Sun Studio 12 Installation Reference Guide

Sun Microsystems, Inc.
4150 Network Circle
Santa Clara, CA 95054
U.S.A.

Part No: 820–0274

070914@18741

Contents

Preface

The *Sun Studio 12 Installation Reference* guide contains:

- Instructions for installing the English-only version of the software on a server for use by client systems with different architectures
- Detailed descriptions of the system preparation tool, batch installer, graphical user interface installer, and command-line installer
- Troubleshooting information
- Component and package lists
- Patch lists
- Component version numbers

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.

Before You Read This Book

Before reading this book, you should be familiar with the *Sun Studio 12 Quick Installation* guide.

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:`
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 that is installed with the software on your local system or network at `file:/opt/SUNWspro/docs/index.html` on Solaris platforms and at `file:/opt/sun/sunstudio12/docs/index.html` on Linux platforms.

  If your software is not installed in the `/opt` directory on a Solaris platform or the `/opt/sun` directory on a Linux platform, ask your system administrator for the equivalent path on your system.
- Most manuals are available from the `docs.sun.com`SM web site. The following titles are available through your installed software on Solaris platforms only:
  - *Standard C++ Library Class Reference*
  - *Standard C++ Library User's Guide*
  - *Tools.h++ Class Library Reference*
  - *Tools.h++ User's Guide*

  The release notes are available from the `docs.sun.com` web site.
- 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.

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 that is installed with the software on your local system or network.

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

TABLE P–3 Documentation in Accessible Formats

Type of Documentation	Format and Location of Accessible Version
Manuals (except third-party manuals)	HTML at `http://docs.sun.com`
Third-party manuals: ■ *Standard C++ Library Class Reference* ■ *Standard C++ Library User's Guide* ■ *Tools.h++ Class Library Reference* ■ *Tools.h++ User's Guide*	HTML in the installed software on Solaris platforms through the documentation index at `file:/opt/SUNWspro/docs/index.html`
Readmes	HTML on the developer portal at `http://developers.sun.com/sunstudio/documentation/ss12`
Man pages	HTML in the installed software through the documentation index at `file:/opt/SUNWspro/docs/index.html` on Solaris platforms, and at `file:/opt/sun/sunstudio12/docs/index.html` on Linux platforms
Online help	HTML available through the Help menu and Help buttons in the IDE
Release notes	HTML at `http://docs.sun.com`

Related Sun Studio Documentation

The following table describes related documentation that is available at `file:/opt/SUNWspro/docs/index.html` and `http://docs.sun.com`. If your software is not installed in the `/opt` directory, ask your system administrator for the equivalent path on your system.

Document	Description
Sun Studio 12 Quick Installation	Contains instructions on installing the prerequisite software on the system on which the English-only release of the Sun Studio 12 software will be run, installing the English-only release of the Sun Studio 12 software on a single-user system, on a server for use by clients with the same architecture, or in one or more zones on a system running the Solaris 10 1/06 operating system, running the Integrated Development Environment (IDE), and uninstalling the English-only release of the Sun Studio 12 software.
Sun Studio Quick Installation (English, Japanese, Simplified Chinese)	Contains instructions on installing the prerequisite software on the system on which the multi-language release of the Sun Studio 12 software will be run; installing the multi-language release of the Sun Studio 12 software on a single-user system, on a server for use by clients with the same architecture, or in one or more zones on a system running the Solaris 10 1/06 operating system; upgrading an installation of the English-only release of the Sun Studio 12 software; running the Integrated Development Environment (IDE); and uninstalling the multi-language release of the Sun Studio 12 software.
Sun Studio 12 Installation Reference (English, Japanese, Simplified Chinese)	Contains instructions for installing the multi-language release of the Sun Studio 12 software on a server for use by client systems with different architectures. It also includes detailed descriptions of the batch installer, graphical user interface installer, and command-line installer; troubleshooting information; component and package lists; patch lists; and component version numbers.

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
- 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 820-0274–10.

◆ ◆ ◆ CHAPTER 1

Installing the Sun Studio 12 Software on a Solaris Server for Use by Clients With a Different Architecture

This chapter includes information about the following:

Installing on a Solaris Server for Use by Clients With a Different Architecture

You can install the Sun Studio 12 software on a server running the Solaris OS for use by client systems with a different architecture. You can install the Sun Studio 12 software on a SPARC based server for use by x86 based client systems. Or you can install the Sun Studio 12 software on an x86 based server for use by SPARC based client systems. You can include the system preparation tool in the installed product so that it can be used to install the prerequisite software on each client system.

The simplest way to install the software on a server is to use the batch installer. However, the batch installer installs all components of the Sun Studio 12 software. If you want to choose which components of the software to install, you must use the graphical user interface installer or command-line installer.

▼ Using the Batch Installer

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

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

2 **In the directory that contains the `batch_installer` command, run the command to view the software license agreement:**

```
./batch_installer --show-sla
```

3. **Run the `batch_installer` command to accept the software license agreement, install the Sun Studio 12 software, and copy the prerequisite software to the server:**

   `./batch_installer --accept-sla --copy-prerequisites -a` *client_architecture*

   To install the software on a SPARC based server for use by x86 based clients, *client_architecture* is `intel-S2`. To install the software on an x86 based server for use by SPARC based clients, *client_architecture* is `sparc-S2`.

   To install the Sun Studio 12 software in a directory other than `/opt`, specify the installation directory with the `-d` option.

