Sun WorkShop software
- Troubleshoot licensing and installation problems

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

Typographic Conventions

Typeface	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this.
AaBbCc123	Command-line placeholder text; replace with a real name or value	To delete a file, type `rm` *filename*.

Shell Prompts

Shell	Prompt
C shell	%
Bourne shell and Korn shell	$
C shell, Bourne shell, and Korn shell superuser	#

Supported Platforms

This Sun WorkShop™ release supports versions 2.6, 7, and 8 of the Solaris™ *SPARC™ Platform Edition* and Solaris™ *Intel Platform Edition* operating environments.

Accessing Sun WorkShop Development Tools and Man Pages

The Sun WorkShop product components and man pages are not installed into the standard `/usr/bin/` and `/usr/share/man` directories. To access the Sun WorkShop compilers and tools, you must have the Sun WorkShop component directory in your `PATH` environment variable. To access the Sun WorkShop man pages, you must have the Sun WorkShop man page directory in your `MANPATH` environment variable.

For more information about the `PATH` variable, see the `csh`(1), `sh`(1), and `ksh`(1) man pages. For more information about the `MANPATH` variable, see the `man`(1) man page. For more information about setting your `PATH` and `MANPATH` variables to access this release, see the *Sun WorkShop 6 update 2 Installation Guide* or your system administrator.

Note – The information in this section assumes that your Sun WorkShop 6 update 2 products are installed in the `/opt` directory. If your product software is not installed in the `/opt` directory, ask your system administrator for the equivalent path on your system.

Accessing Sun WorkShop Compilers and Tools

Use the steps below to determine whether you need to change your `PATH` variable to access the Sun WorkShop compilers and tools.

To Determine If You Need to Set Your `PATH` Environment Variable

1. **Display the current value of the `PATH` variable by typing:**

```
% echo $PATH
```

2. **Review the output for a string of paths containing `/opt/SUNWspro/bin/`.**

   If you find the path, your `PATH` variable is already set to access Sun WorkShop development tools. If you do not find the path, set your `PATH` environment variable by following the instructions in the next section.

To Set Your `PATH` Environment Variable to Enable Access to Sun WorkShop Compilers and Tools

1. **If you are using the C shell, edit your home `.cshrc` file. If you are using the Bourne shell or Korn shell, edit your home `.profile` file.**

2. **Add the following to your `PATH` environment variable.**

   `/opt/SUNWspro/bin`

Accessing Sun WorkShop Man Pages

Use the following steps to determine whether you need to change your MANPATH variable to access the Sun WorkShop man pages.

To Determine If You Need to Set Your MANPATH Environment Variable

1. **Request the workshop man page by typing:**

```
% man workshop
```

2. **Review the output, if any.**

   If the workshop(1) man page cannot be found or if the man page displayed is not for the current version of the software installed, follow the instructions in the next section for setting your MANPATH environment variable.

To Set Your MANPATH Environment Variable to Enable Access to Sun WorkShop Man Pages

1. **If you are using the C shell, edit your home .cshrc file. If you are using the Bourne shell or Korn shell, edit your home .profile file.**

2. **Add the following to your MANPATH environment variable.**

   /opt/SUNWspro/man

Contacting Technical Support

Sun Service Centers will assist you with installing and licensing problems. Contact the Sun Service Center at

http://www.sun.com/service/contacting/solution.html

Accessing Sun WorkShop Documentation

You can access Sun WorkShop product documentation at the following locations:

- **The product documentation is available from the documentation index installed with the product on your local system or network.**

  Point your Netscape™ Communicator 4.0 or compatible Netscape version browser to the following file:

  `/opt/SUNWspro/docs/index.html`

  If your product software is not installed in the `/opt` directory, ask your system administrator for the equivalent path on your system.

- **Manuals are available from the docs.sun.com℠ Web site.**

  The `docs.sun.com` Web site (`http://docs.sun.com`) enables you to read, print, and buy Sun Microsystems manuals through the Internet. If you cannot find a manual, see the documentation index installed with the product on your local system or network.

Accessing Related Documentation

The following table describes related documentation that is available through the `docs.sun.com` Web site.

Document Collection	Document Title	Description
Numerical Computation Guide Collection	*Numerical Computation Guide*	Describes issues regarding the numerical accuracy of floating-point computations.
Solaris 8 Reference Manual Collection	See the titles of man page sections.	Provides information about the Solaris operating environment.

Document Collection	Document Title	Description
Solaris 8 Software Developer Collection	*Linker and Libraries Guide*	Describes the operations of the Solaris link-editor and runtime linker.
Solaris 8 Software Developer Collection	*Multithreaded Programming Guide*	Covers the POSIX and Solaris threads APIs, programming with synchronization objects, compiling multithreaded programs, and finding tools for multithreaded programs.

Ordering Sun Documentation

You can order product documentation directly from Sun through the `docs.sun.com` Web site or from Fatbrain.com, an Internet bookstore. You can find the Sun Documentation Center on Fatbrain.com at the following URL:

`http://www.fatbrain.com/documentation/sun`

Sending Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. Email your comments to Sun at this address:

`docfeedback@sun.com`

CHAPTER 1

Preparing for Installation

This chapter describes:

- The software installation overview
- System requirements

Software Installation Overview

The following is the general process you follow to install your Sun WorkShop™ 6 update 2 software and your licenses. Note that subsequent chapters contain specific instructions.

1. Your application and license servers must meet the minimum requirements for this release. See "System Requirements" on page 8.
2. You must request and receive your license information from the Sun License Center before you can install your licenses and start your software development tools. Chapter 2 describes how to request your license information from Sun.
3. You can install Sun WorkShop on your application server and license manager software on your license server. Chapter 3 describes product installation and Chapter 4 describes license installation. Chapter explains how to use the Fortran licenses.

After following the instructions in this manual, you will be ready to use your Sun WorkShop development tools.

System Requirements

This Sun WorkShop release supports versions 2.6, 7, and 8 of the Solaris™ *SPARC*™ *Platform Edition* and the Solaris *Intel Platform Edition* operating environments in Developer or Full Cluster configurations.

Note – For disk space requirements and important last-minute information about this release, see the release notes on the Sun WorkShop 6 update 2 web site at `http://www.sun.com/forte`

TABLE 1-1 lists the system requirements for each platform in Developer or Full Cluster distribution configurations.

TABLE 1-1 System Requirements by Platform in Developer or Full Cluster Distribution Configurations

	Solaris *SPARC Platform Edition*		**Solaris *Intel Platform Edition***	
	2.6	**Solaris 7 and 8**	**2.6**	**Solaris 7 and 8**
System	Recommended: SPARCstation™ 5/ 170 MHz	Recommended: Ultra	Recommended: Pentium/133 MHz	Recommended: Pentium/233 MHz
	Minimum: SPARCstation/ 50 MHz	Minimum: SPARCstation/ 50 MHz	Minimum: Pentium/90 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	128 Mbytes recommended; 64 Mbytes minimum			
Swap Space	300 Mbytes recommended; 200 Mbytes minimum			
Browser	Netscape Communicator 4.0 or a compatible Netscape version, with JavaScript enabled			
OS Configurations	Developer or Full Cluster Distribution	Developer or Full Cluster Distribution	Developer or Full Cluster Distribution	Developer or Full Cluster Distribution

Configuring a StandAlone License Server

Several configuration requirements for license servers are handled automatically if your license server is part of a network. However, these requirements might be overlooked if your license server is a standalone machine.

Testing TCP/IP

FLEXlm 7.0b license manager software requires that TCP/IP be set up and operational before FLEXlm 7.0b 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, refer to the `tcp` man page or see your system administrator.

Editing `/etc/inet/hosts` File

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

Configuring a System Without a 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 that does not have a network interface card, follow these steps:

Note – You must have root access to perform this procedure. If you do not have root access, contact your system administrator for assistance.

---

1. **Become root user (or superuser) by typing the su command and entering your root password:**

```
# su
# Password: root-password
```

2. **Type the following:**

```
# /usr/sbin/sys-unconfig
```

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

3. **Answer the questions as prompted.**

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

CHAPTER 2

Requesting Your Licenses

Sun Microsystems Inc. uses license agreements to specify manufacturer and user obligations concerning the number of users who can access the Sun WorkShop™ 6 update 2 software.

Note – For information about domain-based licenses that support products licensed through the GoldPass and ScholarPASS programs, see "Domain-Based Licenses" on page 13.

The following is the process you follow to request and receive your licenses from the Sun License Center. Detailed instructions are described in this chapter.

1. Choose a license (see "Choosing a License Type" on page 12).
2. Choose a license server configuration (see "Choosing a License Server Configuration" on page 14).
3. Complete the License Request Form (see "Completing the License Request Form" on page 15). 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.
4. Contact the Sun License Center to give the information contained in the License Request Form (see "Contacting the Sun License Center" on page 17).
5. Receive your license information from the Sun License Center. The Sun License Center responds to your license request *within two business days* 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/forte`

Choosing a License Type

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

- Personal Edition (node-locked) and Desktop Edition (node-locked) licenses
- Floating license
- Demo license (see "Demo License Installation" on page 54)
- Domain license

Note – Node-locked (Personal Edition and Desktop Edition) licenses can use a single independent or a redundant server configuration.

Personal Edition (Node-locked), Desktop Edition (Node-locked), and Floating Licenses

This release of Sun WorkShop supports a node-locked (Personal Edition and Desktop 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. If the license server and application server are two different machines, the license on the license server is used only by the host that is specified in the license file.

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.

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 "Completing the License Request Form" on page 15 to request and receive your license information from the Sun License Center.**

   In Step 8 of the License Request Form, add your site number and network domain name or names.

Choosing a License Server Configuration

There are three types of license server configurations available with Sun WorkShop:

- Single independent server
- Multiple independent server
- Redundant server

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

Note – Node-locked (Personal Edition and Desktop Edition) licenses can use a single independent or a redundant server configuration.

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 6 update 2 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_v9n1_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 Step 1, type your name, company name, address, telephone and fax numbers, and email address.**

5. **In Step 2, type an `X` next to the description that best describes your job title.**

6. **In Step 3, type an `X` next to Fax only if you want the Sun License Center to fax 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 Step 4, for Try and Buy licenses only, enter the product name and version number of the Sun WorkShop product you are evaluating.**

8. **In Step 5, type the product name and 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.

9. **In Step 6, enter the license server information for either a single license server or redundant license server.**

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 Step 6 of the form. Skip to "Contacting the Sun License Center" on page 17.

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

---

10. **If you purchased a Personal Edition (node-locked) and Desktop Edition (node-locked) product, type the node-locked hostid in Step 7 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) or Desktop Edition (node-locked) license can be installed on a three redundant server set. The Personal Edition or Desktop 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.

11. **If you purchased a Sun WorkShop product through the GoldPass or ScholarPASS programs, type your site number and network domain name or names in Step 8 of the form.**

    For more information about the GoldPass and ScholarPASS programs, see "Domain-Based Licenses" on page 13.

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 Step 3 on the License Request Form) to your license request *within two business days* 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 `license@sun.com`.

Saving an Email License to File

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

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

   The email you received from Sun has the license information either in an email attachment (see Step 2) or embedded in the body of the email message (see Step 3).

   Note – `lit` (License Installation Tool) reads the license information directly from the file where you saved the license information you received through email.

   ---

2. **If you received an email attachment, save only the email attachment to a directory and a file name of your choice on your system.**

   You are ready to proceed to Chapter 3.

