Installing and Licensing IDL 5.5

RESEARCH SYSTEMS
A Kodak Company

IDL Version 5.5
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Chapter 1:
Introduction

This guide describes how to install and license version 5.5 of the following products:

- **IDL** — This is the standard version of IDL offering full access to all of the software's features including the ability to run and compile programs.

- **IDL Academic Edition** — This version of IDL provides full access to all of the software's features for qualified academic customers.

- **IDL Runtime** — IDL Runtime lets users run IDL applications and other IDL-based programs that have been packaged as IDL `.sav` files. The IDL development environment and the command line are not accessible when using a Runtime license.

About Adobe® Acrobat® Reader

IDL online manuals (which are installed with IDL) require Adobe Acrobat Reader with Search 3.0 or greater. Acrobat Reader 4.0 with Search has been included on your IDL CD-ROM in the `adobe` directory (Windows), the `/rdr_srch` directory (UNIX), and the `Extras` folder (Macintosh). UNIX installation instructions are included in the `instguid.txt` file located in each operating system subdirectory.

Visit the Adobe Systems Web site at `www.adobe.com` for the latest Acrobat Reader information and downloads.

Contacting Research Systems

If you have problems with installing or licensing this software product, contact Research Systems technical support for assistance:

- E-mail: `support@ResearchSystems.com`

- Phone: (303) 413-3920

- Fax: (303) 786-9909

- Web page: `http://www.ResearchSystems.com` — Visit the Tech Tips section on our Web page for Frequently Asked Questions.

International customers should contact their local Research Systems office or distributor for technical support.

Supported Platforms

Supported Platforms

IDL 5.5 supports the following platforms and operating systems:

Platform	Vendor	Hardware	Operating System	Supported Versions
Windows	Microsoft	Intel x86	Windows	98, NT 4.0, 2000
UNIX†	Compaq	Alpha	Tru64 UNIX	5.1
	Compaq	Alpha	Linux	Red Hat 6.2††
	HP	PA-RISC	HP-UX	11.0
	IBM	RS/6000	AIX	4.3
	Intel	Intel x86	Linux	Red Hat 6.0, 7.1††
	SGI	Mips	IRIX	6.5.1
	SUN	SPARC	Solaris	8
	SUN	SPARC (64-bit Ultra)	Solaris	8
	SUN	Intel x86	Solaris	8
Macintosh	Apple	PowerMAC†††	MacOS	8.6, 9.x

Table 1-1: Platforms Supported in IDL 5.5

† For UNIX, RSI software was either built on (the lowest version listed) or tested on that version. It may be possible to install and run RSI software on versions other than those listed if your version is binary compatible.

†† IDL 5.5 was built on the Linux 2.2 kernel with `glibc` 2.1 using Red Hat Linux. If your version of Linux is compatible with these, it is possible that you can install and run IDL on your version.

††† Includes G3, G4 and iMac

Running IDL in Demonstration Mode

If you want to run IDL for demonstration purposes, you can do so either from the CD-ROM or after installation.

Running from the CD-ROM

To run IDL in demonstration mode from your IDL CD-ROM, complete the following steps:

Windows

1. **Insert the IDL CD-ROM in your CD-ROM drive.** After a short delay, the IDL autorun program starts. If the autorun program does not start automatically, select **Start → Run**. In the Run dialog, type x:\DEMO, where x is the name of your CD-ROM drive, and click **OK**.

2. **Start IDL.** Select **Start IDL** from the IDL autorun program. The Demo Mode dialog appears.

3. **Click OK.** This starts IDL in seven-minute demonstration mode.

UNIX

The UNIX CD-ROM does not support this capability.

Macintosh

1. **Insert the IDL CD-ROM in your CD-ROM drive.** The IDL 5.5 folder appears. If the window doesn't appear, click the IDL 5.5 CD-ROM icon.

2. **Start IDL.** Double-click the IDL icon.

3. **Click OK.** This starts IDL in seven-minute demonstration mode.

Installing and Running

To install and run in demonstration mode, complete the following steps:

Windows

1. **Install IDL.** See "Installing IDL for Windows" on page 21. If you wish to run IDL only in unlicensed demonstration mode, select **No** when the Product Licensing dialog appears.

2. **Start IDL.** Click the Windows **Start** button, and select **Programs → Research Systems IDL 5.5 → IDL**. The Demo Mode dialog appears.

3. **Click OK.** This starts IDL in seven minute demonstration mode. IDL will automatically start in demonstration mode until licensed.

UNIX

1. **Install IDL.** See, "Installing IDL for UNIX" on page 67.

2. **Set up and run IDL.** See, "Set Up the IDL Environment" on page 82. IDL will start in demonstration mode which allows you to run a 7-minute session.

Macintosh

1. **Install IDL.** See "Installing IDL for Macintosh" on page 116.

2. **Start IDL.** Double-click the IDL 5.5 icon located in the `install_dir`:RSI:IDL 5.5 folder. Until licensed, IDL displays the licensing dialog.

3. **Click 7-Minute Trial.** This starts IDL in seven-minute demonstration mode.

Tip ————————————————————————————————————

Try running the IDL Demo Applications that illustrate some of the many ways IDL can help visualize data. See "Running the IDL Demo Applications" on page 12 for more information.

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Running the IDL Demo Applications

The IDL Demo Applications are a series of IDL programs that illustrate some of the many ways IDL can help you visualize data.

Note
If you have already started IDL, you can just type in DEMO at the IDL command prompt.

```
IDL> DEMO
```

From the IDL CD-ROM

To run the IDL Demo Applications from your IDL CD-ROM, complete the following steps:

Windows

1. **Insert the IDL CD-ROM in your CD-ROM drive.** After a short delay, the IDL autorun program starts. If the autorun program does not start automatically, select **Start → Run**. In the Run dialog, type *x*:\DEMO, where *x* is the name of your CD-ROM drive, and click **OK**.

2. **S**elect **IDL Demo** from the IDL autorun program.

Macintosh

1. **Insert the IDL CD-ROM in your CD-ROM drive.** The IDL 5.5 folder appears. If the window doesn't appear, click the IDL 5.5 CD-ROM icon.

2. Double-click the **IDL Demo** icon located in the IDL 5.5 volume window.

From your IDL Installation

To run the IDL Demo Applications from an installed version of IDL, complete the following steps:

Windows

Click the Windows **Start** button, and select **Programs → Research Systems IDL 5.5 → IDL Demo**.

UNIX

- From the UNIX prompt enter idldemo

  or

- From the UNIX prompt, start IDL by typing idlde and then type demo at the IDL prompt.

Note ———————————————————————————————

If idldemo or idlde do not work, you need to set IDL environment aliases. See "Set Up the IDL Environment" on page 82.

Macintosh

Drag the IDL Demo icon located in the *install_dir*:RSI:IDL 5.5 folder onto the IDL 5.5 icon.

Chapter 2:
Installing and Licensing IDL 5.5 for Windows

This chapter covers the following topics:

Introduction

Before You Begin

If you're installing on Windows NT or Windows 2000 you must have Administrator privileges to install. Additionally, a user with Administrator privileges must be the first one to start a session of IDL in order for the configuration to be complete.

If you do not have such privileges, the installation process cannot modify the system configuration of the machine and it will fail. After you have installed IDL, you *do not* need Administrator privileges to run IDL on Windows NT or Windows 2000.

Recommended Steps for Installing and Licensing IDL for Windows

The steps required to install and license IDL depend upon the type of license you will be using. Research Systems recommends you use the following steps when installing and licensing IDL.

Evaluation Licenses

The following steps are recommended when installing and licensing IDL using an evaluation license:

1. **Install IDL** — See "Run the IDL Installation Procedure" on page 21.

2. **Request a License** — You may have already received an evaluation license key by e-mail or fax. If you haven't received it, contact your RSI sales representative to request an evaluation license.

3. **Enter Your License Key** — See "Licensing IDL with an Evaluation License" on page 27.

Node-Locked Licenses

The following steps are recommended when installing and licensing IDL using a node-locked license:

1. **Install IDL** — See "Run the IDL Installation Procedure" on page 21.

2. **Request a License** — You may have already received your RSI product license information by e-mail or fax. It provides your product installation number and additional information about licensing your product. If you haven't received it, see "Requesting a License" on page 24 to create a license request.

3. **Enter Your License Key** — See "Licensing IDL with a Node-Locked License" on page 28.

Floating Licenses

The following steps are recommended when installing and licensing IDL using a floating license:

1. **Install IDL on the License Server** — Install the network license server on the machine you have designated to run the license manager. You can accomplish this by running the IDL installer on your server machine and deselecting every option except the **IDL Program Files** and **Network License Server** features.

   Note ───

   Carefully consider the machine you have chosen as your server machine before saving your license file and starting the license manager. Since "client" machines will be sending requests for licenses to the "server" machine, the ability of client machines to access the license manager software depends on the reliability of the server machine. Therefore, the machine chosen as the server must be one that has a history of reliable operation and one that is running most of the time.

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2. **Request a License** — You may have already received your RSI product license information by e-mail or fax. It provides your product installation number and additional information about licensing your product. If you haven't received it, see "Requesting a License" on page 24 to create a license request.

3. **Enter Your License Key** — See "Licensing IDL with a Floating License" on page 35.

4. **Start the License Manager** — See "Start the License Server" on page 37.

5. **Install IDL on Your Client Machines** — See "Run the IDL Installation Procedure" on page 21

6. **Configure the Client Machines** — Configure the client machines so that they can access the license manager, see "Configure Clients to Access the License Server" on page 41.

HASP Licenses

1. **Install IDL** — See "Run the IDL Installation Procedure" on page 21.

2. **Locate Your Hardware Dongle and RSI Product License Information** — You should have received your hardware dongle with your IDL product and

your RSI product license information by electronic mail or fax. The RSI
product license information provides your product installation number and
additional information about licensing IDL. If you haven't received these
items, see "Contacting Research Systems" on page 8.

3. **Enter Your License Key** — See "Licensing IDL with a HASP License" on
   page 58.

Licensing Methods

Access to IDL and other products from Research Systems is controlled by a software
application that ensures a proper license has been entered on the user's system.
Licensing options include demonstration, evaluation, node-locked, floating, and
HASP, each discussed in the following sections.

Demonstration License

Demonstration licenses are the default license provided with Research Systems
software products. These licenses allow you to run limited versions of the software
products in seven minute demonstration mode. You do not need to request or enter a
license file. For more information, see "Running IDL in Demonstration Mode" on
page 10.

Evaluation LIcense

Evaluation licenses are temporary trial licenses allowing access to all IDL features
for a specified number of days. Once the evaluation license expires, you will be
alerted by a dialog box stating that the application is available only in seven-minute
demonstration mode. Contact Research Systems or your local distributor to purchase
a permanent license or to extend your evaluation license.

The following is a sample Evaluation license key that you will receive either by
e-mail or fax:

```
Product:            IDL X.X
Expiration:         23-Aug-20XX
Key:                ABC123DEF456GHI7-123

IDL Major Version:  X.X
Package Name:       eval_idl
```

Node-Locked License

Node-locked licenses are personal licenses tying a single software application to a
single machine. This method of licensing requires a machine's unique host ID to be
incorporated into a license request file. After a license request is sent to Research

Systems or your local distributor, a license file is returned. Entering and saving the license file enables full functionality of the Research Systems product on the machine for which you have sent the host ID.

The following is a sample node-locked license key that you will see on your product registration form which you will receive either by e-mail or fax:

```
# Installation Number(s): 000011-70-1
INCREMENT idl idl_lmgrd X.XXX 1-jan-0000 uncounted \
     ABC123DEF456GHI789JK VENDOR_STRING="000011-70-1Floating \
     Windows License" HOSTID=00aabb11ccdd ck=28
INCREMENT wavelet idl_lmgrd X.XXX 1-jan-0000 uncounted \
     ABC123DEF456GHI789JK VENDOR_STRING="000011-70-1Floating \
     Windows License" HOSTID=00aabb11ccdd ck=28
```

Floating License

Floating licenses (also known as client/server licenses) allow multiple users to concurrently access IDL. After installing and licensing IDL on the server machine, the license manager, installed along with your IDL software, handles requests for licenses from remote client machines. As the server administrator, you can choose how users access the licenses. You can select to reserve licenses for individuals or groups, or select to allow all users to share access to the licenses. If you have a team of 20 people, and you have purchased IDL with 10 floating licenses, you can select to reserve licenses for certain individuals in the group, or allow all team members to share access to the ten licenses throughout the day.

While both *node-locked* and *floating licenses* use a license file or key containing information based on a unique host ID from the machine being licensed, floating licenses additionally require the installation of a license manager.

IDL (with floating licenses) uses the Globetrotter Software FLEXlm license manager. The license manager runs continuously on your system, waiting for a request from a Research Systems product. When a request arrives, the license manager determines whether the proper license for a requested product is available. If the proper license is present and not already in use, the license manager allows access to the software.

The following is a sample floating license key that you will receive either by e-mail or fax:

```
# Installation Number(s): 000011-70-1
SERVER myserver 00aabb11ccdd 1700
DAEMON idl_lmgrd C:\RSI\IDLXX\BIN\BIN.x86\IDL_LMGRD.exe
INCREMENT idl idl_lmgrd X.XXX 1-jan-0000 6 ABC123DEF456GHI789JK \
     VENDOR_STRING="000011-70-1Floating Windows License" ck=205
FEATURESET idl_lmgrd ABC123DEF456GHI7
```

The main difference between a node-locked and floating license is that a floating license contain SERVER and DAEMON lines. The license server should be installed and run on the server indicated in the SERVER line of the license key.

HASP License

Hardware-Based Node-Locked Licenses (HASP) use a combination of a physical hardware dongle (a small plastic and metal device labeled "HASP" that plugs into your computer's parallel port) and a software key code that allows IDL to run in licensed mode. The dongle must be installed on the same machine as the software. Both the dongle and the license key are required in order to run the

DB-25 Hardware Dongle

software in licensed mode. The device will not interfere with the normal functioning of your system or other software packages. If you have a hardware dongle from a previous version, you may not have received a new dongle with your upgrade. Your current dongle will continue to function.
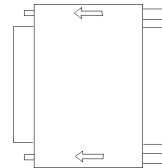
The following is a sample HASP license key that you will receive either by e-mail or fax:

```
PART ID:      10WINDKLIC
VERSION:      X.X
HASP:         WIN

INSTALL ID:  123456
SITE NOTICE: Desktop License
INSTALL KEY: 60-ABC123DE
```

If you have received a dongle and a license key that looks similar to this sample, see "Licensing IDL with a HASP License" on page 58.

Installing IDL for Windows

This sections describes system requirements, recommended steps for installing and licensing IDL, and installation instructions for IDL 5.5 on Windows platforms.

System Requirements

The following are the system requirements for IDL 5.5 for Windows:

Requirement	Description
Disk space	120 MB (default installation). **Note -**
Operating System	Windows 98, Windows NT 4.0 or Windows 2000.
Network Interface Card	A network interface card (NIC or Ethernet) is required for software-based-node-locked and floating licensing.

Table 2-1: IDL 5.5 Windows System Requirements

Run the IDL Installation Procedure

To install IDL 5.5, complete the following steps:

Note

If you haven't used this type of installer before, you may be required to restart your computer during the installation process. To avoid losing unsaved information, save all open files and close any open applications before installing IDL.

If you are prompted to reboot after installation, you will need to run the licensing wizard to license IDL by selecting **Start → Programs → Research Systems IDL 5.5 → License**.

1. **Insert the IDL CD-ROM in your CD-ROM drive.** After a short delay, the IDL autorun program starts. If the autorun program does not start automatically, select **Start → Run**. In the Run dialog, type x:\DEMO, where x is the name of your CD-ROM drive, and click **OK**.

2. **Start the IDL installation process.** Click **Install IDL** from the IDL autorun program. Then click the **Install** and **Next** buttons on the following introduction and welcome dialogs to start the installation and licensing wizards.

3. **Accept the license agreement.** After reading the license agreement, select **Accept** to continue the installation.

4. **View the IDL Release Notes.** The release notes contain important information about this release of IDL. Click **Next** after viewing the IDL Release Notes file.

5. **Complete the Customer Information form.** Enter the following:

    • Your **User Name** (the name with which you log on to your system).

    • Your **Organization** (the name of your company, department., etc.).

    For Windows NT and 2000 only, select one of the following for **Install this application for**:

    • Install the application for all users on this computer (**Anyone who uses this computer**), allowing any user to log on and access IDL.

    • Install the application as **Only for me** (*User Name*) which displays an IDL **Start** menu shortcut only when you log on.

    Click **Next** to continue.

6. **Choose the destination folder.** In the Destination Folder dialog, select the directory in which to install IDL. The default installation directory, which is the disk on your computer with the greatest amount of free space, is displayed. To install IDL in a different location, click **Change**. In the Change Current Destination Folder dialog, select an alternate location, and click **OK**.

    The installation directory will be referred to as the `RSI-DIR` for the remainder of the installation and licensing instructions.

    Click **Next** to accept the directory that is displayed.

7. **Select the features to install.** In the Custom Setup dialog, the typical installation features are pre-selected and indicated by the hard drive symbol. Clicking on a feature displays information about that option. To add the feature to your installation, click the red "X" and select to install the feature on your hard drive. To remove a feature from your installation, click the hard drive symbol and select the red "X".

    Note ───
    If you are installing this version of IDL on the machine you have designated as the license server for floating licenses, you must select the **Network License Server** feature. You can deselect any features except the **IDL Program Files** feature. Only a Windows NT or 2000 machine can be used as a *license server* for floating (client/server) licensing.
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Click **Next** to continue.

8. **Begin the installation.** Select **Install** from the Ready to Install the Program dialog.

9. **Select to License IDL.** To license IDL now, click **Yes**. See the following for more information:

   • "Licensing IDL with an Evaluation License" on page 27

   • "Licensing IDL with a Node-Locked License" on page 28

   • "Licensing IDL with a Floating License" on page 35

   • "Licensing IDL with a HASP License" on page 58

   To license IDL at a later time, or to run IDL only in seven minute demonstration mode, click **No**.

