Sun Studio 12 Update 1 Installation Guide

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Contents

Preface

The *Sun Studio 12 Update 1 Installation Guide* guide gives instructions on how to perform the following tasks:

- Use the English-only package installer to install the English-only release of the Sun Studio 12 Update 1 software
- Use the multi-language package installer to install the multi-language release of the Sun Studio 12 Update 1 software
- Install the required Solaris 10 OS patches
- Run the Integrated Development Environment (IDE)
- Uninstall the Sun Studio 12 Update 1 software

Who Should Use This Book

This book is designed for system administrators who install software and for developers who use software development applications. Experience with the Solaris Operating System (Solaris OS) and UNIX commands is required.

Typographic Conventions

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

TABLE P–1 Typographic Conventions

Typeface	Meaning	Example
`AaBbCc123`	The names of commands, files, and directories, and onscreen computer output	Edit your `.login` file. Use `ls -a` to list all files. `machine_name% you have mail.`
`AaBbCc123`	What you type, contrasted with onscreen computer output	`machine_name%` **`su`** `Password:`

TABLE P–1 Typographic Conventions *(Continued)*

Typeface	Meaning	Example
aabbcc123	Placeholder: replace with a real name or value	The command to remove a file is `rm` *filename*.
AaBbCc123	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the *User's Guide*.
		A *cache* is a copy that is stored locally.
		Do *not* save the file.
		Note: Some emphasized items appear bold online.

Shell Prompts in Command Examples

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

TABLE P–2 Shell Prompts

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

Supported Platforms

This Sun Studio release supports systems that use the SPARC and x86 families of processor architectures: UltraSPARC, SPARC64, AMD64, Pentium, and Xeon EM64T. The supported systems for the version of the Solaris Operating System you are running are available in the hardware compatibility lists at `http://www.sun.com/bigadmin/hcl`. These documents cite any implementation differences between the platform types.

In this document, these x86 related terms mean the following:

- "x86" refers to the larger family of 64–bit and 32–bit x86 compatible products.
- "x64" points out specific 64–bit information about AMD64 or EM64T systems.
- "32–bit x86" points out specific 32–bit information about x86 based systems.

For supported systems, see the hardware compatibility lists.

Accessing Sun Studio Documentation

You can access the documentation at the following locations:

- The documentation is available from the documentation index page at `http://developers.sun.com/sunstudio/documentation/ss12u1`.
- Online help for all components of the IDE is available through the Help menu, as well as through Help buttons on many windows and dialog boxes, in the IDE.
- Online help for the Performance Analyzer is available through the Help menu, as well as through Help buttons on many windows and dialog boxes, in the Performance Analyzer.

The `docs.sun.com` web site (`http://docs.sun.com`) enables you to read, print, and buy Sun Microsystems manuals through the Internet.

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Documentation in Accessible Formats

The documentation is provided in accessible formats that are readable by assistive technologies for users with disabilities. You can find accessible versions of documentation as described in the following table.

Type of Documentation	Format and Location of Accessible Version
Manuals	HTML at `http://docs.sun.com`
Readmes	HTML on the developer portal at `http://developers.sun.com/sunstudio/documentation/ss12u1`
Man pages	HTML on the developer portal at `http://developers.sun.com/sunstudio/documentation/ss12u1`
Online help	HTML available through the Help menu and Help buttons in the IDE
Release notes	HTML at `http://docs.sun.com/app/docs/doc/821-0080`

Resources for Developers

Visit http://developers.sun.com/sunstudio to find these frequently updated resources:

- Articles on programming techniques and best practices
- Documentation of the software, as well as corrections to the documentation that is installed with your software
- Tutorials that take you step-by-step through development tasks using Sun Studio tools
- Information on support levels
- User forums
- Downloadable code samples
- New technology previews

The Sun Studio portal is one of a number of additional resources for developers at the Sun Developer Network web site, http://developers.sun.com.

Contacting Technical Support

If you have technical questions about this product that are not answered in this document, go to http://www.sun.com/service/contacting

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. Submit your comments to Sun at this URL: http://www.sun.com/hwdocs/feedback.

Please include the part number of the document in the subject line of your email. For example, the part number for this document is 820-7601–10.

◆ ◆ ◆ CHAPTER 1

Preparing for Installation

This chapter includes information about the following:

Software Installation Overview

The following steps outline the general process you follow to install the Sun Studio 12 Update 1 software, product serial number, and supporting software.

Step	Task	Description	For Instructions
1.	Verify that the system on which you are installing the Sun Studio 12 Update 1 software meets the minimum hardware and operating system requirements for this release.	Using a system that meets the system requirements is recommended for proper performance.	See "System Requirements" on page 12
2.	Determine whether you are going to display the installer locally or remotely.	You can install the Sun Studio software using a remote display or local display.	See "Choosing Local or Remote Display of the Installer" on page 13
3.	Choose an installation method.	There are two ways to install the Sun Studio software.	See "Choosing an Installation Method" on page 16

4.	Install the Sun Studio 12 Update 1 software and the required OS patches.	Step through the installation information.	See "Installing the Sun Studio Software" on page 17

System Requirements

Sun Studio 12 Update 1 software supports the hardware and operating system requirements shown in Table 1–1.

Note – For further disk space requirements and important last minute information about this release, see the release notes at `http://docs.sun.com/app/docs/doc/821-0080`.

TABLE 1–1 System Requirements

	Solaris OS on SPARC based systems	Solaris OS on x86 based systems	Linux OS on x86 based systems
Operating system	Solaris 10 1/06 and subsequent Solaris 10 OS updates OpenSolaris 2008.11 and 2009.06 (when installed from the OpenSolaris release repository)		SuSE Linux Enterprise Server 10 RedHat Enterprise Linux 5 CentOS 5 Oracle Enterprise Linux 5.3
CPU	Sun UltraSPARC-based systems Fujitsu SPARC64 platform-based systems	32 and 64 bit systems (Pentium class or newer) based on AMD and Intel x86 CPUs	
Memory	Recommended: 1 to 2 GB Minimum: 512 MB (more may be needed for working with large projects in the IDE)		
Disk space (Use the `df -k` command to check your disk space.)	1.35 GB	926 MB	633 MB
Swap space	Recommended: 2 to 4 GB Minimum: 1 GB To add swap space to your system, see "Adding Swap Space" on page 39		

TABLE 1–1 System Requirements *(Continued)*

	Solaris OS on SPARC based systems	Solaris OS on x86 based systems	Linux OS on x86 based systems
Operating system configuration	For the Solaris 10 OS: Entire Solaris Software Group Plus OEM Support, Entire Solaris Software Group, or Developer Solaris Software Group (To determine your operating system configuration, you need to verify the installed packages. Specific packages are installed for each configuration. See the Solaris OS installation documentation for more details.)		Linux OS must include the Development/Libraries Package Group.

