# Installation Instructions

## Contents

## Understanding Release Streams

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- "Overview of Release Streams" on page 2
- "Determining Your Current Release Stream" on page 5
- "Switching Release Streams" on page 6

### Overview of Release Streams

Beginning with IRIX 6.5, a new software release process delivers IRIX upgrades to you in a more easily manageable and consistent fashion.

In this new process, a family of releases is anchored with the initial major operating system release. During your first upgrade to an intermediate release, known as an *overlay,* you will be asked to choose a release stream, which becomes the stream automatically chosen for you in subsequent IRIX 6.5.*x* upgrades.

Because 6.5.*x* releases are cumulative, you do not need to upgrade to the previous 6.5.*x* release in order to upgrade to a new one.

For example, if you are running 6.5.1, and want to upgrade to 6.5.3, you do not need to upgrade to 6.5.2 before you upgrade to 6.5.3. Instead, you may upgrade directly from 6.5.1 to 6.5.3.

Similarly, if you are running a pre-6.5 version of IRIX you can install the 6.5 and 6.5.*x* software at the same time. For example, if you are running 6.2, and want to upgrade to 6.5.3, you do not need to upgrade to 6.5, then 6.5.1, then 6.5.2, before you upgrade to 6.5.3. Instead, you may upgrade directly from 6.2 to 6.5.3.

The sections that follow describe these concepts in more detail.

**Understanding Release Streams**

Overlay releases are divided into two sets of products, called release streams, as described below. Both streams are on the same CDs.

| **A maintenance stream contains:** | **A feature stream contains:** |
|---|---|
| ■ Accumulated bug fixes | ■ Accumulated bug fixes |
| ■ Basic support for new hardware and hardware upgrades | ■ Basic support for new hardware and hardware upgrades |
| | ■ New software features |

Choose the **maintenance stream** if you want to upgrade your system with only the fixes that are essential to maintaining stability and compatibility. Choose the **feature stream** if you want the maintenance stream content *plus* new software features.

Once you choose a release stream, it becomes your default upgrade path. For example, if you chose the feature stream for 6.5.2, then when you upgrade to 6.5.3, Software Manager (or Inst) will assume you wish to install from the feature stream content. "Switching Release Streams" on page 6 tells you how to change streams if you change your mind after an upgrade.

**Understanding the "Release Family"**

Major IRIX releases are those in which Silicon Graphics performs major infrastructure work. They are generally backward compatible and are the releases in which support for older platforms and software is discontinued. Major releases occur on cycles of approximately 24 months, and they are released on all platforms that are supported at the time of the release.

Intermediate releases, called overlays, are used to fix problems or add enhancements and new hardware support. These releases are guaranteed to maintain backward and forward binary compatibility, which means that applications built on any member of a release family will run correctly on other members of that release family. Overlay releases are cumulative, unless otherwise specified. Therefore, each overlay release includes the fixes and features from the previous overlay release. This allows you to upgrade to the most current release in one step.

**Advantages: System Administration and Compatibility**

IRIX 6.5 overlay releases support all platforms supported by the major 6.5 release, as well as later platforms, and therefore system administrators can

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maintain just one network distribution or set of CDs to support all Silicon Graphics systems and peripherals. Also, because these overlay releases are cumulative, system administrators do not have to create archives of IRIX release upgrade media.

For developers, application development will be easier because releases provide support for all platforms, and release families are backward and forward compatible within the major operating system line (assuming programs are not written to explicitly require new features introduced in any of the intermediate releases).

## Determining Your Current Release Stream

If your system is running a 6.5.*x* version of IRIX, it will either be on the maintenance or feature release stream.

**Note:**   If the system is running IRIX 6.5 or earlier, a release stream has not yet been designated. You will be asked to choose the release stream the first time you install an overlay.

You can determine a system's current release stream in one of two ways:

| In Software Manager: | In a shell: |
|---|---|
| ■ Open Software Manager by choosing System > Software Manager from the Toolchest. <br><br> ■ Below the *Lookup* button you see either **Stream: Maint** or **Stream: Feat**. "Maint" indicates maintenance stream and "Feat" means feature stream. | ■ Enter `uname -R` <br><br> ■ The output line includes an IRIX version number that ends with `f` or `m`, where `m` indicates maintenance and `f` indicates feature. |

### Switching Release Streams

This section tells you how to change the release stream that has been previously designated on your system. If your system is running a 6.5 or earlier version of IRIX, this section is not yet relevant for you—release streams began with 6.5.1. If you don't want to change release streams, proceed to the installation instructions (refer to the table of contents on page 1).

You can switch streams in either of the following situations:

- When upgrading from one 6.5.*x* version of IRIX to another 6.5.*x* version

- When you have already installed a 6.5.*x* release using one stream, but would like to switch to the other stream

Switching streams is similar to the IRIX 6.5.*x* upgrade on 6.5. or later, with a few important exceptions.

**To switch release streams:**

To switch streams, read the following applicable exceptions first, then incorporate them into the steps listed in "Installing an IRIX 6.5.x Release on IRIX 6.5 or Later" on page 11. (If your system does not have a graphical interface, see "Installing 6.5.x on a System Without a Graphical Interface" on page 43.)

- When you open Software Manager, choose File > Set Preferences... In the dialog that appears, scroll to `stream`, select it, then click to choose "Maint" or "Feature" from choices that appear on the right. Click *Apply*.

  **Note:** If you are using Inst to switch streams, use the Inst commands *set stream feature* or *set stream maint* when the Inst prompt first appears.

- For **Feature to Maintenance** switches only:

  – open your core IRIX 6.5 CDs during the step in which you open the overlay CDs. (Do this during the *Overlay Installation*, not the *Patch Installation*.)

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– use these installation commands (for product selection) instead of the ones given in the regular instructions:

**set neweroverride on**

**install downgrades**

**install upgrades**

**install prereqs**

**keep incompleteoverlays**

You may see `no matches` messages. This does not indicate an error.

• For **Maintenance to Feature** switches only:

You may not have to open any 6.5 CDs. If you do need to, you will be prompted with conflict messages that look similar to the following (the product names and numbers will differ):

```
Overlay product eoe.sw.base (1275066720) cannot be
installed because of missing prerequisites: base
product eoe.sw.base (1274627340)

   1a. Do not install eoe.sw.base (1275066720)

   1b. Also install base product eoe.sw.base
   (1274627340) from an additional distribution --
   insert another CD or specify another software
   distribution
```

If you see a conflict message like this, choose to open the distribution or CD that contains the missing product, then select the product for installation. In Software Manager, follow these steps:

1. Choose "Open new distribution to resolve conflict."

2. Insert the CD that contains the missing product. (If you don't know which CD to use, see Note below.)

3. Type `/CDROM/dist` (or the remote distribution location if applicable) in Distribution field of the "Open Additional Distribution" dialog.

4. Click *Add.*

5. Click to select the missing product.

6. Continue with the installation.

**Note:** If you aren't sure which 6.5 CD the missing product is on, you have two choices:

• Find out which CD it is on by looking the product up in the CD Descriptions sections of the Start Here pages. (See "How to Access the Start Here Pages" on page 60.)