4. **On each client system, set the `PATH` and `MANPATH` environment variables to access the Sun Studio 12 software and man pages on the server (see "Setting Up Access to the Developer Tools and Man Pages" in** *Sun Studio 12 Quick Installation***.**

5. **On each client system, mount the directory on the server in which you installed the Sun Studio 12 software.**

   `mount` *server:filesystem directory*

6. **Run the system preparation tool on the server to check the client system for the prerequisite software and again, if necessary, to install any missing software.**

   `prepare_system -C`
   `prepare_system -s` *missing_software_name*`,`*missing_software_name*`,...`

▼ 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:**

   `./installer -a` *client_architecture*

   To install the software on a SPARC based server for use by x86 based clients, *client_architecture* is `intel-S2`. To install the software on an x86 based server for use by SPARC based clients, *client_architecture* is `sparc-S2`.

3. **On the Software License Agreement page, click Yes (Accept License).**

4. **On the Select Options page:**

   a. **If the Missing prerequisites field lists any missing prerequisite software, install the missing software by clicking the Update button.**

b. To install the Sun Studio 12 software in a directory other than `/opt`, type the directory name in the Installation directory field. If you have previously installed some components of the Sun Studio 12 software, the Installation directory field displays that installation directory, and the installer will install additional components in the same directory.

c. Click the Advanced options tab.

Select the Enable cross-install checkbox.

Select the Copy system prerequisites checkbox.

5 On the Select Components page, click the checkbox for any component you do not want to install. If you want to install only selected subcomponents of the Sun Studio 12 Compilers and Tools component, click the + icon to expand the component, and click the checkbox for any subcomponent you do not want to install.

6 Proceed through the remaining pages to complete the installation on the server.

7 On each client system, set the `PATH` and `MANPATH` to access the Sun Studio 12 software and man pages on the server (see "Setting Up Access to the Developer Tools and Man Pages" in *Sun Studio 12 Quick Installation*).

8 On each client system, mount the directory on the server in which you installed the Sun Studio 12 software.

`mount` *server:filesystem directory*

9 On each client system, run the system preparation tool on the server to check the client system for the prerequisite software and again, if necessary, to install any missing software.

```
prepare_system -C
prepare_system -s missing_software_name,missing_software_name,...
```

▼ Using the Command-Line 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:

```
./installer -a client_architecture -nodisplay
```

To install the software on a SPARC based server for use by x86 based clients, *client_architecture* is `intel-S2`. To install the software on an x86 based server for use by SPARC based clients, *client_architecture* is `sparc-S2`.

3. **Read the Software License Agreement and accept it by typing `yes`.**

4. **If the installer reports that any prerequisite software is missing, install the missing software by choosing Update All Prerequisites.**

5. **If you have previously installed some components of the Sun Studio 12 software, the installer will install additional components in the same directory. If you have not previously installed any components of the software, and you want to install the Sun Studio 12 software in a directory other than `/opt`, specify the installation directory.**

6. **Select Continue to advanced options, and select Enable cross-install and Copy system prerequisites.**

7. **Deselect any software component or subcomponent you do not want to install.**

8. **Follow the installer instructions to complete the installation.**

9. **On each client system, set the `PATH` and `MANPATH` environment variables to access the Sun Studio 12 software and man pages on the server (see "Setting Up Access to the Developer Tools and Man Pages" in *Sun Studio 12 Quick Installation*).**

10. **On each client system, mount the directory on the server in which you installed the Sun Studio 12 software.**

    ```
    mount server:filesystem directory
    ```

11. **Run the system preparation tool on the server to check the client system for the prerequisite software and again, if necessary, to install any missing software.**

    ```
    prepare_system -C
    prepare_system -s missing_software_name,missing_software_name
    ```

◆ ◆ ◆ CHAPTER 2

Command and Installer Descriptions

This chapter includes detailed information on the following:

`prepare_system` Command

The `prepare_system` command lets you check the system on which you are going to run the Sun Studio 12 software for the prerequisite software, and install any missing software. You can check the system without having root privileges on the system, but you must have root privileges to install missing software.

Syntax

```
prepare_system [-d directory] [-R altroot] [-C | -s netbeans | java | patches |
all_patches | jdk_patches | all | print_needed_steps ]
```

`-d` *directory*
: When specifying the `-s` option to install missing software, use this option if you want to specify the directory in which to install the missing software. If this option is not specified, the software is installed in the standard location.

`-R` *altroot*
: Use this option to specify a root directory other than the default `/`. Define the full path name of a directory to use as the *altroot*. All files, including package system information files, are relocated to a directory tree starting in the specified *altroot*.

`-C`
Check the system for the prerequisite software. Lists the missing prerequisite software, or indicates that none is missing. This option does not check for or report the absence of the patches required by the JDK software.

`-s netbeans | java | patches | all_patches | jdk_patches | print_needed_steps`
`netbeans` installs the NetBeans 5.5.1 IDE and NetBeans C/C++ Development Pack 5.5.1.

`java` installs J2SE Development Kit (JDK) 5.0, Update 9.

`patches` installs the operating system patches required by the Sun Studio 12 software.

`all_patches` installs both the operating system patches required by, and the operating system patches recommended for, the Sun Studio 12 software.

`jdk_patches` installs the patches required by the JDK software. On Solaris 10 1/06 platforms, two of these patches are kernel patches. Before using this option, see the `http://developers.sun.com/sunstudio/documentation/ss12/release_notes.html` for more information.