Choosing Local or Remote Display of the Installer

You can display the installer either locally or remotely while you are installing the Sun Studio 12 Update 1 software with the graphical user interface installer or the command-line installer:

- *Local display*. The source computer and the display computer are the same computer. The installer window or command-line installer is displayed on the same computer that contains the product DVD or downloaded files and runs the installer.
- *Remote display*. The source computer and the display computer are different computers. The source computer contains the product DVD or downloaded files and runs the installer. The display computer displays the installer window or command-line installer. To install using a remote display, follow the instructions in the remainder of this section.

▼ Preparing for Installation Using a Remote Display

1 On the display computer, enable client access to the X server by typing the following on the command line:

`xhost +` *source-computer-name*

Replace *source-computer-name* with the output of the `/usr/bin/hostname` command entered on the source computer, which is the computer that contains the product DVD or downloaded files.

2 Log in to the source computer and become a superuser (root).

`rlogin` *source-computer-name* **`-l`** *rootname*
`Password:` *root-password*

3 On the source computer, set the display to the monitor that is attached to the display computer.

If you use the C shell, type:

`setenv DISPLAY` *display-computer-name*`:`*n.n*

If you use the Bourne shell, type:

```
DISPLAY=display-computer-name:n.n
export DISPLAY
```

If you use the Korn shell, type:

```
export DISPLAY=display-computer-name:n.n
```

Replace *display-computer-name* with the output of the `/usr/bin/hostname` entered on the display computer.

Installing to an NFS-Mounted Filesystem

To install the Sun Studio software on an NFS-mounted filesystem, you must run the installer on a supported system regardless of where the NFS partition is mounted. In the following procedure, the server is the machine with the physical disk on which the installed software will reside, and the client is the machine on which you run the installer and which NFS-mounts the filesystem from the server.

Note – The best way to share the product image as an NFS-mounted filesystem is to export it from a supported system. Run the installer on the server and share the directory in which the software is installed. Use the following NFS install procedure only if your NFS server is not a supported platform for the product.

After mounting the filesystem you can install the Sun Studio product on the server by running the graphical user interface (GUI) installer or non-GUI installer on the client machine . You would specify the directory on which you mounted the filesystem as the installation directory for the Sun Studio 12 Update 1 software.

After you have installed the software, any machine that is running the Solaris 10 OS can mount the filesystem from the server on which you installed the software, and run the software. Each client machine that runs the software must have the required OS patches installed (see Appendix D, “Patch Identification Numbers and Descriptions”). You can install the patches using the `install_patches` utility (see “Installing the Required Solaris OS Patches” on page 22.

To uninstall Sun Studio software installed on an NFS-mounted filesystem, you must run the uninstaller on the same client machine you used to install the software, and you must mount the filesystem prior to running the uninstaller.

▼ To Prepare for Installing the Sun Studio Software on an NFS-mounted Filesystem

1. **On the server machine, share the filesystem with the appropriate options. It is essential that root on the client machine on which the installer will be run have full access to the NFS filesystem:**

   `share -F nfs -o root=`*client-machine*`,rw`** *filesystem*

2. **On the client machine, mount the shared filesystem with read/write access:**

   `mount` *server-machine:filesystem installation-directory*

Supporting Previous Sun Studio Releases

If you installed any previous release of Sun Studio software (Sun Studio 12 software or an earlier release) on your system, then you must uninstall it, or install the Sun Studio 12 Update 1 software in a different directory.

If you used the English-only installer to install some components of the English-only release of the Sun Studio 12 Update 1 software, you can use the multi-language installer to install additional components for the English locale. However, before using the multi-language installer to install Sun Studio 12 Update 1 software for additional locales, uninstall all English-only Sun Studio 12 Update 1 software installed with the English-only installer.

If you installed Sun Studio 10 software, Sun Studio 11 software, or Sun Studio 12 software on a Solaris 10 system, you can install the Sun Studio 12 Update 1 software on that system only if you run the installer from the correct zone.

- On a Solaris 10 system that has Sun Studio 10 software installed, you must run the installer in the global zone, which will install the Sun Studio 12 Update 1 software in all zones.
- On a Solaris 10 system that has Sun Studio 11 software or Sun Studio 12 software installed, you can run the installer in either the global zone or a local zone, but the installer will install the Sun Studio 12 Update 1 only in the zone where you are running the installer.
- On a Solaris 10 system that has no previous releases of Sun Studio software installed, you can run the installer in the global zone to install the Sun Studio 12 Update 1 software in all zones, or in a local zone to install the software in that zone only.

Choosing an Installation Method

There are two ways to install the Sun Studio 12 Update 1 software:

Package installer, graphical user interface (GUI) mode	The graphical user interface installer is an installation wizard that displays pages for a series of installation steps. On each page, you can quit, go back to the previous step, or go on to the next step. You can choose the installation directory and which components of the Sun Studio 12 Update 1 software you want to install.
Package installer, non-GUI mode	The non-GUI mode of the package installer installs all components of the Sun Studio 12 Update 1 silently.

◆ ◆ ◆ CHAPTER 2

Installing the Sun Studio 12 Update 1 Software

This chapter includes information about the following:

Installing the Sun Studio Software

You can install the Sun Studio 12 Update 1 software and the required OS patches on a single-user system. Or you can install the software and OS patches on a server for use by client systems with the same architecture, and then install the OS patches on each client system that will access the Sun Studio software on the server.