- Or, insert each of the 6.5 CDs and enter the selection commands after opening each CD:

```
keep *
```

```
install standard
```

```
install prereqs
```

```
keep incompleteoverlays
```

Once a new release stream has been chosen, Software Manager will display only the products that are in the chosen stream.

## Installing an IRIX 6.5.*x* Release on IRIX 6.5 or Later

**In order to follow these instructions, your system must already be running IRIX 6.5 or later.** If it is not, follow "Installing an IRIX 6.5.x Release on a Pre-6.5 Version of IRIX" on page 24. To install on a system that does not have a graphical interface, see "Installing Software on a System Without a Graphical Interface" on page 42.

Because 6.5.*x* releases are cumulative, you do not need to upgrade to the previous 6.5.*x* release in order to upgrade to a new one.

For example, if you are running 6.5.1, and want to upgrade to 6.5.3, you do not need to upgrade to 6.5.2 before you upgrade to 6.5.3. Instead, you may upgrade directly from 6.5.1 to 6.5.3.

If you need to determine your system's IRIX version, enter the following in a shell window: `uname -R`

This section includes:

- "Quick Summary for Experienced Users" on page 12
- "Detailed Instructions: Installing 6.5.x on IRIX 6.5 or Later" on page 14

## Quick Summary for Experienced Users

All users should follow the "Detailed Instructions: Installing 6.5.x on IRIX 6.5 or Later" on page 14. However, this section provides a quick summary for experienced Inst users.

1. **Preparation Summary**

   Print or check the Start Here pages for information you need before you begin, such as:

   - Minimum system requirements for this release

   - Any major installation caveats

   See "How to Access the Start Here Pages" on page 60. (The Start Here pages include additional useful information, such as descriptions of each CD.)

   If you want to switch to a different release stream, see "Switching Release Streams" on page 6.

2. **Patch Installation Summary**

   In order to do a live (not miniroot) upgrade, you need the "Installation tools to support overlays" patch. If not, install it from the */CDROM/installtools* directory on the Installation Tools and Overlays CD. Exit Inst or Software Manager after you install it.

Summary for experienced users

### 3. Overlay Installation Summary

Use Inst or Software Manager to install products from the CDs you received in your overlay package.

Important notes:

- Open IRIX 6.5.*x* Installation Tools and Overlays first.
- Each CD must be inserted and read by Software Manager before you begin the installation selections.
- To install upgrades and related (prerequisite) products:

```
Inst> keep *

Inst> install standard

Inst> install prereqs

Inst> keep incompleteoverlays
```

- If you haven't already chosen a stream in a previous installation, you will be prompted to select the maintenance or feature stream. See "Overview of Release Streams" on page 2 for details.

### 4. Postinstallation Summary

Although every product has an associated release note that informs you of any major bugs and workarounds, Silicon Graphics has collected information on bugs that could most *significantly* affect your experience once you upgrade, and posted them as "Caveats to Read

After Upgrading." This documentation is installed on your system, by default. You can see them after you restart and log in. To do so, bring up a Web browser and enter this address:
`file:/var/www/htdocs/WhatsNew/precaveats.html`

In addition to reviewing this list, you may want to check "Caveat and Release Note Updates" at http://support.sgi.com/6.5/ for any late-breaking information.

### Detailed Instructions:
### Installing **6.5.***x* **on IRIX 6.5 or Later**

**Before you Begin**

1. Print or check the Start Here pages for information you need before you begin, such as:

   • Minimum system requirements for this release

   • Any major installation caveats

   See "How to Access the Start Here Pages" on page 60.

   **Note:** The Start Here pages include additional useful information, such as descriptions of each CD.

**Patch Installation**

To be able to perform a live (as opposed to miniroot) installation of the 6.5.*x*
installation, first install the "Installation tools to support overlays" patch as
described in the following steps.

2.  Follow the instructions below to bring up Software Manager and the distribution that contains the patch:

| If installing from a CD connected to **your system:** | If installing from a distribution or CD on a **remote** system: |
| --- | --- |
| ■ Insert the "Installation Tools and Overlays" CD in the CD drive. | ■ From your Toolchest, choose System > Software Manager. |
| ■ Open Software Manager by double-clicking the CDROM icon on your desktop. | ■ In the Available Software field, enter the remote system's name and the location of the *installtools* directory of the "Installation Tools and Overlays" distribution. |
| ■ If a README window appears, read it and click *Dismiss.* | For example, if it is in a CD drive on a remote system named *mars*, enter: |
| ■ Edit the Available Software field so that it displays the *installtools* directory. Enter: | `mars:/CDROM/installtools` |
| `/CDROM/installtools` | ■ If a README dialog appears, read it and click *Dismiss.* |

**Note:** If a network error message appears, refer to "Troubleshooting Remote Installations" on page 54.

A Readme window appears. Read it and click *Dismiss*.

3. Click the *Customize Installation...* button.

4. Open the Software menu and make sure that "Short Product Names" is *not* selected. (A check mark indicates that it is selected.)

5. Confirm that your system needs this patch:

   ■ If, in the Software Inventory list, next to "Installation tools to support overlays," you see *New* or *Upgrade*, proceed to step 6 to install the patch.

   ■ If you see the phrase *Older Version* or *Same Version* next to "Installation tools to support overlays," this patch is already installed. **Quit** Software Manager and cancel the installation, then proceed to step 9 to begin the overlay installation.

6. Make sure that the "Installation tools to support overlays" patch is selected.

7. Click the *Start* button.

8. When the installation is complete, choose File > Quit. (Do not install any other products yet.)

**Overlay Installation**

The "Installation tools to support overlays" patch must be installed (as described above) before you begin step 9.

9. Follow the instructions below to bring up Software Manager and the software distribution:

If installing from a CD connected to **your system:**

- The "Installation Tools and Overlays" CD should still be in the CD drive. If it isn't, insert it in the drive now.

- Open Software Manager by double-clicking the CDROM icon on your desktop.

    The Available Software field should display `/CDROM/dist`.

If installing from a distribution or CD on a **remote** system:

- From your Toolchest, choose System > Software Manager.

- Enter the remote system's name and the location of the "Installation Tools and Overlays" distribution in the Available Software field.

    For example, if it is in a CD drive on a remote system named *mars*, enter:

    **mars:/CDROM/dist**

**Note:** If a network error message appears, refer to "Troubleshooting Remote Installations" on page 54.

10. Click the *Customize Installation...* button.

11. As Software Manager begins to read the CD, a dialog will ask you to select a software stream if you have not already done so in a previous installation. If you aren't sure what to choose, see "Overview of Release Streams" on page 2 for more information about release streams.

    If you *have* selected a release stream during a previous installation, but want to switch to a different stream during this installation, read the special instructions given in "Switching Release Streams" on page 6.

    **Note:** Unlike patches or patchsets, the files that are replaced in a release stream are not saved during installation. Therefore, if you wish to change release streams after your initial choice, you may need to use CDs from the major release (IRIX 6.5) during the installation. Details are in "Switching Release Streams" on page 6.