`all` checks whether the NetBeans 5.5.1 IDE and NetBeans C/C++ Development Pack 5.5.1, JDK software, and operating system patches required by the Sun Studio 12 software are installed, and installs them if they are missing.

`print_needed_steps` is an option used by the installer to list the missing software in a machine-readable format.

`batch_installer` Command

The simplest way to install the Sun Studio 12 software is to use the batch installer, which installs all components of the software.

Syntax

`batch_installer [-R` *altroot*`] [-d` *installation_directory*`] [-a` *architecture*`] [-p netbeans | java | patches | all_patches | jdk_patches | all] [--copy-prerequisites] [--show-sla] [--accept-sla] [--no-links] [-no-prodpatch] [--zone=all|this] [-J` *extra_java_args*`]`

`-R` *altroot*
Use this option to specify a root directory other than the default `/`. Define the full path name of a directory to use as the *altroot*. All files, including package system information files, are relocated to a directory tree starting in the specified *altroot*.

-d *installation_directory*
Specifies the installation directory for the Sun Studio 12 software. Use this option to install in a directory other than the default installation directory, which is /opt on Solaris platforms and /opt/sun on Linux platforms.

-a *client_architecture*
Allows the batch installer to install the Sun Studio 12 software on a server with a different architecture from the client systems that will use the software. To install the software on a SPARC based server for use by x86 based clients, *client_architecture* is intel-S2. To install the software on an x86 based server for use by SPARC based clients, *client_architecture* is sparc-S2.

-p netbeans | java | patches | all_patches | jdk_patches | all
netbeans installs NetBeans 5.5.1 IDE and NetBeans C/C++ Development Pack 5.5.1.

java installs J2SE Development Kit (JDK) 5.0, Update 9.

patches installs the operating system patches required by the Sun Studio 12 software.

all_patches installs both the operating system patches required by, and the operating system patches recommended for, the Sun Studio 12 software.

jdk_patches installs the patches required by the JDK software. On Solaris 10 1/06 platforms, two of these patches are kernel patches. Before using this option, see the http://developers.sun.com/sunstudio/documentation/ss12/release_notes.html for more information.

all checks whether the NetBeans 5.5.1 IDE and NetBeans C/C++ Development Pack 5.5.1, JDK software, and operating system patches required by the Sun Studio 12 software are installed, and installs them if they are missing.

--copy-prerequisites
Copies the prerequisite software to a server for use when running the prepare_system command on client systems that will run the Sun Studio 12 software. The software is copied to the prepare_system_prerequisites directory in the Sun Studio 12 installation directory. For example, if the Sun Studio 12 installation directory is the default /opt directory, the prerequisite software is copied to /opt/prepare_system_prerequisites. The prerequisite software requires 1.2 GB of disk space on SPARC platforms running the Solaris OS, 750 MB of disk space on x86 platforms running the Solaris OS, and 200 MB of disk space on Linux platforms.

--show-sla
Displays the software license agreement.

--accept-sla
Asserts that the person installing the software agrees to the terms of the software license agreement. Software installation will not take place until the software license agreement has been accepted.

`--no-links`
Lets you choose not to create symbolic links in the `/usr/bin` directory and `/usr/share/man` directory to the Sun Studio 12 software and man pages. These links are created by default unless you already have symbolic links in `/usr/bin` and `/usr/share/man` to a previous Sun Studio release.

`--no-prodpatch`
Lets you choose not to install Sun Studio 12 product patches, if any are provided.

`--zone all|this`
When installing on a Solaris 10 1/06 server with zones, determines whether the Sun Studio 12 software is installed in the all zones (`all`) or only in the zone in which you are running the batch installer (`this`). The `batch_installer` command must be issued in the zone where the software is to be installed.

`-J` *extra_java_args*
Lets you pass extra arguments to the Java™ virtual machine (JVM) used to run the installer

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Note – The terms "Java virtual machine" and JVM mean a virtual machine for the Java platform.

Graphical User Interface Installer

The graphical user interface installer lets you choose which components and subcomponents of the Sun Studio 12 software you want to install. It automatically runs the system preparation tool to check your system for the prerequisite software, and lets you install any missing software.

To start the graphical user interface installer, type the following in the download directory:

```
./installer &
```

Note – To install the Sun Studio 12 software on a Solaris server for use by clients with a different architecture, include the `-a` *client_architecture* option when you start the installer. To install the software on a SPARC based server for use by x86 based clients, *client_architecture* is `intel-S2`. To install the software on an x86 based server for use by SPARC based clients, *client_architecture* is `sparc-S2`.

Software License Agreement

The Software License Agreement page displays the software license agreement and offers you the choice of accepting it or not. If you click `Yes (Accept License)`, the installer proceeds to the next page. If you click `No`, the installer asks you if you want to exit. You cannot continue with installation until you accept the software license agreement.

Select Options: Install Tab

The Install tab of the Select Options page includes:

- A table that displays the release name, the installation directory, and the installed components for each release of Sun Studio software installed on the system where you are running the installer.
- The `Missing prerequisites` field, which tells you whether the system is missing any of the prerequisite software and lets you install any missing software by clicking Update. The field does not report the absence of the patches required by the JDK software, and the installer does not install them if they are missing.
- The `Installation directory` field, which displays the default installation directory (`/opt` on Solaris platforms and `/opt/sun` on Linux platforms) and lets you change the installation directory by typing a directory path. If you have previously installed some components of the Sun Studio 12 software, the `Installation directory` field displays that installation directory, and the installer will install additional components in the same directory.