Determining Which Installer You Have

Before running the package installer, it is important to know which version of the installer you have. The English-only version of the installer installs the English-only release of the Sun Studio 12 Update 1 software. The multi-language version installs the multi-language release of the software. The two versions provide slightly different options, so be sure that you know which one you have before you start it from the command line.

To determine which installer you have, in the directory that contains the installer, type:

./SunStudio12u1-*OS***-***platform***-***packages***.sh --help**

If you have the multi-language installer, the first line of the help output is:

```
Sun Studio 12 Update 1 multi-language installer
```

If you have the English-only installer, the line above is not included in the help output.

Installing in a Zone

To install the software in a zone on a Solaris 10 system, run the installer in that zone. If you are installing in the global zone and want the software to be available in that zone only, specify the `--current-zone-only` when starting the installer.

If you install the software in the global zone and want to be able to run the IDE from non-global zones, you must copy the */installation_directory/*`netbeans` directory from the global zone to each non-global zone.

Installing in an Alternate Root Directory

To install the English-only software using an alternate root directory (the default root directory is `/`), use the GUI installer with the `--use-alternate-root` *directory* option.

To install the multi-language software using an alternate root directory, use either the GUI installer or the non-GUI installer with the `--use-alternate-root` *directory* option.

Installing on Multiple Systems

To install the software on multiple systems, you can use the `--record` *state_file*`.xml` option when starting the GUI installer to record an installation that you can repeat using the `--state` *state_file*`.xml` option with the non-GUI installer.

Installing With the Graphical User Interface Installer

The graphical user interface (GUI) installer lets you choose the installation directory and select which components of the Sun Studio 12 Update 1 software you want to install. For a complete list of the valid command-line options when starting the GUI installer, see "Command-Line Options for the GUI Installer" on page 35.

The GUI installer requires the Java 2 Software Development Kit (JDK) 5, Update 16.

▼ Using the Graphical User Interface Installer

1. **If you are not currently superuser (root), become superuser by typing:**

   `su`
   `Password:` *root-password*

2. **In the directory that contains the installer, start the installer by typing:**

   `./SunStudio12u1-`*OS*`-`*platform*`-`*packages*`.sh`**

3. **On the License Agreement page, review the license agreement and then select the checkbox to accept the terms in the license agreement. Click Next.**

4. **If you are running the multi-language installer, the Locales page offers you the opportunity to select additional locales for which to install the software. Click the checkboxes for any additional locales for which you want to install. Then click Next.**

5. **The System Analysis page tells you if your system is missing any of the required OS patches.**

   If you are running the multi-language installer, click More info, and then click Execute install_patches.sh now. The `install_patches.sh` utility runs in your terminal window. When it displays Execution finished, press Enter to exit the utility.

   If you are running the English-only installer and you need to install these patches, you can do so later by running the `install_patches.sh` utility from the command line.

   For a complete list of the valid command-line options when starting the `install_patches.sh` utility, see "Command-Line Options for the `install_patches.sh` Utility" on page 37

   The required OS patches must also be installed with the `install_patches.sh` utility on client systems that will use the Sun Studio 12 Update 1 software on a server. For more information, see "Installing the Required Solaris OS Patches" on page 22.

6. **The Sun Studio Installer page gives you the option of selecting which components of the Sun Studio software to install:**

   a. **Click Next if you want to install all components of the software.**

   b. **Click Customize if you want to select which components of the software to install. The Customize Installation dialog box lists the components and indicates which, if any, components are already installed. Click the checkbox for any component you do not want to install to remove the checkmark. Click OK, then click Next.**

7. **On the Sun Studio Installation page:**

   a. **Specify a different installation directory if you do not want to install the software in the default installation directory `/opt`. If you already have some components of Sun Studio 12 Update 1 software installed, the installer will install additional components only in the same directory.**

   b. **By default, the installer creates symbolic links in the `/usr/bin` directory and the `/usr/share/man` directory to the Sun Studio 12 Update 1 software and man pages. If you already have symbolic links in `/usr/bin` and `/usr/share/man` to a previous Sun Studio release, the links to Sun Studio 12 Update 1 will replace them. If you do not want the symbolic links created, or you do not want links to a previous release replaced, click the checkbox to remove the checkmark. (If you already have the links to Sun Studio 12 Update 1 installed, the checkbox is not displayed.)**

8. **On the Summary page, verify that the list of components to be installed is correct and that you have adequate space on your system for installation. Then click Install to start the installation.**

9. **When the installation is complete, the Setup Complete page is displayed. Click Finish to exit the installer.**

10. **After installation, the installer opens a web browser and asks you to use your Sun Online Account to register your copy of Sun Studio with the Sun Inventory. Registration is not required, but it allows you to organize your products in the Sun Inventory and receive timely information from Sun. The installer also registers this copy of Sun Studio in your local Service Tags database (if this service is available).**

11. **If the Sun Studio 12 Update 1 is going to be used from client systems, then on each client system, set the `PATH` and `MANPATH` to access the Sun Studio 12 Update 1 software and man pages on the server (see "Setting Up Access to the Developer Tools and Man Pages" on page 22).**

12. **If you installed the Sun Studio 12 Update 1 software on a single-user system, type the following to determine whether you need to set up your access to the Sun Studio 12 Update 1 software tools and man pages:**

    ```
    /usr/bin/version
    ```

    a. **If you receive the message `/usr/bin/version: not found` or the command reports an earlier version of Sun Studio software, see "Setting Up Access to the Developer Tools and Man Pages" on page 22 for information on setting your `PATH` and `MANPATH` to point to the Sun Studio 12 Update 1 software.**

    b. **If the command reports Sun Studio 12 Update 1 software, you do not need to set your `PATH` and `MANPATH`.**

Installing With the Non-GUI Installer

The non-GUI installer installs all components of the Sun Studio 12 Update 1 software silently. For a complete list of the valid command-line options when starting the non-GUI installer, see "Command-Line Options for the Non-GUI Installer" on page 36.