12. A dialog prompts you to insert any other CDs that were included in the IRIX overlay package (for example, any WorldView language support CDs).

The CDs must be opened now because Software Manager needs to read the product descriptions before you begin the installation selections.

To open the CDs:

■ Eject the current CD and insert the next one. (See the table below for location-specific instructions.)

■ Click the *Add* button.

■ When all CDs have been added, click *Done*.

| Software location: | To replace the CD or distribution: |
|---|---|
| CD | Eject the current CD by selecting the CDROM icon (on the desktop of the system connected to the CD drive), holding down the right mouse button, and choosing Eject CDROM. (Alternatively, enter `eject /CDROM` in a shell.) |
| Distribution Directory | Open the next directory, for example: `open mars:/irix/cd2` |

13. To enter the install commands, the Command pane must be open. If it does not appear at the bottom of the Software Manager window, choose Panes > Command.

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**Note:** If you are switching from the Feature to the Maintenance stream, use the special commands given in "Switching Release Streams" on page 6.

To install upgrades and related (prerequisite) products, enter each of the following lines in the Command field at the bottom of the window. (Press **Enter** after you type each line.)

**keep \***

**install standard**

**install prereqs**

**keep incompleteoverlays**

You may see a `no matches` message regarding `prereqs`, `standard`, or `incompleteoverlays`. This does not indicate an error.

**Note:** These commands are recommended because they significantly reduce installation conflicts. Alternatively, you can click to select or deselect products. A red check mark indicates that the product is selected for installation.

14. If there are installation conflicts, the *Conflicts* button text turns red. To display and resolve conflicts, click the *Conflicts* button.

   • If you need to resolve conflicts by opening a CD, the installation selections you already made may be altered on the CD you open. Review what is selected on the CD and deselect or reselect as needed. Or re-enter the commands given in step 13. ***Exception****: If you are*

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> *switching from the Feature to the Maintenance stream you must use the special commands given in "Switching Release Streams" on page 6.*

- If a conflict gives you the option of deselecting a product with "eoe" or "Execution Environment" in the product name, *do not* choose to deselect the product. The operating system needs "eoe" products in order to function properly. ***Exception**: You do not have to install "eoe" products that are man (manual) pages or relnotes (release notes).*

- If you deselected subsystems, conflicts may be generated by remaining patches that go with the deselected subsystems. However, because such patches go with subsystems you are not installing, you do not need to install them.

15. Click the *Start* button.

    You are prompted to open one or more specific CDs for the actual installation. If necessary, refer to the table in step 12 for details on opening additional CDs.

16. When a dialog appears that says "Installations and removals were successful," select *Restart the system now* and click *OK*.

    Restarting completes the installation process.

**Postinstallation**

Now that the IRIX operating system is upgraded, you can also use Software Manager to select and install any new products that were included with your

upgrade package. See "Installing Applications on a Workstation" on page 39 or "Installing Applications From a Remote CD Drive" on page 40.

Although every product has an associated release note that informs you of any major bugs and workarounds, Silicon Graphics has collected information on bugs that could most *significantly* affect your experience once you upgrade, and posted them as "Caveats to Read After Upgrading." These caveats are installed on your system, by default. You can see them after you restart and log in. To do so, bring up a Web browser and enter this address:
`file:/var/www/htdocs/WhatsNew/precaveats.html`

In addition to reviewing this list, you may want to check "Caveat and Release Note Updates" at http://support.sgi.com/6.5/ for any late-breaking information.

## Installing an IRIX 6.5.*x* Release on a Pre-6.5 Version of IRIX

Use these instructions if you have not yet upgraded to 6.5, or if you are installing onto a clean disk. Using these instructions, you will install both the 6.5.*x* upgrade and the 6.5 operating system at the same time.

For example, if you are running 6.2, and want to upgrade to 6.5.3, you do not need to upgrade to 6.5, then 6.5.1, then 6.5.2, before you upgrade to 6.5.3. Instead, you may upgrade directly from 6.2 to 6.5.3.

If you need to determine your workstation's IRIX version, enter the following in a shell window: `uname -R` (On systems running releases prior to 6.2, enter `uname -r`)

This section includes:

- "Quick Summary for Experienced Inst Users" on page 25

- "Detailed Instructions: Installing 6.5.x on a Pre-6.5 Version of IRIX" on page 27

## Quick Summary for Experienced Inst Users

All users should follow the steps in "Detailed Instructions: Installing 6.5.x on a Pre-6.5 Version of IRIX" on page 27. However, this section provides a quick summary of the process for experienced Inst users.

1. **Preparation Summary**

   - Collect the CDs you need (listed in step 1 of "Detailed Instructions: Installing 6.5.x on a Pre-6.5 Version of IRIX" on page 27).

   - Print or check the Start Here pages for information you need before you begin, such as minimum system requirements and any relevant installation caveats for this release. (See "How to Access the Start Here Pages" on page 60.)

2. **Preinstallation Summary**

   - If you are using CDs, insert the IRIX 6.5.*x* Installation Tools and Overlays CD.

   - Go to the miniroot.

3. **CD or Distribution Reading Summary**

   - Before you enter any selection commands, you must correctly open all the CDs (described in steps 7 through 12 of "Detailed Instructions: Installing 6.5.x on a Pre-6.5 Version of IRIX" on page 27) so that Inst can read the product descriptions on *each* of the CDs or distribution directories.

Summary for experienced users

(You will be prompted to insert specific CDs again during the installation, but all the CDs must be read now in order to prevent *many* installation conflicts.)

- Open IRIX 6.5.*x* Installation Tools and Overlays first.

- You will be prompted to select the maintenance or feature stream. See "Overview of Release Streams" on page 2 for details.

4. **Product Selection Summary**

To install upgrades and related (prerequisite) products:

```
Inst> keep *
```

```
Inst> install standard
```

```
Inst> install prereqs
```

```
Inst> keep incompleteoverlays
```

5. **Installation Summary**

- Enter **go**, and resolve conflicts if necessary.

- In some cases, the message that indicates which CD to insert may include `Error/Interrupt Menu`—this does not signify a problem. Insert the requested CD, and at the Interrupt prompt enter **retry**.

6. **Postinstallation Summary**

Although every product has an associated release note that informs you of any major bugs and workarounds, Silicon Graphics has collected information on bugs that could most *significantly* affect your experience once you upgrade, and posted them as "Caveats to Read After Upgrading." These caveats are installed on your system, by default. You can see them after you restart and log in. To do so, bring up a Web browser and enter this address:
**`file:/var/www/htdocs/WhatsNew/precaveats.html`**

In addition to reviewing this list, you may want to check "Caveat and Release Note Updates" at http://support.sgi.com/6.5/ for any late-breaking information.

### Detailed Instructions:
### Installing **6.5.***x* **on a Pre-6.5 Version of IRIX**

**Before You Begin**

1. Confirm that you have the appropriate CDs or distributions. At the minimum, you need:

   - The latest 6.5.*x* Installation Tools and Overlays
     **(use this *instead* of the 6.5 Installation Tools CD)**.