3. **If you received an email with the license information embedded in the email message, then copy the license to a file with a name of your choice on your system.**

The license information is at the end of the email. The license information will look similar to the license below:

```
#
# Product : Forte H-Perf Computing 6/SPARC, 6
# Date    : 06-Mar-2000
#
INCREMENT workshop.c.sparc sunwlicd 6.000 05-apr-2000 0 \
        FB0A00211F6E47DA4569 "0" DEMO
#LICENSE_FILE workshop.c.sparc 6.000 sunpro 1
INCREMENT workshop.cc.sparc sunwlicd 6.000 05-apr-2000 0 \
        BBAAA011A70D5DA55649 "0" DEMO
#LICENSE_FILE workshop.cc.sparc 6.000 sunpro 1
INCREMENT workshop.dbx.sparc sunwlicd 6.000 05-apr-2000 0 \
        6BBAD0C1E59E07451CB5 "0" DEMO
#LICENSE_FILE workshop.dbx.sparc 6.000 sunpro 1
INCREMENT workshop.mpmt.sparc sunwlicd 6.000 05-apr-2000 0 \
        1B8AF091A0719719982C "0" DEMO
#LICENSE_FILE workshop.mpmt.sparc 6.000 sunpro 1
INCREMENT workshop.teamware.sparc sunwlicd 6.000 05-apr-2000 0 \
        CBDA30E1D8BA961D6FDE "0" DEMO
#LICENSE_FILE workshop.teamware.sparc 6.000 sunpro 1
INCREMENT workshop.tools.sparc sunwlicd 6.000 05-apr-2000 0 \
        EB5AA0A1C290FAACDB83 "0" DEMO
#LICENSE_FILE workshop.tools.sparc 6.000 sunpro 1
INCREMENT workshop.f77.sparc sunwlicd 6.000 05-apr-2000 0 \
        CB3A5071C8BA195483B6 "0" DEMO
#LICENSE_FILE workshop.f77.sparc 6.000 sunpro 1
INCREMENT workshop.f90.sparc sunwlicd 6.000 05-apr-2000 0 \
        FB8A40714AF0090C4686 "0" DEMO
#LICENSE_FILE workshop.f90.sparc 6.000 sunpro 1
```

Note – 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.

---

4. **Proceed to Chapter 3 for software installation.**

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. See "Fax License Installation" on page 47 for installation details.**

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. You can request to receive the license by Fax or email.
2. **Go to Chapter 3.**

CHAPTER 3

Installing Software

This chapter gives you step-by-step instructions for installing your FLEXlm 7.0b license manager software and your Sun WorkShop™ 6 update 2 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 21.

If you installed an Early Access version of Sun WorkShop 6 update 2, see "Early Access Versions of Sun WorkShop 6 update 2" on page 22 for special instructions.

If you plan to support this new Sun WorkShop release and previous Sun WorkShop releases on the same machine, see "Supporting Previous Software Releases" on page 23.

Otherwise, proceed to "Software Installation Steps" on page 24.

From Try and Buy Software to Purchase

If you installed Sun WorkShop 6 update 2 development tools on a trial basis (known as Try and Buy software) and then purchased Sun WorkShop 6 update 2, you *do not* need to reinstall your purchased Sun WorkShop 6 update 2 development tools. You *do* need to install FLEXlm 7.0b 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 7.0b 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
```

3. **Run `lmver` by typing the following:**

```
# cd /etc/opt/licenses/
# ./lmver ./sunwlicd
```

- If there *is* output from the command showing `v7.0b`, you have FLEXlm 7.0b 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 7.0b license manager software on your license server.

The section "Using Web Start" on page 25 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.

Early Access Versions of Sun WorkShop 6 update 2

You must remove all versions of Sun WorkShop 6 update 2 before installing the purchased product. See Chapter 6 for complete instructions on using Web Start to remove Sun WorkShop software.

If you installed a trial version of Sun WorkShop 6 update 2 that you downloaded from `http://access1.sun.com/fortedevprod` prior to purchasing Sun WorkShop 6 update 2, you must *manually* remove the following packages:

- SPROpl
- SPROpls
- SPROplsx
- SPROplx

You must uninstall these packages before installing your purchased Sun WorkShop 6 update 2 product. Use the `pkgrm` command to uninstall the packages by following these steps:

1. **Become a superuser by typing:**

```
% su
Password: root-password
```

2. **Remove a package by typing:**

```
# pkgrm package-name
```

Repeat Steps 1 and 2 until you have removed all four packages. See the `pkgrm` man page for more information about the `pkgrm` command.

Note – Use the `pkgrm` command to uninstall only those packages that you installed manually.

Supporting Previous Software Releases

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 release resides. For example, if you previously installed development tools in `/opt`, install the new development tools in a new directory that you created on a file system with sufficient disk space. For example:

```
/opt/SUNWspro
```

for the previous version, and

```
/opt/new/SUNWspro
```

for the new version.

After installation, modify your `PATH` and `MANPATH` environment variables to include the new directory. See "Changing `PATH` and `MANPATH` Variables" on page 39 about setting the variables to access the new release.

Local or Remote Installation

In the section "Software Installation Steps" on page 24, you will be asked to pick a local or remote installation method.

In a local installation, the source computer and the target computer are the same machine. In a remote installation, the software is downloaded on one machine (the *source* computer) and installed on another machine (the *target* computer).

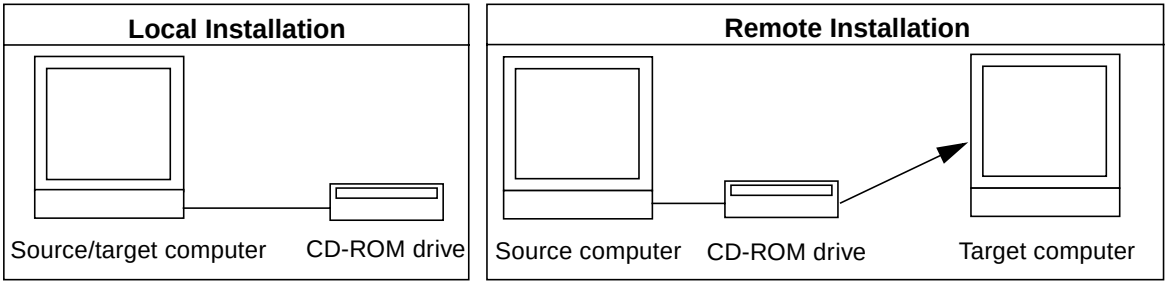

FIGURE 3-1 Local and Remote Installations

Software Installation Steps

There are two ways to install Sun WorkShop development tools and FLEXlm 7.0b license manager software:

- Solaris™ Web Start (Web Start) graphical user interface (see "Using Web Start" on page 25 for instructions)
- `installer` command-line installation executable if you do not have graphical user interface capabilities (see "Using the Command-Line Installation" on page 34 for instructions)

Using Web Start

These instructions describe how to use Web Start to install the Sun WorkShop development tools and the FLEXlm 7.0b license manager software.

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. **Pick a local or remote installation method.**

   To help you decide, see "Local or Remote Installation" on page 24. Then follow the instructions in this step.

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

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

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

   Replace *target-machine-name* with the output of the `/usr/bin/hostname` command entered 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.

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

```
# mkdir -p /cdrom/devpro_v9n1_platform
# mount -F hsfs -r cdrom-device /cdrom/devpro_v9n1_platform
```

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

6. **Follow the instructions for local or remote installation in "Local or Remote Installation" on page 24.**

Local Installation

For a local installation, follow these steps:

a. 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.

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

```
# cd /cdrom/devpro_v9n1_platform
```

c. Skip to Step 7.

Remote Installation

For a remote installation, follow these steps:

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

```
share -F nfs -o ro /cdrom/devpro_v9n1_platform
```

b. Verify whether if your source machine is an NFS server by typing:

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

If screen output that resembles the following example appears, then `nfsd` is running:

```
root 237 1 17 Jun 04 ? 0:00 /usr/lib/nfs/nfsd -a 16
```

- If `nfsd` is running, type:

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

- If you do *not* get screen output like the preceding example, start `nfsd` by typing:

```
# /etc/init.d/nfs.server start
# ps -ef | grep nfsd
```

You should see screen output similar to the previous example. If not, contact your system administrator or your Sun authorized service provider.

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

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

Screen output that resembles the following example appears:

```
RESOURCE                        SERVER      ACCESS  TRANSPORT
server-name:product-location    server-name -       -
```

d. Log in to the target machine by typing:

```
# rlogin target-machine-name -l user
Password: user-password
% su
Password: root-password
```

Replace *user* with your user login name (not `root`).

e. Go to the source machine by typing:

```
# cd /net/source-machine/cdrom/devpro_v9n1_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:

Note – Do not type the backslash (\). The backslash indicates that the command must be typed as one line.

```
# mkdir /remote_products
# /usr/sbin/mount -F nfs -r source-machine:/cdrom/\
devpro_v9n1_platform /remote_products
# cd /remote_products
```

f. Redirect the target machine display.

If you use a C shell, type:

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

If you use a Bourne shell, type:

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

If you use a Korn shell, type:

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

7. **Start the Web Start Installer by typing:**

```
# ./installer
```

Note – Do not run the installer in the background.

The Welcome window appear.

8. **Click next.**

The 64-Bit Selection window opens. The default selection is 64-bit, which installs 32- and 64-bit packages. If you will be developing on Solaris 7 and 8 *SPARC Platform Edition*, decide if you want to install only 32-bit packages or both 32-bit and 64-bit packages.

Note – The 64-bit selection window does not appear for an x86 platform installation.

9. **Click Next to proceed to the Product Selection window (**FIGURE 3-2**).**

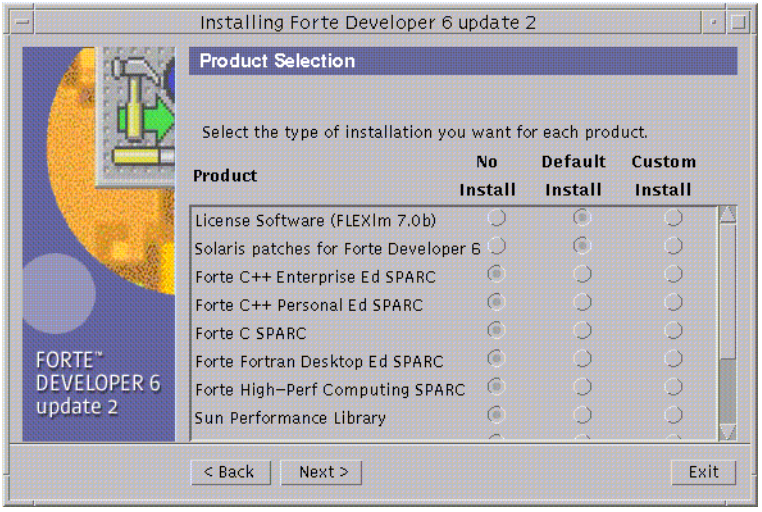

FIGURE 3-2 Product Selection Window

The default selection License Software (FLEXlm 7.0) installs FLEXlm 7.0b and the License Installation Tools.

Caution – You cannot install your license without installing the License Software, and you cannot execute your installed product software without installing your software license.

Note – The default selection Solaris patches for Forte Developer 6 installs the patches. If you have previously installed patches, installing the default patches does not downgrade your system. For more information on patches, see the `README` files in the Patch directory.

10. **Select the software that you want to install by clicking the radio buttons in the Default Install column or Custom Install column.**

Note – If you are upgrading to FLEXlm 7.0b license manager software from an earlier FLEXlm version, your license manager is automatically brought down during the upgrade. After you install your new licenses, the license installation tool starts your license manager again. During the upgrade, your licensed software will be unavailable.