▼ Using the Non-GUI Installer

1. **If you are not currently superuser (root), become superuser by typing:**

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

2. **In the directory that contains the installer, print the license agreement.**

   a. **If you are using the multi-language installer, type:**

      `./SunStudio12u1-`*OS*`-`*platform*`-`*packages*`.sh --print-license`**

   b. **If you are using the English-only installer, do one of the following:**

      If you are using the Bourne shell or Korn shell, type:

      `./SunStudio12u1-`*OS*`-`*platform*`-`*packages*`.sh --print-license 2>&1 | more`**

      If you are using the C shell, type:

      `./SunStudio12u1-`*OS*`-`*platform*`-`*packages*`.sh --print-license |& more`**

   The installer displays startup messages and then prints the license agreement. Review the license agreement.

3. **Accept the terms of the license agreement and start the installer by typing:**

   `./SunStudio12u1-`*OS*`-`*platform*`-`*packages*`.sh --non-interactive-accept-license`**

4. **The installer runs silently and returns your prompt when installation is complete. It writes a log file in the `/root/.nbi/logs` directory.**

5. **If the Sun Studio 12 Update 1 is going to be used from client systems, then on each client system, set the `PATH` and `MANPATH` to access the Sun Studio 12 Update 1 software and man pages on the server (see "Setting Up Access to the Developer Tools and Man Pages" on page 22).**

6. **If you installed the Sun Studio 12 Update 1 software on a single-user system, type the following to determine whether you need to set up your access to the Sun Studio 12 Update 1 software tools and man pages:**

   `/usr/bin/version`

   a. **If you receive the message `/usr/bin/version: not found` or the command reports an earlier version of Sun Studio software, see "Setting Up Access to the Developer Tools and Man Pages" on page 22 for information on setting your `PATH` and `MANPATH` to point to the Sun Studio 12 Update 1 software.**

   b. **If the command reports Sun Studio 12 Update 1 software, you do not need to set your `PATH` and `MANPATH`.**

Installing the Required Solaris OS Patches

Several operating system patches are required for the proper operation of the compilers and tools in the Sun Studio 12 Update 1 release on the Solaris OS. To install the required Solaris OS patches, you can run the `install_patches.sh` utility that is included in the product download.

If you are running the GUI installer, the System Analysis page informs you if your system does not have the required OS patches. If you are running the multi-language GUI installer, you can run the utility by clicking More info, and then clicking Execute install_patches.sh now. If you are running the English-only GUI installer, you can run the utility from the command line after you have finished installing the Sun Studio software and exited the installer.

If you are running the non-GUI installer, run the `install_patches.sh` utility after installation to ensure that your system has the required OS patches.

If you have installed the Sun Studio 12 Update 1 software on a server and it is going to be used from client systems, then do the following:

1. On each client system, mount the directory on the server into which you downloaded the package installer.

   `mount` *server:filesystem download_directory*

2. On each client system, run the `install_patches.sh` utility to install the required Solaris OS patches.

Setting Up Access to the Developer Tools and Man Pages

Because the Sun Studio 12 Update 1 software product components and man pages are not installed into the system directories `/usr/bin/` and `/usr/share/man`, you might need to change your `PATH` and `MANPATH` environment variables to enable use of the Sun Studio 12 Update 1 software.

You do not need to change your paths if:

- You did not previously install Sun Studio 11 software or Sun Studio 12 software on your system.
- The response to the command`/usr/bin/version` is Sun Studio 12 Update 1 software.

On Solaris platforms, add the path */installation_directory*`/sunstudio12.1/bin` to your `PATH` environment variable. On Linux platforms, add the path */installation_directory*`/sun/sunstudio12.1/bin` to your `PATH` environment variable. If you have previous versions of Sun Studio, Sun ONE Studio, or Forte Developer software installed, add the path before the paths of the previous installations.

On Solaris platforms, add the path */installation_directory*`/sunstudio12.1/man/` to your `MANPATH` environment variable. On Linux platforms, add the path */installation_directory*`/sun/sunstudio12.1/man/` to your `MANPATH` environment variable.

Starting the Sun Studio 12 Update 1 IDE

Once you have the Sun Studio 12 Update 1 software and the required OS patches installed, and have added the software installation directory to your path, you can start using the software. To start the IDE, type the following:

```
sunstudio &
```

Note – The full path to the command is */installation_directory*/`sunstudio12.1/bin/sunstudio` on Solaris systems, and */installation_directory*/`sun/sunstudio12.1/bin/sunstudio` on Linux platforms.

◆ ◆ ◆ CHAPTER 3

Uninstalling the Sun Studio 12 Update 1 Software

This chapter includes information about the following:

Uninstalling When Previous Releases of Sun Studio Software Are Installed

I f you installed the Sun Studio 12 Update 1 software on a system that has previous Sun Studio software installations, then only the Sun Studio 12 Update 1 is removed when you run the uninstaller. The uninstaller removes all of the installed product components.

Choosing Local Display or Remote Display of the Uninstaller

You can display an uninstaller either locally or remotely while you are uninstalling Sun Studio 12 Update 1 software.

▼ Preparing for Uninstallation Using a Remote Display

1 **On the display computer, enable client access to the X server by typing the following on the command line:**

`xhost +` *source-computer-name*

Replace *source-computer-name* with the output of the `/usr/bin/hostname` command entered on the source computer, which is the computer that contains the product CD-ROM or downloaded files.

2. **Log in to the source computer and become a superuser (root).**

   rlogin *source-computer-name* **-l** *rootname*
   Password: *root-password*

3. **On the source computer, set the display to the monitor that is attached to the display computer.**

   If you use the C shell, type:

   setenv DISPLAY *display-computer-name*:*n.n*

   If you use the Bourne shell, type:

   DISPLAY=*display-computer-name*:*n.n*
   export DISPLAY

   If you use the Korn shell, type:

   export DISPLAY=*display-computer-name*:*n.n*

   Replace *display-computer-name* with the output of the `/usr/bin/hostname` entered on the display computer.

Uninstalling the Software

You can uninstall all of the installed components of the Sun Studio 12 Update 1 software using the graphical user interface uninstaller or the non-GUI uninstaller.

