IDL.

Installation Guide
for UNIX®

RESEARCH
SYSTEMS
Software = Vision.

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Acknowledgments

Contents

Before You Begin

- **Locate Your Product RSI Registration/Licensing Form** — You may have already received your RSI Registration/Licensing form by electronic mail or fax. It provides your license account information and additional information about licensing IDL. If you haven't received it, first install IDL and then see "Obtaining an RSI Registration/Licensing Form" on page 29 for more information. You do not need this form to install and run IDL in demonstration mode.

- **Check Your UNIX Version** — Make sure that you are running on one of the UNIX versions listed in "IDL 5.3 System Requirements" on page 6 or a UNIX version that is binary-compatible with one of these versions.

- **You Must be Running X Windows to Install IDL** — 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 /unix/install/no_gui directory on your IDL CD-ROM.

IDL 5.3 System Requirements

The following are the system requirements for installing IDL 5.3.

Disk space required — 190 MB (typical installation)

Operating System required:

Platform	Hardware	Operating System	Supported Versions
Compaq	Alpha	Tru64 UNIX	4.0
HP	PA-RISC	HP-UX	10.20, 11
IBM	RS/6000	AIX	4.3
Intel	Intel x86	Linux	2.2[†]
SGI	Mips	Irix	6.4, 6.5
SUN	SPARC	Solaris 2	2.6, 2.7
	Ultra	Solaris 2	2.6
	Intel x86	Solaris 2	2.6

[†] Redhat 6.0

Modes of IDL Installation

There are three modes of IDL installation which are: Demonstration, Evaluation, and Purchased (or permanent). The differences between each mode are:

Demonstration Mode

- No licensing required.
- Product runs in seven minute demonstration mode.
- Restricted functionality.

See "Running IDL in Demonstration Mode" on page 8 for more information on how to install and run IDL and IDL in demonstration mode.

Evaluation Mode

- Timed license which gives full access to all functionality for a specified number of days.

Purchased/Permanent Installation

- Gives full access with no time or functionality constraints.

Running IDL in Demonstration Mode

If you want to run IDL without any licensing information, you can install and run them in demonstration mode. To run IDL in demonstration mode, complete the following steps:

1. **Install IDL.** See, "Installing IDL for UNIX" on page 12.

2. **Set up and run IDL.** See, "Setting Up and Running IDL" on page 21. IDL will start in demonstration mode which allows you to run a 7-minute session after which the application will exit.

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 9 for more information.

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Running the IDL Demo Applications

The IDL Demo applications illustrate some of the many ways IDL can help visualize data. The IDL Demo Applications are a series of programs written in the IDL language that demonstrate different aspects of IDL. To start the IDL Demo Applications, enter idldemo at the UNIX prompt after you have installed and licensed IDL (see "Installing and Licensing IDL for UNIX" on page 10) or after you have installed IDL in demonstration mode (see "Running IDL in Demonstration Mode" on page 8.)

Installing and Licensing IDL for UNIX

This sections describes how to install and license IDL 5.3 for UNIX.

Mounting the IDL CD-ROM

This section describes how to mount the IDL CD-ROM on the various UNIX platforms. Note that on most systems, you must have root permissions to mount the CD-ROM.

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

```
/cdrom/idl_53
```

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

Note

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

Compaq Tru64 UNIX

Mount the CD using RockRidge format by entering:

```
/usr/sbin/mount -t cdfs -r -o rrip CDROM-device /cdrom
```

replacing *CDROM-device* with the actual name of the CD-ROM drive on your system. A typical name is /dev/rz4c.

HP-UX

Mount the disk by entering the command:

```
mount -r -F cdfs CDROM-device /cdrom
```

replacing *CDROM-device* with the actual name of the CD-ROM drive on your system. A typical name is /dev/dsk/c1t2d0.

IBM AIX

Mount the disk by entering the command:

```
mount -r -v cdrfs CDROM-device /cdrom
```

replacing *CDROM-device* with the actual name of the CD-ROM drive on your system. A typical name is /dev/cd0.

Linux

Use the following command to mount the CD-ROM on Linux systems:

```
mount -t iso9660 CDROM-device /cdrom
```

replacing C*DROM-device* with the actual name of the CD-ROM drive on your system. A typical name is /dev/cdrom.

SGI IRIX

IRIX automatically mounts the CD-ROM when you insert it into the CD-ROM drive. After inserting the disk, you will see that it has been mounted as:

```
/CDROM
```

Note that the location is all upper case.

Sun Solaris

Solaris includes a "Volume Manager" that automatically mounts the CD-ROM when you insert it into the CD-ROM drive. After inserting the disk, you will see that it has been mounted as:

```
/cdrom/idl_53
```

Installing IDL for UNIX

To install IDL 5.3, 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:

   All except HP:

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

   HP:

   ```
   /bin/sh /CDROM-PATH/UNIX/XINSTALL.SH\;1
   ```

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

   The Product Installation dialog should appear.

2. **Accept the license agreement.** In order to continue the installation, you must accept the terms of the Research Systems license agreement. Click Yes.

3. **Choose the installation directory.** The directory listed next to the "Set Directory" button is the directory under which the idl_5.3 directory will be created. The default installation directory is /usr/local/rsi. To change the default, click the "Set Directory" button. If you do not have write permissions for the selected directory, it will appear as grey 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 where you are running the installation script. Select or deselect platforms by clicking on the check box next to the option. Select the appropriate binaries for any machines that will run IDL on your network.