10. **Select to Install Adobe Acrobat Reader.** The Install Adobe Acrobat dialog appears after you exit the licensing wizard.

   IDL online manuals require Acrobat Reader with Search 3.0 or greater. Select **Yes** to install Adobe Acrobat Reader 4.0 if you have not previously installed version 3.0 or greater.

11. **Click Finish.** Your installation is now complete.

Note —————————————————————————————————
On Windows NT and 2000 the first user to start a session of IDL must have Administrator privileges.
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Tip ——————————————————————————————————
To Modify or Repair your installation, insert the IDL CD-ROM and click **Install IDL** from the IDL autorun program. From the Program Maintenance dialog, you can Modify the installed components, or Repair your installation.
——

Requesting a License

If you are licensing with either a node-locked license or a floating license, you need a permanent license file from Research Systems or your distributor. The license file is created using information from the machine on which you have installed IDL. A built-in licensing program has been created to simplify the request and installation of your license file.

Note ───

You do not need to request a license if you are using an evaluation or HASP license. The required information will be automatically sent to you.

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Note ───

The electronic request program will not be able to retrieve the correct information if you do not have a configured network interface card and do not meet one or more of the following network protocols:

Windows NT/2000 — Requires that either the NETBEUI Transport Protocol, the NW Link (IPX/SPX) Transport Protocol or the SNMP service be installed on your system.

Windows 98 — Requires that either the NETBEUI Transport Protocol, or the NW Link (IPX/SPX) Transport Protocol be installed on your system.

──

Preparing a License Request

The licensing wizard allows you to easily generate and send a license request. The request contains information necessary for Research Systems to generate your license key. If you have exited the installation program, access the licensing wizard by selecting **Start → Programs → Research Systems IDL 5.5 → License**.

Note ───

If you have purchased a floating license, the licensing wizard must be run from the designated license server machine on which you have installed IDL. This ensures proper generation of the server LMHostid and Hostname for your license file.

──

1. **Begin the license request process.** Click **Permanent** from the Product Licensing dialog.

2. **Prepare a Request file.** Click **Request** to prepare a license request file to submit to Research Systems. The licensing wizard guides you through the

creation of a license request file that will contain all the information necessary for Research Systems to create a valid license file for your software installation.

3. **Enter your information.** Fill in the following text fields in the Permanent Licensing dialog:

- **Contact Person** — Enter the name of the person to whom the license file should be sent.

- **Email Address** — Enter the e-mail address of the contact person.

- **Installation Number** — Enter the installation number found on the Research Systems Product Registration Form. You should have already received this form by e-mail or fax. If you have not received the form, contact Research Systems technical support. See "Contacting Research Systems" on page 8 for more information.

- **Site Notice** — Enter the name that you want to appear when you launch the software. The name you select will replace <your site notice> in the following statement: "licensed for use by <your site notice>." This is typically your company's name, department, or project.

4. **Select the license type**. Select either **Node Locked** or **Floating**. The license wizard automatically generates the correct Hostname and LMHostid. Do not modify these values.

5. **Enter comments.** Enter any comments you may have.

6. Click **Next** to continue.

7. **Review your license request.** If the information is correct, click **Next** to save the license request file and proceed. If the information is incorrect, edit it in the text window or click **Back** to make any corrections.

8. **Send the license request file.** Click **Next** to send the license request file to Research Systems. If you did not purchase your software directly from Research Systems, modify the e-mail address and send the file to your local distributor.

Note ───

If you can't send e-mail from your machine or if you receive a message stating that an attempt to send the e-mail was unsuccessful, see "Manually Sending a License Request" on page 26. A license file will be generated and sent to you at the e-mail address or fax number you supply.

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9. **Exit the license wizard.** Click **Finish** to exit the license request program.

If you do not receive a license file or any confirmation that the request was received, see the section below to manually re-send the request. To contact Research Systems, see "Contacting Research Systems" on page 8.

Manually Sending a License Request

To manually send a license request, select the appropriate step below and e-mail your request to `register@ResearchSystems.com` or fax the request file text to Research Systems at (303) 786-9909. If you did not purchase IDL directly from Research Systems, send the file to your local distributor.

•   **From the license wizard** — Select **Back** to display the request file. Copy all of the request information into an e-mail message or fax this text to Research Systems.

•   **Outside of the license wizard** — Copy the request file, located in *RSI-DIR*\license\rsi_request.txt, where *RSI-DIR* is the directory where you have installed IDL, and send it by fax or e-mail.

Licensing IDL with an Evaluation License

After installing IDL, use the licensing wizard to install the license key for your evaluation license. If you do not have a license key, contact your RSI sales representative to request an evaluation license.

1. **Start the licensing wizard.** If you have exited the installation program, access the licensing wizard by selecting **Start → Programs → Research Systems IDL 5.5 → License**.

2. **Access the Evaluation Licensing dialog.** Select the **Evaluation** button on the Product Licensing dialog.

3. **Enter your license information**.

   • Select the Product — select the product you wish to license from the drop-down list. Only installed products are displayed.

   • Enter the Expiration date — for example, 12-Oct-2000.

   • Enter the license Key — enter the key *exactly* as it appears and click **Next**.

4. **Exit the Licensing wizard.** Click **Finish**.

IDL is now licensed. After your trial period expires, a message appears stating this fact when you start IDL and until re-licensed, IDL will operate only in seven-minute demonstration mode.

Troubleshooting Evaluation Licensing

If you receive an error message, locate it below for suggestions on resolving the problem.

1. **The license information does not pass the checksum test.** Carefully check to make sure you have entered your license information exactly as it appears in your RSI product license information. Exactly duplicate capitalization, spacing and the date format as shown on your form.

2. **The file already exists.** If you have an existing evaluation license for this product, you will be asked if you want to replace it. Select **Yes** to overwrite the old license with the new, extended evaluation license.

3. **The file cannot be written.** You may not have write permissions for the directory or the file to which you are attempting to write. Check the permissions to make sure neither the directory nor any files you are attempting to overwrite are designated as "read-only."

Licensing IDL with a Node-Locked License

After installing IDL, use the licensing wizard to install the license key for your node-locked license. Your license key will be sent to you via e-mail or fax. If you have not received your license key, see "Requesting a License" on page 24.

Save the License File

If your license key arrived via e-mail, you can save the e-mail message out to a file so that the licensing wizard can import it. Complete the following steps:

1. From your e-mail application, save the license file e-mail anywhere on your system as a file named `license.dat`.

2. With any text editor, remove any lines that appear before the beginning of the actual license information keeping the comment lines that begin with the "#" character. For an example of a license key, see "Node-Locked License" on page 18.

Enter the License Key

To enter your license key, complete the following steps:

1. **Start the IDL Licensing Wizard.** If you have already exited the installation program and licensing wizard, click the Windows **Start** button, and select **Programs → Research Systems IDL 5.5 → License**.

2. **Display the Permanent Licensing dialog.** Click **Permanent** and then **License** from the licensing wizard.

3. **Enter your license file.** Paste the text of the license file into the dialog, or select **Browse** to select the license file which you have named `license.dat`. If you paste in your license file, remove any header lines that are included in the file but keep the comment lines that begin with the "#" character. If you have received your license file via fax or other hardcopy method, type the information directly into the text window.

   Note ───
   The license key consists of non-indented lines, indented lines, and blank lines. Besides the comment lines (lines beginning with the number sign (#)), non-indented lines should begin with either a FEATURE or INCREMENT keyword. Because of e-mail/fax limitations, extra long lines of the license key may have been inadvertently wrapped to a new line. If a non-indented line begins with a character other than a number sign (#) or a FEATURE or

INCREMENT keyword, then it is likely that an extra long line has been incorrectly wrapped and that the segment belongs at the end of the previous line. Make sure that you review your license key for these possible errors. If the key does contain an error, the software will not be licensed.

4. **Save the license file.** Click **Next** to save the license file in the directory where you have installed the software. The licensing wizard recognizes where you have installed the software and generates an appropriate path, for example, *RSI-DIR*\license\license.dat.

Note ──

Research Systems strongly recommends saving your license file with the default path and filename *RSI-DIR\license\license.dat*, for example, where *RSI-DIR* is RSI. If you put your license file in this directory, you do not have to redefine any environment variables.

If you have saved the license file in a directory other than the default *RSI-DIR*\license\license.dat, you must set an environment variable pointing to the license.dat file before starting the software or the license manager. See the following section "Saving the License File in an Alternative Location" for instructions.

──

Note ──

If you receive a message that there is an existing license file, save the existing file under a different name before proceeding. While the new license usually contains information for all currently licensed products, save the old file as a safeguard against destroying license information. Run the license wizard again to save the new license file in the default location.

──

5. **Exit the licensing wizard.** Click **Finish** to save the license file.

Saving the License File in an Alternative Location

If you choose a location other than *RSI-DIR*\license\license.dat for the license file, it must be accessible to Research Systems software products that you have installed on your machine.

Therefore, you must define the environment variable LM_LICENSE_FILE to point to the actual path of the license file prior to using your software. For example, if you save your license file as C:\RSI\mylicensefiles\license.dat, Research Systems products will not run properly until you define the LM_LICENSE_FILE variable.

For Windows NT Systems

1. Click **Start** → **Settings** → **Control Panel** and double-click on the **System** icon.

2. Click on the **Environment** tab. (For Windows 2000, click the **Advanced** tab, and then click **Environment**). Scroll down the **System Variable**s scroll box and click in the white area. No variables should be highlighted.

3. Type, in uppercase letters, LM_LICENSE_FILE in the **Variable** field.

4. Type the path to the license file in the **Value** field, in this example, C:\RSI\mylicensefiles\license.dat. Replace this value with the actual path to your license file.

   Note
   If the directory name in the path to your license file contains any spaces, put double quotation marks around the entire path. For example, if you save your license file in the Program Files directory, the path would be:

   ```
   "C:\Program Files\license.dat"
   ```

5. Click **Set**, **Apply**, and **OK**.

For Windows 98 Systems

Using the previous example, add the setting for the environment variable to the *autoexec.bat* file as follows:

```
SET LM_LICENSE_FILE = C:\RSI\mylicensefiles\license.dat
```

The system must be restarted in order for this setting to take effect.

Troubleshooting a Node-Locked License

1. Check the License Format

After installing the permanent license information via the licensing wizard program, one of the following error messages appears when attempting to start IDL:

```
% LICENSE MANAGER: Future license file format or misspelling in
license file
The file was issued for a later version of FLEXlm than this
program understands.
Feature:       idl
License path:  C:\RSI\license\license.dat;C:\RSI\license\*.lic
FLEXlm error:  -90,313.  System Error: 2 ""

% LICENSE MANAGER: Invalid license file syntax
```

```
Feature:       idl
License path:  C:\RSI\license\license.dat;C:\RSI\license\*.lic
FLEXlm error:  -2,134.  System Error: 2 ""
```

These errors may indicate that the license information has been corrupted.

Some email programs can corrupt license text, replacing original characters with invalid characters. For example, the string:

```
VENDOR_STRING="000011Research Systems, Inc." HOSTID=00b012345678 ck=99
```

could be inadvertently changed to:

```
VENDOR_STRING?"000011Research Systems, Inc." HOSTID?00b012345678 ck?99
```

Another cause of license corruption is inadvertent line wrapping introduced by the email program. For example, a line in the license might be changed from (2 lines).

Correct format:

```
INCREMENT idl idl_lmgrd 5.500 1-jan-0000 0 EC3B7DA4CA19E85C0A71 \
    VENDOR_STRING="000011Research Systems, Inc."
HOSTID=00b012345678 ck=123
```

Incorrect format:

```
INCRMENT idl idl_lmgrd 5.500 1-jan-0000 0 EC3B7DA4CA19E85C0A71
\
    VENDOR_STRING="000011Research Systems, Inc."
HOSTID=00b012345678 ck=123
```

If the license file appears to have been corrupted, try to restore the problem characters or line wrapping to its original state. Or if a separate file attachment of the license information was provided please use the license information in the file attachment to replace the corrupted license information. The licensing wizard may be used to edit the license file information that has already been installed.

2. The hostid of this system does not match the hostid

After installing the permanent license information via the licensing wizard, a form of the following error message appears when starting IDL:

```
% LICENSE MANAGER: Invalid host
  The hostid of this system does not match the hostid
  specified in the license file
 Feature:       idl
 Hostid:        00b0d0911470
 License path:  C:\RSI\license\license.dat;C:\RSI\license\*.lic
 FLEXlm error:  -9,57.  System Error: 2 ""
```

Confirm that the node-locked hostid in the license matches the actual hostid of the machine that is running IDL:

1. Start the licensing wizard by clicking **Start→Programs→Research Systems IDL 5.5→License**.

2. Click **Permanent** and then **Request**.

3. Compare the Node LMHostid value with the HOSTID value in your IDL license file.

For example the following IDL license feature line:

```
INCREMENT idl idl_lmgrd 5.500 1-jan-0000 0 EC3B7DA4CA19E85C0A71 \
    VENDOR_STRING=000011RSI HOSTID=00b012345678 ck=123
```

is built for the node hostid "00b012345678".

If the hostid information obtained from the licensing wizard is different from the information listed in the license file, then the license will not work with your machine. The license HOSTID value cannot be altered by a user without invalidating the license. If the host on which you are installing is different than the one you are installing on, you must request another license. See "Requesting a License" on page 24 for information on how to request a license.

3. License file does not support this version

After installing the permanent license information via the licensing wizard program, a form of the following error message appears when attempting to start IDL:

```
% LICENSE MANAGER: License file does not support this version
Feature:        idl
Application version > License version: 5.5 > 5.400
License path:  C:\RSI\\license\license.dat;C:\RSI\\license\*.lic
FLEXlm error:  -21,126.  System Error: 2 ""
```

Confirm that the license being referenced contains the correct version. Check the license(s) listed in the "license path" of the error message to verify the contents of the referenced license. Below is an example of an IDL 5.5 license feature (2 lines):

```
INCREMENT idl idl_lmgrd 5.500 1-jan-0000 0 EC3B7DA4CA19E85C0A71 \
    VENDOR_STRING=000011RSI HOSTID=00b012345678 ck=123
```

Notice that the product "idl" is listed after "INCREMENT" and the IDL version "5.500" is located after "idl_lmgrd". An IDL 5.5 FLEXlm license can also support previous versions of IDL.

If the listed IDL version is less than the version you are trying to license, then an old version of the license is being referenced. Make sure you that the correct version of

the `license.dat` file is being referenced. See "Saving the License File in an Alternative Location" on page 29 for more information.

If the you do not have a license with the correct version, you must request another license. See "Requesting a License" on page 24 for information on how to request a license.

4. IDL cannot find license

After installing the license information via the licensing wizard, an error message appears that indicates that the `license.dat` file cannot be found.

```
% LICENSE MANAGER: Cannot find license file
The license files (or server network addresses) attempted are
listed below.  Use LM_LICENSE_FILE to use a different license file,
or contact your software provider for a license file.
Feature:       idl
Filename:      C:\RSI\IDL55\license.dat
License path:  C:\RSI\IDL55\license.dat
FLEXlm error:  -1,359.  System Error: 2 "No such file or directory"
```

Make sure that you have either installed the license.dat in the default location (*RSI-DIR*/license/license.dat) or that you have defined your LM_LICENSE_FILE environment variable to the path where the `license.dat` file exists. See "Saving the License File in an Alternative Location" on page 29 for more information.

If this information is correct, try the following (if using Windows NT or 2000 you should be logged on as a user with administrative privileges before proceeding):

1. Quit out of any IDL session.

2. Open a Windows Explorer and browse to the bin\bin.x86 subdirectory the IDL installation (for example: C:\RSI\IDL55\bin\bin.x86).

3. Find the file "idl.000". If you can't find the idl.000 file in the bin.x86 directory select the **View** menu for Windows NT, or the **Tools** menu for Windows 2000, of the Windows Explorer, then select **Folder Options**. Then, under the View tab:

    •   Select the option for **Show hidden files and folders**.

    •   Uncheck the box for the option: **Hide file extensions for known file types**.

    •   Apply and save the changes.

4.) After locating the "idl.000" file in the bin.x86, rename it to "idl.ini"

5.) Start a session of IDL.

6.) When prompted to import preferences, select Yes.

If the licensing information is correct IDL should find the license and start in licensed mode.

5. Search the RSI Technical Support Library

Go to `www.ResearchSystems.com/services/search.cfm` and select the following for more information on troubleshooting node-locked licensing:

Product: **IDL**
Platform: **WINDOWS**
Category: **LICENSING**
Functional Area: **LICENSING - FLEXlm**

6. Contact RSI Technical Support

If you are still having problems licensing, see "Contacting Research Systems" on page 8 for information on how to contact Technical Support.

Licensing IDL with a Floating License

After installing IDL, use the following instructions to:

- Set Up the License Server

- Configure Clients to Access the License Server

Your license key will be sent to you via e-mail or fax. If you have not received your license key, see "Requesting a License" on page 24.

Set Up the License Server

1. Save the License File

If your license key arrived via e-mail, you can save the e-mail message to a file so that the licensing wizard can import it. If your information was faxed to you or you prefer to directly enter the text into the licensing wizard, continue with the next section.

To save the license key to a file, complete the following steps:

1. From your e-mail application, save the license file e-mail anywhere on your system as a file named `license.dat`.

2. With any text editor, remove any lines that appear before the beginning of the actual license information keeping the comment lines that begin with the "#" character. For an example of a license key, see "Floating License" on page 19.

3. Copy the `license.dat` file anywhere on your designated license server machine.

2. Enter the License Key

To enter your license key, complete the following steps:

1. **Start the IDL Licensing Wizard.** On your designated license server machine, click the Windows **Start** button, and select **Programs → Research Systems IDL 5.5 → License**.

2. **Display the Permanent Licensing dialog.** Select **Permanent** and then **License** from the licensing wizard dialogs

3. **Enter your license file.** Paste the text of the license file into the dialog, or select **Browse** to select the license file which you have named `license.dat`. If you paste in your license file, remove any header lines that are included in the file but keep the comment lines that begin with the "#" character. If you

have received your license file via fax or other hardcopy method, type the
information directly into the text window.