▼ Using the Graphical User Interface Uninstaller

1. **If you are not currently superuser (root), become superuser by typing:**

   su
   Password: *root-password*

2. **Go to the installation directory, for example, `/opt/sunstudio12.1`.**

3. **Start the GUI uninstaller by typing:**

   ./uninstall.sh &

4. **On the Summary page, click Uninstall to start the uninstallation.**

5. **When the uninstallation is complete, the Setup Complete page is displayed. Click Finish to exit the uninstaller.**

▼ Using the Non-GUI Uninstaller

1. **If you are not currently superuser (root), become superuser by typing:**

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

2. **Go to the installation directory, for example, `/opt/sunstudio12.1`.**

3. **Start the non-GUI uninstaller by typing:**

   ```
   ./uninstall.sh --non-interactive
   ```

4. **The uninstaller runs silently and returns your prompt when uninstallation is complete.**

◆ ◆ ◆ CHAPTER 4

Troubleshooting

This chapter describes how to fix problems that can occur during Sun Studio 12 Update 1 installation and uninstallation.

The chapter includes information about the following:

GUI Installer Will Fail If `TMPDIR` Points to Non World-Writable Directory

If you choose to install the symbolic links to Sun Studio software in the `/usr/bin` and `/usr/man/share` directories, and your `TMPDIR` environment variable is pointing to a directory that is not world-writable, then the GUI installer will fail to complete installation. To ensure that this situation does not occur, unset your `TMPDIR` environment variable or set it to a world-writable directory before starting the installer.

GNOME Errors Might Occur When Starting GUI Installer

On some systems, GNOME errors might occur when you start the GUI installer. If such errors prevent the GUI installer from starting, use the non-GUI installer.

Installer Lock File Might Prevent Installer From Starting

If the installer is interrupted or quits without completing the installation, a lock file might prevent you from restarting the installer. If you receive a message that an instance of the installer is already running when you try to start the installer, you might need to remove a lock file from the `/root/.nbi` directory.

Fixing a Failed Installation or Uninstallation

On Solaris platforms, the installer stores information on which Sun Studio 12 Update 1 packages it has installed in two places:

- The `productregistry` file, the Solaris Product Registry database
- The `/root/.nbi` directory

On Linux platforms, the installer stores information on which Sun Studio 12 Update 1 packages it has installed in two places:

- The database of installed packages
- The `/root/.nbi` directory

If some packages were not properly installed, you will have problems using the Sun Studio software, and you might have problems installing additional components or uninstalling the software.

For example, if the installer quit before installation was complete, the uninstaller (`uninstall.sh`) might not be present in your installation directory. Or if you used the `pkgadd` command to install any of the packages, the `productregistry` file or the `product-cache` directory in the `/root/.nbi` directory might be corrupted. In such cases, the uninstaller cannot uninstall the packages and you need to remove them in the correct way in order to be able to rerun the installer.

If the uninstaller quits before all the product files are deleted, rerunning the uninstaller will not delete the remaining files and you need to remove them in the correct way to complete the uninstallation of the product.

Do not uninstall the product by removing the installation directory. Packages will still be registered in the `productregistry` database and the `/root/.nbi` directory, and the installer will not run.

Using the Uninstallation Workaround Script to Fix a Failed Installation or Uninstallation

1. **Download the uninstallation workaround script tar file from the Sun Download Center into a directory of your choice.**

2. **Unpack the file by typing:**

   ```
   bzcat download_directory/sunstudio12u1_uninstaller.bash.tar.bz2 | /bin/tar -zf -
   ```

3. **If you are not currently superuser (root), become superuser by typing:**

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

4. **Start the script by typing:**

   ```
   ./sunstudio12u1_uninstaller.bash
   ```

   If the Sun Studio software you want to uninstall was installed in an alternate root location, start the script with the `-R` option to specify the alternate root directory.

5. **The script analyzes your system and locates all complete or partial installations of Sun Studio 12 Update 1 software. For example, it might tell you that it has found the software in `/opt/sunstudio12.1` because it finds package entries in the product registry even though you do not see a `sunstudio12.1` directory in `/opt`.**

6. **The script asks you to confirm that you want to install the software it has located. If the script has located one installation, type `yes` to indicate that you want it to remove that installation. If it has located multiple installations, type the pathname of the installation you want it to remove.**

7. **The script executes `pkgrm` commands for all of the packages in the selected installation. It automatically interacts with `pkgrm`, answering `yes` when `pkgrm` asks for confirmation that a package should be removed, so do not type `y` when you see questions from `pkgrm`.**

8. **The script informs you when all of the packages have been removed. Your Sun Studio 12 Update 1 software has been successfully uninstalled and you can reinstall it if you wish.**

Manually Fixing a Failed Installation or Uninstallation on Solaris Platforms

1. **Become superuser by typing:**

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

2. **Open the Solaris Product Registry tool by typing:**

   ```
   /usr/bin/prodreg &
   ```

3. **In the left pane of the tool, expand the Unclassified Software node.**

4. **Select all of the package names containing Sun Studio 12 Update 1 and click Uninstall. Follow the instructions to remove the packages.**

5. **Click Exit to exit the tool.**

6. **Remove the `/root/.nbi` directory by typing:**

   ```
   rm -r /.nbi
   ```

7. **If you installed the Sun Studio 12 Update 1 IDE component, remove the NetBeans IDE 6.5.1 by going to the installation directory (by default, `/opt/sunstudio12.1`) and typing:**

   ```
   rm -r netbeans
   ```

▼ Manually Fixing a Failed Installation or Uninstallation on Linux Platforms

1. **Become superuser by typing:**

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

2. **Find all of the Sun Studio packages by typing:**

   ```
   rpm -q -a | grep sun
   ```

3. **Remove each Sun Studio 12 Update 1 rpm package by typing:**

   `rpm -e` *package-name*

   Sun Studio 12 Update 1 rpm packages have the suffix `12.1–1`, for example, `sun-cpl-12.1–1`. Be careful not to remove packages from other Sun Studio releases, which have different suffixes.