A default installation installs all components and all online documentation that is associated with the components.

A custom installation allows you to select which components you want to install.

Note – If you select Custom Install, the Component Selection window appears after you complete Step 11.

11. **Click Next to continue to the Select Install Directory. Decide if you want to change the software installation directory from `/opt`.**

See "Supporting Previous Software Releases" on page 23 if you want to install this new Sun WorkShop release on a machine that contains previous Sun WorkShop releases.

Note – Web Start allows you to install multiple products in one location only and it must be on the same system from which Web Start is started.

The installation directory that you choose is your default installation directory for this Web Start session:

- If you want to install in `/opt`, click Next.
- If you want to install the software in a directory other than `/opt`, type the new location in the text field.

- If you want to browse for another location, do the following:

a. Click Browse and select the location where you want the software installed.

b. Click OK from the Browse window.

You return to the Select Install Directory.

12. Click Next to continue with the installation.

- If you selected Default Install in Step 10, the installer checks the diskspace, and the Ready to Install windows opens to show a list of items to be installed.

Note – If you do not have sufficient disk space, Web Start warns you.

- If you selected Custom Install in Step 10, click Next.

The Component Selection window opens. By default, all components are selected.

a. Deselect any components that you do not want to install.

b. Click Next.

A new Component Selection window opens for each product that you select for custom installation.

c. Continue through the Component Selection windows for each product.

d. Click Next in the last Component Selection window.

The installer checks the disk space, and the Ready to Install window opens with a list of items to be installed.

13. In the Ready to Install window, verify the items that you want to install.

a. If you want to install more products, click Back to return to the Product Selection window, make your selections, and click Next to return to the Ready to Install window.

b. When you complete your selection, click Install Now to start the installation.

The Installing ... window appears with progress bars to indicate the installation status. When the installation is complete, the Install License window opens (FIGURE 3-3).

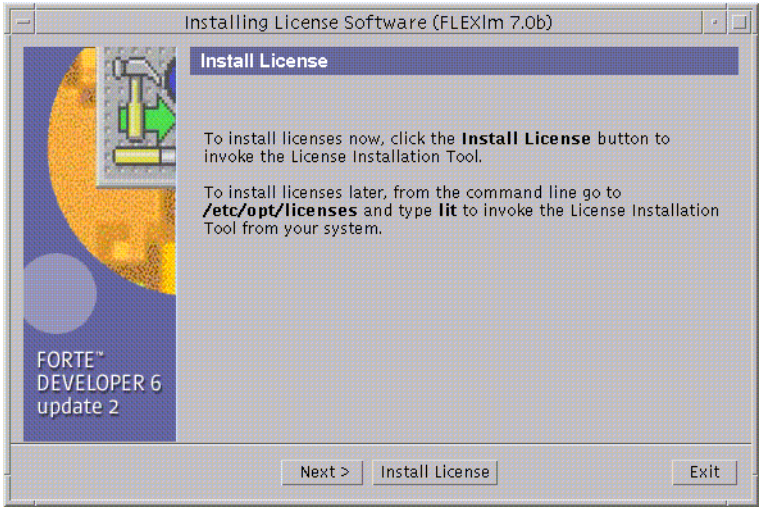

FIGURE 3-3 Install License Window

14. **Determine if you want to install your licenses now.**

    a. **If you choose to *not* install licenses now, click Next.**

    The Installation Summary window opens. If you do not use Web Start to install your licenses, you must use `lit` and `lit_tty` to install your licenses. See Chapter 4 for license installation.

    b. **If you choose to install licenses now, click Install License.**

    Go to "Installing Your Licenses" on page 43 for complete instructions on installing licenses.

15. **Review the messages in the Installation Summary window, then click Exit to quit the Web Start installation.**

16. **If you mounted the product directory in Step 6 during a remote installation, unmount by typing:**

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

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

```
# exit
```

18. **If you performed a remote installation, follow these steps (if you did not perform a remote installation, skip to Step 19):**

    a. **Exit from the remote machine by typing:**

```
% exit
```

    b. **Do the following regarding the NFS server:**

    - If `nfsd` was already running in Step 6, type the following:

```
# /usr/sbin/unshare /cdrom/devpro_v9n1_platform
```

    - If you manually started `nfsd` in Step 6, 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_v9n1_platform
```

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

```
# exit
```

19. **Disable client access by typing the following:**

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

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

21. **Set your `PATH` and `MANPATH` variables by following the steps in "Changing `PATH` and `MANPATH` Variables" on page 39.**

Note – If you use more than one license server, follow the software installation steps to install the license manager software and the license file on each license server.

Using the Command-Line Installation

These instructions describe how to install the FLEXlm 7.0b license manager software and the Sun WorkShop development tools using the command-line interface.

Follow these steps:

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

```
% su
Password: root-password
```

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

3. **Pick a local or remote installation method.**

   To help you decide, see "Local or Remote Installation" on page 24. Then follow the instructions in this step.

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*.

Local Installation

For a local installation, follow these steps:

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

```
# cd /cdrom/devpro_v9n1_platform
```

b. Skip to Step 4.

Remote Installation

For a remote installation, follow these steps:

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

```
share -F nfs -o ro /cdrom/devpro_v9n1_platform
```

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

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

If screen output like the following appears, then `nfsd` is running:

```
root 237 1 17 Jun 04 ? 0:00 /usr/lib/nfs/nfsd -a 16
```

- If `nfsd` is running, type:

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

- If you do *not* get screen output like the above, start `nfsd` by typing:

```
# /etc/init.d/nfs.server start
# ps -ef | grep nfsd
```

You should then get screen output like the above. If not, contact your system administrator or your Sun authorized service provider.

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

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

Screen output like the following appears:

```
RESOURCE                        SERVER      ACCESS  TRANSPORT
server-name:product-location    server-name -       -
```

d. Log in to the target machine by typing:

```
# rlogin target-machine-name -l user
Password: user-password
% su
Password: root-password
```

Replace *user* with your user login name (not `root`).

e. Go to the source machine by typing:

```
# cd /net/source-machine/cdrom/devpro_v9n1_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:

Note – Do not type the backslash (\). The backslash indicates that the command must be typed as one line.

```
# mkdir /remote_products
# /usr/sbin/mount -F nfs -r source-machine:/cdrom/\
devpro_v9n1_platform /remote_products
# cd /remote_products
```

4. Start the command-line installation by typing:

```
# ./installer -nodisplay
```

The following dialog appears:

```
Solaris Web Start will assist you in installing software for Forte
Developer 6 update 2. Press <ENTER> to continue.
```

5. Press the Enter key.

6. Decide whether you want 64-bit support.

```
Type 1 to select 64-bit support or 2 to select 32-bit support.
```

If no character is entered, the choice will default to 64-bit support.

Note – The 64-bit selection does not appear for an x86 platform installation.

---

7. The following product selection text appears:

```
Select the type of installation you want for each product.

      No Install  Default Install  Custom Install  Product
      ----------  ---------------  --------------  -------
 0.   [ ]         [X]              [ ]             License Software (FLEXlm 7.0
 1.   [ ]         [X]              [ ]             Solaris patches for Forte De
 2.   [X]         [ ]              [ ]             Forte C++ Enterprise Ed SPAR
 3.   [X]         [ ]              [ ]             Forte C++ Personal Ed SPARC
 4.   [X]         [ ]              [ ]             Forte C SPARC
 5.   [X]         [ ]              [ ]             Forte Fortran Desktop Ed SPA
 6.   [X]         [ ]              [ ]             Forte High-Perf Computing SP
 7.   [X]         [ ]              [ ]             Sun Performance Library
 8.   [X]         [ ]              [ ]             Forte University Edition SPA
 9.   [X]         [ ]              [ ]             Forte TeamWare SPARC
 10.  [X]         [ ]              [ ]             XEMACS 20.4 Source Distribut
 11.  [X]         [ ]              [ ]             GVIM 5.3 Source Distribution
 12.                                               Done
   Enter the number next to the product you wish to change.  Select "Done"
   when finished [12] {"!" exits}: 12
```

The default selection License Software (FLEXlm 7.0) installs FLEXlm 7.0b and the License Installation Tools.

Caution – You cannot install your license without installing the License Software, and you cannot execute your installed product software without installing your software license.

Note – The default selection Solaris patches for Forte Developer 6 installs the patches. If you have previously installed patches, installing the default patches does not downgrade your system. For more information on patches, see the `README` files in the Patch directory.

---

8. **To select or deselect a product for installation, type the number (0-9) corresponding to the product you are considering.**

Note – If you are upgrading to FLEXlm 7.0b license manager software from an earlier FLEXlm version, your license manager is automatically brought down during the upgrade. After you install your new licenses, the license installation tool starts your license manager again. During the upgrade, your licensed software will be unavailable.

---

9. **Select the type of installation you want for that product.**
   - For no installation, type 1. No installation deselects a product and the product is not installed.
   - For default installation, type 2. Default installation installs all components and online documentation associated with that product.
   - For custom installation, type 3. Custom installation allows you to select the components of that product you want to install. (You will be taken through custom installation in Step 12.)

10. **To select or deselect another product for installation, return to Step 8. Select Done if you are finished.**

11. **Before you can proceed, you must specify a location for installation.**

Note – Web Start allows you to install multiple products in one location only and it must be on the same system from which Web Start is started.

- If the default directory, `/opt`, is your desired installation directory, press Return.
- If not, enter the name of the new directory.

12. **If you selected custom installation for a product in Step 9, you will now be taken through the custom installation steps for that product.**

    a. **Select or deselect a component for installation by entering the number corresponding to the component, and press Return.**

    b. **When finished, type 0 and press Return.**

13. **A list of products and its components will be listed for verification.**

- Type 1 if you want to proceed with installation.
- Type 2 if you want to start over from Step 6.
- Type 3 if you want to exit installation.

14. **If you typed 1 to proceed with installation, a progress indicator will appear.**

    a. **When installation is 100% complete, you can view a product's log file by typing the number corresponding to that product.**

    b. **When finished viewing the log files, type the number corresponding to done.**

15. **If you mounted the product directory in Step 3 during a remote installation, unmount by typing:**

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

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

```
# exit
```

17. **If you performed a remote installation, follow these steps (if not, skip to Step 18):**

a. Exit from the remote machine by typing:

```
% exit
```

b. Do the following regarding the NFS server:

- If `nfsd` was already running in Step 3, type the following:

```
# /usr/sbin/unshare /cdrom/devpro_v9n1_platform
```

- If you manually started `nfsd` in Step 3, 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_v9n1_platform
```

d. Exit from superuser privileges by typing:

```
# exit
```

18. **Review the `README` files located in the top directory of the software you installed.**
19. **Set your `PATH` and `MANPATH` variables. See "Changing `PATH` and `MANPATH` Variables" on page 39**

Changing PATH and MANPATH Variables

Because the Sun WorkShop product components and man pages do not install into the system `/usr/bin/` and `/usr/share/man` directories, you must change your `PATH` and `MANPATH` environment variables to enable access to Sun WorkShop.

Note – The paths shown in this section assume that Sun WorkShop packages have been installed in the standard `/opt` directory. If you have indicated another installation directory when you started Web Start, replace `/opt` in the examples with the installation path you have selected.

The `PATH` and `MANPATH` variables should be set in your home `.cshrc` file if you are using the C shell, or your home `.profile` file if you are using the Bourne or Korn shells.

- To invoke the Sun WorkShop commands, you need to add `/opt/SUNWspro/bin` to your `PATH` environment variable.
- To access Sun WorkShop man pages with the `man` command, you need to add `/opt/SUNWspro/man` to your `MANPATH` environment variable.
- To access the man pages for the Sun WorkShop license management tools, add `/opt/SUNWste/license_tools/man` to your `MANPATH` variable.

SunOS™ man pages `csh`(1), `sh`(1), and `ksh`(1) describe the `PATH` variable for the C, Bourne, and Korn shells. The `man`(1) man page describes the `MANPATH` variable.

You can display the current value of `PATH` to determine if you need to set your `PATH` variable to locate Sun WorkShop commands. If the command