- Any other CDs that came with the overlay package.

- These CDs from the core 6.5 release package:

    – IRIX 6.5 Foundation 1

    – IRIX 6.5 Foundation 2

    – IRIX 6.5 Applications (use if a newer Applications CD was not included in the 6.5.*x* package)

    – IRIX 6.5 Development Foundation (use if you are a developer)

    – IRIX 6.5 Development Libraries (use if you are a developer)

- In addition to the CDs listed above, you probably received other CDs with your IRIX 6.5 package, depending on your configuration. For example, there are separate CDs for NFS and SoftWindows. If you have already installed older versions of any of these products, upgrade them during this installation. If you do not open a CD that contains a product you have installed, "conflict" messages during installation will prompt you to open it.

2. Print or check the Start Here pages for information you need before you begin, such as:

- Minimum system requirements for this release

- Any major installation caveats

See "How to Access the Start Here Pages" on page 60.

**Note:** The Start Here pages include additional useful information, such as descriptions of each CD.

**Preinstallation**

3. If it isn't already in the CD drive, insert the IRIX 6.5.*x* Installation Tools and Overlays CD. (If you are using a distribution directory instead of a CD, skip this step—you will open the Installation Tools directory in step 7.)

   **Note:** Because you need the new installation tools, *do not* use the *IRIX 6.5* Installation Tools CD for this installation. Use the 6.5.*x* Installation Tools and Overlays CD instead.

4. Bring up the system maintenance menu:

   ■ From the Toolchest, choose System > System Shutdown.

   ■ If a Shut Down dialog appears, click *OK*.

   ■ Press the **Esc** key when you see `Okay to power off.`
   Press the **Esc** key immediately again when you see `Starting up the system.`

   A menu screen should appear now. (If it doesn't, you probably did not press the Esc key soon enough; begin this step again.)

5. Click *Install System Software* on the menu screen.

6.  Specify the location of the new software to install:

| If the location is a CD in a drive connected to **your system:** | If the location is a CD drive or a directory on a **remote system**: |
| --- | --- |
| ■ Click *Local CDROM.* | ■ Click *Remote Directory.* |
| ■ Click *Install.* | ■ Enter the name of the remote system that contains the distribution. |
| ■ Click *Continue* in the dialog box that appears. | ■ Enter the pathname of the distribution source on the remote system. For example, if the source is a CD, enter `/CDROM/dist`. |
| ■ If you are installing onto a clean disk, see the Note below. | ■ Click *Install.* |
| | ■ If a network error message appears, refer to "Troubleshooting Remote Installations" on page 54. |

The new installation tools are loaded and a command-line interface appears.

**Note:** If you are installing on a **clean disk,** a message appears that includes `make new filesystem`, and ends with `[yes/no/sh/help]`. Enter **yes** to make the new filesystem. You are asked to confirm this; enter **yes**. You are asked to enter a block size. If you don't know what to enter, enter **4096**.

**CD or Distribution Reading**

Before you enter any selection commands, you must follow steps 7 through 12 in order to open the CDs or distribution directories so that Inst can read the product descriptions.

You will be prompted to open CDs again during the actual installation, but Inst needs to read all the product descriptions first in order to prevent several product conflicts during installation.

If you have not yet determined which CDs you need, refer to step 1.

7. To tell Inst to read the Installation Tools and Overlays, enter the appropriate command at the Inst prompt, as described below (depending on the software location):

| Software location: | To open the installation tools: |
| --- | --- |
| Local CD | Enter **open /CDROM/dist** |
| Remote CD | Open the CD distribution directory on the remote system, for example: **open mars:/CDROM/dist** |
| Distribution Directory | Open the pathname for the Installation Tools and Overlays CD, for example: **open mars:/irix/tools** |

A Readme message appears.

8. You will see:
```
1. Place me on the maintenance stream.
2. Place me on the feature stream.
3. Cancel
```

Enter **1** or **2**.

If you are not sure which stream to choose, refer to "Overview of Release Streams" on page 2 for clarification. Unlike patches or patchsets, the files that are replaced in a release stream are not saved during installation.

Therefore, if you wish to change release streams after your initial choice, you may need to use CDs from the major release (IRIX 6.5) during the installation. For details, see "Switching Release Streams" on page 6.

9. When you see a message similar to `Install software from:[/CDROM/dist]`, replace the current CD or distribution directory with the next one.

| Software location: | To replace the CD or distribution: |
| --- | --- |
| Local CD | Eject the current CD by pressing the manual eject button on the CD drive. |
| Remote CD | Eject the current CD by selecting the CDROM icon on the remote desktop, holding down the right mouse button, and choosing Eject. (Alternatively, enter `eject /CDROM` in a shell on the remote system.) |
| Distribution Directory | Open the next directory, for example: `open mars:/irix/cd2` |

When installing from a CD, make sure that the prompt indicates that the installation is from the */CDROM/dist* directory. For example, if the prompt changes to reflect the */CDROM/dist/dist6.5* directory, enter `/CDROM/dist` at the prompt.

10. Press **Enter** to instruct Inst to read the new CD or distribution directory.

11. Continue to replace and open each CD or distribution directory in the manner described in the previous two steps. (Use the CDs you collected in step 1.)

    **Note:** Do not enter "done" until all the CDs or distribution directories have been read. If you enter "done" too early, you can continue to insert the rest of the CDs, but you will have to use the *open* command (as described in step 7) each time.

12. When all the relevant CDs or distribution directories have been read, enter **done**.

**Product Selection**

13. After the product descriptions on each CD have been read (as described in the preceding steps), you can make the product selections.

    To install upgrades and related (prerequisite) products:

    ```
    Inst> keep *
    Inst> install standard
    Inst> install prereqs
    Inst> keep incompleteoverlays
    ```

    • You may see a no matches message regarding prereqs, standard, or incompleteoverlays. This does not indicate an error.

- If you are installing onto a clean disk, these commands select and install all standard software, plus necessary prerequisite software and patches.

- If you are familiar with using Inst, you can also choose to install new products now. Otherwise, proceed to the next step.

**Tip:** For information on viewing or altering the products that are marked for installation, save your place on this page and refer to step 17 of "Installing 6.5.x on a System Without a Graphical Interface" on page 43.

**Installation**

14. Enter `go` at the prompt to begin the installation.

    If there are no "Conflict" messages, proceed to the next step.

    If your installation selections have generated conflicts, Inst asks if you want to address them now.

    Enter `1` for "Address these conflicts now."

    To resolve conflicts, enter `conflicts` *choice choice.* For example, enter `conflicts 1b 2a` to indicate that for conflict 1 you choose choice b and for conflict 2 you choose choice a. (You can type several conflict choices on the same line.)

    - If you need to resolve conflicts by opening a CD, the installation selections you already made may be altered on the CD you open. Review what is selected on the CD and deselect or reselect as needed (or re-enter the commands given in step 13).