4. **Remove the `/root/.nbi` directory by typing:**

   ```
   rm -r /.nbi
   ```

5. **If you installed the Sun Studio 12 Update 1 IDE component, remove the NetBeans IDE 6.5.1 by going to the installation directory (by default, `/opt/sun/sunstudio12.1`) and typing:**

   ```
   rm -r netbeans
   ```

Installation Will Fail on an NFS-Mounted Filesystem If Write Permission is Not Set

If installation fails on an NFS-mounted filesystem, ensure that you have write permission on that filesystem. You can check for write permission by following these instructions. For information about installing on an NFS-mounted filesystem, see "Installing to an NFS-Mounted Filesystem" on page 14.

1. Check for write permission by typing:

   touch /net/*remote-system***/opt/testfile**

   If you receive an error message, then you do not have write permission. For example:

   ```
   touch /net/harker/opt/testfile
   touch: /net/harker/opt/testfile cannot create
   ```

2. Choose another installation directory on which you have write permission, or contact your system administrator to change the filesystem permissions.

Viewing the Installation Log File

When you install the Sun Studio 12 Update 1 software, a log file that contains a record of the installation session is automatically generated. Log files are stored in the `/root/.nbi/logs` directory.

◆ ◆ ◆ APPENDIX A

Command-Line Options for the Installer,Uninstaller,and `install_patches` Utility

Command-Line Options for the GUI Installer

The following command-line options are valid when you are starting the GUI installer.

`--current-zone-only`	Install only in the current zone. When you run the installer in the global zone, this option makes the installed product available only in that zone.
`--help`	Display information on the options.
`--javahome` *directory*	Use the JDK in directory when running the installer. This option is needed when the installer cannot locate a JDK in a standard location on your system, and you need to point it to one.
`--locale` *locale*	Override the default locale for the installer with the specified locale. Valid locales are `en` (English), `ja` (Japanese), and `zh` (Simplified Chinese). This option is valid only for the multi-language installer.
`--output` *output_file*	Write all installer output to the specified file.
`--record` *state_file*`.xml`	Record an installer session in the GUI installer so that you can use repeat the installation on another system with the non-GUI installer. This option is especially useful when you want to install a subset of the product components on multiple systems.
`--tempdir`	By default, the installer extracts temporary data into the `/tmp` directory. If there is not sufficient space in the `/tmp` directory on your system, you can specify another directory for the installer to use.

`--use-alternate-root` *directory*	Install in the specified root directory instead of the default root directory `/`. Specify the full path of the directory to use as the alternate root. This option is valid only on systems running the Solaris OS.
`--verbose`	Write verbose output to the console.

Command-Line Options for the Non-GUI Installer

The following command-line options are valid when you are starting the non-GUI installer.

`--create-symlinks`	Create symbolic links in the `/usr/bin` and `/usr/share/man` directories to the Sun Studio 12 Update 1 software and man pages. This option is valid only for the multi-language installer.
`--current-zone-only`	Install only in the current zone. When you run the installer in the global zone, this option makes the installed product visible only in that zone.
`--extract-installation-data` *directory*	Extract installation data, do not perform installation.
`--help`	Display information on the options.
`--install-all-locales`	Install Sun Studio software for all locales. This option is valid only for the multi-language installer.
`--installation-location` *directory*	Install Sun Studio software in the specified directory instead of in the default installation directory `/opt`. This option is valid only for the multi-language installer.
`--javahome` *directory*	Use the JDK in directory when running the installer. This option is needed when the installer cannot locate a JDK in a standard location on your system, and you need to point it to one.
`--non-interactive-accept-license`	Accept the license agreement and start the installer in non-GUI mode.
`--print-license`	Print the license agreement.
`--silent-logs-dir` *directory*	Write the installer log file to the specified directory.
`--state` *state_file* `.xml`	Play back the state file recorded by the GUI installer to silently repeat an installation session. This option lets you install a subset of the product components in non-GUI mode.

`--tempdir`	By default, the installer extracts temporary data into the `/tmp` directory. If there is not sufficient space in the `/tmp` directory on your system, you can specify another directory for the installer to use.
`--use-alternative-root` *directory*	Install in the specified root directory instead of the default root directory `/`. Specify the full path of the directory to use as the alternate root. This option is valid only on systems running the Solaris OS and only for the multi-language installer.
`--verbose`	Write verbose output to the console.

Command-Line Options for the Uninstaller

The following option is valid when starting the uninstaller.

`--locale` *locale*	Override the default locale for the uninstaller with the specified locale. Valid locales are `en` (English), `ja` (Japanese), and `zh` (Simplified Chinese). This option is valid only for the multi-language GUI uninstaller.
`--non-interactive`	Run the uninstaller in non-GUI mode and uninstall installed components of the software.
`--output` *output_file*	Write all uninstaller output to the specified file. This option is valid only for the GUI uninstaller.
`--use-alternative-root` *directory*	Uninstall from the specified root directory instead of the default root directory `/`.

Command-Line Options for the `install_patches.sh` Utility

The following options are valid when starting the `install_patches.sh` utility.

`-G`	Add patches to packages in the current zone only. When you run the utility in the global zone, this option makes the patches available in that zone only.
`-p`	Install Sun Studio product patches if available. If you specify this option and no product patches are available, the utility displays a message telling you so. This option is valid only for the multi-language installer.

`-l` *locale*	Override the default locale for the utility with the specified locale. This option is valid only for the multi-language installer. Valid locales are `en` (English), `ja` (Japanese), and `zh` (Simplified Chinese).
`-R` *directory*	Install patches in the specified root directory instead of the default root directory `/`. Specify the full path of the directory to use as the alternate root.
`-h`	Display information on the options.

◆ ◆ ◆ APPENDIX B

Adding Swap Space

Adding Swap Space

If the system on which you are installing the software does not have the required minimum 1 GB of swap space, add swap space by doing the following.

▼ Adding Swap Space on a Solaris System

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

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

2 **Create a file in a selected directory to add swap space by typing:**

mkfile *number*[**m**|**k**|**b**] */directory/swap-file-name*

where *number* is an amount of swap space, followed by either `m` for megabyte, `k` for kilobyte, or `b` for block. The *directory* is a directory in which you have permission to add swap space. The *swap-file-name*is the name of the swap file you are creating.