Select Options: Advanced Options Tab

The Advanced options tab of the Select Options page offers options you might want to select when installing on a server:

- If you are installing on a Solaris 10 1/06 OS system with zones, the `Zone disposition` buttons let you specify the zone(s) in which you want to install the software:
  - If you are running the installer in the global zone, you can select the appropriate radio button to install the software in `this zone` (the global zone, not visible from local zones) or `all zones` (the global zone, visible from local zones).
  - If you are running the installer in a local zone, you can select the `this zone` radio button to install the software in that local zone. The software will be accessible only from that zone.
- The `Enable cross-install` option lets you enable installation of the Sun Studio 12 software on a server for use by clients with a different architecture. If you select `Enable cross-install`, you can install the Sun Studio 12 software on a SPARC based server for use by x86 based client systems. Or you can install the Sun Studio 12 software on an x86 based server for use by SPARC based client systems. You must have specified the client architecture with the `-a` option when you started the installer.
- The `Copy system prerequisites` option lets you copy the prerequisite software to a server for use when running the `prepare_system` command on client systems that will run the Sun Studio 12 software. The software is copied to the `prepare_system_prerequisites` directory in the Sun Studio 12 installation directory. For example, if the Sun Studio 12 installation directory is the default `/opt` directory, the prerequisite software is copied to `/opt/prepare_system_prerequisites`. The prerequisite software requires 1.2 GB of disk

space on SPARC platforms running the Solaris OS, 750 MB of disk space on x86 platforms running the Solaris OS, and 200 MB of disk space on Linux platforms.

- The `Create /usr/bin symlinks` option lets you choose not to create symbolic links in the `/usr/bin` directory and `/usr/share/man` directory to the Sun Studio 12 software and man pages. These links are created by default unless you already have symbolic links in `/usr/bin` and `/usr/share/man` to a previous Sun Studio release.
- The `Alternate root` field lets you specify a root directory other than the default `/`. All files, including package system information files, are relocated to a directory tree starting in the specified alternate root directory.

Select Components

On the Select Components page, you can select which components of the Sun Studio 12 software you want to install. The disk space requirement for each component is displayed. By default, all three components (Compilers and Tools, Performance Library, and Third-party Source Code) are installed. You can select a component you do not want to install by clicking its checkbox.

You can also choose to install only selected subcomponents of the Compilers and Tools component. To do so, click the + icon next to the component to expand it. Then select any subcomponent you do not want to install by clicking its checkbox.

Ready to Install

This page lists the Sun Studio 12 components to be installed and the total amount of disk space required. When you click Install Now, the installation begins.

Installing

This page displays a progress bar that tracks the progress of the installation. It includes a Stop button that allows you to stop the installation.

Post-Installation Setup

This page is displayed if there are any post-installation steps to be performed. The page lists steps you requested on Select Options page, such as installing missing prerequisite software and copying the prerequisite software to a server. If Sun Studio 12 product patches are available for installation, they are installed unless you click the Disable button.

Installation Summary

This page lists the status of the installation after it has completed. Click Details next to each component to see information on the packages that were installed. Click Close to exit the installer.

Command-Line Installer

The command-line installer offers the same series of interactive steps as the graphical user interface installer in text form.

To start the command-line installer, type the following in the download directory:

```
./installer -nodisplay
```

Note – To install the Sun Studio 12 software on a Solaris server for use by clients with a different architecture, include the `-a` *client_architecture* option when you start the installer. To install the software on a SPARC based server for use by x86 based clients, *client_architecture* is `intel-S2`. To install the software on an x86 based server for use by SPARC based clients, *client_architecture* is `sparc-S2`.

You can exit the command-line installer at any time by typing `!`. To go back to a previous section of the installer, type `<`.

Software License Agreement

The installer displays the software license agreement. Press Enter as many times as needed to display all of the agreement. Then type `yes` and press Enter to accept the agreement. You cannot continue with installation until you accept the software license agreement.

Select Options

- If your system has all of the prerequisite software, the installer reports that no prerequisites are missing. If your system is missing any of the prerequisite software, the missing software is listed, and you are given a choice of installing it or not. Type `2` and press Enter to install all of the missing prerequisite software. The installer does not report the absence of the patches required by the JDK software, and does not install them if they are missing.
- The default installation directory for the Sun Studio 12 is `/opt` on Solaris platforms and `/opt/sun` on Linux platforms. To accept the default directory, press Enter. If you want to change the installation directory, type the name of the directory into which you want to

install the Sun Studio 12 software and press Enter. If you have previously installed some components of the Sun Studio 12 software, the installer displays that installation directory and will install additional components in the same directory.

- If you are installing on a single-user system, type `1` and press Enter to skip the advanced options. If you are installing on a server, type `2` and press Enter to continue to the advanced options.

Advanced Options

Advanced options offers options you might want to select when installing on a server.