- If the list of conflicts is long, enter `q` to stop viewing the list and resolve the conflicts currently visible on the screen. Once you've resolved the visible conflicts, enter `conflicts` again to view the remaining conflicts. The other option is to write down all of your choices before you enter them.

- If a conflict gives you the option of deselecting a product with "eoe" or "Execution Environment" in the product name, *do not* choose to deselect the product. The operating system needs "eoe" products in order to function properly. ***Exception****: You do not have to install "eoe" products that are man (manual) pages or relnotes (release notes).*

- If you deselected subsystems, conflicts may be generated by remaining patches that go with the deselected subsystems. However, because such patches go with subsystems you are not installing, you do not need to install them.

15. Enter `go` again when all conflicts are resolved. A preinstallation check begins.

16. When you see a message similar to

    ```
    Please insert the "CD title" CD
    Type Ctrl-C to interrupt
    ```

    insert the specified CD in the CD drive.

    In some cases, the message that indicates which CD to insert may include `Error/Interrupt Menu`—this does not signify a problem. Insert the requested CD, and at the Interrupt prompt enter **retry**.

    It may take several minutes for each CD to install. Eventually a new message will prompt you to insert the next CD or indicate that the installation is complete.

**Postinstallation**

17. When Inst indicates that the installation is finished, enter **quit**.

    Postinstallation processes begin. When they are complete, you see:

    ```
    Ready to restart the system. Restart?
    ```

    Enter **y** to restart the system, which completes the installation process.

    Now that the IRIX operating system is upgraded, you can also use Software Manager to select and install some of the new products that were included with your 6.5.*x* package. See "Installing Applications on a Workstation" on page 39.

    Although every product has an associated release note that informs you of any major bugs and workarounds, Silicon Graphics has collected information on bugs that could most *significantly* affect your experience

once you upgrade, and posted them as "Caveats to Read After Upgrading." These caveats are installed on your system, by default. You can see them after you restart and log in. To do so, bring up a Web browser and enter the following address:
`file:/var/www/htdocs/WhatsNew/precaveats.html`

In addition to reviewing this list, you may want to check "Caveat and Release Note Updates" at http://support.sgi.com/6.5/ for any late-breaking information.

## Installing Applications on a Workstation

To install applications from a CD-ROM drive that is connected to your system, follow the instructions in the following section, "Installing Applications From a Local CD Drive."

To install applications from a CD-ROM drive that is connected to another system on your network, follow the instructions in "Installing Applications From a Remote CD Drive" on page 40.

For more details about software installation, including how to customize your installation and troubleshoot, refer to the Software Manager Help menu.

**Note:** Installing applications is more simple than installing a new version of the IRIX operating system. If you are installing a new version of IRIX, be sure to follow the appropriate instructions (refer to the table of contents on page 1). After you upgrade IRIX, you can log in and use Software Manager to select and install some of the new software products that were included with your IRIX package. To do so, use the directions in this section.

## Installing Applications From a Local CD Drive

1. Insert the CD in the CD drive.
2. Open Software Manager by double-clicking the CDROM icon on your desktop.

3. To install all upgrades and new products, proceed to step 4; otherwise, click *Customize Installation* to select specific products:

   ■ After the Software Inventory is displayed, click to select the products you want to install.

   ■ If a product has release notes, the product name turns blue when you click it. Click again to display release notes, or choose Selected > Release Notes.

4. Click the *Start* button.

5. When the installation is complete, choose File > Quit.

6. Eject the CD from the drive:

   Select the CDROM icon, hold down the right mouse button, and choose Eject.

### Installing Applications From a Remote CD Drive

1. Insert the CD in the remote CD drive.

2. From the Toolchest on your system, choose System > Software Manager.

3. In the Available Software field, enter the remote system's name and the distribution directory path. For example:

   ```
   mars:/CDROM/dist
   ```

   **Note:** If a network error message appears, refer to "Troubleshooting Remote Installations" on page 54.

4. Click the *Lookup* button.

5. To install all upgrades and new products, proceed to step 6; otherwise, click *Customize Installation* to select specific products:

   ■ After the Software Inventory is displayed, click to select the products you want to install.

   ■ If the product has release notes, the product name turns blue when you click on it. Click again to display release notes, or choose Selected > Release Notes.

6. Click the *Start* button.

7. When the installation is complete, choose File > Quit.

8. Eject the CD from the drive:

   Select the CDROM icon on the remote system's desktop, hold down the right mouse button, and choose Eject.

### Installing Software on a System Without a Graphical Interface

This section includes:

- "Installing Applications on a System Without a Graphical Interface" on page 42
- "Installing 6.5.x on a System Without a Graphical Interface" on page 43

### Installing Applications on a System Without a Graphical Interface

If you are installing application software (not upgrading the IRIX operating system), it is not necessary to restart the system and perform the installation from the miniroot. Instead:

1. Open a shell and enter **su** to become superuser.
2. Enter **inst**.
3. Enter **from** followed by the distribution path. For example, if you are installing from a local CD-ROM drive, enter **from /CDROM/dist**
4. Proceed to the **Product Selection** section of "Installing 6.5.x on a System Without a Graphical Interface" on page 43.

### Installing 6.5.*x* on a System Without a Graphical Interface

**Note:** If you are installing onto a system running IRIX 6.5 or later, you can perform a live (non-miniroot) 6.5.*x* installation if you first install the "Installation tools to support overlays" patch. To perform the live installation:

- Install the "Installation tools to support overlays" patch from the *installtools* directory of the Installation Tools and Overlays CD.

- Follow steps 1 through 3 in "Installing Applications on a System Without a Graphical Interface" on page 42.

- If you want to switch to a different release stream, a special command must be entered when the Inst prompt appear—follow the instructions in "Switching Release Streams" on page 6.

- Continue to steps 1 through 3 below, then skip to step 10 below.

If you are installing onto a system running a pre-6.5 version of IRIX, follow all the steps below. You may also be interested in the "Quick Summary for Experienced Inst Users" on page 25.

**Before You Begin**

1. Confirm that you have the appropriate CDs or distributions. At the minimum, you need:

   - The latest 6.5.*x* Installation Tools and Overlays
     **(use this *instead* of the 6.5 Installation Tools CD).**

   - Any other CDs included in your 6.5.*x* package.

- These CDs from the core 6.5 CD package:

  – IRIX 6.5 Foundation 1

  – IRIX 6.5 Foundation 2

  – IRIX 6.5 Applications (use if you did not receive a new Applications CD in the Overlay package)

  – IRIX 6.5 Development Foundation (use if you are a developer)

  – IRIX 6.5 Development Libraries (use if you are a developer)

- In addition to the CDs listed above, you probably received other CDs with your IRIX 6.5 package, depending on your configuration. For example, there are separate CDs for NFS and SoftWindows. If you have already installed older versions of any of these products, upgrade them during this operating system upgrade. If you do not open the CDs that contain products you have installed, "conflict" messages during installation will prompt you to open them.

2. Print or check the Start Here pages for information you need before you begin, such as:

- minimum system requirements for this release

- any major installation caveats

See "How to Access the Start Here Pages" on page 60.