For example, to create a 16-megabyte swap file named `16mswap`in the `foo`directory, type the following:

```
mkfile 16m /foo/16mswap
```

See the `mkfile`(1M) man page for more information.

3 **Verify that the file was created by typing:**

ls -l */directory/swap-file-name*

The new file appears in the directory. For example:

```
ls -l /foo/16mswap
-rw------T   1 root     other    16777216 Dec 12 14:24 /foo/16mswap
```

4 **Run the** `swap` **command to specify the additional swap space by typing:**

```
swap -a /directory/swap-file-name
```

5 **Verify that the extra swap space was added by typing:**

```
swap -s
```

The output shows the allocated swap space. For example:

```
swap -s
total: 289336k bytes allocated + 27008k reserved = 316344k used, 298336k available
```

▼ Adding Swap Space on a Linux System

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

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

2 **Create a file in a selected directory to add swap space by typing:**

```
dd if=/dev/zero of=/dir/myswapfile bs=1024 count=number_blocks_needed
```

where *dir* is a directory in which you have permission to add swap space. The *myswapfile* is the name of the swap file you are creating. The *number_blocks_needed* is an amount of 1024-byte blocks you want to create. See the `dd`(1) man page for more information.

3 **Verify that the file was created by typing:**

```
ls -l /dir/myswapfile
```

The new file appears in the directory.

4 **Initialize the new swap area by typing:**

```
mkswap /dir/myswapfile
```

See the `mkswap`(8) man page for more detailed information.

5 **Run the** `swapon` **command to enable the new swap space for paging and swapping by typing the following:**

```
swapon -a /dir/myswapfile
```

6 **Verify that the extra swap space was added by typing:**

```
swapon -s
```

The output shows the allocated swap space.

◆ ◆ ◆ APPENDIX C

Sun Studio 12 Update 1 Components and Packages

This appendix lists the components, and packages that comprise the Sun Studio 12 Update 1 software.

Table C–1 lists the Sun Studio 12 Update 1 software package configuration and component information for the Solaris OS on SPARC based systems.

Table C–2 lists the Sun Studio 12 Update 1 software package configuration and component information for the Solaris OS on x86 based systems.

Table C–3 lists the Sun Studio 12 Update 1 RPM package and component information for Linux platforms.

TABLE C–1 Sun Studio 12 Update 1 Components and Packages for SPARC Based Systems

Component	Packages
C Compiler	`SPROcc`
C++ Compiler	`SPROcpl`
	`SPROcplx`
	`SPROtl7x`
	`SPROtlbn7`
	`SPROtll7`
	`SPROtll7x`
Fortran 95 Compiler	`SPROf90`
	`SPROftool`
DBX Debugging Tools	`SPROdbx`
	`SPROdbxx`

TABLE C–1 Sun Studio 12 Update 1 Components and Packages for SPARC Based Systems *(Continued)*

Component	Packages
	SPROjdbx
	SPROjdbxx
	SPROmrdbx
Build tools	SPROdmake
IDE	NetBeans IDE 6.5.1
Support files	SPROatd
	SPROcmpl
	SPROctags
	SPROdemo
	SPROdlight
	SPROdwrfb
	SPROdwrfx
	SPROfd
	SPROgc
	SPROgcx
	SPROidext
	SPROipl
	SPROiplg
	SPROiplx
	SPROl77s
	SPROl77sx
	SPROl90
	SPROl90s
	SPROl90sx
	SPROl90x
	SPROlang
	SPROlangx
	SPROlcxs

TABLE C–1 Sun Studio 12 Update 1 Components and Packages for SPARC Based Systems *(Continued)*

Component	Packages
	SPROlgc
	SPROlgcx
	SPROlklnt
	SPROlgcx
	SPROm9xpx
	SPROm9xs
	SPROm9xsx
	SPROmr3m
	SPROmrcc
	SPROmrcom
	SPROmrcpl
	SPROmrdmk
	SPROmrdwf
	SPROmrftn
	SPROmrgc
	SPROmride
	SPROmripl
	SPROmrmp
	SPROmrpan
	SPROmrstd
	SPROmrtcv
	SPROnbreg
	SPROplck
	SPROprfan
	SPROprflb
	SPROsbld
	SPROsbldx
	SPROscl

TABLE C–1 Sun Studio 12 Update 1 Components and Packages for SPARC Based Systems *(Continued)*

Component	Packages
	SPROsclx
	SPROsmpx
	SPROsmsx
	SPROsslnk
	SPROstl4a
	SPROstl4h
	SPROstl4o
	SPROstl4x
	SPROstl4y
	SPROsunms
	SPROsvc
	SPROtdemo
	SPROudchk
	SPROutool
Performance Library	SPROpl
	SPROplg
	SPROpls
	SPROplsx
	SPROplx
	SPROmrpl
	SPROscalapack
Third Party Source	SPROctsrc
	SPROdwrfs

TABLE C–2 Sun Studio 12 Update 1 Components and Packages for x86 Based Systems

Component	Packages
C Compiler	SPROcc
C++ Compiler	SPROcpl

TABLE C–2 Sun Studio 12 Update 1 Components and Packages for x86 Based Systems *(Continued)*

Component	Packages
	SPROcplx
	SPROtl7x
	SPROtlbn7
	SPROtll7
	SPROtll7x
Fortran 95 Compiler	SPROf90
	SPROftool
DBX Debugging Tools	SPROdbx
	SPROdbxx
	SPROjdbx
	SPROjdbxx
	SPROmrdbx
Build Tools	SPROdmake
IDE	NetBeans IDE 6.5.1
Support Files	SPROatd
	SPROcmpl
	SPROctags
	SPROdemo
	SPROdlight
	SPROdwrfb
	SPROdwrfx
	SPROfd
	SPROgcx
	SPROl90
	SPROl90s
	SPROl90sx
	SPROl90x
	SPROlang

TABLE C–2 Sun Studio 12 Update 1 Components and Packages for x86 Based Systems *(Continued)*