- If you are installing on a Solaris 10 1/06 OS system with zones, you can specify the zone in which you want to install the software:
  - If you are running the installer in the global zone, you can choose to install the software in `this zone` (the global zone, not visible from local zones) or `all zones` (the global zone, visible from local zones).
  - If you are running the installer in a local zone, you can choose `this zone` to install the software in that local zone. The software will be accessible only from that zone.
- The installer offers the following optional installation steps:
  - Cross-install: If you are installing the Sun Studio 12 software on a server for use by client systems with a different architecture, type `1` and press Enter to enable cross-install. You must have specified the client architecture with the `-a` option when you started the installer.
  - Copy system prerequisites: If you are installing the Sun Studio 12 software on a server for use by client systems, type `2` and press Enter to prerequisite software to the server for use when running the system preparation tool on client systems that will run the Sun Studio 12 software. The software is copied to the `prepare_system_prerequisites` directory in the Sun Studio 12 installation directory. For example, if the Sun Studio 12 installation directory is the default `/opt` directory, the prerequisite software is copied to `/opt/prepare_system_prerequisites`. The prerequisite software requires 1.2 GB of disk space on SPARC platforms running the Solaris OS, 750 MB of disk space on x86 platforms running the Solaris OS, and 200 MB of disk space on Linux platforms.
  - Create /usr/bin/symlinks: If you do not want the installer to create symbolic links in the `/usr/bin` directory and `/usr/share/man` directory to the Sun Studio 12 software and man pages, type `3` and press Enter to disable creation of these links. These links are created by default unless you already have symbolic links in `/usr/bin` and `/usr/share/man` to a previous Sun Studio release.
  - Type `0` and press Enter when you have finished selecting optional installation steps.
- To set a root directory other than the default `/`, type the name of the directory and press Enter. All files, including package system information files, are relocated to a directory tree starting in the specified alternate root directory.

Select Components

Select any component or subcomponent you do not want to install by typing its number and pressing Enter. When you are finished selecting the components to install, type `0` and press Enter.

Ready to Install

The installer lists the components to be installed, the installation directory, and the disk space required. When you type `1` and press Enter, the installation begins. The installer displays the progress of the installation.

Post-Installation Setup

This page is displayed if there any post-installation steps to be performed. The page lists steps you requested on Select Options page, such as installing missing prerequisite software and copying the prerequisite software to a server. If Sun Studio 12 product patches are available for installation, they are installed unless you type `2` and press Enter.

Installation Details

When the installation is complete, the installer displays the result. Type `1` to see information on the packages that were installed. Type `2` and press Enter to exit the installer.

◆ ◆ ◆ CHAPTER 3

Troubleshooting

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

Installing in a Directory That Is Reached by a Symbolic Link

You can install in a directory where part of the path is a symbolic link. An example for installing in a path reached by a symbolic link is if the default directory `/opt` does not have enough disk space. You need to complete the steps below to prevent the installer from bypassing the symbolic link and installing in an actual filesystem.

Note – For example, if you choose to install in `/opt`, the following steps show you how to create a symbolic link of `/opt/SUNWspro` that points to `/export/opt_SUNWspro`. You can substitute your directory names for the example names.

▼ Preventing the Installer from Bypassing the Symbolic Link

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

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

2. **Save the existing symbolic link by typing:**

   ```
   mv /opt/SUNWspro /mytemp
   ```

3. **Make a new `/opt/SUNWspro` directory, which will serve as a mount point, by typing:**

   ```
   mkdir /opt/SUNWspro
   ```

4. **Mount the target directory so it is available as `/opt/SUNWspro` by typing:**

   ```
   mount -F lofs localhost:/export/opt_SUNWspro /opt/SUNWspro
   ```

5. **Install the product in the `/opt` directory.**

6. **Unmount the target directory by typing:**

   ```
   umount /opt/SUNWspro
   ```

7. **Remove the empty `/opt/SUNWspro` mount point by typing:**

   ```
   rmdir /opt/SUNWspro
   ```

8. **Restore the symbolic link that you moved in step 2:**

   ```
   mv /mytemp /opt/SUNWspro
   ```

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

   ```
   exit
   ```

Product Registry Problems

If you encounter installation or uninstallation problems that involve a corrupt `productregistry` file, you can sometimes use the Solaris™ Product Registry Tool to locate and fix the problem.

Identifying and Fixing a Failed Installation

If some packages are not properly installed, you will have problems using the Sun Studio software. For example, if you used the pkgadd command to install the software, you have corrupted the `productregistry` file. To verify whether all packages are installed properly, follow these instructions.

▼ Verifying Whether All Packages are Installed Properly

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

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

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

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

3. **In the left column of the tool, look at the list under the heading Registered Software.**

   If a yellow triangle appears adjacent to the product name, then the product is not installed properly.

4. **Select the product name and click the Uninstall button. The Uninstall Failed dialog box opens.**

5. **Read the message in the box, and then click OK if you want to uninstall the product.**

   The Interactive Uninstall dialog box opens.

6. **Follow the instructions in the subsequent dialog boxes until uninstallation is complete.**

   Once the uninstallation is complete, you can reinstall the product software using the product installer. See the *Sun Studio 12 Quick Installation* guide for product installation instructions.

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

   ```
   exit
   ```

Fixing a Failed Uninstallation

If the uninstaller quits before all the product files are deleted, rerunning the uninstaller will not delete the remaining product files. The product files have been marked as deleted in the `productregistry` file, so the uninstaller does not remove the remaining files. To completely remove the product files, use the Solaris Product Registry tool, as described in the following procedure:

▼ Removing the Product Files with the Solaris Product Registry Tool

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

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

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

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

3. **In the left column of the tool, select all product names containing SS12 or Sun Studio 12 and click the Uninstall button.**

   The Uninstall Failed dialog box opens.