```
% echo $PATH
```

displays a string of paths containing

```
/opt/SUNWspro/bin/
```

you do not need to set your `PATH` variable because it is already set. (`/opt` may be replaced by an alternative install path.)

You can determine if you need to set your `MANPATH` variable by requesting the `workshop`(1) man page. If the **`man workshop`** command is not able to find the `workshop`(1) man page, or if the page displayed is not for the version of the software just installed, you do not have the `MANPATH` variable set correctly.

The discussion that follows shows how to permanently add these paths to the appropriate environment variables so that all Sun WorkShop components are always available. These commands can also be entered at a shell prompt to temporarily enable only that shell.

Note – Do not type the backslash (\). The backslash indicates that the command must be typed as one line.

1. **Add Sun WorkShop to your PATH and MANPATH variables.**

   - If you are using the C shell (csh), first determine if your MANPATH variable is already set. At a shell prompt, type the command:

```
% echo $MANPATH
```

   If the response is "Undefined variable" (C shell) or an empty line (Bourne/Korn shell), the MANPATH variable is not set. If paths to one or more man directories are displayed, the variable is set.

   Now edit the .cshrc file in your home directory and add the following line at the end of the file:

```
set path=(/opt/SUNWspro/bin  $path)
```

   If the MANPATH variable is not already set, add the following line:

```
setenv MANPATH   \
/opt/SUNWspro/man:/opt/SUNWste/license_tools/man:/usr/share/man
```

   If the MANPATH variable is already set, add the following line instead:

```
setenv MANPATH   \
/opt/SUNWspro/man:/opt/SUNWste/license_tools/man:$MANPATH
```

   - If you are using the Bourne or Korn shells (sh or ksh), edit the .profile file in your home directory and add the following lines:

```
PATH=/opt/SUNWspro/bin${PATH:+:}${PATH}
MANPATH=   \
  /opt/SUNWspro/man:/opt/SUNWste/license_tools/man:  \
  ${MANPATH:=/usr/share/man}
```

   There should not be any blanks in these two lines.

2. **Save the .cshrc or .profile file that you modified in step 1.**

3. **Reinitialize your shell by executing the following command:**

- For the C shell, type:

```
source ~/.cshrc
```

- For the Bourne or Korn shell, type:

```
. ~/.profile
```

Note – The `PATH` and `MANPATH` variables must be set to include Sun WorkShop in each user's environment for users to access the installed software.

Continue to Chapter 4 if you have not installed your licenses. If you have installed your licenses, you are now ready to use your Sun WorkShop products.

CHAPTER 4

Installing Your Licenses

This chapter gives you step-by-step instructions for 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 7.0b 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 "Domain-Based Licenses" on page 13.

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/forte`

Special Cases

The following cases require special handling:

- When you completed your License Request Form, if you requested to have your floating and node-locked (Personal Edition or Desktop Edition) licenses on the same license server, you should have received separate license information from the Sun License Center for floating licenses and for node-locked licenses that you requested. To install your licenses on the same license server, run `lit` (see "Using `lit` License Installer" on page 44) or `lit_tty` (see "Using the `lit_tty` Command-Line Executable" on page 50) on your license server for floating licenses you received from the Sun License Center and run it again for node-locked licenses 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 21.

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 and Desktop Edition (node-locked) license can be installed on a three redundant server set only if it was requested to run on a redundant server configuration. The Personal Edition or Desktop 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.

Using `lit` License Installer

This section describes how to start `lit` from the command line. Invoking `lit` will start the GUI interface for license installation.

Note – License software must be installed before proceeding with `lit` instructions. See "Software Installation Steps" on page 24 to install license software.

Email License File Installation

You must run `lit` on your license server.

If you will be using redundant server configuration, you must install FLEXlm 7.0b license manager software and run `lit` on all three redundant servers.

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).

For Fax license installation, go to "Fax License Installation" on page 47.

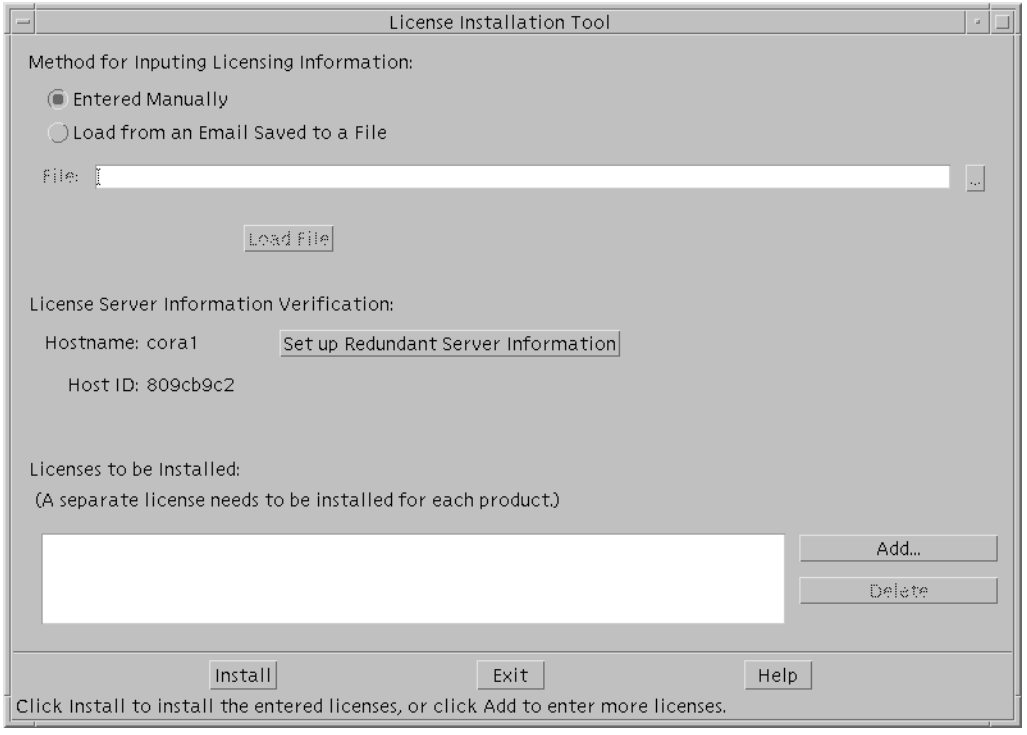

FIGURE 4-1 License Installation Tool Window

5. **Verify the radio button for Load from an Email Saved to a File is active.**

6. **In the File text box in the License Installation Tool window, type the pathname to the file where you saved the license information that Sun emailed to you, or click the browse button (...) to use a file chooser to find the saved file.**

   If you used the file chooser, continue to Step 8.

7. **Click Load File.**

   Your licenses listed in the email you received from Sun appear in the Licenses to be Installed pane.

8. **Click Install.**

   `lit` installs your licenses. When the installation is complete, the message License installation was successful appears in the lower left corner of the window. If you receive an error message, see "Contacting Technical Support" on page 4 for technical support information.

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

10. **Click Exit to dismiss the License Installation Tool.**

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

Note – You must copy the `LIC_CONFIG_SCRIPT` from the license server onto each product server into the `/tmp` directory. Do not create a `/etc/opt/licenses` directory for the `LIC_CONFIG_SCRIPT` on the application server.

Running the `LIC_CONFIG_SCRIPT` script creates a license router file for WorkShop 6 or elementary license file for previous WorkShop releases on your application server. For information on elementary license files or router files, see Chapter 2 in the *Sun WorkShop Installation and Licensing Reference*.

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

```
# exit
```

Fax License Installation

Note – Refer to the license information you received from the Sun License Center to complete this section.

---

1. **Click Entered Manually in the License Installation Tool window.**

   The Add License window opens.

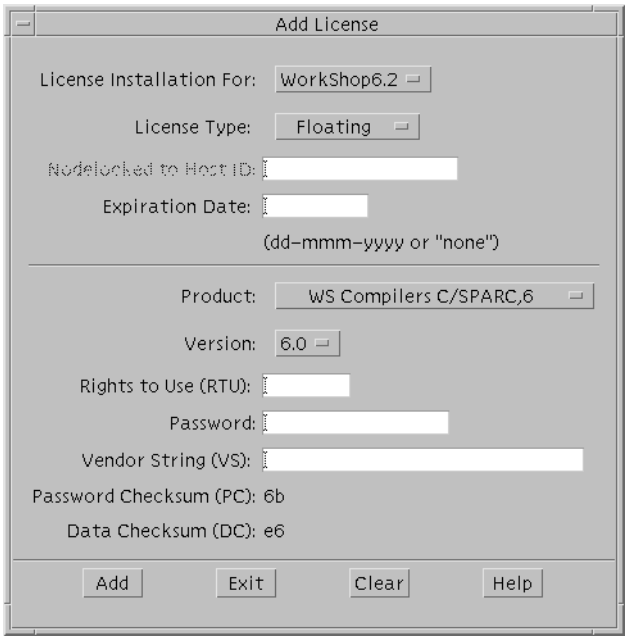

FIGURE 4-2 Add License Window

2. **Use the pulldown menu in License Installation For to select `WorkShop6.2` if it is not already selected.**

3. **In License Type, select the license type you are installing.**

   a. **If License Type is node-locked, enter the hostid you received from the license server.**

   b. **To determine the hostid, at the prompt type the following:**

   ```
   % /usr/bin/hostid
   ```

   Enter the results of the command in the hostid text field.

4. **Type the expiration date in `dd-mmm-yyyy` format (for example, `22-may-2000`) that the Sun License Center provided.**

   If you are using a license with no expiration date, type the word `none` in the text field.

5. **Use the Product pulldown menu to select the software for which you want to install a license.**

   The license information you received from the Sun License Center provides the feature names you need.

6. **For Version, verify the software version.**
7. **For RTU, enter the number of users.**
8. **For Password, type the password the Sun License Center provided.**
9. **For Vendor String (VS), type the number the Sun License Center provided.**
10. **For Password Checksum (PC), verify the PC against what appears in the license email or fax you received from the Sun License Center.**

    If there is a discrepancy, recheck the other data you have entered such as License Type, Expiration Date, the product name, version, Rights to Use, Password, and Vendor String. For further assistance, contact Technical Support at `http://www.sun.com/service/contacting/solution.html`.
11. **For Data Checksum (DC), verify the value of the DC against what appears in the license email or fax you received from the Sun License Center.**

    If there is a discrepancy, recheck the other data you have entered such as License Type, Expiration Date, the product name, version, Rights to Use, Password, and Vendor String. For further assistance, contact Technical Support at `http://www.sun.com/service/contacting/solution.html`.
12. **Click Add.**
13. **This license is added to the Licenses to be Installed pane in the License Installation Tool window.**
14. **Repeat Step 5 through Step 12 as needed to install more licenses.**
15. **Click Exit in the Add License window.**
16. **Click Install in the License Installation Tool window.**
17. **When the installation is complete, click OK in the pop-up window.**
18. **Click Exit to dismiss the License Installation Tool.**
19. **If your application server is different from your license server, copy and run the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` script in the `/tmp` directory on each of the application servers that will access the software products.**

Note – You must copy the `LIC_CONFIG_SCRIPT` from the license server onto each product server into the `/tmp` directory. Do not create a `/etc/opt/licenses` directory for the `LIC_CONFIG_SCRIPT` on the application server.

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

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

```
# exit
```

Using 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. See Chapter 2 for information on obtaining your license.

If you will be using redundant server configuration, you must install FLEXlm 7.0b license manager software and run `lit_tty` on all three redundant servers.

Running the `LIC_CONFIG_SCRIPT` script creates a license router file for WorkShop 6 or elementary license file for previous WorkShop releases on your application server. For information on elementary license files or router files, see Chapter 2 in the *Sun WorkShop Installation and Licensing Reference*.

Note – License software must be installed before you can proceed with `lit_tty` instructions. See *Software Installation Steps* on page 24 to install license software.

Email License File Installation

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

```
% su
Password: root-password
```

2. **Start `lit_tty` by typing:**

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

Replace *license-file* with the path to the file where you saved the license information that Sun emailed to you (see "Saving an Email License to File" on page 18). Refer to the `lit_tty` man page for more information.

3. **Decide if you want the displayed licenses installed.**
   - If you want the displayed licenses installed, type `y`. `lit_tty` installs your licenses.
   - If the licenses that are displayed are not the licenses you want to install, type `n`. See "Contacting Technical Support" on page 4 for technical support.

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

```
# exit
```

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
```

3. **In the Select Product to License screen, type an `x` next to `WorkShop6.2`.**

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

   Press Return to navigate down the product list to `WorkShop6.2`.