Component	Packages
	SPROlangx
	SPROlgc
	SPROlgcx
	SPROlklnt
	SPROm9xs
	SPROmr3m
	SPROmrcc
	SPROmrcom
	SPROmrcpl
	SPROmrdmk
	SPROmrdwf
	SPROmrftn
	SPROmrgc
	SPROmride
	SPROmrmp
	SPROmrpan
	SPROmrstd
	SPROmrtcv
	SPROnbreg
	SPROprfan
	SPROprflb
	SPROsbld
	SPROsbldx
	SPROscl
	SPROsclx
	SPROsmpx
	SPROsmsx
	SPROsslnk

TABLE C–2 Sun Studio 12 Update 1 Components and Packages for x86 Based Systems *(Continued)*

Component	Packages
	SPROstl4a
	SPROstl4h
	SPROstl4o
	SPROstl4x
	SPROstl4y
	SPROsunms
	SPROsvc
	SPROtdemo
	SPROudchk
	SPROutool
Performance Library	SPROipl
	SPROiplg
	SPROiplx
	SPROmripl
	SPROmrpl
	SPROpl
	SPROplg
	SPROpls
	SPROplsx
	SPROplx
	SPROscalapack
Third Party Source	SPROctsrc
	SPROdwrfs

TABLE C–3 Sun Studio 12 Update 1 Components and RPM Packages for Linux Platforms

Component	RPMs
C Compiler	SPROcc
C++ Compiler	SPROcpl

TABLE C–3 Sun Studio 12 Update 1 Components and RPM Packages for Linux Platforms *(Continued)*

Component	RPMs
	SPROcplx
	SPROtl7x
	SPROtlbn7
	SPROtll7
	SPROtll7x
Fortran 95 Compiler	SPROf90
	SPROftool
DBX Debugging Tools	SPROdbx
	SPROdbxx
	SPROjdbx
	SPROjdbxx
	SPROmrdbx
Build Tools	SPROdmake
IDE	NetBeans IDE 6.5.1
Support Files	SPROatd
	SPROdwrfb
	SPROidext
	SPROl90
	SPROl90s
	SPROl90sx
	SPROl90x
	SPROlang
	SPROlangx
	SPROmr3m
	SPROmrcc
	SPROmrcom
	SPROmrcpl
	SPROmrdbx

TABLE C–3 Sun Studio 12 Update 1 Components and RPM Packages for Linux Platforms *(Continued)*

Component	RPMs
	SPROmrdmk
	SPROmrdwf
	SPROmrftn
	SPROmrgc
	SPROmride
	SPROmrlnx
	SPROmrpan
	SPROmrstd
	SPROmrtcv
	SPROnbreg
	SPROprfan
	SPROprflb
	SPROrtm
	SPROrtmx
	SPROscl
	SPROsclx
	SPROstl4a
	SPROstl4h
	SPROstl4o
	SPROstl4x
	SPROstl4y
	SPROsvc
	SPROtdemo
	SPROudchk
	SPROutool
Third Party Source	SPROdwrfs

◆ ◆ ◆ APPENDIX D

Patch Identification Numbers and Descriptions

Operating system patches are provided for the Sun Studio 12 Update 1 software. These patches are required for the proper operation of the compilers and tools in this release. This appendix lists the Solaris OS patches that are included with this release. If these patches are not already installed on your system, you can install them using the `install_patches` script that is included in the directory that contains the installer.

Table D–1 lists the patch identification numbers and descriptions of the required patches for the Solaris 10 OS on SPARC based systems.

Table D–2 lists the patch identification numbers and descriptions of the required patches for the Solaris 10 OS on x86 based systems.

Additional patches, which are not included in the product download file or on the product DVD, are recommended to resolve specific issues that might or might not affect your use of the software. To install one of the recommended patches, download the patch from SunSolve (`http://sunsolve.sun.com`) and follow the instructions in the README file included with the patch, which contains important information on risks and proper procedure.

Table D–3 lists the patch identification number and description of the recommended patch for the Solaris 10 OS on SPARC based systems.

Table D–4 lists the patch identification numbers and descriptions of the recommended patches for the Solaris 10 OS on x86 based systems.

TABLE D–1 Required Patches for Solaris 10 OS on SPARC Based Systems

Patch Identification Number	Patch Description
118683-03	Assembler and `libxprof` patch (required for `-xprofile` option)
120753-06	`libmtsk` patch
119963–13	Shared library patch for C++

TABLE D–2 Required Patches for Solaris 10 OS on x86 Based Systems

Patch Identification Number	Patch Description
119961-05	Assembler and `libxprof` patch (required for `-xprofile` option)
120754–06	`libmtsk` patch
119964–13	Shared library patch for C++

TABLE D–3 Recommended Patch for Solaris 10 OS on SPARC Based Systems

Patch Identification Number	Patch Description
127127–11	Kernel patch. This patch is required on systems running Solaris 10 OS releases earlier than the Solaris 10 08/07 release in order for compiler annotations (`-xannotate=yes`) to work.

TABLE D–4 Recommended Patches for Solaris 10 OS on x86 Based Systems

Patch Identification Number	Patch Description
127128–11	Kernel patch. This patch is required on systems running Solaris 10 OS releases earlier than the Solaris 10 08/07 release in order for compiler annotations (`-xannotate=yes`) to work.
137122–01	Kernel patch. This patch is required on systems running Solaris 10 releases earlier than the Solaris 10 10/08 release on which patch 127112 or 127128 has been installed in order to use the dbx debugger to debug applications that use signal handling.

◆ ◆ ◆ APPENDIX E

Version Numbers of the Sun Studio 12 Update 1 Components

This appendix provides the version numbers of the components of the Sun Studio 12 Update 1 software.

TABLE E–1 Version Numbers of the Sun Studio 12 Update 1Components

Component	Version Number
C compiler	5.10
C++ compiler	5.10
Fortran 95 compiler	8.4
dbx debugger	7.7
dmake	7.9
IDE	9.0
Locklint	2.6
OpenMP Support	3.0
Performance Analyzer	7.7
Standard C++ Library	5.9
STLport	4.5.3
Sun Performance Library	2009/04/28
Thread Analyzer	7.7
Tools.h++	7.1.0

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