Note ───
The license key consists of non-indented lines, indented lines, and blank
lines. Besides the comment lines (lines beginning with the number sign (#)),
non-indented lines should begin with either a SERVER, DAEMON,
FEATURE, or INCREMENT keyword. Because of e-mail/fax limitations,
extra long lines of the license key may have been inadvertently wrapped to a
new line. If a non-indented line begins with a character other than a number
sign (#) or a SERVER, DAEMON, FEATURE, or INCREMENT keyword,
then it is likely that an extra long line has been incorrectly wrapped and that
the segment belongs at the end of the previous line. Make sure that you
review your license key for these possible errors. If such an error is not
corrected, the software will not be licensed.
───

4. **Save the license file.** Click **Next** to save the license file in the directory where
    you have installed the software. The licensing wizard recognizes where you
    have installed the software and generates an appropriate path, for example,
    RSI-DIR\license\license.dat.

Note ───
Research Systems strongly recommends saving your license file with the
default path and filename *RSI-DIR\license\license.dat*, for example,
where *RSI-DIR* is RSI. If you put your license file in this directory, you do
not have to redefine environment variables.

If you have saved the license file in a directory other than the default
RSI-DIR\license\license.dat, you must set an environment variable
pointing to the license.dat file before starting the license manager. See
the following section "Saving the License File in an Alternative Location"
for instructions.
───

Note ───
If you receive a message that there is an existing license file, save the
existing file under a different name before proceeding. While the new license
usually contains information for all currently licensed products, save the old
file as a safeguard against destroying license information.
───

5. **Exit the licensing wizard.** Click **Finish** to save the license file.

Note ——

> If you have other software that is using the Globetrotter Software FLEXlm license
> manager, you may want to combine the Research Systems license file with the
> existing ones. See "Multiple Applications Using the Same License Server" on
> page 50 for options and instructions.

——

Saving the License File in an Alternative Location

If you choose a location other than *RSI-DIR*\license\license.dat for the
license file, it must be accessible to the licensing server that you have installed on
your machine.

Therefore, you must define the environment variable LM_LICENSE_FILE to point
to the actual path of the license file prior to starting the license server. For example, if
you save your license file as C:\RSI\mylicensefiles\license.dat, the
license server will not find the license file until you define the LM_LICENSE_FILE
variable.

1. Click **Start** → **Settings** → **Control Panel** and double-click on the **System** icon.

2. Click on the **Environment** tab. (For Windows 2000, click the **Advanced** tab,
   and then click **Environment**). Scroll down the **System Variable**s scroll box
   and click in the white area. No variables should be highlighted.

3. Type, in uppercase letters, LM_LICENSE_FILE in the **Variable** field.

4. Type the path to the license file in the **Value** field, in this example,
   C:\RSI\mylicensefiles\license.dat. Replace this value with the
   actual path to your license file.

   Note ——————————————————————————————————————

   > If the directory name in the path to your license file contains any spaces, put
   > double quotation marks around the entire path. For example, if you save your
   > license file in the Program Files directory, the path would be:
   >
   > "C:\Program Files\license.dat"

   ——

5. Click **Set**, **Apply**, and **OK**.

3. Start the License Server

With a floating license, you will need to start the license server before Research
Systems products can access a network license and run in licensed mode. You may
also set up your system so that the license manager is automatically started when
your system is booted.

The license manager needs to be started only on the designated license server machine, not on client machines accessing the IDL product from the network. However, client machines do need to be set up to access the Research Systems software and the license file. After installing the license manager, see "Configure Clients to Access the License Server" on page 41 for instructions.

The Network License Server

The license server is a custom install option in the software product installation for Windows. You must install the license server on the Windows NT/2000 machine that will be the license server.

Access to the license manager utilities requires installation of the Network License Server option during your software installation. This option installs the following files in the *RSI-DIR*\idl55\bin\bin.x86 directory:

- install_lm_server.exe

- lmgrd.exe

- idl_lmgrd.exe

- lmutil.exe

- lmtools.exe

Configuring the License Server

After entering and saving the license file, you must start the license server on your server machine. Included with your installation is a graphical interface for configuring the license manager, the FLEXlm License Manager Control Panel. With this utility, you can set environment paths, start, stop, and monitor the license manager.

1. **Open the license manager control panel.** Open the FLEXlm License Manager Control Panel by selecting **Start** → **Settings** → **Control Panel** and double-clicking on the FLEXlm License Manager icon.
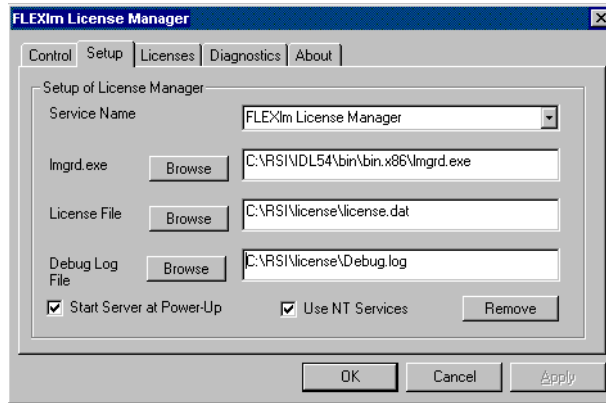
Figure 2-1: FLEXlm License Manager Control Panel

2. **Check for existing license managers.** Click the **Setup** tab. In the **Service Name** list, click the arrow to display installed license managers. If there is more than one service listed, the potential for conflict exists between the license manager services. See "Multiple Applications Using the Same License Server" on page 50 for options and instructions.

3. **Setup the License paths.** Click the **Setup** tab and enter paths for:

    • **The license manager** — **Browse** to select lmgrd.exe, located in the *RSI-DIR*\IDL55\bin\bin.x86 directory. *RSI-DIR* is the directory in which you have installed your RSI software.

    • **The license file** — **Browse** to select license.dat, located in the *RSI-DIR*\license directory.

    • **The debug log file** — Choose a location to save the license manager log reports. A typical choice is creating a lmgrd_log.txt file in the *RSI-DIR*\license directory.

4. **Start the license manager at boot time.** Check the boxes **Use NT Services** and **Start Server at Power-Up** to automatically start the license manager when the server is started.

5. **Accept the changes.** Click **Apply** to save your license manager configurations. Then, click **Yes** to save these settings.

Note ──

After selecting **Start Server at Power-Up**, note that the license manager will not be started automatically until the next time the machine is rebooted. Once you have started the service manually and it is operating as desired, you may want to restart your machine to verify that the automatic startup is operating correctly.

──

Start the License Manager

From the FLEXlm Control Panel, you can start the license manager.
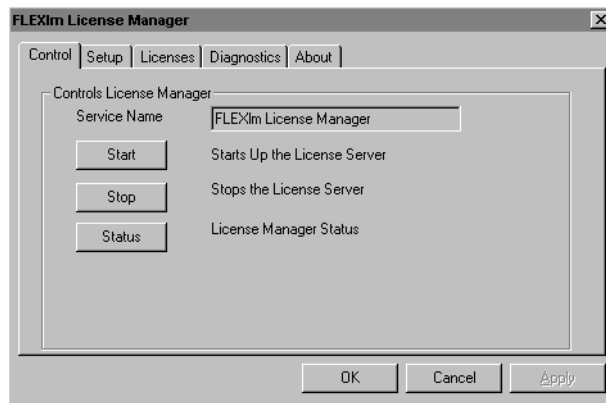
Figure 2-2: FLEXlm Control Panel - Control tab

1. **Open the license manager control panel.** Open the FLEXlm License Manager Control Panel by selecting **Start → Settings → Control Panel** and double-clicking on the FLEXlm License Manager icon.

2. **Start the license manager**. Select the **Control** tab and click **Start** to start the license manager.

   Note ───

   If you receive the "Server Start Failed" error message, the service may already be running. Click Status to see if the service is already running.

   ──

3. Click **OK** to exit the control panel.

For more information on license manager utilities, see "Working with the License Server" on page 47.

Configure Clients to Access the License Server

To allow network access to a license manager installed on a server, the client machines must have access to the license file used by the license manager. Research Systems recommends having a local installation of your RSI product on each client machine and referencing the license.dat file stored on the server machine. Set the each client machine's System Environment variables to point to the license.dat file stored on the server to easily keep each installation updated with a current license. See the instructions for your platform, either the following section covering Windows NT/2000 or

Windows NT / 2000

Complete the following steps for each client machine:

1. **Access the System Control Panel.** Click **Start** → **Settings** → **Control Panel**. Double-click on the **System** icon.

2. **Select the Environment tab.** (For Windows 2000, select the **Advanced** tab and then select **Environment**.) In the upper System Variables list, scroll down to the bottom and click in the white area. None of the currently listed variables should be highlighted.

3. **Enter a new System variable.**

   A. In the **Variable** field, enter LM_LICENSE_FILE.

   B. In the **Value** field, enter your server's *port@host* value, for example 1700@hal. This information is in your license file. The port number is the last number on the SERVER line. The host name immediately follows SERVER.

Note ──

If LM_LICENSE_FILE has already been defined for another software product, the definition of this license file may be appended using a semi-colon (;) as the delimiter. For example:

```
C:\license\mylicense.dat;1700@hal
```
──

4. **Save the Settings.** Click **Set**, **Apply** and **OK**. Your Environment dialog box should be similar to the following picture when completed.
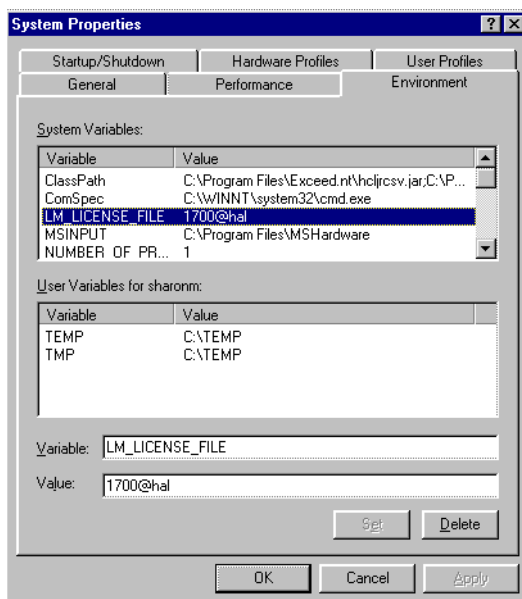
Figure 2-3: Setting Client Environment Variables

Windows 98 Systems

Using the previous example, add the setting for the environment variable to the *autoexec.bat* file as follows:

```
SET LM_LICENSE_FILE = 1700@hal
```

The system must be restarted in order for this setting to take effect.

> **Note**
> If LM_LICENSE_FILE has already been defined for another software product, the definition of this license file may be appended using a semi-colon (;) as the delimiter. For example:
>
> ```
> SET LM_LICENSE_FILE = C:\license\mylicense.dat;1700@hal
> ```

Customize Your Floating Licenses

You can customize IDL license management by creating a license manager options file. This file allows you to:

- Reserve licenses for specified users or groups of users.

- Allows or disallows the use of IDL by certain users.

- Control what events are recorded in the log file.

To customize the license manager, create an options file in a text editor as described below. See "Sample Options Files" on page 46 for examples.

Creating an Options File

Use a text editor to create a options file. For Research Systems products, the options file must be named idl_lmgrd.opt and saved in the same directory as license.dat. The default location in which to save the options file is the *RSI-DIR*\license directory.

Note ──

Any time the options file is modified, you must stop and restart the license manager before the changes will take effect.

──

Use the following conventions when creating an options file:

- Specify each option on a separate line.

- Each line must begin with one of the keywords specified in the following table. See the following section "Options File Keywords" for a list of available keywords.

- Limit the length of each line to less than 2048 characters. You can use the backslash (\) as a line continuation character if you need more than 2048 characters.

- All elements of the options file are case sensitive so users and groups must be correctly and consistently identified.

- Lines beginning with the pound sign (#) are ignored and can be used as comments.

Options File Keywords

The following table describes the available keywords to use when creating an options file:

Keyword	Example	Description
EXCLUDE	EXCLUDE *feature type type_name* `EXCLUDE idl USER bob` Excludes user "bob" from using IDL.	Can exclude user, group, host, or host_group from using IDL. EXCLUDE takes precedence over INCLUDE statements.
EXCLUDEALL	EXCLUDEALL *type type_name* `EXCLUDEALL GROUP misfit` Excludes the group misfit from using any IDL feature.	Implicitly allows all except "misfits" to access all features of IDL.
GROUP	GROUP *group user_list* `GROUP visitor sam kate` Defines users "sam" and "kate" as comprising the group "visitor".	Defines a list of users as a group to be used with other keywords such as INCLUDE or EXCLUDE.
HOST_GROUP	HOST_GROUP *group host_list* `HOST_GROUP main hal sam` Defines hosts "hal" and "sam" as the group "main".	Defines a list of hosts as a group to be used with other keywords such as INCLUDE or EXCLUDE.
INCLUDE	INCLUDE *feature type type_name* `INCLUDE idl GROUP visitor` Allows only users in the group "visitor" to use IDL.	Includes only specifically identified users or groups. All others are implicitly outside of this group, and denied access.

Table 2-2: Options File Keywords

Keyword	Example	Description
INCLUDEALL	INCLUDEALL *type type_name* `INCLUDEALL GROUP research` Allows all users listed in the group research to use all features of IDL.	Specifies users or groups allowed use of all IDL features.
LINGER	LINGER *feature seconds* `LINGER idl 20` The license manager holds on to a license for an additional 20 seconds after it is checked in.	Causes licenses to be held by the license manager for a specific amount of time after a user exits IDL. Rarely used.
MAX	MAX *#lic feature type type_name* `MAX 6 compile GROUP research` Allows only a single user in the research group to use the compile feature at one time.	Limits usage of a feature among users or groups.

NOLOG	NOLOG *event_type*
	`NOLOG DENIED`
	`NOLOG QUEUED`
		A separate NOLOG line is needed to turn off logging of events including IN, OUT, DENIED, and QUEUED.

REPORTLOG	REPORTLOG *report_log _path* `REPORTLOG +RSI\license` Specifies the reportlog file path.	The "+" indicates that the file is to be appended instead of being over-written each time the manager is started.
RESERVE	RESERVE *#lic feature type type_name* `RESERVE 6 idl USER sam` Reserves a single IDL license for the user "sam".	Ensures that an IDL license will always be available to a specified user or group.

Table 2-2: Options File Keywords (Continued)

Sample Options Files

To Reserve Licenses for a Group

The following example shows how to define and reserve a number of licenses for a group of users, and tells the license manager not to log denied requests. Each copy of IDL requires 6 license units. Comment lines begin with #.

```
# reserve 5 IDL licenses for the research group
RESERVE 30 idl GROUP research
# define the users in the research group
GROUP research josh hal bob kate beth
# exclude anyone on a computer with the name main
EXCLUDE idl HOST main
# do not log license denials
NOLOG DENIED
```

Note

When using INCLUDE or EXCLUDE, anyone not specifically mentioned on a list is implicitly excluded or included. For example, in the above file, everyone who is **not** working on a computer named "main" would be allowed to access IDL. An EXCLUDE statement takes precedence over an INCLUDE statement. If the user "josh" was working on a computer named "main," he would not be able to access IDL even though there is a license reserved for him.

To Reserve Licenses for Individuals

The following options file reserves licenses for individuals in the group defined above. If you have a group of 10 people, you can specify that a license or licenses will always be available to certain users by using the RESERVE keyword in an options file. The NOLOG line pertains to the IDL QUEUED command which allows a user to wait for an IDL license instead of entering seven-minute demonstration mode when a counted license is unavailable. It tells the log file not to record any queue events.

```
# reserve one license for "kate"
RESERVE 6 idl USER kate
# reserve one license for "josh"
RESERVE 6 idl USER josh
# reserve 3 licenses for "hal"
RESERVE 18 idl USER hal
# do not log queue events
NOLOG QUEUED
```

Working with the License Server

A license server support utility is provided to control the operation of the license server. To access the FLEXlm License Manager Control Panel, select **Start →
Settings → Control Panel** and double-click on the FLEXlm License Manager icon. For information on setting up the license manager, see "Configuring the License Server" on page 38.

Starting and Stopping the License Manager

In the FLEXlm Control Panel, you can easily start, stop and see the status of the license manager. Open the FLEXlm Control Panel utility by selecting **Start →
Settings → Control Panel** and double-clicking on the FLEXlm License Manager icon. Select the **Control** tab.
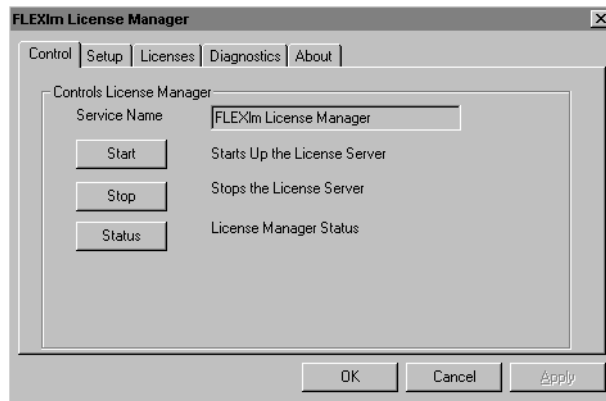
Figure 2-4: FLEXlm Control Panel - Control tab

- **Starting the license manager** — Click **Start** to start the license manager.

- **Monitoring the license manager** — Click **Status** to see the current operational status of the license manager.

- **Stopping the license manager** — Click **Stop** to disable the license manager. Your software will run only in seven-minute demonstration mode without an available license.

Removing the License Manager Service

To remove the license manager service, open the FLEXlm Control Panel utility by selecting **Start → Settings → Control Panel** and double-clicking on the FLEXlm License Manager icon. Select the **Setup** tab and click **Remove**.