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. **Select the license type by pressing Enter until the cursor is in the appropriate box for Floating, Node-locked, Demo, or Domain license.**

6. **Type an `x`, then press Enter until the cursor is at Servers.**

7. **Type an `x` to select the number of servers you will use.**

   Press Tab to select a different number of servers.

8. **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.

9. **Press Return to navigate past Phone Number List.**

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

10. **For Nodelocked to Host ID, type one of the following:**
    - For a floating license, type the word `none`.
    - For a Personal Edition (node-locked) or Desktop Edition (node-locked) license, type the same hostid you typed on your License Request Form.

11. **For the expiration date, type the word `none`.**

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

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

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

15. **For Data Checksum (DC), verify the DC against what appears in the license email or fax you received from the Sun License Center.**

    If there is a discrepancy, recheck the other data you have entered such as License Type, Expiration Date, the product name, version, Rights to Use, Password, and Vendor String. For further assistance, contact Technical Support at `http://www.sun.com/service/contacting/solution.html`.

16. **For Password Checksum (PC), verify the PC against what appears in the license email or fax you received from the Sun License Center.**

    If there is a discrepancy, recheck the other data you have entered such as License Type, Expiration Date, the product name, version, Rights to Use, Password, and Vendor String. For further assistance, contact Technical Support at `http://www.sun.com/service/contacting/solution.html`.

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

18. **Press any key to return to selecting products for which you want to install a license, and repeat Step 4 through Step 17.**

    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.

---

19. **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.

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

Note – You must copy the `LIC_CONFIG_SCRIPT` from the license server onto each product server into the `/tmp` directory. Do not create a `/etc/opt/licenses` directory for the `LIC_CONFIG_SCRIPT` on the application server.

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

Demo License Installation

You install the demo license the same as you would install other Sun licenses. See "Using `lit` License Installer" on page 44 or "Using the `lit_tty` Command-Line Executable" on page 50 for license installation. In order for you to use Sun WorkShop, the demo license file must be installed on your application server, because the demo license does not use the license manager and will not communicate with the license server. If you choose to install your demo license on your license server, you will need to copy the license file `sunpro.lic,node` to your application server.

Note – The demo license file must be named `sunpro.lic,node` (be sure to include the comma and the period in the name of the demo license file).

---

1. **On the license server, type:**

```
% cd /etc/opt/licenses
```

2. **From the license server install directory, copy the `sunpro.lic,node` file to the product directory `/`*install-directory*`/SUNWspro/license_dir` on your application server.**

   For more information about demo licenses, see *Sun WorkShop 6 update 2 Installation Guide: Web Download Version* or *Sun WorkShop 6 update 2 Try and Buy Quick Install After Download*.

(Optional) Changing the Owner of the License Server Daemon

The license server daemon is automatically configured to be owned by `nobody`, which is a predefined account on Solaris™. The `adjust_flexlm_owner` script is provided to allow you to change the user name to a functional name, such as `gsi_admin`.

Note – This is only required if you want to use the license admin utilities as something other than `root`.

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 security risks, do not change ownership to `root`.

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. You can run the `adjust_flexlm_owner` script at any time to change the ownership and execute privileges of the daemon and utilities.

CHAPTER 5

Understanding Fortran Licenses

This chapter describes Fortran licenses and how to use them.

About Fortran Licenses

Sun WorkShop™ 6 update 2 has a new type of license available for Fortran. The new license is a limited license and is available only with the Forte™ Fortran Desktop Edition 6. You request and install the license in the same manner as other Sun WorkShop licenses. See Chapter 2 and Chapter 4 for license request and license installation instructions.

The limited license disallows the ability to parallelize code, and it limits the scalability of executables to one CPU (Central Processing Unit). The limited license is ideal for creating personal or internal applications that do not require multiple CPUs to function.

Fortran is also available with an unlimited license, which is shipped in Forte™ Developer University Edition 6 and Forte™ for High Performance Computing 6 (referred to as *HPC* in Sun WorkShop Fortran documentation). The unlimited license allows you to parallelize code and does not limit the scalability of the executables.

The Fortran limited license is a node-locked license, and the floating license is an unlimited license. A node-locked license functions with the node-locked workstation that is specified in the license file, and the floating license can function with any workstation. See “Requesting Your Licenses” on page 11 for more detail on node-locked and floating licenses.

TABLE 5-1 is a list of the licenses available with the three Fortran products.

TABLE 5-1 Sun WorkShop Fortran Products and License Tokens

	License Tokens Available	
Sun WorkShop Fortran Product	**Unlimited**	**Limited**
Forte™ Fortran Desktop Edition 6		`workshop.f90l.sparc` `workshop.f77l.sparc`
Forte™ Developer University Edition	`workshop.f90.sparc` `workshop.f77.sparc`	
Forte™ for High Performance Computing 6	`workshop.f90.sparc` `workshop.f77.sparc`	

Using Fortran Licenses

The license tokens available in the Forte Fortran Desktop Edition 6 compiler are `workshop.f90l.sparc` and `workshop.f77l.sparc`, which are both limited. The Fortran limited license will not allow you to use any parallelization when you compile. The three parallelization flags that will not function with the limited license are:

- `-parallel`
- `-explicitpar`
- `-autopar`

Your ability to parallelize depends on the availability of the Fortran licenses. If you have access to an unlimited license, you can use the parallelization flags. If you have access to the limited license only, then you cannot use the parallelization flags. However, if you have access to *both* a limited and unlimited license, then you can use the parallelization options.

Using Fortran Limited Licenses *or* Unlimited Licenses

TABLE 5-2 lists the various scenarios and the compile results that occur when parallelization flags are used and not used with the limited license and unlimited license. The scenarios in this table show how the licenses function when you have access to either a limited license *or* unlimited license, but not both.

TABLE 5-2 Limited *or* Unlimited License Function With and Without Parallelization Flags

	Compile Results	
Scenario	**Limited License Token**	**Unlimited License Token**
1. Parallelization Flag Node-locked Workstation	`Error no a.out`	`parallelized a.out`
2. Parallelization Flag Other Workstation	`Error no a.out`	`parallelized a.out`
3. No Parallelization Flag Node-locked Workstation	`non-parallelized a.out`	`non-parallelized a.out`
4. No Parallelization Flag Other Workstation	`Error no a.out`	`non-parallelized a.out`

Note – In the Scenarios column of TABLE 5-2, *Node-locked Workstation* is the workstation that is indicated in the limited (node-locked) license file. *Other Workstation* is a workstation that is not node-locked to the limited license.

Scenario 1

Scenario 1 (TABLE 5-2) shows the results you receive if you use a parallelization flag with a limited license from the node-locked workstation. You cannot compile with the limited license, and you will receive an error message (FIGURE 5-1).

```
riscjr{impact}11 f90 -parallel -loopinfo f90.f
f90: Warning: Optimizer level changed from 0 to 3 to support
parallelized code

License Error : Licensing product (Sun WorkShop Compiler FORTRAN
90 SPARC).
    License File: 7588@riscjr
License server does not support this feature
Feature:workshop.f90.sparc
Server name
FLEXlm error:-18,147.
```

FIGURE 5-1 License Error Message

The `license_log` entry will show an `UNSUPPORTED` message (FIGURE 5-2).

```
7:56:36 (sunwlicd) UNSUPPORTED: "workshop.f90.sparc"
(PORT_AT_HOST_PLUS   )
impact@anyhost  (License server does not support this feature (-
18,327))
```

FIGURE 5-2 `UNSUPPORTED` Entry in `license_log`

If you are using an unlimited license, the license server will check out that license, and you can use parallelization options.

Scenario 2

Scenario 2 (TABLE 5-2) shows the results you receive if you use the parallelization flag from a workstation other than the node-locked workstation. If you try to use a limited license, you will receive an error message (FIGURE 5-1) and your compilation will not proceed. You also will receive an UNSUPPORTED message (FIGURE 5-2) in the `license_log`. If you are using the unlimited license token, you can parallelize when you compile.

Scenario 3

Scenario 3 (TABLE 5-2) shows the results you receive if you do not use the parallelization flag from a node-locked workstation. If you are using a limited license token, you will not receive an error message, and your compilation will proceed. If you are using an unlimited license token, you will not receive an error message, and your compilation will proceed. You will receive an UNSUPPORTED message (FIGURE 5-2) in the `license_log`.

Scenario 4

Scenario 4 (TABLE 5-2) shows the results you receive if you do not use the parallelization flag from a workstation other than a node-locked workstation. If you are using a limited license, you receive an error message (FIGURE 5-1) and your compilation will not proceed. You will receive an UNSUPPORTED message (FIGURE 5-2) in the `license_log` because the license server searches for the limited license first when no parallelization option is used. However, if you are using an unlimited license, your compilation will proceed. You will receive an UNSUPPORTED message (FIGURE 5-2) in the `license_log`.

Using Fortran Limited Licenses *With* Unlimited Licenses

If you have access to *both* Fortran limited and unlimited licenses, you can use parallelization options when you compile. When you have access to both licenses, there is a chance that the license will be unavailable. As a standard operation of licensing software, you are placed in a queue and must wait until a license is available. Once a license is available, your compilation will proceed. (TABLE 5-3) shows the license function during various scenarios.

Note – In the Scenarios column of (TABLE 5-3), *Node-locked Workstation* is the workstation that is indicated in the limited (node-locked) license file. *Other Workstation* is a workstation that is not node-locked to the limited license.

TABLE 5-3 Limited *and* Unlimited License Function With and Without Parallelization Flags

	Compile Results If You Have Both License Tokens			
Scenarios	**Both License Tokens Available**	**Limited License Token Unavailable**	**Unlimited License Token Unavailable**	**Both License Tokens Unavailable**
1. Parallelization Flag Node-locked Workstation	`parallelized a.out`	`parallelized a.out`	`queue` `parallelized a.out`	`queue` `parallelized a.out`
2. Parallelization Flag Other Workstation	`parallelized a.out`	`parallelized a.out`	`queue` `parallelized a.out`	`queue` `parallelized a.out`
3. No Parallelization Flag Node-locked Workstation	`non-parallelized a.out`	`queue` `non-parallelized a.out`	`non-parallelized a.out`	`queue` `non-parallelized a.out`
4. No Parallelization Flag Other Workstation	`non-parallelized a.out`	`non-parallelized a.out`	`queue` `non-parallelized a.out`	`queue` `non-parallelized a.out`

Scenario 1

Scenario 1 (TABLE 5-3) shows the license function if you use a parallelization flag from a node-locked workstation. If the unlimited license is available, you can use parallelization flags when you compile. If the unlimited license is not available, you receive a `queue` message. Once the unlimited license is available, your compilation will proceed. Because you are using parallelization flags, the limited license will not be invoked in this scenario.