> **Note:** The Start Here pages include additional useful information, such as descriptions of each CD.

**Preinstallation**

3. Insert the 6.5.*x* Installation Tools and Overlays CD in the CD drive. (It is important that you load this CD first.)

   > **Note:** If you are using a distribution directory instead of a CD, skip this step—you will load the Installation Tools directory in a future step.

4. Become superuser and shut down the system:

   ```
   % su
   ```

   ```
   # shutdown
   ```

   You see the message `Do you want to continue with the shutdown (yes/no) [no]`

5. Enter **yes**.

6. If prompted, choose Restart, then press **Esc** to Stop for Maintenance.

7. You are given a list of choices at the system maintenance menu. Enter **2** for Install System Software.

8. Specify the distribution source:

   - If the source is a CD drive connected to the workstation, enter the number for the local CD-ROM selection. (You may have to press **Enter** twice.)

- If the source is on another system:

    – Enter the number for the remote directory selection.

    – When prompted, enter the name of the remote system that contains the distribution.

    – Enter the pathname of the distribution source on the remote system. For example, if the source is a CD, enter **/CDROM/dist**.

9. Press **Enter** to start the miniroot and Inst.

    Rows of dots and various messages appear. Wait for the Inst prompt.

    If you wish to *switch* release streams (for example, to install the feature stream when you previously installed the maintenance stream), a special command must be entered when the Inst prompt appears. Follow the instructions in "Switching Release Streams" on page 6.

    **Note:** If a network error message appears, refer to "Troubleshooting Remote Installations" on page 54.

**CD or Distribution Reading**

Before you enter any selection commands, you must follow steps in this section to open the CDs or distribution directories so that Inst can read the product descriptions.

You will be prompted to open CDs again during the actual installation, but Inst needs to read all the product descriptions first in order to prevent several product conflicts during installation.

If you have not yet determined which CDs you need, refer to step 1.

10. Tell Inst to read the Installation Tools and Overlays by entering the appropriate command at the Inst prompt, as described below (depending on the software location):

| Software location: | To open the installation tools: |
|---|---|
| Local CD | Enter **open /CDROM/dist** |
| Remote CD | Open the CD distribution directory on the remote system, for example: **open mars:/CDROM/dist** |
| Distribution Directory | Open the pathname for the Installation Tools and Overlays CD, for example: **open mars:/irix/tools** |

A Readme message appears.

11. If you have not chosen a release stream during a previous upgrade, you will see

```
1. Place me on the maintenance stream.
2. Place me on the feature stream.
3. Cancel
```

Enter **1** or **2**.

If you are not sure which stream to choose, refer to "Overview of Release Streams" on page 2 for clarification. Unlike patches or patchsets, the files that are replaced in a release stream are not saved during installation.

Therefore, if you wish to change release streams after your initial choice, you may need to reinstall the underlying major IRIX release (IRIX 6.5). For more information, see "Switching Release Streams" on page 6.

12. When you see a message similar to `Install software from:[/CDROM/dist]`, replace the current CD or distribution directory with the next one:

| Software location: | To replace the CD or distribution: |
| --- | --- |
| Local CD | Eject the current CD by pressing the manual eject button on the CD drive. |
| Remote CD | Eject the current CD by selecting the CDROM icon on the remote desktop, holding down the right mouse button, and choosing Eject. (Alternatively, enter `eject /CDROM` in a shell on the remote system.) |
| Distribution Directory | Open the next directory, for example: `open mars:/irix/cd2` |

When installing from a CD, make sure that the prompt indicates that the installation is from the */CDROM/dist* directory. For example, if the prompt changes to reflect the */CDROM/dist/dist6.5* directory, enter `/CDROM/dist` at the prompt.

13. Press **Enter** to instruct Inst to read the new CD or distribution directory.

14. Continue to replace and open each CD or distribution directory in the manner described in the previous two steps. (Use the CDs you collected in step 1.)

   **Note:** Do not enter "done" until all the CDs or distribution directories have been read. If you enter "done" too early, you can continue to insert the rest of the CDs, but you will have to use the *open* command (as previously described) each time.

15. When all the relevant CDs or distribution directories have been read, enter **done**.

**Product Selection**

16. To install upgrades and related (prerequisite) products:

   ```
   Inst> keep *
   Inst> install standard
   Inst> install prereqs
   Inst> keep incompleteoverlays
   ```

   • You may see a no matches message regarding prereqs, standard, or incompleteoverlays. This does not indicate an error.

   • If you are installing onto a clean disk, these commands select and install all standard software, plus necessary prerequisite software and patches.

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17. *(Optional)* If you want to view or alter the products that are marked for installation, enter *list*:

    ```
    Inst> list
    ```

    Each product is marked:

    – The status of products appears as follows: N=new, U=upgrade, S=same, D=downgrade.

    – The selection command that is currently applied to a product appears as follows: i=install, r=remove, k=keep, where "keep" means that the product is not marked for installation.

    – Product types appear in brackets, as follows: [b]=reBoot needed after installation is complete, d=Default, r=Required, p=Patch, o=Overlay, c=Client only.

    You may change the installation status of any product in the distribution listed. Tips for making selections:

    • To select software that is not already selected, use the *install* command. For example: **install ViewKit_dev.sw.lib**

    • If there is software you do not wish to install, use the *keep* command. For example: **keep ViewKit_dev.sw.lib**

**Installation**

18. Enter **go** at the prompt to begin the installation.

    If there are no "Conflict" messages, proceed to the next step.

If your installation selections have generated conflicts, Inst asks you if you want to address them now.

Enter **1** for "Address these conflicts now."

To resolve conflicts, enter **conflicts** *choice choice.* For example, enter **conflicts 1b 2a** to indicate that for conflict 1 you choose choice b and for conflict 2 you choose choice a.

- If you need to resolve conflicts by opening a CD, the installation selections you already made may be altered on the CD you open. Review what is selected on the CD and deselect or reselect as needed.

- If the list of conflicts is long, enter **q** to stop viewing the list and resolve the conflicts currently visible on the screen. Once you've resolved the visible conflicts, enter **conflicts** again to view the remaining conflicts. The other option is to write down all of your choices before you enter them.

- If a conflict gives you the option of deselecting a product with "eoe" or "Execution Environment" in the product name, *do not* choose to deselect the product. The operating system needs "eoe" products in order to function properly. ***Exception****: You do not have to install "eoe" products that are man (manual) pages or relnotes (release notes).*

- If you deselected subsystems, conflicts may be generated by remaining patches that go with the deselected subsystems. However, because such patches go with subsystems you are not installing, you do not need to install them.

19. Enter **go** again when all conflicts are resolved.

    A preinstallation check begins.

20. When you see a message similar to

    ```
    Please insert the "<CD title>" CD
    Type Ctrl-C to interrupt
    ```

    insert the specified CD in the CD drive.

    In some cases, the message that indicates which CD to insert may include `Error/Interrupt Menu`. This does not signify a problem. Insert the requested CD, and at the Interrupt prompt enter **retry**.