Note ──
This command removes the license manager service, and should not be used to simply stop the service. To stop the service, see "Starting and Stopping the License Manager" on page 47.
──

License Manager Diagnostics

Open the FLEXlm Control Panel utility by selecting **Start → Settings → Control Panel** and double-clicking on the FLEXlm License Manager icon. Select the **Diagnostics** tab. In this dialog, you can view the following:

- **Hostid's** — displays the identifying information of the machine running the license manager.

- **Version** — displays version of the license manager application

- **Environment** — displays the setting of LM_LICENSE_FILE. If you did not save your license file in the default location, see "Saving the License File in an Alternative Location" on page 37 for information on setting this environment variable.

- **Connection** — displays the status of your connection to the server.

Reclaiming an Unused License

If a licensed user is running IDL when the machine crashes, that user's license may fail to return to the server. In this case, the license is not available to other users. The `lmremove` program allows the system administrator to remove a single user's license for a specified feature and return the license to the pool of available licenses.

To free the license, complete the following steps:

1. **Start the license manager utility.** Open a DOS based Command Prompt window from the server machine and change the directory to access the license manager utility by typing the following at the prompt:

   ```
   cd RSI-Dir\IDL55\bin\bin.x86
   ```

   Enter `lmutil` at the prompt to access the utility program. A list of possible commands is displayed.

2. **Gather the information necessary to remove the license.** Review the license manager status by entering the following at the command prompt:

```
lmutil lmstat -a.
```

This command displays available licenses and which users have licenses checked out. An example output of `lmstat -a` follows:

```
robin hal7 josh (v5.4) (hal7/1700/395), start Mon 10/12 4:34,
# licenses
```

The format of this line is:

```
user host display (version) (host/port/license handle),
start_date, available_licenses
```

Note the user, host, and display values.

3. **Remove the unused license.** Use the following to remove a license:

```
lmutil lmremove feature user host display
```

For example:

```
lmutil lmremove idl robin hal7 josh
```

where `idl` is the *feature*, `robin` is the *user*, `hal7` is the *host*, and `josh` is the *display*. Other feature values for Research System products appear in the table below.

RSI Software Product	*Feature* Value
IDL	idl
IDL Runtime	idl_rt
IDL Academic Edition	idl_student
IDL with the Wavelet Toolkit	idl_wavelet
IDL DataMiner	idl_dm
IDL MPEG	idl_mpeg
Right to Distribute	devkit
ENVI	envi
ION Script	ion_script

Table 2-3: Feature Values for lmremove

RSI Software Product	*Feature* Value
ION Java	ion_java
RiverTools	idl_rivertools
Noesys	noesys
VIP	vip

Table 2-3: Feature Values for lmremove (Continued)

4. **Verify the license has been removed.** You can check to make sure the license was freed by typing the following at the DOS command prompt:

```
lmutil lmstat -a
```

The license you just removed should no longer appear in the list of licenses checked out.

If the license manager gives an error message when starting, see "Troubleshooting the License Server Startup" on page 55.

Multiple Applications Using the Same License Server

IDL's network license server facility is provided by the FLEXible License Manager (FLEXlm), a product of Globetrotter Software. Since this license manager is not unique to IDL, the possibility exists that you will need to run software from two or more software vendors that all use FLEXlm. In this case, the potential for license server conflict exists. You have the following options if all products using FLEXlm are installed on the same license server.

All Products Using FLEXlm are Installed on the Same Server

If a Research Systems product and other vendor product(s) using FLEXlm license management software are all installed on the same server machine, there are two options:

• Combine all license files into a single license file.

• Create unique license manager services for each product.

Combining License Files

If separate vendor applications using FLEXlm software are installed on the same server machine, and each vendor's license file contains a SERVER line with an identical LMhostid, the solution is simple. After shutting down the license servers,

use a text editor to create a single license file. In this single license file, combine all license files by taking the SERVER lines from any *one* license file, and adding *all* the DAEMON, FEATURE, FEATURESET, and INCREMENT lines from *all* of the license files.

Multiple copies of this combined license file can be placed in the locations required by the various software vendors. Alternatively, a single copy of the license file can be located in any convenient location, in which case each client machine must set the LM_LICENSE_FILE environment variable to point to it.

When you have finished editing the license file, and saved it in the appropriate locations, restart the license manager with the *most recent* version of `lmgrd` that you have installed. From Windows Explorer, right click on each instance of `lmgrd.exe` and select the **Version** tab in the **Properties** menu. If an older version of `lmgrd` is used, the license manager from the product with a more recent *lmgrd* will not operate correctly.

Configuring Unique FLEXlm License Manager Services on the Same Server

As an alternative to combining the license information from multiple vendors licenses and running a single instance of the FLEXlm license manager service, a separate instance of the FLEXlm license manager service (with a unique name) can be installed and started for each separate vendor's license file.

Using separate instances of the FLEXlm license manager service with separate vendor licenses requires administering multiple services and license files. However, multiple license manager services and separate vendor license files allow the system administrator to stop and start FLEXlm services freely for particular vendors without regard for other vendors' FLEXlm services running on that same system.

Warning ───

Be certain that only one instance of the FLEXlm license manager will start on the server machine with respect to any RSI product license file. If an instance of FLEXlm license manager service is already running for an RSI product on this same license server machine, then installing a second instance of the FLEXlm service for an RSI product under a different name can cause a conflict when Windows NT is loaded. (To resolve such a conflict, quickly stop all but one of the conflicting FLEXlm services immediately after logging on to that Windows NT license server machine.)

───

After verifying that there is not already an RSI product-configured license manager service running on your server machine, you can configure an uniquely named

instance of the license manager service for RSI products to avoid conflict with other
vendors' license managers. To install a unique instance of the FLEXlm license
manager for an RSI product license file, complete the following steps:

1. Confirm that your updated RSI product license is already properly installed on
   the license server machine.

2. Open the FLEXlm License Manager control panel from your machine's control
   panel interface.

3. Select the **Setup** tab and enter a new (unique) FLEXlm service name in the
   Service Name field. By default, the FLEXlm license manager service is called
   "FLEXlm License Manager". If the name "FLEXlm License Manager" is
   configured and already being used for another vendor's product license file, we
   recommend using the name "RSI FLEXlm License Manager" instead.

4. Enter the paths to the RSI product's lmgrd.exe and license.dat files. if
   not already created, the Debug Log File, typically saved in the license
   directory, will be created when the license manager is started. The **Browse**
   buttons can help to insure that the file path entered is valid.

5. Select the **Use NT Services** and the **Start Server at Power-Up** check boxes.

6. Click **Apply** and then click **OK** when you are prompted to save changes to the
   new FLEXlm service that you are adding.
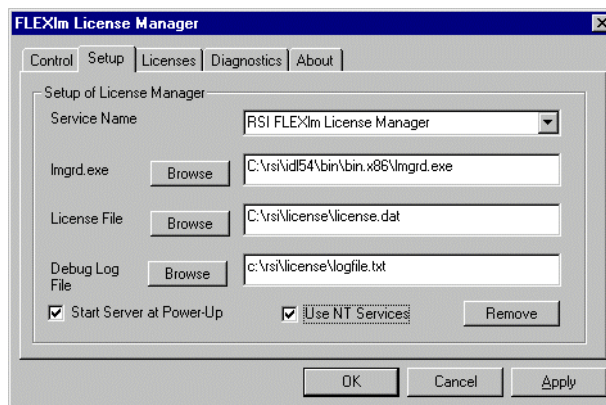
Figure 2-5: Uniquely Naming a FLEXlm License Manager

7. Go to the **Licenses** tab and click **Show License file**. If necessary, modify the
   DAEMON line such that the idl_lmgrd.exe path points to the most recent

version of the idl_lmgrd.exe file on the license server machine.
Additionally, if another vendor's license file references the same
communication port number as that in the SERVER line of the RSI license file,
change this to an unused port number. The default port number for RSI product
licenses is 1700. Save changes to the RSI product license file and close the
license file editor window.

8. Start the newly named license manager. Select the **Control** tab and start the
    updated service by clicking the **Start** button.

9. Verify that the license manager service has been started by clicking the **Status**
    button.

Troubleshooting a Floating License

If your Research Systems product runs in seven minute demonstration mode after
you have attempted to license the product, follow the appropriate suggestions below
and try starting IDL again. If you see errors from the license manager itself, turn to
"Troubleshooting the License Server Startup" on page 55.

Note

Useful messages may be logged in the license manager output log file that is
designated at the time the FLEXlm service is installed.

1. Check that the server daemon is running.

Open the FLEXlm License Manager Control Panel by select **Start** → **Settings** →
Control Panel and selecting the FLEXlm License Manager icon. Click the **Status**
button on the **Control** tab. If you receive a message that states the license manager
cannot connect to the license server, proceed to step 5.

2. Stop and restart the license manager.

Exit IDL. Stop and then restart the license manager.

3. Is the LM_LICENSE_FILE environment variable set to the license file of another application?

See "Saving the License File in an Alternative Location" on page 37 to check the
setting of the LM_LICENSE_FILE environment variable. If LM_LICENSE_FILE
points to a license file other than the RSI product's license file, stored in the
RSI-DIR\license directory, you will need to correct this prior to starting IDL.

4. Is the license server reachable from your machine?

If IDL displays the following error message at startup:

```
LICENSE MANAGER: cannot connect to license server.
```

make sure that you can use the network utility "ping" to contact the server machine. Open your system's MS-DOS command prompt, enter:

```
ping server_name
```

If you can ping the server machine, ensure that the license manager is running on that machine.

5. Has your license file been copied correctly?

If IDL displays the following error message at startup:

```
% LICENSE MANAGER: encryption code in license file is
inconsistent.
```

some of the encrypted information in the license file is not correct. This can involve the server hostid, the daemon name, and any character on the FEATURE lines.

Examine your license file and correct the INCREMENT or FEATURE line so that it exactly matches the one sent to you by Research Systems. Check for proper capitalization and spacing. Shut down the license manager service, make any corrections necessary, and restart the service with the corrected license file.

6. Is the license manager using the correct license file?

If IDL displays the following error message at startup:

```
LICENSE MANAGER: no such feature exists.
LICENSE MANAGER: license file does not support this feature.
```

the license manager may be using the wrong license file. See the section, "Configuring the License Server" on page 38 for details.

7. Does the license file contain the correct hostname?

If IDL displays the following error message at startup:

```
% LICENSE MANAGER: cannot find SERVER hostname in network
database.
```

the *hostname* in the license file does not agree with the actual hostname for the server, or cannot be accessed from the client node. Edit the license file and correct the hostname.

8. Search the RSI Technical Support Library

Go to `www.ResearchSystems.com/services/search.cfm` and select the
following for more information on troubleshooting floating licensing:

Product:	**IDL**
Platform:	**WINDOWS**
Category:	**LICENSING**
Functional Area:	**LICENSING - FLEXlm**

9. Check the Globetrotter Web Site.

The Globetrotter Web site contains on-line documentation and an excellent FLEXlm
FAQ. This information can be helpful when trying to combine licenses from different
vendors. See the following Web pages:

Globetrotter home page: `http://www.globetrotter.com`

FLEXlm FAQ: `http://www.globetrotter.com/flmfaq.htm`

10. Contact RSI Technical Support

If you are still having problems licensing, see "Contacting Research Systems" on
page 8 for information on how to contact Technical Support.

Troubleshooting the License Server Startup

If the license server gives an error message when starting, find the error message
below and follow the instructions to eliminate the error.

1. Invalid Server Hostname

```
date time (lmgrd) "Hostname1": Not a valid server hostname,
exiting.
date time (lmgrd) Valid server hosts are: "Hostname2"
```

In spite of the error message, *Hostname1* is the hostname of the server that probably
should be in the license file, while *Hostname2* is the incorrect hostname currently in
the license file. Edit your license file to contain the correct hostname.

2. Inconsistent Encryption Code

```
date time (idl_lmgrd) Inconsistent encryption code for idl
```

There is a problem with the information on the FEATURE or INCREMENT line of
the license file. Verify that the license key was entered correctly. Check capitalization
and spacing, making sure it is exactly the same as in the license file sent to you.

Finally, check to make sure that long lines in the license file have not been inadvertently wrapped to a new line.

3. No Features to Serve

```
date time (idl_lmgrd) No features to serve!
```

There are no valid FEATURE or INCREMENT lines. This is most commonly due to the "inconsistent encryption code" error described above.

4. Retrying Socket Bind

```
date time (lmgrd) Retrying socket bind (address in use: port 1700)
```

An attempt has been made to start the license manager when it was already running. This often happens when the license file contains a mistake, the mistake is corrected, and the license manager is started again before the first attempt has been shut down or killed. There may also be some other software product using the default port number, 1700. Stop the service using the Services dialog in the Control Panel and restart the service.

5. No Such File or Directory

```
license daemon: execl failed: .../idl -T host 2.40 3 -c
license daemon: system error code: No such file or directory
```

The path on the DAEMON line of the license file is incorrect. It should point to the IDL directory. Edit the license file and correct the DAEMON line.

6. Cannot Find License File

```
license manager: can't initialize: cannot find license file
(No such file or directory)
date time (lmgrd) Using license file "filename"
```

The license manager cannot find the *license.dat* file. Either the *license.dat* file is not in the default location or the file specified in the environment variable LM_LICENSE_FILE is incorrect. Also, make sure that the filename *license.dat* is spelled correctly and that you have read permission for the *license.dat* file.

7. Cannot Read License File

```
license manager: can't initialize: cannot read license file
(Permission denied)
```

The permissions are set incorrectly on the *license.dat* file. Set the file to allow read permission for all users.

8. Wrong Hostid for Server

```
Wrong hostid on Server line for license file:
C:\RSI\LICENSE\LICENSE.DAT.
SERVER line says 000c0123454, hostid is 000c0abcde
Invalid host on SERVER line.
```

The hostid in the license file does not match the hostid of the machine. Verify that you are using the correct machine. You may need to request a corrected license file. Make sure that the license file has been correctly copied from the original information sent to you by Research Systems.

For additional assistance, see "Contacting Research Systems" on page 8.

Licensing IDL with a HASP License

After installing IDL, use the licensing wizard to install the license key for your HASP license. Your license key will be sent to you via e-mail or fax. You should have received your hardware dongle with your IDL product. If you haven't received these items, see "Contacting Research Systems" on page 8.

Enter the License Key

To enter your license key and install your hardware dongle, complete the following steps:

1. **Shut down your computer.** Always shut down your computer before installing or removing a HASP.

2. **Insert the HASP into any parallel port.** Parallel ports are 25 pin ports also known as printer ports. The arrows on the HASP should point toward the back of the computer.

3. **Restart your computer.**

4. **Start the IDL Licensing Wizard.** Click the Windows **Start** button, and select **Programs → Research Systems IDL 5.5→ License**.

5. **Display the License Information dialog.** Click the **HASP** button. Click Yes to confirm the installation of the HASP device driver. This will start the installation of the required drivers for HASP licensing. This may take a few minutes. After the installation is complete, the License Information dialog displays.

6. **Enter your license information.** Enter the Installation Number, the Site Notice, any Optional Features and the Installation Key exactly as they appear in the RSI product license information that was sent to you. Click **OK**.

Important Note About Your Hardware Key

If the hardware key is removed during an RSI software session or if you start your software without the hardware key attached, the software enters demonstration mode and you will not be able to save your work.

Troubleshooting HASP Licensing

1. Verify the license key is correct.

To verify your license key is correct, complete the following steps:

1. Open your Windows Explorer and browse to the
   RSI-DIR\IDL55\bin\bin.x86 directory.

2. Double-click on the program file, hwrl.exe to open the License Information
   dialog.

3. Verify that the license key information that you have entered is exactly as it
   appears in the RSI product license information you have received.

   Note ———————————————————————————————————

   The license key is case-sensitive.

   ——

4. Click **OK**.

2. Make sure there are no earlier versions of HASP drivers on your system.

This is only required if you have run other versions of RSI software products with
earlier versions of the HASP drivers.

1. Open a DOS command prompt and CD to the directory of your previous RSI
   product installation which holds the hinstall.exe file (for example,
   C:\RSI\IDL52, C:\RSI\ENVI32\IDL52 or
   C:\RSI\IDL54\bin\bin.x86).

2. Enter the following command to disable the now obsolete HASP device driver
   program:

   ```
   hinstall -r
   ```

3. Install the latest HASP driver.

Open a DOS command prompt and CD to the *RSI-DIR*\IDL55\bin\bin.x86
directory (for example, C:\RSI\IDL55\bin\bin.x86)

Enter the following command to install the HASP device driver program:

```
hinstall -i
```

This command launches the installation utility, which automatically installs the
required drivers on your system (this may take a few minutes to complete). Click **OK**
when the dialog appears stating that the installation has been completed.

4. Verify the hardware dongle has been installed correctly.

Make sure that your hardware dongle has been installed properly on your computer.

1. **Shut down your computer.** Always shut down your computer before installing or removing a HASP.

2. **Re-Insert the HASP into any parallel port.** Parallel ports are 25 pin connectors that are also known as "Printer" or "LPT" port. Check the back of the computer and make sure the hardware dongle is attached to a parallel port. The arrows on the HASP should point toward the back of the computer.

3. **Restart your computer.**

5. Is the correct dongle installed on your computer?

Make sure that you have the correct hardware dongle installed on your computer. Look at the writing on the dongle and make sure the appropriate hardware dongle is listed:

Product	HASP Label
IDL	IDL
IDL Runtime	IDL/RT

Table 2-4: Product Label on HASP

For example, the appropriate hardware dongle label should look like one of the following:

```
HASP-3              R3a          HASP-3              R3d
XKAXZ      UI      IDL          XEQIK      US    IDL/RT
```

Figure 2-6: HASP Labels — IDL (right) and IDL Runtime (left)

If you have an "IDL Runtime" license key and an "IDL" hardware dongle, you will not be able to license IDL. If you have the wrong hardware dongle, see "Contacting Research Systems" on page 8 for information on how to contact Research Systems for a new hardware dongle.