Scenario 2

Scenario 2 (TABLE 5-3) shows the license function if a parallelization flag is used from a workstation other than the node-locked. If the unlimited license is available, you can parallelize when you compile. If the unlimited license is not available, you receive a `queue` message. Once the unlimited license is available, your compilation will proceed. Because you are using parallelization flags, the limited license will not be invoked in this scenario.

Scenario 3

Scenario 3 (TABLE 5-3) shows how the licenses function when you use *no* parallelization flags from a node-locked workstation. You will receive a `queue` message if the node-locked license is unavailable, because the license server looks *only* for the limited license when the parallelization flag is not used. If both licenses are unavailable, you receive a `queue` message. Once the limited license is available, your compilation will proceed.

Scenario 4

Scenario 4 (TABLE 5-3) shows how the licenses function when you use *no* parallelization flags from a workstation other than a node-locked workstation. You will receive a `queue` message when the unlimited license is not available or when neither license is available. Once the unlimited license is available, your compilation will proceed. In all instances, you will receive the following message:

```
5:58:02 (sunwlicd) DENIED: "workshop.f90l.sparc" avitar@anyhost
(Invalid host (-9,333))
```

CHAPTER 6

Removing Software

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

When you have successfully installed your software, an uninstaller is automatically generated. There are two ways to use this uninstaller to remove Sun WorkShop™ 6 update 2 development tools:

- Using the Web Start uninstaller GUI
- Using the command line uninstaller

Using the Web Start Uninstaller

When Sun WorkShop is installed correctly, a Web Start GUI uninstaller is created.

To run the Web Start uninstaller, follow these steps:

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

```
% su
Password: root-password
```

2. **Go to the product directory by typing:**

```
# cd /var/sadm/prod/com.sun.forte_developer_6_2
```

3. **Run the Web Start uninstall GUI by typing the following:**

```
# /usr/bin/java uninstall_product-name
```

Note – Do not include the `.class` extension when you type the command.

The Web Start uninstall GUI appears. The first window shows you which product will be uninstalled.

4. **Click Next to continue.**
5. **Select Full Uninstallation.**
6. **Click Uninstall Now.**
7. **Click Exit to quit the uninstaller.**

Using the Command Line Uninstaller

To remove software products, follow these steps:

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

```
% su
Password: root-password
```

2. **Go to the product directory by typing:**

```
# cd /var/sadm/prod/com.sun.forte_developer_6_2
```

3. **Type the following to run the command-line uninstaller:**

```
# /usr/bin/java uninstall_product-name -nodisplay
```

Note – Do not include the `.class` extension when you type the command.

The first line shows you what product will be uninstalled.

4. **Press Return to continue.**

5. **For a full uninstallation, type `1`.**

   All components are automatically removed.

6. **If you proceed with uninstallation, a progress indicator will appear.**

   When uninstallation is 100% complete, you will have the option to view the product's log file by typing its corresponding number. When finished, type the number corresponding to done.

7. **Type Exit to quit the uninstaller.**

CHAPTER 7

Troubleshooting

This chapter describes problems that may occur during Sun WorkShop installation and licensing processes.

Registry Data File Problems

If you installed Sun WorkShop™ 6 update 2 without first invoking Web Start, the install registry data file `productregistry` is not consistent with the product packages installed on the system. The install `productregistry` file contains information about the products and packages installed on your system by Web Start. It is used and updated by Web Start when you install or uninstall software.

The current `productregistry` file is located in the following directory:

```
/var/sadm/install/
```

Information Mismatch If You Use `pkgadd` Without Web Start

If you ran the `pkgadd` command to install any part of the Sun WorkShop 6 update 2 without invoking Web Start, your registry data file may contain incorrect or outdated information about the products and packages installed on your system. To ensure that your `productregistry` file is up-to-date and accurate:

- **Run Web Start and install the software according to the instructions in Chapter 3. Web Start will install the products and create the registry database.**

  Use the same directory you specified when you ran the `pkgadd` command.

Information Mismatch If You Use `pkgrm` Without Web Start

If you ran the `pkgrm` command to uninstall any part of the Sun WorkShop without invoking Web Start, your `productregistry` file may contain incorrect or outdated information about the products and packages installed on your system. To ensure that your `productregistry` file is up-to-date and accurate:

- **Follow the instructions in Chapter 6 to do an uninstallation. Web Start uninstalls the products and creates or updates the registry database. If you ran a `patchadd` or `patchrm` command, the `productregistry` file will remain unchanged. Patches are not registered in the `productregistry` file.**

How to Replace a Corrupted `productregistry` File

If you have edited the `productregistry` file, or used the pkgrm command to remove software installed with Web Start, or the `productregistry` file has become corrupted due to power outages or network problems, the file might not accurately reflect what is currently installed on a system. If this happens, installations and uninstallations using Web Start can appear to complete successfully without actually installing or uninstalling some or all of the desired software.

If your `productregistry` file has become corrupted for any of these reasons, you must remove the file. Web Start will then be able to successfully install software. However, Web Start will not be able to uninstall any software that was installed using Web Start prior to removing the product registry file. You must manually use the `pkgrm` command to uninstall such software.

License Issues

`license_log` and `license_errors` Files

After installing your licenses, open the `license_log` and the `license_errors` files located in `/usr/tmp` to check for any errors. In some installations this file is located in `/tmp`.

License Was Not Installed Properly or Does Not Work

If your license was not installed properly or it does not work, do the following:

1. **Verify that you followed the license installation instructions in "Using `lit` License Installer" on page 44 or "Using the `lit_tty` Command-Line Executable" on page 50.**
2. **View the License FAQ (frequently asked questions) at**
   `http://www.sun.com/forte`

No License Received

If you did not receive your license, do the following:

1. **Verify that you requested your license from the Sun License Center.**
2. **Send your license request to the Sun License Center.**

If you encounter other technical problems, contact Sun Service Centers. See "Contacting Technical Support" on page 4 for more information.

Other Possible Symptoms of Incorrect License Installation

1. Multiple `sunpro.lic,x` files might be created.
2. A `sunpro.lic,node` file might be created which would then stop the compilers from working properly if the file does not contain demo licenses.
3. Erroneous licenses in the `licenses_combined` file are not overwritten if LIT is used to reinstall licenses, which causes duplicate entries and confuses the license manager.

Reinstalling License Keys

LIT does not correct mistakes in previously installed license files. You must remove the license files to correct license errors.

For the first-time installation, remove the following files and then reinstall the license.

```
# rm /etc/opt/licenses/licenses_combined
# rm /etc/opt/licenses/LIC_CONFIG_SCRIPT
```

For installations on servers with no licenses previously installed, follow these steps:

1. **Exit LIT.**
2. **Stop any license daemons (`lmgrd.ste`, `suntechd`, and `sunwlicd`) that are running. To see what daemons are running, at the prompt, type the following:**

```
# ps -e | egrep “lmgrd.ste|suntechd|sunwlicd”
```

3. **Use the kill command to stop any running license daemons.**
4. **Remove the following files (this step assumes that your backed-up copies of the license file and `LIC_CONFIG_SCRIPT` are correct):**

```
# rm /etc/opt/licenses/licenses_combined
# rm /etc/opt/licenses/LIC_CONFIG_SCRIPT
```

5. **Restore the old license files:**

```
# cp /etc/opt/licenses/licenses_combined.BAK /etc/opt/licenses/
licenses_combined
# cp /etc/opt/licenses/LIC_CONFIG_SCRIPT.1 /etc/opt/licenses/
LIC_CONFIG_SCRIPT
```

6. **Restart LIT and re-enter all new license information.**

APPENDIX **A**

Sun WorkShop Products, Packages, and Components

This appendix provides information about the Sun WorkShop products available for software development, the products for which you need a license to run the software, and the feature names for each product.

TABLE A-1 provides the license sticker ID, license information, and Sun WorkShop feature names for the Solaris *SPARC Platform Edition* operating environment.

TABLE A-2 provides the license sticker ID, license information, and Sun WorkShop feature names for the Solaris *Intel Platform Edition* operating environment.

TABLE A-3 lists the Sun WorkShop product package component and metacluster configuration information.

TABLE A-4 lists the Sun WorkShop product package component and configuration information.

TABLE A-1 provides the 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	Feature Name
Forte C++ Enterprise Edition 6	WS Compilers C/SPARC, 6	`workshop.c.sparc`
(Forte C++ Enterp Ed 6/SPARC)	WS Compilers C++/SPARC, 6	`workshop.cc.sparc`
	WS Visual/SPARC, 6	`workshop.visu.sparc`
	WS Debugging/SPARC, 6	`workshop.dbx.sparc`
	WS LockLint LoopTool/SPARC, 6	`workshop.mpmt.sparc`
	WS TeamWare/SPARC, 6	`workshop.teamware.sparc`
	WS Dev/Perf Tools/SPARC, 6	`workshop.tools.sparc`
Forte C++ Personal Edition 6	WS Compilers C/SPARC, 6	`workshop.c.sparc`
(Forte C++ Personal Ed 6/SPARC)	WS Compilers C++/SPARC, 6	`workshop.cc.sparc`
	WS Visual/SPARC, 6	`workshop.visu.sparc`
	WS Debugging/SPARC, 6	`workshop.dbx.sparc`
	WS LockLint LoopTool/SPARC, 6	`workshop.mpmt.sparc`
	WS TeamWare/SPARC, 6	`workshop.teamware.sparc`
	WS Dev/Perf Tools/SPARC, 6	`workshop.tools.sparc`
Forte Fortran Desktop Edition 6	WS Compilers C/SPARC, 6	`workshop.c.sparc`
(Forte Fortran DT Ed 6/SPARC	WS Debugging/SPARC, 6	`workshop.dbx.sparc`
	WS FORTRAN 77 Lim/SPARC, 6	`workshop.f77l.sparc`
	WS Fortran 95 Lim/SPARC, 6	`workshop.f95l.sparc`
	WS Dev/Perf Tools/SPARC, 6	`workshop.tools.sparc`
Forte for High Performance Computing 6	WS Compilers C/SPARC, 6	`workshop.c.sparc`
	WS Compilers C++/SPARC, 6	`workshop.cc.sparc`
(Forte H-Perf Computing 6/ SPARC)	WS FORTRAN 77/SPARC, 6	`workshop.f77.sparc`
	WS Visual/SPARC, 6	`workshop.visu.sparc`
	WS Fortran 95/SPARC, 6	`workshop.f90.sparc`
	WS Debugging/SPARC, 6	`workshop.dbx.sparc`
	WS LockLint LoopTool/SPARC, 6	`workshop.mpmt.sparc`
	WS TeamWare/SPARC, 6	`workshop.teamware.sparc`
	WS Dev/Perf Tools/SPARC, 6	`workshop.tools.sparc`