4. **Read the message in the box, and then click OK if you want to uninstall the product.**

   The Interactive Uninstall dialog box opens.

5 **Follow the instructions in the subsequent dialog boxes until uninstallation is complete.**

Once the uninstallation is complete, you can reinstall the product software using the product installer.

6 **Exit from superuser privileges by typing:**

```
exit
```

What To Do If the `productregistry` File Is Corrupted

If you attempted to fix the failed installation or uninstallation by using the steps in "Identifying and Fix a Failed Installation" or "Fixing a Failed Uninstallation" and you are still having problems, you need to delete the corrupted productregistry file from your system. The `productregistry` file is typically corrupted if you attempt to install or uninstall the software using the `pkgadd` command or `pkgrm` command.

Note – Deleting the `productregistry` file removes the entries for the Sun Studio 12 software and the registry entries for the Solaris Operating System (OS) and other products. Review the steps in "Identifying and Fix a Failed Installation" or "Fixing a Failed Uninstallation" before proceeding with the steps below.

▼ Deleting a Corrupted Product Registry File

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

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

2 **Go to the `productregistry` file by typing:**

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

3 **Remove the `productregistry` file by typing:**

```
rm productregistry
```

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

```
exit
```

Viewing the Installation Log Files

When you install the Sun Studio software, log files that contain a record of the installation are automatically generated.

▼ Troubleshooting Installation Problems By Viewing the Log File

1 **Go to the `logs` directory by typing:**

```
cd /var/sadm/install/logs
```

2 **View the file by typing:**

```
more Sun_Studio_Software_install.A03200125
```

The file extension is different for each log file.

Installing With a Remote Display

The following problems can occur during a remote display installation.

Installation Fails on an NFS-Mounted Filesystem

If the 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. See "Choosing Local Display or Remote Display of the Installer" in the *Sun Studio 12 Quick Installation* guide for more information about installing on an NFS-mounted filesystem.

▼ Checking for Write Permission

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.**

Initializing a ToolTalk Software Session During Remote Display Installation

If the graphical user interface installer stalls during installation, you can initialize a ToolTalk™ software session by doing the following:

▼ Initializing a ToolTalk Session

1. **Exit from the installer.**
2. **If you are not currently superuser (root), become a superuser by typing:**

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

3. **Start the session by typing:**

   ```
   /usr/dt/bin/ttsession -c
   ```

4. **Ensure that the `DISPLAY` environment variable is set. The section "Choosing Local or Remote Display of the Installer" in *Sun Studio 12 Quick Installation* describes how to set the remote display.**
5. **Start the installer by typing:**

   ```
   ./installer
   ```

If the Batch Installer Stalls

If you enter an invalid parameter when you start the batch installer, the installer stalls and does not complete the installation. Some common errors are including two different directory names or invoking the installer when you do not have enough disk space.

▼ Restarting the Batch Installer

1. **View the log files for any error messages by typing:**

   ```
   cd /var/sadm/install/logs
   ```

2. **To stop the installer, press Ctrl+C.**
3. **To install the product using the batch installer, see *Sun Studio 12 Quick Installation*.**

◆ ◆ ◆ APPENDIX A

Sun Studio 12 Components and Packages

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

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

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

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

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

Component	Subcomponent	Packages
Sun Studio 12 Compilers and Tools		
	C Compiler	SPROcc
	C++ Compiler	SPROcpl
		SPROcplx
		SPROtl7x
		SPROtlbn7
		SPROtll7
		SPROtll7x
	Fortran 95 Compiler	SPROf90
		SPROftool

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

Component	Subcomponent	Packages
	DBX Debugging Tools	SPROdbx
		SPROdbxx
		SPROjdbx
		SPROjdbxx
		SPROmrdbx
	Build tools	SPROdmake
	X-Designer	SPROfdxd
		SPROmrxd
	Demos	SPROdemo
	External editors	SPROgvim
		SPROxmbin
		SPROxmshr
		SPROxmsrc
		SPROmrxm
	Support files	SPROcmpl
		SPROctags
		SPROdbxui
		SPROdwrfb
		SPROdwrfx
		SPROfd
		SPROgc
		SPROgcx
		SPROidext
		SPROatd
		SPROipl
		SPROiplg
		SPROiplx
		SPRO177s

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

Component	Subcomponent	Packages
		SPROl77sx
		SPROl90
		SPROl90s
		SPROl90sx
		SPROl90x
		SPROlang
		SPROlangx
		SPROlgc
		SPROmrgc
		SPROlcxs
		SPROlgcx
		SPROlklnt
		SPROm9xs
		SPROm9xsx
		SPROm9xpx
		SPROmr3m
		SPROmripl
		SPROmrmp
		SPROmrcc
		SPROmrcom
		SPROmrcpl
		SPROmrdmk
		SPROmrdwf
		SPROmrftn
		SPROmride
		SPROmrpan
		SPROmrpgn
		SPROmrsbe

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

Component	Subcomponent	Packages
		SPROmrstd
		SPROmrtcv
		SPROpnsn
		SPROplck
		SPROprfan
		SPROprflb
		SPROrdbkb
		SPROrdbkx
		SPROsbe
		SPROsbld
		SPROsbldx
		SPROscl
		SPROsclx
		SPROsmpx
		SPROsmsx
		SPROst14a
		SPROst14h
		SPROst14o
		SPROst14x
		SPROst14y
		SPROsunms
		SPROsvc
		SPROtdemo
		SPROutool
		SPROudchk
		SPROsslnk
		SPROsysprp
Sun Studio 12 Performance Library		