6. Search the RSI Technical Support Library

Go to www.ResearchSystems.com/services/search.cfm and select the following for more information on troubleshooting HASP licensing:

Product: **IDL**
Platform: **WINDOWS**
Category: **LICENSING**
Functional Area: **LICENSING - HASP**

7. Contact RSI Technical Support

If you are still having problems licensing, see "Contacting Research Systems" on page 8 for information on how to contact Technical Support.

Chapter 3:
Installing and Licensing IDL 5.5 for UNIX

This chapter covers the following topics:

Introduction

Before You Begin

- **Check Your OS Version** — Make sure that you are running on one of the supported UNIX versions listed in "Supported Platforms" on page 9, or a UNIX version that is binary-compatible with one of these versions.

- **You Must be Running X Windows** — The IDL installation program has a Motif graphical user interface and requires you to be running X Windows. If you cannot install from a machine running X Windows, see the instructions in the /install/no_gui directory on your IDL CD-ROM.

Licensing Methods

Access to IDL and other products from Research Systems is controlled by a software application that ensures a proper license has been entered on the user's system. Licensing options include demonstration, evaluation, node-locked, and floating, each discussed in the following sections.

Demonstration License

Demonstration licenses are the default licenses provided with Research Systems software products. These licenses allow you to run limited versions of the software products in seven minute demonstration mode. You do not need to request or enter a license file. For more information, see "Running IDL in Demonstration Mode" on page 10.

Evaluation LIcense

Evaluation licenses are temporary trial licenses allowing access to all IDL features for a specified number of days. Once the evaluation license expires, you will be alerted by a dialog box stating that the application is available only in 7 minute demonstration mode. Contact Research Systems or your local distributor to purchase a permanent license or to extend your evaluation license.

The following is a sample Evaluation license key that you will receive either by e-mail or fax:

```
Product:            IDL X.X
Expiration:         23-Aug-20XX
Key:                ABC123DEF456GHI7-123

IDL Major Version:  X.X
Package Name:       eval_idl
```

Node-Locked License

Node-locked licenses are personal licenses tying a single software application to a single machine. This method of licensing requires a machine's unique host ID to be incorporated into a license request file. After a license request is sent to Research Systems or your local distributor, a license file is returned. Entering and saving the license file enables full functionality of the Research Systems product on the machine for which you have sent the host ID.

The following is a sample node-locked license key that you will see on your product registration form which you will receive either by e-mail or fax:

```
SERVER myserver 12345678 1700
DAEMON idl_lmgrd /usr/local/rsi/idl_X.X/bin
INCREMENT idl idl_lmgrd X.X00 1-jan-0000 10 ABC123DEF456GHI789JK \
    VENDOR_STRING="000011Research Systems, Inc." \
    HOSTID=12345678 ck=2
FEATURESET idl_lmgrd ABC123DEF456GHI789JK
```

Floating License

Floating licenses (also known as client/server licenses) allow multiple users to concurrently access IDL. After installing and licensing IDL on the server machine, the license manager, installed along with your IDL software, handles requests for licenses from remote client machines. As the server administrator, you can choose how users access the licenses. You can select to reserve licenses for individuals or groups, or select to allow all users to share access to the licenses. If you have a team of 20 people, and you have purchased IDL with 10 floating licenses, you can select to reserve licenses for certain individuals in the group, or allow all team members to share access to the ten licenses throughout the day.

While both *node-locked* and *floating licenses* use a license file or key containing information based on a unique host ID from the machine being licensed, floating licenses additionally require the installation of a license manager.

IDL (with floating licenses) uses the Globetrotter Software FLEXlm license manager. The license manager runs continuously on your system, waiting for a request from a Research Systems product. When a request arrives, the license manager determines whether the proper license for a requested product is available. If the proper license is present and not already in use, the license manager allows access to the software.

The following is a sample floating license key that you will receive either by e-mail or fax:

```
# License Number(s): 000011

SERVER PSGUBAJ 12345678 1700
DAEMON idl_lmgrd /usr/local/rsi/idl_X.X/bin
INCREMENT idl idl_lmgrd X.X00 1-jan-0000 10 ABC123DEF456GHI789JK \
    VENDOR_STRING="000011Research Systems, Inc." ck=34
FEATURESET idl_lmgrd ABC123DEF456GHI789JK
```

Installing IDL for UNIX

This section describes how to install and license IDL 5.5 for UNIX.

System Requirements

The following are the system requirements for installing IDL 5.5 for UNIX.

Requirement	Description
Disk space	200 MB (typical installation).
Operating System	See "Supported Platforms" on page 9 for a complete listing of supported UNIX platforms.
Network Interface Card	Product licensing procedures require a system equipped with TCP/IP addressable network communication card (for example an ethernet card) and TCP/IP service.

Table 3-1: IDL 5.5 UNIX System Requirements

Mount the IDL CD-ROM on Your System

Some platforms automatically mount the CD-ROM when you insert it into your CD-ROM drive. In most cases, the CD-ROM will be mounted as:

```
/cdrom/idl_55
```

The following instructions work in most cases for the platform listed. Consult your operating system documentation for instructions on mounting a CD-ROM on your system.

Note —————————————————————————————————

Replace *CDROM-Dev* with the actual name of the CD-ROM drive on your system. Type mounting commands as a single line. On most systems, you must have root permissions to mount the CD-ROM.

————————————————————————————————————

Platform	CD Mounting Command	Typical *CDROM-Device* Name
Compaq Tru64 UNIX	`/usr/sbin/mount -t cdfs -r -o rrip` *CDROM-Dev* `/cdrom`	`/dev/rz4c`
HP-UX	`mount -r -F cdfs -o cdcase` *CDROM-Dev* `/cdrom`	`/dev/dsk/c1t2d0`
IBM AIX	`mount -r -v cdrfs` *CDROM-Dev* `/cdrom`	`/dev/cd0`
Linux	`mount -o ro -t iso9660` *CDROM-Dev* `/mnt/cdrom`	`/dev/cdrom`
SGI IRIX	`(automatically mounted as /CDROM)`	
SUN Solaris	`(automatically mounted by volume manager as /cdrom/idl_55)`	

Table 3-2: CD-ROM Mounting Commands

Remember how your CD-ROM has been mounted, and use this path in place of *CDROM-PATH* in the installation instructions.

Run the IDL Installation Procedure

To install IDL 5.5, complete the following steps:

Note ───
If you are installing IDL in a public directory, make sure you have root or similar permissions before running the installation script.
──

1. **Execute the installation script.** Enter the following command at your UNIX prompt:

   `/bin/sh /`*CDROM-PATH*`/xinstall.sh`

   where *CDROM-PATH* is the path to your CD-ROM drive.

   The Product Installation dialog appears.

2. **Read and accept the license agreement.** To continue the installation, you must accept the terms of the Research Systems license agreement. Click **Yes** to continue.

3. **Choose the installation directory.** The directory listed next to the **Set Directory** button is the directory under which the idl_5.5 directory will be created. The default installation directory is /usr/local/rsi. To change the default, click **Set Directory**. If you do not have write permissions for the selected directory, it will appear as gray text. The selected directory will be created for you if it does not already exist.

4. **Select the options to install.** Move the mouse pointer over each option to display information about that option. Select the check box next to each option you want to install.

5. **Select the platforms to install.** This defaults to the platform on which you are running the installation script. Select or deselect platforms by clicking on the check box next to the option. Select the appropriate platforms for any machines that will run IDL on your network. When installing on a 64-bit machine, both the 32 and 64-bit check boxes will be checked by default.

6. **Verify your Selections.** When you have selected the installation directory, options, and platforms for your IDL installation and have made sure you have enough disk space, click **OK**.

7. **Begin the Installation.** The **IDL Installation Summary** dialog displays the options you have selected. If the options shown in the dialog are correct, click **Install** to begin the installation process. If the options are not correct, click **Cancel** to return to the **IDL Installation** dialog.

8. **Set up symbolic links.** Once the installation script has finished copying files to the installation directory, the **Product Environment** dialog appears prompting you whether or not to create symbolic links.

   Symbolic links are shortcuts to the IDL executables that you can create in your home directory or in any directory you specify that users can execute to start IDL. If you want to create symbolic links, click **Create Links**. The Product Links dialog appears.

   If you choose not to create symbolic links at this time, you can create them after installing IDL by doing one of the following:

   • Use the *RSI-DIR*/idl_5.5/bin/install executable to create the symbolic links for you. *RSI-DIR* denotes the directory where you have installed IDL. You must execute this script from the *RSI-DIR*. Enter the following to create the symbolic links:

   ```
   cd RSI-DIR
   idl_5.5/bin/install
   ```

- Make note of the commands you will need to execute to manually create symbolic links. These commands are displayed at the end of the installation process.

9. **Choose the directory in which to create the symbolic links.** This can be your home directory or any other directory from which you want to start IDL. The default directory is /usr/local/bin. This is a directory which is commonly in a user's paths already. To change the default, click the **Set Directory** button. If you do not have write permissions for the selected directory, it will appear as gray text. The selected directory will be created for you if it does not already exist.

10. **Select to License IDL.** To license IDL now, click **Yes**. For licensing instructions, see "Licensing IDL with a Node-locked or Floating License" on page 78. You can license IDL at a later time by typing rsilicense at the UNIX prompt. To license IDL at a later time, or to run IDL only in seven minute demonstration mode, click **No**.

    Note ───
    To license IDL on Alpha Linux, select **No** in the License IDL dialog and see "Licensing for Alpha Linux" on page 85 for instructions.
    ──

11. **Your installation is now complete.** The Installation Complete dialog reports any errors that may have been encountered during installation.

Note ───
IDL online manuals require Acrobat Reader with Search 3.0 or greater. A copy of Adobe Acrobat Reader with Search 4.0 has been included on your product CD-ROM. For more information, see "About Adobe® Acrobat® Reader" on page 8.
──

Unmount the IDL CD-ROM from Your System

You can now unmount the CD-ROM using one of the following commands where *CDROM-Device* is the name of your CD-ROM drive.

```
umount /CDROM-Device
```
    or
```
eject /CDROM-Device
```

Installing the License Server

If you are intending the license server to run on a different machine than IDL, you need to install it on that platform. The license server binaries are included on your CD-ROM in the /flexlm directory.

Note

If you are intending to run the license server on the same machine as IDL, the required binaries have been installed with IDL. You do not need to install the license server binaries using the following instructions.

To install the license server binaries, complete the following steps:

1. **Mount the IDL CD-ROM on the license server system.** Use the mounting instructions located in "Mount the IDL CD-ROM on Your System" on page 67

2. **Create the RSI directory.** On the server machine, the default location for all of the files is /usr/local/rsi. You need to create this directory using the following command:

    ```
    mkdir /usr/local/rsi
    ```

    This path will be referenced as *RSI-DIR* in the remaining instructions in this guide.

3. **Change directory to *RSI-DIR*.** Change to the directory you created in the previous step:

    ```
    cd /usr/local/rsi
    ```

4. **Unpack the license server binaries.** There are a set of platform-independent binaries (the flexlm.tar file) and a set of platform dependent binaries (the f_*platform*.tar file). To unpack the binaries, use the following commands:

    ```
    tar -xvf /CDROM-PATH/flexlm/flexlm.tar
    ```

    and

    ```
    tar -xvf /CDROM-PATH/flexlm/f_platform.tar
    ```

    where *CDROM-PATH* is the path to your CD-ROM drive and *platform* represents the OS of the platform on which you are installing the binaries.

5. **Unmount the IDL CD-ROM.** Use the unmounting instructions located in "Unmount the IDL CD-ROM from Your System" on page 70

Requesting a License

If you are licensing with either a node-locked license or a floating license, you need a license key from Research Systems or your distributor. The license key is created using information from the machine on which you will be running the license server. A built-in licensing program has been created to simplify the request and installation of your license file.

Note ————————————————————————————

You do not need to request a license if you are using an evaluation license. The required information will be automatically sent to you.

Note ————————————————————————————

Alpha Linux customers do not need to use the licensing wizard to request or enter a license file. See "Licensing for Alpha Linux" on page 85 for instructions.

Note ————————————————————————————

The electronic registration program can't retrieve the correct information unless you have a TCP/IP addressable network communication card (for example, an ethernet card) and a TCP/IP service set up on your system.

Note also that you must run the licensing wizard from the license server machine or the node-locked machine, on which you have installed your Research Systems software. This ensures proper generation of the server LMHostid and Nodename for your license file.

Note ————————————————————————————

You need write permissions for the *RSI-DIR/license* directory in order to save the license request file, `rsi_request.txt`, created by the license wizard.

Preparing a License Request

To prepare a license request, complete the following:

1. **Set up your environment.** Before running the licensing wizard, you must set up your environment. You can use predefined setup files included with IDL.

    If you are using the license server installed on the same platform with IDL, use one of the following:

    For C shell:

    ```
    source RSI-DIR/idl_5.5/bin/idl_setup
    ```

    For Korn shell:

    ```
    . RSI-DIR/idl_5.5/bin/idl_setup.ksh
    ```

    where *RSI-DIR* is the main installation directory for IDL.

    If you are using a license server that you have installed on a different machine (as described in "Installing the License Server" on page 71), use one of the following:

    For C shell:

    ```
    source RSI-DIR/idl_5.5/bin/license_setup
    ```

    For Korn shell:

    ```
    . RSI-DIR/idl_5.5/bin/license_setup.ksh
    ```

    where *RSI-DIR* is the main installation directory for the IDL license server.

2. **Start the license wizard.** To start the license wizard, enter the following at the UNIX prompt:

    ```
    rsilicense
    ```

3. **Begin the license request process.** Select **Permanent** from the Permanent Licensing dialog.

4. **Prepare a Request file.** Click **Request** to prepare a license request file to submit to Research Systems. The licensing wizard guides you through the creation of a license request file that will contain all the information necessary for Research Systems to create a valid license file for your software installation.

5. **Enter your information.** Fill in the following text fields in the Permanent Licensing dialog:

    •   **Contact Person** — Enter the name of the person to whom the license file should be sent.

    •   **E-mail Address** — Enter the e-mail address of the contact person.

    •   **Installation Number** — Enter the installation number found on your product installation form. You should have already received this form from Research Systems by electronic mail or fax. If you have not received it, contact Research Systems technical support. See "Contacting Research Systems" on page 8 for more information.

    •   **Site Notice** — Enter the name that you want to appear when you launch the software. The name you select will replace <your site notice> in the following statement: "licensed for use by <your site notice>." This is typically your company's name, department, or project.

6. **Select the license type**. Select either **Node Locked** or **Floating**. The license wizard automatically generates the correct Hostname and LMHostid. Do not modify these values.

7. Click **Next** to continue.

8. **Review your license request.** If the information is correct, click **Next** to save the license request file and proceed. If the information is incorrect, edit it in the text window or click **Back** to make any corrections.

9. **Send the license request file.** Click **Next** to send the license request file to Research Systems. If you did not purchase your software directly from Research Systems, alter the e-mail address and send the file to your local distributor.

Note ───

If you can't send e-mail from your machine or if you receive a message stating that an attempt to send the e-mail was unsuccessful, see "Manually Sending a License Request" on page 75. A license file will be sent to you at the e-mail address or fax number you supply.

──

10. **Exit the License Wizard.** Click **Finish** to exit the license request program.

If you do not receive a license file or any confirmation that the request was received, see "Manually Sending a License Request" on page 75 to re-send the request.

Manually Sending a License Request

To manually send a license request, select the appropriate step below and e-mail your request to register@ResearchSystems.com or fax the text of the request file to Research Systems at 303-786-9909.

- **From the license wizard** — Select **Back** to display the request file. Copy all of the request information into an e-mail message or fax this text to Research Systems.

- **Outside of the license wizard** — Copy the request file, located in *RSI-DIR*/license/rsi_request.txt, and send it by fax or e-mail.

Note ——————————————————————————————

If you did not purchase your software directly from Research Systems, send the file to your local office or distributor.

Licensing IDL with an Evaluation License

After installing IDL, use the licensing wizard to install your evaluation license. If you do not have a license key, contact your RSI sales representative to request an evaluation license.

If you have exited the installation program, type `rsilicense` at the UNIX command prompt. If you have problems with this command, you may need to set environment aliases. See "Set Up the IDL Environment" on page 82.

1. **Set up your environment.** Before running the licensing wizard, you must set up your environment. You can use predefined setup files included with IDL.

   If you are using the license server installed on the same platform with IDL, use one of the following:

   For C shell:

   ```
   source RSI-DIR/idl_5.5/bin/idl_setup
   ```

   For Korn shell:

   ```
   . RSI-DIR/idl_5.5/bin/idl_setup.ksh
   ```

   where *RSI-DIR* is the main installation directory for IDL.

   If you are using a license server that you have installed on a different machine (as described in "Installing the License Server" on page 71), use one of the following:

   For C shell:

   ```
   source RSI-DIR/idl_5.5/bin/license_setup
   ```

   For Korn shell:

   ```
   . RSI-DIR/idl_5.5/bin/license_setup.ksh
   ```

   where *RSI-DIR* is the main installation directory for the IDL license server.

2. **Start the license wizard.** To start the license wizard, enter the following at the UNIX prompt:

   ```
   rsilicense
   ```

3. **Access the Evaluation License dialog.** Select the **Evaluation** button on the Product Licensing dialog.

4. **Enter your license information**.

   • Select the Product — Select the product you wish to license from the drop-down list. Only installed products are displayed.

   • Enter the Expiration date — For example, 12-oct-2000.

   • Enter the Key code — Enter the key **exactly** as it appears on your Registration form and click **Next**.

5. **Exit the licensing wizard.** Click **Finish**. IDL is now licensed.

If you have saved your license file in a directory other than `/usr/local/rsi/license`, see "Set Up the IDL Environment" on page 82 for instructions on setting the LM_LICENSE_FILE path environment variable. When your trial period expires, an error message appears stating this fact when you start IDL. Until re-licensed, IDL will operate only in seven-minute demonstration mode.

Troubleshooting Evaluation Licensing

If you receive an error message, locate it below for suggestions on resolving the problem.