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

Product (License Sticker ID)	License Needed	Feature Name
Forte C 6 (Forte C 6/SPARC)	WS Debugging/SPARC, 6	`workshop.dbx.sparc`
	WS Compilers C/SPARC, 6	`workshop.c.sparc`
	WS Dev/Perf Tools/SPARC, 6	`workshop.tools.sparc`
Forte TeamWare 6 (Forte TeamWare 6/SPARC)	WS TeamWare/SPARC, 6	`workshop.teamware.sparc`
Forte Developer University Edition 6 (Forte University Ed 6/SPARC)	WS Compilers C/SPARC, 6	`workshop.c.sparc`
	WS Compilers C++/SPARC, 6	`workshop.cc.sparc`
	WS FORTRAN 77/SPARC, 6	`workshop.f77.sparc`
	WS Fortran 95/SPARC, 6	`workshop.f90.sparc`
	WS Visual/SPARC, 6	`workshop.visu.sparc`
	WS Debugging/SPARC, 6	`workshop.dbx.sparc`
	WS LockLint LoopTool/SPARC, 6	`workshop.mpmt.sparc`
	WS TeamWare/SPARC, 6	`workshop.teamware.sparc`
	WS Dev/Perf Tools/SPARC, 6	`workshop.tools.sparc`

TABLE A-2 provides the 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	Feature Name
Forte C++ Enterprise Edition 6 (Forte C Enterp Ed 6/Intel)	WS Compilers C/Intel, 6	`workshop.c.x86`
	WS Compilers C++/Intel, 6	`workshop.cc.x86`
	WS Visual/Intel, 6	`workshop.visu.x86`
	WS Debugging/Intel, 6	`workshop.dbx.x86`
	WS Dev/Perf Tools/Intel, 6	`workshop.tools.x86`
	WS TeamWare/Intel, 6	`workshop.teamware.x86`
Forte C 6 (Forte C 6/Intel)	WS Compilers C/Intel, 6	`workshop.c.x86`
	WS Compilers C++/Intel, 6	`workshop.cc.x86`
	WS Visual/Intel, 6	`workshop.visu.x86`
	WS Debugging/Intel, 6	`workshop.dbx.x86`
	WS Dev/Perf Tools/Intel, 6	`workshop.tools.x86`
	WS TeamWare/Intel, 6	`workshop.teamware.x86`
Forte TeamWare 6 (Forte TeamWare 6/Intel)	WS TeamWare/Intel, 6	`workshop.teamware.x86`
Forte University Edition 6 (Forte University Ed 6/Intel)	WS Compilers C/Intel, 6	`workshop.c.x86`
	WS Compilers C++/Intel, 6	`workshop.cc.x86`
	WS Visual/Intel, 6	`workshop.visu.x86`
	WS Debugging/Intel, 6	`workshop.dbx.x86`
	WS Dev/Perf Tools/Intel, 6	`workshop.tools.x86`
	WS TeamWare/Intel, 6	`workshop.teamware.x86`
Forte C++ Personal Edition 6 (Forte C++ Personal Ed 6/Intel)	WS Compilers C/Intel, 6	`workshop.c.x86`
	WS Compilers C++/Intel, 6	`workshop.cc.x86`
	WS Visual/Intel, 6	`workshop.visu.x86`
	WS Debugging/Intel, 6	`workshop.dbx.x86`
	WS Dev/Perf Tools/Intel, 6	`workshop.tools.x86`
	WS TeamWare/Intel, 6	`workshop.teamware.x86`

The packages contained in the products provide the files needed to run the tools. TABLE A-3 provides Sun WorkShop product package component and metacluster configuration information for both Solaris *SPARC Platform Edition* and Solaris *Intel Platform Edition*.

TABLE A-3 Sun WorkShop Product Package Metacluster Components

Package	Component	Metacluster Configuration
Forte C++ Enterprise Edition 6 update 2		SPROMVISU
	Forte Developer 6 update 2 Compilers C	SPROCC
	Forte Developer 6 update 2 Compilers C++	SPROCCC
	Forte Developer 6 update 2 Visual	SPROCVISU
	Forte Developer 6 update 2 DBX Debugging Tools	SPROCDBX
	Forte Developer 6 update 2 Development Environment	SPROCIPE
	Forte Developer 6 update 2 Locklint (SPARC platform only)	SPROCLKLT
	Forte Developer 6 update 2 TeamWare	SPROCTW
	Forte C++ inventory file	SPROvws
	Forte Developer 6 update 2 Memory Monitor	SPROCLGC
	Forte Developer 6 update 2 Documentation Set	SPROCDOCS
	Forte Developer 6 update 2 Performance Analyzer	SPROCPRFA

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

Package	Component	Metacluster Configuration
Forte C++ Personal Edition 6 update 2		SPROMVISUP
	Forte Developer 6 update 2 Compilers C	SPROCC
	Forte Developer 6 update 2 Compilers C++	SPROCCC
	Forte Developer 6 update 2 Visual	SPROCVISU
	Forte Developer 6 update 2 DBX Debugging Tools	SPROCDBX
	Forte Developer 6 update 2 Development Environment	SPROCIPE
	Forte Developer 6 update 2 Locklint (SPARC platform only)	SPROCLKLT
	Forte Developer 6 update 2 TeamWare	SPROCTW
	Forte C++ inventory file	SPROvws
	Forte Developer 6 update 2 Memory Monitor	SPROCLGC
	Forte Developer 6 update 2 Documentation Set	SPROCDOCS
	Forte Developer 6 update 2 Performance Analyzer	SPROCPRFA

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

Package	Component	Metacluster Configuration
Forte for High Performance Computing 6 update 2 (SPARC platform only)		SPROMHPC
	Forte Developer 6 update 2 Compilers C	SPROCC
	Forte Developer 6 update 2 Compilers C++	SPROCCC
	Forte Developer 6 update 2 Compilers FORTRAN 77	SPROCF77
	Forte Developer 6 update 2 Compilers Fortran 95	SPROCF90
	Forte Developer 6 update 2 Visual	SPROCVISU
	Forte Developer 6 update 2 DBX Debugging Tools	SPROCDBX
	Forte Developer 6 update 2 Development Environment	SPROCIPE
	Forte Developer 6 update 2 Locklint	SPROCLKLT
	Forte Developer 6 update 2 TeamWare	SPROCTW
	Forte C++ inventory file	SPROhpc
	Forte Developer 6 update 2 Memory Monitor	SPROCLGC
	Forte Developer 6 update 2 Documentation Set	SPROCDOCS
	Forte Developer 6 update 2 Performance Analyzer	SPROCPRFA

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

Package	Component	Metacluster Configuration
Forte Fortran Desktop Edition 6 update 2 (SPARC platform only)		SPROMPERF
	Forte Developer 6 update 2 Compilers C	SPROCC
	Forte Developer 6 update 2 Compilers FORTRAN 77	SPROCF77
	Forte Developer 6 update 2 Compilers Fortran 95	SPROCF90
	Forte Developer 6 update 2 DBX Debugging Tools	SPROCDBX
	Forte Developer 6 update 2 Development Environment	SPROCIPE
	Forte Developer 6 update 2 Building Software	SPROCBLD
	Forte Developer 6 update 2 Memory Monitor	SPROCLGC
	Forte Developer 6 update 2 Documentation Set	SPROCDOCS
	Forte Developer 6 update 2 Performance Analyzer	SPROCPRFA
Forte C 6 update 2		SPROMC
	Forte Developer 6 update 2 Compilers C	SPROCC
	Forte Developer 6 update 2 DBX Debugging Tools	SPROCDBX
	Forte Developer 6 update 2 Development Environment	SPROCIPE
	Forte C inventory file	SPROprfc
	Forte Developer 6 update 2 Building Software	SPROCBLD
	Forte Developer 6 update 2 Documentation Set	SPROCDOCS
	Forte Developer 6 update 2 Performance Analyzer	SPROCPRFA

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

Package	Component	Metacluster Configuration
Forte University Edition 6 update 2		SPROMWSU
	Forte Developer 6 update 2 Compilers C	SPROCC
	Forte Developer 6 update 2 Compilers C++	SPROCCC
	Forte Developer 6 update 2 Compilers FORTRAN 77	SPROCF77
	Forte Developer 6 update 2 Compilers Fortran 95	SPROCF90
	Forte Developer 6 update 2 Visual	SPROCVISU
	Forte Developer 6 update 2 DBX Debugging Tools	SPROCDBX
	Forte Developer 6 update 2 Development Environment	SPROCIPE
	Forte Developer 6 update 2 Locklint (SPARC platform only)	SPROCLKLT
	Forte Developer 6 update 2 TeamWare	SPROCTW
	Forte University Edition inventory file	SPROuws
	Forte Developer 6 update 2 Memory Monitor	SPROCLGC
	Forte Developer 6 update 2 Documentation Set	SPROCDOCS
	Forte Developer 6 update 2 Performance Analyzer	SPROCPRFA
Forte TeamWare 6 update 2		SPROMTW
	Forte Developer 6 update 2 TeamWare	SPROCTW
	Forte Developer 6 update 2 Building Software	SPROCBLD
	Forte Developer 6 update 2 Documentation Set	SPROCDOCS
XEmacs 20.4 Source Distribution		MXEMACS
	XEmacs 20.4 source distribution	XMSRC

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

Package	Component	Metacluster Configuration
GVIM 5.3 Source Distribution		`MGVIM`
	GVIM 5.3 source distribution	`SPROgvsrc`
License Software FLEXlm 7.0b		`FLEXlm`
	Forte Developer 6 update 2 FLEX license manager 7.0b	`SUNWCLCSW`
	Forte Developer 6 update 2 license installation tools	`SUNWCLIT`
Sun Performance Library 6 update 2		`SPROMPLIB`
	Forte Developer 6 update 2	`SPROCPERF`

TABLE A-4 provides Sun WorkShop product package component and configuration information.

TABLE A-4 Sun WorkShop Product Package Components

Package	Component	Configuration
Forte Developer 6 update 2 Compilers C	Compilers C	SPROcc
	Incremental Linker	SPROild
	Incremental linker 64-bit	SPROildx
	Common components	SPROlang
	Common Components (64-bit)	SPROlangx
	Unbundled shared libcx	SPROlcxs
	C9X math library profiled (64-bit)	SPROm9xpx
	C9X math library	SPROm9xs
	C9X math library (64-bit)	SPROm9xsx
	Man pages/online information for C	SPROmrcc
	Common compiler man pages/online information	SPROmrcom
	Man pages/Online information for source browser	SPROmrsbe
	Source browser	SPROsbe
	Linker stab library	SPROsbld
	Linker stab library	SPROsbldx
	libsunmath shared/profiled (64-bit)	SPROsmpx
	libsunmath shared (64-bit)	SPROsmsx
	Unbundled shared libsunmath	SPROsunms
	Common tools	SPROutool

TABLE A-4 Sun WorkShop Product Package Components *(Continued)*

Package	Component	Configuration
Forte Developer 6 update 2 Compilers C++	C++ complex library	SPROcmpl
	Compiler C++	SPROcpl
	C++ libraries (64-bit)	SPROcplx
	Incremental Linker	SPROild
	Incremental linker 64-bit	SPROildx
	Common components	SPROlang
	Common Components (64-bit)	SPROlangx
	Unbundled shared libcx	SPROlcxs
	C9X math library profiled (64-bit)	SPROm9xpx
	C9X math library	SPROm9xs
	C9X math library (64-bit)	SPROm9xsx
	Common compiler man pages/online information	SPROmrcom
	Man pages/online information for C++	SPROmrcpl
	Man pages/Online information for source browser	SPROmrsbe
	Standard class library man pages for C++	SPROmrstd
	Source browser	SPROsbe
	Linker stab library	SPROsbld
	Linker stab library	SPROsbldx
	Standard class library for C++	SPROscl
	Standard class library for C++ (64-bit)	SPROsclx
	libsunmath shared/profiled (64-bit)	SPROsmpx
	libsunmath shared (64-bit)	SPROsmsx
	Unbundled shared libsunmath	SPROsunms
	Tools.h++ 7.1 class library for C++ (64-bit)	SPROtl7x
	Tools.h++ 7.1 class library for C++	SPROtlbn7
	Tools.h++ 7.1 class library for C++	SPROtll7
	Tools.h++ 7.1 class library for C++ (64-bit)	SPROtll7x
	Common tools	SPROutool