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

Component	Subcomponent	Packages
		SPROplg
		SPROpl
		SPROplx
		SPROpls
		SPROplsx
		SPROmrpl
Sun Studio 12 Third Party Source		
		SPROdwrfs
		SPROrdbks
		SPROctsrc

TABLE A–2 Sun Studio 12 Components and Packages for x86 Based Systems

Component	Subcomponent	Package
Sun Studio 12 Compilers and Tools		
	C Compiler	SPROcc
	C++ Compiler	SPROcpl
		SPROcplx
		SPROtl7x
		SPROtlbn7
		SPROtll7
		SPROtll7x
	Fortran 95 Compiler	SPROf90
		SPROftool
	DBX Debugging Tools	SPROdbx
		SPROdbxx
		SPROjdbx
		SPROjdbxx
		SPROmrdbx

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

Component	Subcomponent	Package
	Build Tools	SPROdmake
	X-Designer	SPROfdxd
		SPROmrxd
	Demos	SPROdemo
	External Editors	SPROgvim
		SPROxmbin
		SPROxmshr
		SPROxmsrc
		SPROmrxm
	Support Files	SPROcmpl
		SPROctags
		SPROdbxui
		SPROdwrfb
		SPROdwrfx
		SPROfd
		SPROgc
		SPROgcx
		SPROidext
		SPROatd
		SPROudchk
		SPROl90
		SPROl90s
		SPROl90sx
		SPROl90x
		SPROlang
		SPROlangx
		SPROlgc
		SPROlgcx

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

Component	Subcomponent	Package
		SPROmrgc
		SPROm9xs
		SPROmr3m
		SPROmrcc
		SPROmrcom
		SPROmrcpl
		SPROmrdmk
		SPROmrdwf
		SPROmrftn
		SPROmride
		SPROmrpan
		SPROmrpgn
		SPROmrsbe
		SPROmrstd
		SPROmrtcv
		SPROpnsn
		SPROprfan
		SPROprflb
		SPROrdbkb
		SPROrdbkx
		SPROsbe
		SPROsbld
		SPROsbldx
		SPROscl
		SPROsclx
		SPROsmpx
		SPROsmsx
		SPROstl4a

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

Component	Subcomponent	Package
		SPROstl4h
		SPROstl4o
		SPROstl4x
		SPROstl4y
		SPROsunms
		SPROsvc
		SPROtdemo
		SPROutool
		SPROlklnt
		SPROmrmp
		SPROsslnk
		SPROsysprp
Performance Library		
		SPROplg
		SPROpl
		SPROplx
		SPROpls
		SPROplsx
		SPROmrpl
		SPROopl
		SPROiplg
		SPROiplx
		SPROmripl
Sun Studio 12 Third Party Source		
		SPROdwrfs
		SPROrdbks
		SPROctsrc

TABLE A–3 Sun Studio 12 Components and RPM Packages for Linux Platforms

Component	Subcomponent	RPM
Sun Studio 12 Compilers and Tools		
	C Compiler	`sun-cc`
	C++ Compiler	`sun-cpl`
		`sun-cplx`
		`sun-tll7`
		`sun-tlbn7`
		`sun-tl7x`
		`sun-tll7x`
	Fortran 95 Compiler	`sun-ftool`
		`sun-f90`
	DBX Debugging Tools	`sun-dbx`
		`sun-dbxx`
		`sun-jdbx`
		`sun-jdbxx`
		`sun-mrdbx`
	Build Tools	`sun-dmake`
	X-Designer	`sun-fdxd`
		`sun-mrxd`
	External Editors	`sun-gvim`
		`sun-xmbin`
		`sun-xmshr`
		`sun-xmsrc`
		`sun-mrxm`
	Support Files	`sun-dwrfb`
		`sun-lang`
		`sun-rtm`
		`sun-svc`

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

Component	Subcomponent	RPM
		sun-mrlnx
		sun-rtmx
		sun-dbxui
		sun-l90
		sun-l90s
		sun-idext
		sun-atd
		sun-l90sx
		sun-l90x
		sun-langx
		sun-mrdmk
		sun-mrdwf
		sun-mride
		sun-mr3m
		sun-mrcc
		sun-mrcom
		sun-mrcpl
		sun-mrftn
		sun-mrstd
		sun-mrpan
		sun-nbreg
		sun-pnsn
		sun-prfan
		sun-prflb
		sun-scl
		sun-sclx
		sun-tdemo
		sun-udchk

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

Component	Subcomponent	RPM
		sun-st14a
		sun-st14h
		sun-st14o
		sun-st14x
		sun-st14y
		sun-sysprp

◆ ◆ ◆ APPENDIX B

Patch Identification Numbers and Descriptions

Operating system patches are provided for the Sun Studio 12 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, they are installed by the `prepare_system` command, the `batch_installer` command, the graphical user interface installer, and the command-line installer at your request.

Table B–1 lists the patch identification numbers and descriptions for the Solaris 9 OS on SPARC based systems.

Table B–2 lists the patch identification numbers and descriptions for the Solaris 9 OS on x86 based systems.

Table B–3 lists the patch identification numbers and descriptions for the Solaris 10 1/06 OS on SPARC based systems.