1. **The license information does not pass the checksum test.** Carefully check to make sure you have entered your license information exactly as it appears in your RSI product license information. Exactly duplicate capitalization, spacing and the date format as shown on your form.

2. **The file already exists.** If you have an existing evaluation license for this product, you will be asked if you want to replace it. Select **Yes** to overwrite the old license with the new, extended evaluation license.

3. **The file cannot be written.** You may not have write permissions for the directory or the file to which you are attempting to write. Check the permissions to make sure neither the directory nor any files you are attempting to overwrite are designated as "read-only."

Licensing IDL with a Node-locked or Floating License

To license your RSI product using a software-based node-locked license or a floating license, you need to enter your license key. After completing and sending your license request file, described in "Requesting a License" on page 72, your license file will be sent to you via electronic mail or fax. If your file is sent via e-mail, you can save the e-mail message as a file named *license.dat*, removing any header lines before the beginning of the actual license information. If you receive your license file via fax, you will have to enter the information into the text window of the license wizard as described below.

1. Save the License File

If your license key arrived via e-mail, you can save the e-mail message to a file so that the licensing wizard can import it. Complete the following steps:

1. From your e-mail application, save the license file e-mail anywhere on your system as a file named license.dat.

2. With any text editor, remove any header lines that appear before the beginning of the actual license information keeping the comment lines that begin with the "#" character. For an example of a license key, see "Node-Locked License" on page 65.

3. Copy the license.dat file to anywhere on the system you are running IDL if this is a node-locked license or anywhere on the license server if this is a floating license.

2. Enter the License Key

1. **Set up your environment.** Before running the licensing wizard, you must set up your environment. You can use predefined setup files included with IDL.

    If you are using the license server installed on the same platform with IDL, use one of the following:

    For C shell:

    ```
    source RSI-DIR/idl_5.5/bin/idl_setup
    ```

    For Korn shell:

    ```
    . RSI-DIR/idl_5.5/bin/idl_setup.ksh
    ```

where *RSI-DIR* is the main installation directory for IDL.

If you are using a license server that you have installed on a different machine (as described in "Installing the License Server" on page 71), use one of the following:

For C shell:

```
source RSI-DIR/idl_5.5/bin/license_setup
```

For Korn shell:

```
. RSI-DIR/idl_5.5/bin/license_setup.ksh
```

where *RSI-DIR* is the main installation directory for the IDL license server.

2. **Start the IDL Licensing Wizard.** Type rsilicense at the UNIX command prompt.

3. **Display the Enter License Text dialog.** Select **Permanent** and then **License** from the licensing wizard dialogs.

4. **Enter your license file.** Paste the text of the license file into the dialog's text window, or select **Browse** to select the license file which you have named license.dat. If you paste in your license file, remove any header lines that are included in the file but keep the comment lines that begin with the "#" character. If you have received your license file via fax or other hardcopy method, enter the information directly into the text window.

Note ───
The license key consists of non-indented lines, indented lines, and blank lines. Besides the comment lines (lines beginning with the number sign (#)), non-indented lines should begin with either a SERVER, DAEMON, FEATURE, or INCREMENT keyword. Because of e-mail/fax limitations, extra long lines of the license key may have been inadvertently wrapped to a new line. If a non-indented line begins with a character other than a number sign (#) or a SERVER, DAEMON, FEATURE, or INCREMENT keyword, then it is likely that an extra long line has been incorrectly wrapped and that the segment belongs at the end of the previous line. Make sure that you review your license key for these possible errors. If such an error is not corrected, the software will not be licensed.
───

Note ───
Be sure that the DAEMON line of the license file points to the idl_lmgrd program in the *RSI-DIR*/IDL_5.5/bin directory where *RSI-DIR* is the

directory where you have installed your RSI software. If this is not the case, be sure to correct the license file path before proceeding.

5. **Save the license file.** Click **Next** to save the license.dat file in the `RSI-DIR`/license directory. If you have installed your software in a directory other than the default, /usr/local/rsi, you must set the environment variables pointing to the license.dat file before starting your Research Systems software or the license manager. See instructions for setting the LM_LICENSE_FILE environment variable in "Set Up the IDL Environment" on page 82.

   Note
   If you receive a message that there is an existing license file, save the existing file under a different name before proceeding. While the new license usually contains information for all currently licensed products, save the old file as a safeguard against destroying license information. Run the license wizard again to save the new license file in the default location.

6. **Exit the licensing wizard.** Click **Finish**.

   Note
   If you have other software that uses Globetrotter Software's FLEXlm license manager you may want to combine the Research Systems license file with the existing ones. See "Multiple Applications That Use The Same License Manager" on page 100 for instructions and options.

   Note
   Research Systems strongly recommends saving your license file with the default path and filename *RSI-DIR/license/license.dat*, for example, where *RSI-DIR* is usr/local/rsi. If you put your license file in this directory, you do not have to redefine environment variables.

   If you have saved the license file in a directory other than the default *RSI-DIR*/license/license.dat, you must set an environment variable pointing to the license.dat file before starting the license manager. See the section "Set Up the IDL Environment" on page 82 for instructions.

3. Start the License Server

This section describes how to start the license server. If you are using a node-locked or floating licenses, you must start the license server.

Note ───

If you are running *only* type MU (unlimited usage) licenses, as indicated on your license file's INCREMENT line (indicated with 0 (zer0) or "uncounted"), you do not need to start the license manager.

───

Once you entered the license key, start the license manager by completing the following steps:

1. **Set the IDL_DIR environment variable.** To set the IDL_DIR environment variable, enter the following:

    For C shell:

    ```
    setenv IDL_DIR /RSI-DIR/idl_5.5
    ```

    For Korn shell:

    ```
    export IDL_DIR='/RSI-DIR/idl_5.5'
    ```

    where *RSI-DIR* is the main installation directory for your software.

2. **Start the license server.** To start the license server, enter the following:

    ```
    RSI-DIR/idl_5.5/bin/lmgrd [-c license_path]
    ```

    where *RSI-DIR* is the directory where you have installed your RSI software, and *license_path* is the full pathname to the license file, including the license filename. The default license path is *RSI-DIR*/license/license.dat. If you have used this default location or have defined the LM_LICENSE_FILE environment variable (as described in "Define the Path to the License File or License Server" on page 83), it is not necessary to specify the -c license_path option.

For information on other license manager functions, see "Working with the License Server" on page 88. If you receive an error message while trying to start the license manager, consult "License Manager Startup Troubleshooting" on page 108 for possible solutions to your problem.

Note ───

If you have more than a single FLEXlm license manager running on a server, conflicts may exist among the license managers. Before starting the license

manager, see "Multiple Applications That Use The Same License Manager" on page 100 for more detailed information on customizing your license file.

Note

Starting the license manager requires no special privileges. Note the potential security ramifications of running the license manager from the `root` account, as it can be started by any user. However, special privileges *are* required to *shut down* the license manager. See "Shutting Down The License Manager" on page 90 for more information.

---

4. Set Up the IDL Environment

Before you can run IDL, you must set up each user's environment on the machine that will be running IDL. This consists of two tasks that each user of IDL will complete:

- Defining the required IDL environment variables and aliases.
- Defining the path to the license file or license server.

Define IDL Environment Variables and Aliases

A setup script has been provided which will set all required environment variables and aliases for IDL. Research Systems suggests that you modify either the `.cshrc` or `.profile` file for each user who will be accessing IDL so that these settings are automatically executed whenever a user logs in.

To modify your `.cshrc` or `.profile` file, complete the following steps:

1. **Modify each user's `.cshrc` or `.profile` file using any plain text editor.**

   For C shell, have each user add the following line to their `.cshrc` file:

   ```
   source RSI-DIR/idl_5.5/bin/idl_setup
   ```

   For Korn shell, have each user add the following line to their `.profile` file:

   ```
   . RSI-DIR/idl_5.5/bin/idl_setup.ksh
   ```

   where *RSI-DIR* is the main installation directory for IDL.

2. **Execute your `.cshrc` or `.profile` file.** Log out and log back in to execute the `.cshrc` or `.profile` file or execute the file from the home directory using one of the following commands:

For C shell:

```
source .cshrc
```

For Korn shell:

```
. .profile
```

Define the Path to the License File or License Server

To allow access to Research Systems software for both node-locked and floating licenses, the machines on which you are running IDL must have access to both the license file or the license manager.

Node-locked License

If you are installing a node-locked license and you saved the license file in a place other than the default (`/usr/local/rsi/license/license.dat`), you must define the path to the license file. Research Systems suggests that you modify either the `.cshrc` or `.profile` file for each user who will be accessing IDL so that these settings are automatically executed whenever a user logs in.

1. **Modify each user's `.cshrc` or `.profile` file using any plain text editor.** You must define the UNIX environment variable for LM_LICENSE_FILE to point to the path to the license file. For example, if you save your license file as:

   ```
   /myhome/license.dat
   ```

   in the `.cshrc` or `.profile` file, define the LM_LICENSE_FILE variable as follows:

   For C shell:

   ```
   setenv LM_LICENSE_FILE /myhome/license.dat
   ```

   For Korn shell:

   ```
   export LM_LICENSE_FILE='/myhome/license.dat'
   ```

2. **Execute your `.cshrc` or `.profile` file.** Log out and log back in to execute the `.cshrc` or `.profile` file or execute the file from the home directory using one of the following commands:

   For C shell:

   ```
   source .cshrc
   ```

   For Korn shell:

   ```
   . .profile
   ```

Floating Licenses

You must define the path to the license server in each user's environment that will be
running IDL. To do this, you must define the LM_LICENSE_FILE environment
variable. Research Systems suggests that you modify either the .cshrc or
.profile file for each user who will be accessing IDL so that these settings are
automatically executed whenever a user logs in.

1. **Modify each user's .cshrc or .profile file using any plain text editor.**
   You must define the UNIX environment variable for LM_LICENSE_FILE to
   point to the server and port of the machine running the license server. The
   syntax for the defining the environment variable is:

   ```
   port@host
   ```

   For example, if you are running the license server on a machine named "hal"
   with a port of 1700, then you would enter:

   For C shell:

   ```
   setenv LM_LICENSE_FILE 1700@hal
   ```

   For Korn shell:

   ```
   export LM_LICENSE_FILE='1700@hal'
   ```

2. **Execute your .cshrc or .profile file.** Log out and log back in to execute
   the .cshrc or .profile file or execute the file from the home directory
   using one of the following commands:

   For C shell:

   ```
   source .cshrc
   ```

   For Korn shell:

   ```
   . .profile
   ```

You can change the port number by modifying the license file. For more information,
see "Modifying the License File" on page 98

Licensing for Alpha Linux

Licensing for Alpha Linux requires Research Systems or your regional distributor to interactively create a license file for your RSI software installation. You will need to contact Research Systems Technical Support during business hours to license IDL.

Note

To reach Research Systems Technical Support, dial (303) 413-3920 from 8 a.m. to 5 p.m. mountain time or e-mail support@ResearchSystems.com.

After installing IDL, complete the following steps:

1. Log in as root.

2. Change to your *RSI-DIR*/idl_5.5/bin directory where *RSI-DIR* is the directory where you have installed IDL.

3. Configure the environment for IDL:

    *   For C Shell, type: source idl_setup

    *   For Korn shell, type: . ./idl_setup.ksh

4. Type ./genver at the UNIX prompt. The genver program outputs a value for "Your number for today is:" that RSI requires to generate your license file.

    Note

    Keep the genver program running. To create a valid license, you must enter information received from RSI or your distributor before closing the genver program.

5. *Keep the genver program running* and call or e-mail Research Systems Technical Support or your distributor with "Your number for the day" value reported by the genver program.

    If you are using e-mail, please include your name, company and installation number along with the value reported by genver.

6. You will receive values for both the trial length period and for the RSI supplied installation key.

7. Enter the licensing information received from RSI or your distributor. Your software is now licensed.

Note

When your 180-day period expires, you will need to repeat this process to maintain your RSI software in licensed mode.

Running IDL

You can now start IDL or any of the following executables by entering one of the following commands:

- For IDL without its Motif GUI environment, enter `idl` at the system command prompt. IDL command line access is available at the UNIX prompt.

- For IDL with a GUI environment, enter `idlde` at the system command prompt. This starts the IDL Development Environment.

All available commands are:

Command	Description
idl	Start IDL Development Environment.
idlde	Start IDL in command line access mode.
rsilicense	Starts the licensing wizard.
idldemo	Starts the IDL Demo Applications. You can also type `demo` at the IDL prompt after you have started IDL.
idlman	Start the IDL online manuals. This requires Adobe Acrobat Reader to be installed on your system.
idlhelp	Displays the IDL Online Help. You can also enter `?` at the IDL prompt after you have started IDL.

Table 3-3: IDL Startup Commands

Note

If the previous commands do not produce the expected results, you need to set IDL environment aliases. See "Set Up the IDL Environment" on page 82.

Working with the License Server

Several license manager support utilities are supplied for controlling the operation of the license server. These commands are all found in the `bin` subdirectory of the IDL distribution as shell scripts.

Note ───

You must have your IDL environment set up before running any of these utilities. For more information, see "Set Up the IDL Environment" on page 82

───

Note ───

To view a complete list of license manager utility commands, change to the *RSI-DIR*/idl_5.5/bin directory and type `lmutil` at the UNIX prompt.

───

Automatically Starting the License Manager at Boot Time

To have the license server automatically start every time your server is booted, you should add the following license manager startup command to the system startup script:

```
RSI-DIR/idl_5.5/bin/lmgrd [-c license_path]
```

for example

```
/usr/local/rsi/idl_5.5/bin/lmgrd $
     -c /usr/local/rsi/ license/license.dat
```

(On some systems, you may need to enter a controlling script rather than changing the system startup script.)

Although the general idea is the same for all UNIX systems, the exact details differ between platforms. In all cases, you should consult the documentation for your system. The guidelines below are intended to serve as a starting point.

Note ───

These systems all require modification of system files and/or directories to start the license manager. Such changes may be lost when you update the operating system. Therefore, you should keep notes on the changes made, so that you can properly customize new operating system releases.The following instructions may differ for your platform. For additional information, refer to your host operating system documentation or the man pages for init, rc0, rc2, and rc3.

───

IBM AIX

Using any text editor, add the startup command for the license manager to the end of the /etc/rc file.

Linux

Using any text editor, add the startup command for the license manager to the end of the /etc/rc.d/rc.local file.

Sun Solaris, SGI IRIX, HP-UX, and Compaq Tru64 UNIX

You must place a controlling script in a directory (usually /etc/init.d or /sbin/init.d) and create links to that script that are run at system startup and shutdown.

A template for the controlling script can be found in the file *RSI-DIR*/idl_5.5/bin/sys5_idl_lmgrd. Read this file for instructions that apply to your system. After customizing this script for your site, copy the file to the appropriate directory and create the links that are described in the file. For additional information, see the system administrator's manual for your system or the man pages for init, rc0, rc2, and rc3.

Note
> These instructions cover most situations. For information about license manager error messages or for permissions needed to run and shut down the license manager, see the "License Manager Startup Troubleshooting" on page 108 or "Working with the License Server" on page 88.

Creating a License Manager Log File

The license manager writes a log of its activities to its standard output. If you don't want to keep a log, you can redirect the standard output to the null device (/dev/null) by starting the license manager with the command:

```
RSI-DIR/idl_5.5/bin/lmgrd > /dev/null
```

It is also possible to direct the log to the system console with the command:

```
RSI-DIR/idl_5.5/bin/lmgrd > /dev/console
```

If you wish to keep a permanent log file, you should choose a location on your system where a growing log won't cause disk space problems. On Sun systems, the /var/adm directory is a reasonable choice.

Shutting Down The License Manager

The lmdown program initiates a shutdown of all license managers by sending a message to every license manager asking it to shut down. The license managers write out their last messages to the log file, close the file, and exit. All licenses which have been given out by those managers are rescinded, so that the next time an RSI software process goes to verify its license, it will not be valid.

To run lmdown, change to your *RSI-DIR*/idl_5.5/bin directory and type lmdown at the UNIX prompt following the syntax below:

```
lmdown [-c license_file] [-q]
```

Option arguments include -c which defines the path to your license.dat file and -q which runs lmdown in "quiet mode". If the -q switch is not specified, lmdown asks for confirmation before asking the license managers to shut down. If this switch is specified, lmdown does not ask for confirmation.

Security note: Unauthorized use of the lmdown command can be disruptive because when the license manager shuts down, all current RSI software product sessions are terminated. You should ensure that the file access modes on your system are sufficiently restrictive. We recommend setting the permissions for lmdown with the following UNIX command:

```
chmod 500 RSI-DIR/idl_5.5/bin/lmdown
```

Reclaiming an Unused License

If a licensed user is running IDL when the machine crashes, the license that was in use may fail to be returned to the server. In this case, the license is not available to other users. The lmremove program allows the system administrator to remove a single user's license for a specified feature and allows the license to return to the pool of available licenses.

Warning

Do not use lmremove to return a license that is being used by an active IDL session. Use only to reclaim licenses from IDL sessions that are no longer active.

To free a license, you need to first gather information using the status, lmstat, command.

To run lmstat, change to your *RSI-DIR*/idl_5.5/bin directory and type:

```
lmstat -A | more
```

This shows the status of license managers as well as checked-out licenses. For example the following line shows user 'robin' has a license for IDL 5.5 checked out from the server 'hal7' which is being displayed on the host 'josh':

```
robin hal7 josh (v5.5) (hal7/1700/395), start Mon 10/12
4:34, # licenses
```

The format of this line is:

```
user host display (version) (host/port/license_handle),
start_date, #_of_available_licenses
```

If the license held by user 'robin' needs to be freed, make note of the user, host, and display values, and then remove the license with the following lmremove syntax:.

```
lmremove idl robin hal7 josh
```

where idl is the *feature*, robin is the *user*, hal7 is the *host*, and josh is the *display*. Other feature values for Research Systems products appear in the table below. You can check to make sure the license was freed by typing the following at the UNIX command prompt:

```
lmstat -A | more
```

The license you just removed should no longer appear in the list of licenses checked out. See the following table for a list of lmremove feature values.