TABLE A-4 Sun WorkShop Product Package Components *(Continued)*

Package	Component	Configuration
Forte Developer 6 update 2 Compilers FORTRAN 77 (SPARC platform only)	Compilers FORTRAN 77	SPROf77
	Compilers FORTRAN 77 tools	SPROftool
	Incremental Linker	SPROild
	Incremental linker 64-bit	SPROildx
	FORTRAN 77 static libraries	SPROl77
	FORTRAN 77 dynamic libraries	SPROl77s
	FORTRAN 77 dynamic libraries (64-bit)	SPROl77sx
	FORTRAN 77 static libraries (64-bit)	SPROl77x
	Common components	SPROlang
	Common Components (64-bit)	SPROlangx
	Unbundled shared libcx	SPROlcxs
	C9X math library profiled (64-bit)	SPROm9xpx
	C9X math library	SPROm9xs
	C9X math library (64-bit)	SPROm9xsx
	Common compiler man pages/online information	SPROmrcom
	Man page and online information for FORTRAN 77	SPROmrf77
	Man pages/Online information for source browser	SPROmrsbe
	Source browser	SPROsbe
	Linker stab library	SPROsbld
	Linker stab library	SPROsbldx
	libsunmath shared/profiled (64-bit)	SPROsmpx
	libsunmath shared (64-bit)	SPROsmsx
	Unbundled shared libsunmath	SPROsunms
	Common tools	SPROutool

TABLE A-4 Sun WorkShop Product Package Components *(Continued)*

Package	Component	Configuration
Forte Developer 6 update 2 Compilers Fortran 95	Compiler Fortran 90	SPROf90
	Compiler FORTRAN 77 Tools	SPROftool
	Incremental Linker	SPROild
	Incremental linker 64-bit	SPROildx
	FORTRAN 77 static libraries	SPROl77
	FORTRAN 77 dynamic libraries	SPROl77s
	FORTRAN 77 dynamic libraries (64-bit)	SPROl77sx
	FORTRAN 77 static libraries (64-bit)	SPROl77x
	Fortran 95 static libraries	SUNWl90
	Fortran 95 dynamic libraries	SUNWl90s
	Fortran 95 dynamic libraries (64-bit)	SPROl90sx
	Fortran 95 static libraries (64-bit)	SPROl90x
	Common components	SPROlang
	Common Components (64-bit)	SPROlangx
	Unbundled shared libcx	SPROlcxs
	C9X math library profiled (64-bit)	SPROm9xpx
	C9X math library	SPROm9xs
	C9X math library (64-bit)	SPROm9xsx
	Common compiler man pages/online information	SPROmrcom
	Man pages and online information for Fortran 95	SPROmrf90
	Linker stab library	SPROsbld
	Linker stab library (64-bit)	SPROsbldx
	libsunmath shared/profiled (64-bit)	SPROsmpx
	libsunmath shared (64-bit)	SPROsmsx
	Unbundled shared libsunmath	SPROsunms
	Common tools	SPROutool
Forte Developer 6 update 2 Visual	Editor server	SPROesrt
	Visual man pages and online help	SPROmrvis
	Common tools	SPROutool
	Visual GUI builder	SPROvisu

TABLE A-4 Sun WorkShop Product Package Components *(Continued)*

Package	Component	Configuration
Forte Developer 6 update 2 Development Environment	Examples and programs	SPROdemo
	Editor server	SPROesrt
	TeamWare file differences and merging	SPROflmrg
	Icons and glyphs	SPROglyph
	GVim Editor v 5.3	SPROgvim
	WorkShop volume	SPROhlpws
	Man pages and online information for source browser	SPROmrsbe
	Man pages and online information for workshop	SPROmrws
	XEmacs 20.4 online documentation	SPROmrxm
	NEdit Editor v 5.1	SPROnedit
	Source browser	SPROsbe
	Sbtags	SPROsbfsf
	Common tools	SPROutool
	Program development tools	SPROws
	XEmacs 20.4 architecture-dependent runtime kit	SPROxmbin
	XEmacs 20.4 architecture-independent runtime kit	SPROxmshr
Forte Developer 6 update 2 DBX Debugging Tools	Debugging tools	SPROdbx
	Debugging tools (64-bit)	SPROdbxx
	Man pages and online information for dbx	SPROmrdbx
	Debugging tools	SPROjdbx
	Debugging tools (64-bit)	SPROjdbxx
Forte Developer 6 update 2 Locklint (SPARC platform only)	Locklint	SPROlklnt
	Man pages and online information for MT tools	SPROmrmp

TABLE A-4 Sun WorkShop Product Package Components *(Continued)*

Package	Component	Configuration
Forte Developer 6 update 2 TeamWare	TeamWare for source code management	SPROcodmg
	TeamWare distributed make	SPROdmake
	TeamWare file differences and merging	SPROflmrg
	Freezepoint	SPROfrzpt
	Icons and glyphs	SPROglyph
	TeamWare help volume	SPROhlptw
	TeamWare maketool	SPROmktl
	Man pages and online documentation for TeamWare	SPROmrtw
	Common tools	SPROutool
	TeamWare version tool	SPROvertl
Forte Developer 6 update 2 Memory Monitor	Memory monitor libraries for C++	SPROgc
	Memory monitor libraries for C++ (64-bit)	SPROgcx
	Memory monitor library 1.0 for C++	SPROlgc
	Memory monitor library (64-bit)	SPROlgcx
	Memory monitor man pages for C++	SPROmrgc
Forte Developer 6 update 2 Documentation Set	Copyright and images	SPROhtbas
	Release notes	SPROhtrel
	Standard library C++ documentation	SPROhtstd
	Tools.h++ 7.1 documentation	SPROhttl7
	Visual documentation	SPROhtvis
	Installation documentation	SPROhtins
	Fortran documentation	SPROhtftn
	Workshop documentation collection	SPROhtws
	C compilers documentation	SPROhtcc
	Common tools documentation	SPROhtcom
	C++ compilers	SPROhtcpl
	TeamWare documentation	SPROhttw
	Performance library documentation	SPROhtpl

TABLE A-4 Sun WorkShop Product Package Components *(Continued)*

Package	Component	Configuration
Forte Developer 6 update 2 Performance Analyzer	Icons and glyphs	SPROglyph
	Man pages and online information for Performance Analyzer	SPROmrpan
	Performance analyzer	SPROprfan
	Performance analyzer (64-bit)	SPROprfax
Forte Developer 6 update 2 Building Software	TeamWare distributed make	SPROdmake
	Editor server	SPROesrt
	Icons and glyphs	SPROglyph
	TeamWare help volume	SPROhlptw
	WorkShop volume	SPROhlpws
	TeamWare maketool	SPROmktl
	TeamWare	SPROtw
	Man pages and online documentation for TeamWare	SPROmrtw
	Common tools	SPROutool
Sun Performance Library 7 update 2	Sun Performance library man pages	SPROmrpl
	Performance library 32-bit (Archive)	SPROpl
	Performance library common components	SPROplg
	Performance library 32-bit (Archive/MT)	SPROplm
	Performance library 32-bit (Shared/MT)	SPROplms
	Performance library 64-bit (Shared/MT)	SPROplmsx
	Performance library 64-bit (Archive/MT)	SPROplmx
	Performance library 32-bit (Shared)	SPROpls
	Performance library 64-bit (Shared)	SPROplsx
	Performance library 64-bit (Archive)	SPROplx
Forte Developer 6 update 2 FLEX license manager	FLEX license manager and software utilities	SUNWlicsw
Forte Developer 6 update 2 License Installation Tool	STE license installation tool	SUNWlit
	License configuration data	SUNWwslic
GVIM 5.3 Source Distribution	GVim editor source distribution v 5.3	SPROgvsrc

Glossary

application server A machine on which the software is installed. The application server can be the same as the license server.

daemon options file A file that is stored on your license server and allows you to control access to products. The default file is `/etc/opt/licenses/daemon_options`.

data checksum (DC) A number you receive from the Sun License Center to help you verify you have entered all license information correctly into the license installation tool `lit` and `lit_tty`. The DC is calculated from the license feature name, feature version, license server node name, license server hostid, and node-locked hostid.

demonstration license See *Try and Buy license*.

device name A name referring to hardware. For example, `/dev/dsk/c0t6d0s2` is a CD-ROM device name. The name may differ depending on your machine and how you configure it.

diskless client A machine on a network that does not have a disk and relies on a server for file storage and other basic services. Do not install the licensing software on a diskless client.

floating license A concurrent user license that makes software available to any user on any computer on a network.

hostid An eight-digit hexadecimal number that is unique to each system and is used to identify that system.

hostname An identifying name given to a computer.

installation directory The directory where you decide to install Sun WorkShop products and licenses. The default is `/opt`.

license daemon The license manager daemon (`lmgrd.ste`) monitors the requests for access to Sun WorkShop software. This daemon also handles the communication between the software application requested for use and the vendor daemon.

license server The workstation or machine running the license daemon.

local installation Where you perform the installation on the machine with the CD-ROM drive where you loaded the product CD and install the product software on that same machine; where you download the product software and install the product software on the same machine. In a local installation, the source computer and the target computer are the same machine. See *source computer* and *target computer*.

node An addressable point on a network. Each node in a network has a different name. A node can connect a computing system, a terminal, or various other peripheral devices to the network.

node locked Refers to an application that can run only on the licensed machine (the node).

package dependency The dependence of one package on the installation of other packages. For example, if you install a compiler, you must also install the backend component, header file, and front-end component packages.

password checksum (PC) A number you receive from the Sun License Center to help you verify you have entered all license information correctly into the license installation tool lit and lit_tty. The expiration date, vendor string, RTU, and password all contribute to the generation of this number.

product server See *application server*.

redundant license servers Three servers acting as a single logical license server.

remote installation Where you perform the installation or download the product software on one machine (source computer) and install the software on another machine (target computer). See *source computer* and *target computer*.

router file An ASCII file that lists the license servers on the network that should be checked for licenses. It has the port@host format.

server A machine that provides a network service. For example, license checkouts and checkins must be performed on a server.

server pool Two or more independent servers combined so that users can obtain a license token from any one of the servers. See Multiple Independent Server Configuration on page 4 of the *Sun WorkShop 6 update 2 Installation and Licensing Reference Manual*.

source computer The machine with the CD-ROM drive where you loaded the product CD; the machine where you downloaded the product software. See also *local installation*, *remote installation*, and *target computer*.

target computer The machine where the product software is installed. See also *local installation*, *remote installation*, and *source computer*.

Try and Buy license A license that allows you to evaluate free of charge any Sun WorkShop software for a specified period of time (also called demonstration or demo licenses). A Try and Buy license does not need a license daemon to run and allows an unlimited number of concurrent users.

vendor daemon The daemon that tracks which users have licenses for a product, if they are checked out, and how many licenses are available. The Sun WorkShop daemons, `sunwlicd and suntechd`, run on the license server.

vendor string (VS) A code used to ensure license passwords are unique. For ScholarPASS and GoldPASS domain licensed customers, this code contains the customer's domain name.

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