    It may take several minutes for each CD to install. Eventually a new message will prompt you to insert the next CD or indicate that the installation is complete.

**Postinstallation**

21. When Inst indicates that the installation is finished, enter **quit**.

    Postinstallation processes begin. When they are complete, you see:

    ```
    Ready to restart the system. Restart?
    ```

    Enter **y** to restart the system, which completes the installation process.

    Although every product has an associated release note that informs you of any major bugs and workarounds, Silicon Graphics has collected information on bugs that could most *significantly* affect your experience once you upgrade, and posted them as "Caveats to Read After

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Upgrading." These caveats are installed on your system, by default. You can see them after you restart and log in. To do so, bring up a Web browser and enter this address:
**`file:/var/www/htdocs/WhatsNew/precaveats.html`**

In addition to reviewing this list, you may want to check "Caveat and Release Note Updates" at http://support.sgi.com/6.5/ for any late-breaking information.

### Troubleshooting Remote Installations

When a network error message appears during a remote installation, review the following to see if they apply to your situation:

- Check the network connection; make sure that the cables are secure.

- If you see an error similar to `Cannot load network (0) bootp()<system name>:/CDROM/dist`, check that *tftp* access to the CDROM is enabled on the *remote* system. Detailed instructions are in the online *Personal System Administration Guide*. To find the section in the book, search for "tftp." You can access the book from the Toolchest (choose Help > Online Books), or from http://techpubs.sgi.com.

- (Only applicable when installing installation tools from a remote source.) If your system does not have its IP address correctly set in *nvram*, you will see these messages in the system monitor when your system tries to reach a remote distribution:

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```
Unable to execute network(0)bootp()[distribution path]

could not connect to server

Cannot load network(0)bootp()[distribution path]

could not connect to server

Unable to continue; press <enter> to return to the
menu.
```

To correct either problem, you need to change the nvram IP address entry to match the IP address that is being used by UNIX. This procedure is described in the following steps:

1. When you see the error messages (shown above) in the System Monitor, press **Enter** to clear messages.

2. From the system maintenance menu, click *Enter System Monitor* (or press **5**)

3. Enter **printenv netaddr** to display the IP address currently set in nvram.

4. If the address displayed is correct, then stop. Your nvram is set correctly, and there is a different problem preventing you from reaching the distribution server. If the address displayed is incorrect (or if you aren't sure), proceed to the next step.

5.  This step depends on whether you know the correct IP address:

| If you know your system's correct IP address: | If you don't know your system's correct IP address: |
| --- | --- |
| ■ Proceed to step 15 below. | ■ If your system was not working properly before starting the installation, or if you are installing on a clean disk, you must stop, find out the correct IP address from your network administrator, and proceed to step 15 below. |
| | ■ If your system was working properly and was already running IRIX, proceed to step 6 below. |

6.  Enter `exit` or click *Done* to return to the maintenance menu.

7.  Choose *Start System* (or press `1`). Wait until your system starts up, then log in normally.

8.  From the Toolchest, choose Desktop > Open Unix Shell.

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9. In the shell window, enter:

   `/usr/etc/netstat -in`

10. Your IP address will be listed as a series of four numbers separated by periods (such as `10.10.61.2`) under the `Address` column, usually in the first line of output. (Ignore the `lo0` line and the `127.0.0.1` address.)

11. To confirm your address, enter:

    `grep ` `hostname` ` /etc/hosts`

    In the above command, be sure to use backward apostrophes (`` ` ``).

    You should see your system's hostname and the same IP address you saw in the previous step.

12. Write down your IP address.

13. From the Toolchest, choose System > System Shutdown, then:

    – If a Shut Down dialog appears, click *OK*.

    – Press the *Esc* key when you see **Okay to power off**.

    – Press the *Esc* key immediately again when you see **Starting up the system**.

    The System Maintenance menu screen should appear now. (If it doesn't, you probably did not press the Esc key soon enough; begin this step again.)

14. Click *Enter System Monitor* on the menu screen (or press **5**).

15.  Enter `setenv netaddr` followed by your IP address.

   For example: `setenv netaddr 10.10.61.2`

16. Enter `exit` or click *Done* to return to the maintenance menu.

17. Return to the installation instructions you were originally following.

**Accessing the Start Here Pages, Troubleshooting Information,
and Release Notes**

This section contains directions on accessing more installation-related
information:

- *(Required for IRIX Operating System Installations Only)* Follow the
  instructions in "How to Access the Start Here Pages" on page 60 before
  you install IRIX.

- *(Optional)* See "How to Access Inst Troubleshooting" on page 61 if you
  want to print out troubleshooting documentation for Inst, the program
  used for installing an operating system.

- *(Optional)* See "How to Access Release Notes" on page 62 to find out how
  to view product release notes. Product release notes typically include
  known bugs and workarounds, a description of changes particular to the
  product release, and compatibility information.

**How to Access the Start Here Pages**

Reviewing the Start Here pages is the first step in upgrading an IRIX operating system, but is not applicable for single application upgrades or installations.

1. Insert your most recent Installation Tools CD. (For example, insert the IRIX 6.5.*x* Installation Tools and Overlays CD instead of the IRIX 6.5 Installation Tools CD.)

2. Open a Web browser and enter this address:

   `file:/CDROM/WhatsNew/yourSystem.html`

   **Note:**  Literally type `yourSystem.html`; do not type your actual system name.

3. Click the Start Here link.

The Start Here pages are also at http://support.sgi.com/6.5/installing.html.

When you are finished with the Start Here pages, return to the relevant installation instructions, depending on what kind of upgrade you are doing:

- "Installing an IRIX 6.5.x Release on IRIX 6.5 or Later" on page 11

- "Installing an IRIX 6.5.x Release on a Pre-6.5 Version of IRIX" on page 24

- "Installing Software on a System Without a Graphical Interface" on page 42

The Start Here pages include key information such as minimum requirements, major (pre ⁄ post-installation) caveats for this release, CD descriptions, and an overview of the new software included in the release. After you complete the upgrade, you can access the Start Here pages by double-clicking the *Welcome_to_SGI* icon on your desktop.

### How to Access Inst Troubleshooting

There is information about troubleshooting network errors during remote installations in "Troubleshooting Remote Installations" on page 54.

You may want to access (or print out) the Troubleshooting section of *IRIX Admin: Software Installation and Licensing.* To access it:

1.  Log in.
2.  Insert the IRIX 6.5 Base Documentation CD into the CD-ROM drive.
3.  Open a shell: From the Toolchest, choose Desktop > Unix Shell.
4.  Go to the *CDROM* directory.

    The default CD-ROM directory location is */CDROM*, so at the shell prompt, enter `cd /CDROM`
5.  Enter `./CDinsight` to launch the IRIS InSight book viewer.
6.  Click the *SGI Admin* tab and double-click the *IRIX Admin: Software Installation and Licensing* book icon.

    The Troubleshooting section is the last section of the book.

**Note:** You can also find this book at the Technical Publications Library Web site at http://techpubs.sgi.com.

### How to Access Release Notes

To view product-specific release notes, follow steps 1 through 4 above, then enter **./CDgrelnotes** to launch the release notes viewer.

### Installing Software Licenses

For products that require a license to run, you must activate a license for that product on your system. You should have received a license information sheet or label from Silicon Graphics. If you do not have this sheet or label, contact Silicon Graphics or your local support provider.

Silicon Graphics uses FLEXlm to license its products. The sections that follow describe how FLEXlm Nodelocked and floating or concurrent licenses are installed using License Manager. (The terms "floating license" and "concurrent license" are interchangeable.)

Additional licensing information can be found at http://www.sgi.com/Products/license.html.

**Installing a FLEXlm Nodelocked License**

To install FLEXlm Nodelocked licenses you must invoke License Manager and install the license. If you are installing a license for XFS Volume Plexing or any other product that must be installed in a directory other than */var/flexlm*, then refer to the release notes for license installation instructions.

To install the license, follow this procedure:

1.  Choose System > License Manager from the Toolchest to open License Manager.

2.  Click the *Install...* button.

3.  Select *FLEXlm Nodelock.*

4.  Click the *OK* button.

5.  Copy all requested fields from the license information sheet or label into the window labelled "License Manager: Install FLEXlm Nodelock License."

6.  Click the *OK* button.

7.  Repeat steps 2 through 6 until all licenses are installed.

8.  Click the *Close* button on the main License Manager window.

You are finished installing the license(s). Save the license information sheet or label; you may need it again later to reinstall your license(s).

### Installing a FLEXlm Floating (Concurrent) License

**Note**: The information in this section should be used only by the system administrator of the license server system. If you are an end user of client software with a floating license that is not functioning, contact your system administrator.

If you are installing a license for a product that must be installed in a directory other than */var/flexlm*, refer to the product's release notes for license installation instructions.

Floating licenses require a network license server. The subsystem license_eoe.sw.flexlm_server must be installed on that system. Verify that it is installed by opening a UNIX shell and entering