RSI Software Product	*Feature* Value
IDL	idl
IDL Runtime	idl_rt
IDL Academic Edition	idl_student
IDL with the Wavelet Toolkit	idl_wavelet
IDL DataMiner	idl_dm
IDL MPEG	idl_mpeg
Right to Distribute	devkit
ENVI	envi
ION Script	ion_script
ION Java	ion_java

Table 3-4: Feature Values for lmremove

RSI Software Product	*Feature* Value
RiverTools	idl_rivertools
Noesys	noesys
VIP	vip

Table 3-4: Feature Values for lmremove (Continued)

Checking the License Manager Status

The lmstat program provides information about the status of the server nodes, license managers, and currently checked out licenses. To run lmstat, change to your *RSI-DIR*/idl_5.5/bin directory, and enter:

```
lmstat [-a] [-A] [-c license_file] [-l [regular_expr]]
      [-s [server]]
```

Optional flags for lmstat are shown in the following table.

Optional Flags for lmstat	
-a	This option displays all available information about the license manager status. If this argument is not present, only a brief summary of the manager's state is given.
-A	This option displays a list of all active licenses.
-c *license_file*	This option defines the license file path. If this switch is not specified, lmstat looks for the LM_LICENSE _FILE environment variable. If that environment variable is not set, lmstat looks for the file *RSI-DIR*/license/license.dat.
-l [*regular_expression*]	This option lists all users of the features matching the given regular expression.
-s [*server*]	This option displays the status of the specified server node(s).

Table 3-5: Optional Flags for lmstat

Obtaining a Host ID

The `lmhostid` program calls the license manager version of `gethostid` and displays the results. To run lmhostid, change to the directory, *RSI-DIR*/idl_5.5/bin, and type `lmhostid` at the UNIX prompt. The output of `lmhostid` looks like this:

```
lmhostid - Copyright (C) 1989-1999 Globetrotter Software, Inc.
The FLEXlm host ID of this machine is "8002add0"
```

If You Encounter Errors

If the license manager gives an error message when starting, see "License Manager Startup Troubleshooting" on page 108.

Customizing Your Floating Licenses

You can customize IDL license management by creating a license manager options file. This file allows you to:

- Reserve licenses for specified users or groups of users.

- Allows or disallows the use of IDL by certain users.

- Control what events are recorded in the log file.

To customize the license manager, create an options file in a text editor as described below. See "Sample Options Files" on page 97 for examples.

Creating an Options File

Use a text editor to create an options file. For Research Systems products, the options file must be named `idl_lmgrd.opt` and saved in the same directory as `license.dat`. The default location in which to save the options file is the *RSI-DIR*/`license` directory.

Note ──
Any time the options file is modified, the license manager must be stopped and restarted before the changes will take effect.
──

Use the following conventions when creating and options file:

- Specify each option on a separate line.

- Each line must begin with one of the keywords specified in the following table. See the following section "Options File Keywords" for a list of available keywords.

- Limit the length of each line to less than 2048 characters. You can use the backslash (\) as a line continuation character if you need more than 2048 characters.

- All elements of the options file are case sensitive so users and groups must be correctly and consistently identified.

- Lines beginning with the pound sign (#) are ignored and can be used as comments.

Options File Keywords

The following table describes the available keywords to use when creating an options file:

Keyword	Example	Description
EXCLUDE	EXCLUDE *feature type type_name* `EXCLUDE idl USER bob` Excludes user "bob" from using IDL.	Can exclude user, group, host, or host_group from using IDL. EXCLUDE takes precedence over INCLUDE statements.
EXCLUDEALL	EXCLUDEALL *type type_name* `EXCLUDEALL GROUP misfit` Excludes the group misfit from using any IDL feature.	Implicitly allows all except "misfits" to access all features of IDL.
GROUP	GROUP *group user_list* `GROUP visitor sam kate` Defines users "sam" and "kate" as comprising the group "visitor".	Defines a list of users as a group to be used with other keywords such as INCLUDE or EXCLUDE.
HOST_GROUP	HOST_GROUP *group host_list* `HOST_GROUP main hal sam` Defines hosts "hal" and "sam" as the group "main".	Defines a list of hosts as a group to be used with other keywords such as INCLUDE or EXCLUDE.
INCLUDE	INCLUDE *feature type type_name* `INCLUDE idl GROUP visitor` Allows only users in the group "visitor" to use IDL.	Includes only specifically identified users or groups. All others are implicitly outside of this group, and denied access.

Table 3-6: Options File Keywords

Keyword	Example	Description
INCLUDEALL	INCLUDEALL *type type_name* `INLCUDEALL GROUP research` Allows all users listed in the group research to use all features of IDL.	Specifies users or groups allowed use of all IDL features.
LINGER	LINGER *feature seconds* `LINGER idl 20` The license manager holds on to a license for an additional 20 seconds after it is checked in.	Causes licenses to be held by the license manager for a specific amount of time after a user exits IDL. Rarely used.
MAX	MAX *#lic feature type type_name* `MAX 10 compile GROUP research` Allows only a single user in the research group to use the compile feature at one time.	Limits usage of a feature among users or groups.

NOLOG	NOLOG *event_type*
	`NOLOG DENIED`
	`NOLOG QUEUED`
		A separate NOLOG line is needed to turn off logging of events including IN, OUT, DENIED, and QUEUED.

REPORTLOG	REPORTLOG *report_log _path* `REPORTLOG +RSI\license` Specifies the reportlog file path.	The "+" indicates that the file is to be appended instead of being over-written each time the manager is started.
RESERVE	RESERVE *#lic feature type type_name* `RESERVE 10 idl USER sam` Reserves a single IDL license for the user "sam".	Ensures that an IDL license will always be available to a specified user or group.

Table 3-6: Options File Keywords (Continued)

Sample Options Files

To Reserve Licenses for a Group

The following example shows how to define and reserve a number of licenses for a
group of users, and tells the license manager not to log denied requests. Each copy of
IDL requires 10 license units on a Workstation-class machine. Comment lines begin
with #.

```
# reserve 5 IDL licenses for the research group
RESERVE 50 idl GROUP research
# define the users in the research group
GROUP research josh hal bob kate beth
# exclude anyone on a computer with the name main
EXCLUDE idl HOST main
# do not log license denials
NOLOG DENIED
```

Note ————————————————————————————————

When using INCLUDE or EXCLUDE, anyone not specifically mentioned on a list
is implicitly excluded or included. For example, in the above file, everyone who is
not working on a computer named "main" would be allowed to access IDL. An
EXCLUDE statement takes precedence over an INCLUDE statement. If the user
"josh" was working on a computer named "main," he would not be able to access
IDL even though there is a license reserved for him.

——

To Reserve Licenses for Individuals

The following options file reserves licenses for individuals in the group defined
above. If you have a group of 10 people, you can specify that a license or licenses
will always be available to certain users by using the RESERVE keyword in an
options file. The NOLOG line pertains to the IDL QUEUE command which allows a
user to wait for an IDL license instead of entering demonstration mode when a
counted license is unavailable. It tells the log file not to record any queue events.

```
# reserve one license for "kate"
RESERVE 10 idl USER kate
# reserve one license for "josh"
RESERVE 10 idl USER josh
# reserve 3 licenses for "hal"
RESERVE 30 idl USER hal
# do not log queue events
NOLOG QUEUED
```

Modifying the License File

The license file controls:

- Which products can run

- Which machines they can run on

- How many copies can run concurrently

The FEATURE lines of the license file determine which products are available. The SERVER lines define which machines the products run on. The number of copies of the product that can run concurrently is controlled by the number of license units available, as specified by either the FEATURE or INCREMENT lines.

Sample License Files

The following is an example of what a license file look like.

An IDL License File

The following example license file is built for the license server "hal", which has the LMHostid "0000c09a23f0," and the designated port number "1700". This license has 5 floating licenses for UNIX machines.

The last line in the license file is the FEATURESET line, which ties all the FEATURE and INCREMENT lines together:

```
SERVER hal 0000c09a23f0 1700
DAEMON idl_lmgrd usr/local/rsi/idl_5.4/bin/idl_lmgrd
FEATURE idl idl_lmgrd 5.400 1-jan-0000 50 5BC6A081FA3009FA5673 \
        VENDOR_STRING="1234-1Acme Datawack Corp" ck=16
FEATURESET idl_lmgrd 96C31B1FB71BCAE9
```

Note ──

The FEATURE line for the IDL floating license shows 50 license units. This is not an error. Each counted IDL license requires 10 license units on the FEATURE or INCREMENT line. If this field is set to zero, the line indicates an unlimited number of node-locked licenses.The number of license units is a platform-dependent scale factor times the number of licenses you own. For example, if you have 3 UNIX floating licenses, this field is set to 30.

──

Viewing or Modifying the License File

To access the text of your license file through the license wizard, complete the following steps:

Locating the License File

1. After installing RSI software, open the licensing wizard by changing to your *RSI-DIR*/idl_5.5/bin directory and typing rsilicense at the UNIX prompt.

2. Select **Permanent** and **License** to display the license text file window. If you have a file saved in the default location, *RSI-DIR*/license/license.dat, it will appear in the text window. If you have saved the file in another location, click **Browse** to find it.

Altering the License File

Only four data items in the license file can be modified by the user:

*   hostnames (but not host IDs) on SERVER lines

*   port numbers on SERVER lines

*   pathnames on DAEMON lines

*   options file pathnames on DAEMON lines (Note that it is not necessary to specify option file path names with FLEXlm v6 or later. IDL 5.5 for UNIX uses FLEXlm v6.1).

Warning ————————————————————————————
Changing license file lines other than those discussed below will invalidate your license file, causing your IDL installation to run only in Demonstration mode. Individually altering any FEATURE or INCREMENT lines with DAEMON name idl_lmgrd destroys the file.
————————————————————————————————

If you have multiple vendors using FLEXlm license management software, see for more detailed information on customizing your license file.

Multiple Applications That Use The Same License Manager

IDL's network license management facility is provided by Globetrotter's FLEXible License Manager (FLEXlm). Since this license manager is not unique to IDL, the possibility exists that you will need to run software from two or more software vendors that use FLEXlm. In this case, the potential for license server conflict exists. There are two cases to be considered:

- All products and product license managers are installed on the same server.

- The products and product license managers use different servers.

All Products Use the Same Set of Server Nodes

If a Research Systems product and other vendor product(s) using FLEXlm license management software are all installed on the same server machine, the solution is simple. Combine the license files as described below.

Note ───
Note that you must shut down the license server before editing the license file.
───

Combining License Files

After shutting down the license server, use a text editor to alter a single license file. In this single license file, combine all license files by taking the SERVER lines from any *one* license file, and adding *all* the DAEMON, FEATURE, FEATURESET, and INCREMENT lines from *all* of the license files.

Place copies of this combined license file in the locations required by the various software vendors. Alternatively, a single copy of the license file can be located in any convenient location, in which case each client machine must set the LM_LICENSE_FILE environment variable to point to it.

After saving the license files in the appropriate locations, restart the license manager with the *most recent* version of *lmgrd* that you have installed. (IDL 5.5 uses FLEXlm v6.1). If an older version of *lmgrd* is used, the license manager from the product with a more recent *lmgrd* will not operate correctly.

The Products Use Different Servers

If the products use different servers, a local or shared network installation of the product license file is required on each client machine. This copy of the license file directs the request for a license to the proper server. You will also need to set the existing LM_LICENSE_FILE variable to include the new product's license file path.

For example, if you have an existing product named "otherapp" residing in the "home" directory, the LM_LICENSE_FILE environment variable would be as follows:

For C Shell:

```
setenv LM_LICENSE_FILE /home/otherapp/license.dat
```

To add a Research Systems software product license file, add it to the existing LM_LICENSE_FILE variable by separating the new application's license path from the existing one with a colon as follows:

For C shell:

```
setenv LM_LICENSE_FILE
/home/otherapp/license.dat:RSI-DIR/license/license.dat
```

RSI-DIR is the installation directory of your software product.

Tip ───

Restart the license manager with the most recent version of lmgrd that you have installed. The version number of lmgrd is displayed when it is started. If an older version of lmgrd is used, the license manager daemon from the product with a more recent lmgrd will not operate correctly.

───

Running Older Versions of IDL Concurrently with IDL 5.5

In many cases, it is possible to run older versions of IDL concurrently with the most recent version. If a FEATURE line has the version number 5.500, for example, it will allow IDL 5.5 and all earlier versions of IDL to run. In some cases, new license manager capabilities such as the INCREMENT line may prevent an older versions of IDL from working with the latest version of the license manager.

Start the Latest Version of the License Manager

In general, it is important to start the license manager from the latest IDL distribution and use the same license file for the older IDL distribution. The license manager should only be started once, from the new distribution. It should not be started from an old IDL distribution.

Using IDL Version 5.*x* with the IDL Version 5.5 License Manager

The license manager from IDL version 5.5 will support IDL 4.0, 5.0, 5.1, 5.2, 5.3, and 5.4 clients. No modifications to the IDL 5.5 license file are necessary to run IDL 4.0 and IDL 5.x concurrently with IDL 5.5.

Troubleshooting

If a Research Systems software product runs in seven-minute demonstration mode after you have attempted to license the product, follow the appropriate suggestions below and try running the software again. If you see errors from the license manager itself, turn to

1. Is the proper executable file (idl) in your command search path?

The UNIX command:

```
which idl
```

will tell you if it is in your command search path and where it is. You can verify that the search path is the problem by executing IDL directly. If the command:

```
RSI-DIR/idl_5.5/bin/idl
```

runs IDL, you know that the search path is to blame.

2. Are the file permissions correct?

If you receive the error message "Permission denied" when you try to run IDL, check the permissions set on all the executables. They should have execute permission set for all categories. Set execute permissions for IDL by entering:

```
chmod ugo+x RSI-DIR/idl_5.5/bin*/*
```

3. Does IDL know the location of the main IDL directory?

The environment variable IDL_DIR must be defined to the path of the IDL directory. Enter the following UNIX command:

```
echo $IDL_DIR
```

IDL_DIR should be set to *RSI-DIR*/idl_5.5. If not, you probably have not run the idl_setup or idl_setup.ksh file. To set the variable for IDL_DIR, enter the following:

For C shell:

```
setenv IDL_DIR RSI-DIR/idl_5.5
```

For Korn shell:

```
export IDL_DIR='/RSI-DIR/idl_5.5'
```

4. Is the license manager running?

The `lmstat` license manager utility provides information on the status of the license manager. Enter:

```
RSI-DIR/idl_5.5/bin/lmstat
```

If you receive the following message:

```
License server status:
name: cannot connect to license server (Connection refused)
Vendor daemon status (on name):
idl_lmgrd : cannot connect to license server (Connection refused)
```

the server is not running correctly.

5. Stop and restart the license manager.

Exit IDL and stop the license manager, then restart it, directing the output of the license manager to a file. Enter:

```
RSI-DIR/idl_5.5/bin/lmdown
```

Check to make sure that all the license manager processes have shut down with a command like:

```
ps -ef | grep lm
```

   or

```
ps -aux | grep lm
```

If there are any license manager processes still running, use the kill command to stop them (do not use the -9 option for kill). Restart the license manager with the following command:

```
RSI-DIR/idl_5.5/bin/lmgrd > logfile
```

Examine the resulting file *logfile* for error messages and refer to "License Manager Startup Troubleshooting" on page 108.

6. Is the LM_LICENSE_FILE environment variable set to the license file of another application?

Enter the command:

```
echo $LM_LICENSE_FILE
```

to see the current definition of the environment variable. If this environment variable points to some other license file, you will need to unset it prior to starting IDL by entering:

```
unsetenv LM_LICENSE_FILE
```

For Korn shell:

```
unset LM_LICENSE_FILE
```

If you have used a different path than the default location, make sure that LM_LICENSE_FILE points to that location.

7. Is the license manager available from your machine?

If IDL displays the following error message at startup:

```
LICENSE MANAGER: cannot connect to license server.
```

make sure that you can telnet to the server machine. If you can remotely log in to the server machine, make sure that the license manager is running on that machine.

8. Has your license file been copied correctly?

If IDL displays the following error message at startup:

```
% LICENSE MANAGER: encryption code in license file is
inconsistent.
```

some of the encrypted information in the license file is not correct. This can involve the SERVER hostid, the DAEMON name, and any character on the FEATURE line.

Examine your license file and correct the FEATURE line so that it exactly matches the one sent to you by Research Systems. Check for capitalization and spaces. Shut down the license manager by entering:

```
RSI-DIR/idl_5.5/bin/lmdown
```

and restart by entering:

```
RSI-DIR/idl_5.5/bin/lmgrd
```

9. Is the license manager using the correct license file?

If IDL displays the following error message at startup:

```
LICENSE MANAGER: no such feature exists.
LICENSE MANAGER: license file does not support this feature.
```

the license manager may be using the wrong license file. Reset the
LM_LICENSE_FILE environment variable to point to IDL's license file using the
command:

```
setenv LM_LICENSE_FILE RSI-DIR/license/license.dat
```

See Defining the LM_LICENSE_FILE environment variable in "Set Up the IDL
Environment" on page 82 for more information.

10. Does the license file contain the correct hostname?

If IDL displays the following error message at startup:

```
% LICENSE MANAGER: cannot find SERVER hostname in network
database.
```

the hostname in the license file does not agree with the actual hostname for the server,
or cannot be accessed from the client node. Edit the license file and correct the
hostname. The hostname can be found in the /etc/hosts file located on the
network server.

11. Are network permissions set properly?

If IDL displays the following message at startup, *except when run from the root
account*:

```
% LICENSE MANAGER: invalid host.
```

make sure that the ethernet device (usually /dev/lan0) has rw permission for
owner, group and other. It probably just has rw permission for owner (root). Also,
make sure that the /var/tmp directory has rw permissions.

This error occurs most often on HP-UX systems. You can use /etc/lanscan to
check for the name of the ethernet device. It's the item under the heading
"NameUnit".