Table B–4 lists the patch identification numbers and descriptions for the Solaris 10 1/06 OS on x86 based systems.

TABLE B–1 Patches for Solaris 9 OS on SPARC Based Systems

Patch Identification Number	Patch Description
112963-26	Linker patch
111711-12	32-Bit Shared library patch for C++
111712-12	64-Bit Shared library patch for C++
111703-04	`/usr/ccs/bin/sccs` and `/usr/ccs/bin/make` patch
117560-06	`libmtsk` patch
111722-05	Math Library (`libm`) patch

TABLE B–1 Patches for Solaris 9 OS on SPARC Based Systems *(Continued)*

Patch Identification Number	Patch Description
112785-43	X11 6.6.1: Xsun patch
112233–12	Kernel[1]

[1] This patch is not installed by the `prepare_system` command or the installers, but is provided in the product download file and on the product DVD for your convenience.

TABLE B–2 Patches for Solaris 9 OS on x86 Based Systems

Patch Identification Number	Patch Description
113986–18	Linker patch
111713–09	Shared library patch for C++
117559–06	`libmtsk` patch
111728–04	Math library (`libm`) patch
112786-32	X11 6.6.1_x86: Xsun patch
112234–08	Kernel[1]

[1] This patch is not installed by the `prepare_system` command or the installers, but is provided in the product download file and on the product DVD for your convenience.

TABLE B–3 Patches for Solaris 10 1/06 OS on SPARC Based Systems

Patch Identification Number	Patch Description
120753-05	`libmtsk` patch
119254–19	Install and Patch Utilities patch

TABLE B–4 Patches for Solaris 10 1/06 OS on x86 Based Systems

Patch Identification Number	Patch Description
120754–05	`libmtsk` patch
119255–19	Install and patch utilities patch

◆ ◆ ◆ APPENDIX C

JDK Software Required Patch Identification Numbers and Descriptions

Java SE Development Kit (JDK) required patches are included in the Sun Studio 12 product download file and on the product DVD. These patches are required for the proper operation of the JDK software with the Solaris OS. This appendix lists the patches that are included. These patches are installed by the `prepare_system` command only if you specify the `-s jdk_patches` option. The absence of these patches on your system is not detected by the `-C` option or the `-s all` of the `prepare_system` command, by the `-p all` option of the `batch_installer` command, by the graphical user interface installer, or by the command-line installer.

Table C–1 lists the patch identification numbers and descriptions for the Solaris 9 OS on SPARC based systems.

Table C–2 lists the patch identification numbers and descriptions for the Solaris 9 OS on x86 based systems.

Table C–3 lists the patch identification numbers and descriptions for the Solaris 10 1/06 OS on SPARC based systems.

Table C–4 lists the patch identification numbers and descriptions for the Solaris 10 1/06 OS on x86 based systems.

TABLE C–1 Patches Required by the JDK Software for Solaris 9 OS on SPARC Based Systems

Patch Identification Number	Patch Description
111711-16	32-Bit Shared library for C++
111712-16	64-Bit Shared library for C++
113886-38	OpenGL 1.3: OpenGL Patch for Solaris (32-bit)
113887-38	OpenGL 1.3: OpenGL Patch for Solaris (64-bit)
113096-03	X11 6.6.1: `OWconfig` patch

TABLE C–1 Patches Required by the JDK Software for Solaris 9 OS on SPARC Based Systems *(Continued)*

Patch Identification Number	Patch Description
112785-56	X11 6.6.1: Xsun patch
112963-25	Linker

TABLE C–2 Patches Required by the JDK Software for Solaris 9 OS on x86 Based Systems

Patch Identification Number	Patch Description
112786-45	X11 6.6.1_x86: Xsun
111713-13	32-Bit Shared Library for C++
113986-21	Linker

TABLE C–3 Patches Required by the JDK Software for Solaris 10 1/06 OS on SPARC Based Systems

Patch Identification Number	Patch Description
118833–24	Kernel
119578-29	FMA patch
120900-04	`libzonecfg` patch
121133-02	Zones library and zones utility patch
118822-30	Kernel
119254-27	Install and Patch Utilities patch

TABLE C–4 Patches Required by the JDK Software for Solaris 10 1/06 OS on x86 Based Systems

Patch Identification Number	Patch Description
121334-04	`zoneadmd`, `zlogin` and `zoneadm`
120901-03	`libzonecfg`
119255-27	Install and patch utilities
117435-02	`biosdev`
118344-13	Fault Manager
121127-02	`umountall.sh`
113000-07	`SUNWgrub`
121264-01	`cadp160` driver
118844-30	Kernel

TABLE C–4 Patches Required by the JDK Software for Solaris 10 1/06 OS on x86 Based Systems *(Continued)*

Patch Identification Number	Patch Description
118855-19	Kernel
119964-07	Shared library for C++

◆ ◆ ◆ APPENDIX D

Version Numbers of Sun Studio 12 Software Components

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

TABLE D–1 Version Numbers of Sun Studio 12 Components

Component	Version Number
C	5.9
C++	5.9
Fortran 95	8.3
dbx	7.6
dmake	7.8
IDE	8.0
Locklint	2.6
OpenMP Support	2.5
Performance Analyzer	7.6
Thread Analyzer	7.6
Tools.h++	7.1.0
Standard C++ Library	5.9
Sun Performance Library	4.4
STLport	4.5.3
X-Designer	7.9

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