```
showprods license_eoe.sw | grep flexlm_server | wc -w
```

If the result is greater than 0 (for example, 7), the subsystem is installed; if the result is 0, you must install *license_eoe.sw.flexlm_server*.

With FLEXlm, a floating license must be installed on the license server and the license file copied to every client system. The license manager daemon, *lmgrd*, should then be started on the license server. You do not need to start license daemons on client systems

To install the license on the license server system using License Manager, follow this procedure:

1. Choose System > License Manager from the Toolchest to open License Manager.

2. Click the *Install...* button.

3. Click *FLEXlm Floating.*

4. Click the *OK* button.

5. If necessary, enter the Server Host Name in the corresponding field. (To find the name, enter the UNIX shell command *uname -n* on the server.)

6. Copy all requested fields from the license information sheet into the "License Manager-Install FLEXlm Floating License" window.

7. Click the *OK* button.

8. Repeat steps 2 through 7 until all licenses for the server are installed.

9. Click the *Close* button on the main License Manager window.

Start the license daemon (only on the license server system):

1. Become superuser.

   In a UNIX shell, enter **su**.

2. Enter **chkconfig flexlm on**

3. Stop the *lmgrd* daemon.

   Enter **/etc/init.d/flexlm stop**

4. Start the *lmgrd* daemon.

   Enter **/etc/init.d/flexlm start**

5.  Exit the root account: enter **exit**

On any system you wish to access this license from, you must copy (or mount) the license file (*/var/flexlm/license_<server_name>.dat*) from the server system into the */var/flexlm/license_<server_name>.dat* file (on all client systems).

You are finished installing the license. Save the license information sheet or label; you may need it again later to reinstall this license.

### Troubleshooting FLEXlm Software Licenses

Use the methods described in this section for basic troubleshooting. See http://www.sgi.com/Products/license.html for more information.

*   To analyze the licenses in the license files, enter the UNIX command

    **/usr/sbin/lmdiag -c /var/flexlm/license.dat**

    (or **/usr/sbin/lmdiag -c /var/flexlm/license_*serverhost*.dat**)

    If you see an error message that says the HOSTID is incorrect:

    –   For a Nodelocked license, enter the UNIX command **/etc/sysinfo -s**. If the result does not match the HOSTID string for that product in the license file, this is the problem.

- For a floating license, on the server system, enter the UNIX command `/etc/sysinfo -s`. Compare the results with the second argument on the SERVER line, which corresponds to the product in question. If the two numbers are not identical, this is the problem.

Conditions that might cause the */etc/sysinfo -s* results and the HOSTID to be different include:

- The license may be for a system different from the one it is installed on.

- The HOSTID may have been entered incorrectly.

- The HOSTID on the system may have changed (replacing the system board or I/O board can change the HOSTID).

• For trouble with a floating FLEXlm license, configure the *lmgrd* daemon on the server to send its output to a log file by adding

```
-c /var/flexlm/license_server_name.dat -l
/var/adm/flexlm.log
```

to the */etc/config/lmgrd.options* file, where */var/adm/flexlm.log* is the log file. (Note that `-l` is the lowercase letter *l*, not the number one.) In a UNIX shell, enter

```
/etc/init.d/flexlm stop; /etc/init.d/flexlm start
```

Look at the log file for error messages.

If the application program (or *lmstat)* cannot connect to the license server, one of several things may be wrong:

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– The license server may be down, or there may be a network problem. Verify that the client system can communicate with the server. In a UNIX shell on the server, enter this command:

```
setenv LM_LICENSE_FILE /var/flexlm/license_server_name.dat
```

Then, enter `/usr/sbin/lmstat -a` to verify that the vendor daemon is running.

In a UNIX shell on the client system, enter `lmstat -a` to check if the system can contact the vendor daemon on the server. Then, from the client system, enter the command `telnet` *hostname portnumber*, where *hostname* and *portnumber* match the SERVER line in the license file.

– The Silicon Graphics vendor daemon may not be running. On the server, verify that it is running by entering the UNIX command `ps -ef | grep sgifd | grep -v grep`. If nothing is returned, then the vendor daemon is not running.

– The application may not be looking at the expected license file. The default license file for Silicon Graphics products is */var/flexlm/license.dat*. Verify the contents of */var/flexlm/licensefile.db* to see what files are being looked at. To view contents lists of all expected license files, enter:

```
more /var/flexlm/licensefile.db
```

- If a warning message appears stating that the license expires in an incorrect number of days, remove or comment out temporary or evaluation license(s) in the */var/flexlm/license.dat* file for this product.

- The License Password may have been entered incorrectly. Check that the letters *l* and *O* were not typed in place of a numeral 1 (one) and 0 (zero).

- Run the *date* command by entering `date`. Make sure the date is not earlier than the Start Date or later than the Expiration Date listed on the license information sheet.

For more information on troubleshooting, refer to Appendix B of the *FLEXlm End User Manual.* This guide is located in the *IRIS InSight Library* (on the EndUser Bookshelf), which you can find by choosing Help > Online Books from the Toolchest.