12. Is the license file in the correct location and are its permissions set correctly?

If you receive one of the following three error messages, IDL is unable to access the `license.dat` file:

```
% Trial version expired.
% Machine not licensed for IDL. Entering 7 minute Demo mode. This
Demo mode is for short-term product evaluation purposes only.

% Machine not licensed for IDL. Entering 7 minute Demo mode. This
Demo mode is for short-term product evaluation purposes only.

% Unexpected validation error.
% Machine not licensed for IDL. Entering 7 minute Demo mode. This
Demo mode is for short-term product evaluation purposes only.
```

Check the permissions on the `license.dat` file. All users need read permission. Also make sure the `license.dat` filename is spelled correctly. If you are using the environment variable LM_LICENSE_FILE, make sure that the full path and filename of the `license.dat` file are set correctly. See "Set Up the IDL Environment" on page 82 for more information.

13. Search the RSI Technical Support Library

Go to www.ResearchSystems.com/services/search.cfm and select the following for more information on troubleshooting node-locked and floating licensing:

Product: **IDL**
Platform: **UNIX**
Category: **LICENSING**
Functional Area: **LICENSING - FLEXlm**

14. Contact RSI Technical Support

If you are still having problems licensing, see "Contacting Research Systems" on page 8 for information on how to contact Technical Support.

License Manager Startup Troubleshooting

If the license manager gives an error message when starting, find the error message below and follow the instructions to eliminate the error.

1. Invalid Server Hostname

```
date time (lmgrd) "Hostname1": Not a valid server hostname,
exiting.
date time (lmgrd) Valid server hosts are: "Hostname2"
```

In spite of the error message, *Hostname1* is the hostname of the server that probably *should* be in the license file, while *Hostname2* is the incorrect hostname currently in the license file. Edit your license file to contain the correct hostname.

2. Inconsistent Encryption Code

```
date time (idl_lmgrd) Inconsistent encryption code for idl
```

There is a problem with the information on the FEATURE or INCREMENT line of the license file. It has not been copied correctly from the fax or e-mail message. Make sure that the usage of capitalization and spaces is exactly as in the message. Finally, check to make sure that long lines in the license file have not been inadvertently wrapped to a new line. (Refer to "Modifying the License File" on page 98 for examples of the correct license file format.)

3. No Features to Serve

```
date time (idl_lmgrd) No features to serve!
```

There are no valid FEATURE or INCREMENT lines. This is most commonly due to the "inconsistent encryption code" error described above.

4. Retrying Socket Bind and Cannot Establish Lock

```
date time (lmgrd) Retrying socket bind (address in use: port 1700)
```

An attempt has been made to start the license manager when it was already running. This often happens when the license file contains a mistake, the mistake is corrected, and the license manager is started again before the first attempt has been shut down or killed. Only one instance of the license manager can be running on a machine with reference to any RSI product license file at any one time. There may also be some other software product using the default port number, 1700.

If this is the case, the problem may be resolved by issuing the `lmdown` command multiple times and then restarting the license manager again. To shut down the license manager, you can issue the following commands (from a C shell):

```
RSI-DIR/idl_5.5/bin/lmdown -c RSI-DIR/license/license.dat
```

The `lmdown` command should be repeated until the utility indicates that the license manger is not running.Then restart the license manager. See "Start the License Server" on page 81.

5. No Such File or Directory

```
license daemon: execl failed: .../idl -T host 2.40 3 -c
license daemon: system error code: No such file or directory
```

The path on the DAEMON line of the license file is incorrect. It should point to the bin subdirectory of the IDL distribution. Edit the license file and correct the DAEMON line.

6. No "License" Server Found

```
date time (lmgrd) No "license" service found.
```

This error means that no TCP/IP service port number is specified or no TCP/IP service is available.

Check for the existence of the `/etc/services` file. Make sure that the file contains the following line:

```
tcpmux          1/tcp
```

7. Cannot Find License File

```
license manager: can't initialize: cannot find license file
(No such file or directory)
date time (lmgrd) Using license file "filename"
```

The license manager cannot find the `license.dat` file. Either the `license.dat` file is not in the default location or the file specified in the environment variable LM_LICENSE_FILE is incorrect. See "Set Up the IDL Environment" on page 82. Also, make sure that the filename `license.dat` is spelled correctly and that you have read permission for the `license.dat` file.

8. Cannot Read License File

```
license manager: can't initialize: cannot read license file
(Permission denied)
```

The permissions are set incorrectly on the license.dat file. Set the file to read permission for all users. For example, use the command:

```
chmod 444 license.dat
```

9. Wrong Hostid

```
date time (idl_lmgrd) Wrong hostid, exiting (expected xxxx, got
xxxx)
date  time (lmgrd) Please correct problem and restart daemons
```

The permissions are set incorrectly on the ethernet device. This is a common problem on HP-UX systems. Set read-write permission on the ethernet device (/dev/lan0) with the command:

```
chmod 666 /dev/lan0
```

Shutdown the license manager if it is still running and then restart it.

10. Path Not Found

```
lmgrd: PATH/bin.platform/lmgrd: not found.
```

This error indicates that the IDL directory is not in a standard location and that the environment variable IDL_DIR is not set to the actual IDL directory. There are several solutions to the problem:

- Change directories to the IDL directory and issue the following command:

  ```
   bin/lmgrd
  ```

- Set the environment variable IDL_DIR to point to the main IDL directory and then execute the lmgrd startup command.

Change directories to *RSI-DIR*/idl_5.5/bin. Make a copy of the lmgrd script:

```
cp lmgrd lmgrd.bak
```

Open the lmgrd script with an editor. Verify that the INSTALL_DIR environment variable is defined as *RSI-DIR*. For example, if you have installed in the default path, this should be defined as /usr/local/rsi.

11. Check the Globetrotter Web Site.

The Globetrotter Web site contains on-line documentation and an excellent FLEXlm FAQ. This information can be helpful when trying to combine licenses from different vendors. See the following Web pages:

Globetrotter home page: `http://www.globetrotter.com`

FLEXlm FAQ: `http://www.globetrotter.com/flmfaq.htm`

If you continue to have problems, see "Contacting Research Systems" on page 8 for technical support.

Chapter 4:
Installing and Licensing IDL 5.5 for Macintosh

This chapter covers the following topics:

Introduction

Recommended Steps for Installing and Licensing IDL for Macintosh

1. **Install IDL** — See "Installing IDL for Macintosh" on page 116.

2. **Locate Your Hardware Dongle and RSI Product License Information** — You should have received your hardware dongle with your IDL product and your RSI product license information by e-mail or fax. The RSI product license information provides your product installation number and additional information about licensing IDL. If you haven't received these items, see "Contacting Research Systems" on page 8.

3. **Enter Your License Key** — See "Licensing with a USB HASP" on page 119 or "Licensing with an ADB HASP" on page 121.

Licensing Methods

Evaluation License

Evaluation licenses are temporary trial licenses allowing access to all IDL features for a specified number of days. Once the evaluation license expires, you will be alerted by a dialog box stating that the application is available only in seven-minute demonstration mode. Contact Research Systems or your local distributor to purchase a permanent license or to extend your evaluation license.

The following is a sample Evaluation license key that you will receive either by e-mail or fax:

```
Installation Number: abc123de
Site Notice:         Evaluation Purposes Only
Optional Features:   idl_wavelet,X.X;
Installation Key:    123-ABC123DE

Product:             IDL X.X
Platform:            Macintosh non-Hasp
IDL Major Version:   X.X
Optional Features (bits):
```

HASP License

Research Systems software uses a hardware dongle, or HASP, as a copy-protection device. You must attach the hardware dongle before you can license your software. The hardware dongle will not interfere with any of the other devices (e.g., printer,

modem, mouse, etc.) or any other software on your computer. There are two types of hardware dongles:

- Universal Serial Bus (USB) HASP is a short length of blue plastic labeled "MacHASP USB" with a USB connector at one end. It can be used with an iMac or Power Macintosh with a USB port. See "Licensing with a USB HASP" on page 119 for instructions.

USB HASP

- Apple Desktop Bus (ADB) HASP is a short length of white plastic, labeled "MacHASP" with Macintosh ADB connectors at each end. It can be used with any Power Macintosh with an ADB port. See "Licensing with an ADB HASP" on page 121 for instructions.
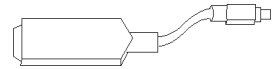
ADB HASP

Note ───

If you have a HASP from another version of this software, you may receive a new one with your upgrade. If you have not received a new HASP, the old one will continue to function. If you have received the incorrect type of HASP, contact Research Systems Technical Support. See "Contacting Research Systems" on page 8.

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Note ───

Only one Research Systems software HASP can be installed on your machine at one time. If you have multiple RSI HASPS and product installations on one machine, only the HASP associated with the product you are licensing or using should be installed at any one time.

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The following is a sample HASP license key that you will receive either by e-mail or fax:

```
ITEM ID:      10MACDKLIC
PRODUCT:      IDL
VERSION:      5.5
HASP:         MAC-ADB

INSTALL ID:   ABCDEF-01
SITE NOTICE:  Research Systems, Inc.
INSTALL KEY:  12-ABC123DE
```

Installing IDL for Macintosh

System Requirements

The following are the system requirements for IDL 5.5 for Macintosh:

Requirement	Description
Disk space	145 MB (default installation).
Operating System	MacOS 8.6 or 9.*x* running on a PowerMAC G3 or G4, or iMac.

Table 4-1: IDL 5.5 Macintosh System Requirements

Run the IDL Installation Procedure

To install IDL 5.5, complete the following steps:

1. **Insert the IDL CD-ROM in your CD-ROM drive.** The IDL 5.5 volume window appears. If the window doesn't appear, click the IDL 5.5 CD-ROM icon.

2. **Start the IDL installation.** Double-click on the **Install_IDL** icon, and then click **Continue** to begin the installation process.

3. **Accept the license agreement.** In order to continue the installation, you must accept the terms of the Research Systems license agreement. Click **Accept**.

4. **View the IDL Release Notes.** The release notes contain important information about this release of IDL. Click **Continue** to proceed.

5. **Select the options to install.** The default, pre-selected options will install the minimum files needed to run IDL. Check any of the boxes to the left of the features listed to include them in your installation. Click on the small "i" icon at the right-hand side of the list for information about each feature.

   Note ─────────────────────────────────
   To license IDL with a USB HASP, you must either install the USB HASP Device Driver now by selecting it from the feature list or install it later by double-clicking the **Install USB Mac Hasp DD** icon located in the Extras folder on your IDL CD-ROM. For more information on licensing IDL using a USB HASP, see "Licensing with a USB HASP" on page 119.
   ───

6. **Select the installation directory.** IDL will be installed in a folder named RSI. To change the location of the RSI folder, open the drop-down list in the **Install Location** section of the Install IDL dialog and click **Select Folder**. You can choose an existing folder, switch disks, or create a new folder. Select the installation directory and click **Install**. The directory you choose will be referred to as *RSI-DIR* in the remainder of this manual.

7. **Exit the installation program.** When the message appears stating that your installation was successful, click **Quit** if you are satisfied with your installation choices.

8. Your installation is now complete.

Note

IDL online manuals require Acrobat Reader with Search 3.0 or greater. A copy of Adobe Acrobat Reader with Search 4.0 has been included on your product CD-ROM. For more information, see "About Adobe® Acrobat® Reader" on page 8.

Installing an Evaluation License

To license IDL, you will need your RSI product license information. If you have not received it, see "Contacting Research Systems" on page 8 for assistance. To install an evaluation license for trial purposes, complete the following steps:

1. Install IDL. See "Installing IDL for Macintosh" on page 116 for instructions.

2. Double-click the IDL icon located in the *install_dir*:RSI:IDL 5.5 folder. Until licensed, IDL displays the licensing dialog. Click **License**.

3. Enter your installation number, the site notice, any optional features and the installation key *exactly* as they appear in your RSI product license information. Click **OK**.

IDL licensing is now complete.

Note
The expiration date of your license is embedded into the installation key code shown on your Registration form. When your evaluation license expires, you will be presented with the licensing dialog when starting IDL. Until re-licensed, IDL will run only in timed demonstration mode.

Licensing with a USB HASP

After installing IDL, use the following instructions to install the license key for your HASP license. Your license key will be sent to you via e-mail or fax. You should have received your hardware dongle with your IDL product. If you haven't received these items, see "Contacting Research Systems" on page 8.

Note ───

To license your software with a USB HASP, you must have either installed the USB HASP Device Driver during the IDL installation or installed it by double-clicking the **Install USB Mac Hasp DD** icon located in the `Extras` folder on your RSI software CD-ROM. An ADB HASP will not function if the USB HASP driver is installed.

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1. **Insert the USB HASP into any unused USB port.** USB ports are typically located on your keyboard, on the side (iMac), or on the back (G3) of your Macintosh. Unlike the ADB HASP, you do not need to shut down your Macintosh before attaching a USB HASP.

    Note ───────────────────────────────────────

    If you are replacing an evaluation license with a permanent license, you need to enter your license information using the IDL License Utility instead of completing the following steps. See "Modifying an Existing License" on page 123 for instructions.

    ───

2. **Start your software product.** Double-click the **IDL 5.5** icon located in the *RSI-DIR:*IDL 5.5 folder. Until licensed, the licensing dialog appears. Click **License**.

3. **Enter your licensing information.** Enter the Installation Number, the Site Notice, any Optional Features and the Installation Key exactly as they appear in your RSI product license information. Click **License**.

Your Research Systems software is now licensed.

Important Information about Your USB HASP

The following information is important to know about your USB HASP:

•   If the USB HASP is removed during an RSI software product session, the software enters seven-minute demonstration mode and you will not be able to save your work.

- If a new session is started without the USB HASP installed, the software program may prompt you to license your installation or default to demonstration mode. You will not be able to run your Research Systems software in licensed mode without the USB HASP attached.

Licensing with an ADB HASP

After installing IDL, use the following instructions to install the license key for your HASP license. Your license key will be sent to you via e-mail or fax. You should have received your hardware dongle with your IDL product. If you haven't received these items, see "Contacting Research Systems" on page 8.

1. **Shut down your Macintosh.** Always shut down your Macintosh before installing or removing an ADB HASP.

2. **Insert the ADB HASP anywhere in your ADB chain.** You can insert it between the keyboard and the ADB bus cord or into an unused ADB port.

3. **Restart your Macintosh.**

   Note ───

   If you are replacing an evaluation license with a permanent license, you need to enter your license information using the IDL License Utility instead of completing the following steps. See "Modifying an Existing License" on page 123 for instructions.

   ──

4. **Start IDL.** Double-click the **IDL 5.5** icon located in the *RSI-DIR*:IDL 5.5 folder. Until licensed the licensing dialog appears. Click **License**.

5. **Enter your licensing information.** Enter the Installation Number, the Site Notice, any Optional Features and the Installation Key exactly as they appear in your RSI product license information. Click **License**.

Your Research Systems software is now licensed.

Important Information about Your ADB HASP

The following information is important to know about your ADB HASP:

• **Never remove the ADB HASP while your Macintosh is running, as serious damage to the computer may result from disconnecting the ADB chain.** Always shut down your Macintosh before removing the ADB HASP.

• If the ADB HASP is removed during an RSI software product session, the software enters seven-minute demonstration mode and you will not be able to save your work.

• If a new session is started without the ADB HASP installed, the software program may prompt you to license your installation or default to

demonstration mode. You will not be able to run your Research Systems software in licensed mode without the ADB HASP attached.

Modifying an Existing License

To modify an existing license, use the IDL License Utility. For example, use this utility if you are replacing an evaluation license with a permanent license.

To modify an existing license, complete the following steps:

1. Open your RSI software product folder.

2. Drag a copy of the IDL 5.5 application onto the IDL License Utility application. The IDL License Utility exists in the IDL*x.x*:bin directory, where *x.x* indicates the version of IDL, for example 5.5.

3. In the IDL License Utility dialog, fill in the following fields with the information provided in your RSI product licensing information:

   A. **Enter the Installation Number** — enter the installation number exactly as it appears.

   B. **Enter the Site Notice** — enter your site notice exactly as it appears.

   C. **Enter any Optional Features** — enter any optional features shown.

   D. **Enter the Installation Key** — enter the key *exactly* as it appears

4. Click **OK**.

Your software is now licensed.

Troubleshooting HASP Licensing

Note

When entering your Installation Number, Site Notice, Optional Features and Installation Key into the HASP licensing wizard dialog, make sure they appear exactly as shown in your RSI product license information. Accurately reproduce all capitalization and spacing.

If your Research Systems software installation continues to run in seven-minute demonstration mode after attempting HASP licensing, you can try troubleshooting the hardware and software.

Hardware Troubleshooting

1. Make sure that there is no other RSI product hasp attached to your ADB chain (such as an ENVI HASP or an IDL Runtime (rt) hasp). Only one RSI product hasp can be used on a Macintosh at any one time.

2. Shut off the machine and examine the HASP. Examine the HASP to make sure none of the connectors are bent. Re-attach the HASP firmly to a different location in the ADB chain, preferably directly to the ADB port directly on your machine. Restart the machine and attempt to license your Research Systems software using the HASP licensing wizard described in "Licensing with an ADB HASP" on page 121.

3. Shut down the machine and remove any external SCSI devices. Restart and attempt to license the Research Systems software. If this seems to correct the problem, there may be a conflict between the HASP software and the device driver. To resolve the conflict, you can update the device driver software.

4. If there are any unusual ADB devices, try removing them temporarily or replacing them with a standard drive. For example, replace a trackball mouse with a standard mouse. Restart the machine and try licensing the RSI software.

5. If there is another Macintosh machine with the RSI software properly running in licensed mode, place the HASP on that machine. If the software does not run in licensed mode on that machine, contact Research Systems technical support. See "Contacting Research Systems" on page 8.

Software Troubleshooting

From the RSI software CD-ROM, go to the RSI:IDL 5.5:bin folder and copy the IDL 5.5 executable file, to the RSI:IDL 5.5 folder onto your hard drive. This will overwrite the existing IDL 5.5 executable in that location. Try licensing the software again.