6. **Click OK to continue.** When you have selected the product, installation directory, installation type, options, and platforms for your IDL installation and have made sure you have enough disk space, click OK. The Installation Summary dialog displays.

7. **Click Install to continue.** 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 Product Installation dialog.

Note

If you have a previous version of IDL installed on your system, you may encounter tar errors. These errors are related to the creation of symbolic links or to the replacement of programs that are running during installation. Most tar errors can safely be ignored. Select "Continue" to proceed with the installation. The following are examples of tar errors you may encounter:

```
tar:idl_5.3/resource/x11/lib/C: Not a directory
tar:idl_5.3/bin/bin.platform/idl_lmgrd:Cannot create
```

Make a note of the tar errors. If, after finishing your installation, IDL does not run properly, contact Research Systems technical support.

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 choose not to create symbolic links at this time, after you have completed the IDL installation you can:

   • Use the RSI-Directory/idl_5.3/bin/install executable to create the symbolic links for you. You must

execute this script from the RSI-Directory. Enter the following to create the symbolic links:

```
cd RSI-Directory
idl_5.3/bin/install idl 5.3
```

- Manually create the symbolic links using commands displayed at the end of the installation process. If you choose to manually create symbolic links, make sure and note the commands you'll need to execute that are displayed at the end of the install process.

If you want to create symbolic links, click Create Links. The Product Links dialog appears.

9. **Choose the directory in which to create the symbolic links.** This can be your home directory or any other directory in which you want to start IDL from. 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 grey text. The selected directory will be created for you if it does not already exist.

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

You now need to license your IDL installation by following the steps in

Unmounting the CD-ROM

You can now unmount the CD-ROM:

```
umount /CDROM-device
  or
eject /CDROM-device
```

Licensing IDL for UNIX

To license IDL, complete the following steps:

Note

These instructions cover most situations. For detailed information, consult the *License Management Guide* located in the info/docs directory on your IDL CD-ROM.

1. **Obtain your RSI Registration/Licensing form.** If you haven't received your RSI Registration/Licensing form by electronic mail or fax, see "Obtaining an RSI Registration/Licensing Form" on page 29 to obtain a license file.

2. **Save your licensing information to a file.** Your license information is usually sent to you via electronic mail or fax. If it is sent via e-mail, simply save the e-mail message to a file named license.dat and remove any header lines before the beginning of the actual license information. (Keep the comment lines that begin with the "#" character.) If you receive your license information via fax or other hardcopy method, you will need to create the file on your system and enter the information using any text editor.

3. **Choose the location of your license file.** Research Systems recommends putting your license file in:

    RSI-Directory/license/license.dat

Tip

If you have an existing license.dat file in this location, make a backup copy of this before saving your new licensing info into this file until your new license is working.

If you put your license file in this directory, you do not have to redefine any environment variables.

If you choose a location other than RSI-Directory/license for the license file, it must be accessible from all server nodes and from any node that runs IDL.

Note

If you have other software that uses Globetrotter Software's FlexLM license manager, see the *License Management Guide* located in the /info/docs directory on your IDL CD-ROM.

4. **Set the LM_LICENSE_FILE environment variable.** If you have chosen to put your license file in a location other than *RSI-Directory*/license/license.dat, you must define the UNIX environment variable LM_LICENSE_FILE to the path to the license file.

   For example, if you save your license file as:

       /mylicense/license.dat

   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'
```

5. **Starting the License Manager Daemon.** The license manager daemon must be running before you can use IDL. Start the daemon by entering the following:

```
RSI-Directory/idl_5.3/bin/lmgrd
```

Note

These instructions cover most situations. For detailed information or for information about an error message or for permissions needed to run and shut down the license manager, see the *License Management Guide* located in the info/docs directory on your IDL CD-ROM.

Starting the Daemon at Boot Time

You can automatically start the license manger daemon by adding the command described previously to your system startup script.

Note

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 daemon to the end of the `/etc/rc` file.

Linux

Using any text editor, add the startup command for the license manager daemon 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-Directory*`/idl_5.3/bin/sys5_idl_lmgrd`. This file contains instructions on how to customize this script for your system, copy the file to the appropriate directory, and create the links that will automatically run the script at boot time.

Setting Up and Running IDL

Modifying a Users .cshrc or .profile File

You must define environment variables and aliases so that when a user logs in, the environment will automatically be set up for them. The IDL installation procedure automatically creates a file that contains appropriate definitions for IDL-related environment variables and aliases. Complete the following steps:

1. **Modify each user's .cshrc or .profile file.**

   Using any text editor, have each C shell user add the following line to their .cshrc file:

   ```
   source RSI-Directory/idl_5.3/bin/idl_setup
   ```

   Using any text editor, have each Korn shell user add the following line to their .profile file:

   ```
   . RSI-Directory/idl_5.3/bin/idl_setup.ksh
   ```

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

2. **Execute your .cshrc or .profile file.** You must log out and log back in to execute your .cshrc or .profile file or, from your home directory, execute your .cshrc or .profile file:

   For C shell:

   ```
   source .cshrc
   ```

   For Korn shell:

```
        . .profile
```

Running IDL

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

idlde	Starts the IDL Development Environment.
idl	Starts IDL without its Motif Graphical User Interface.
idldemo	Starts the IDL demo applications. You can also enter demo at the IDL> prompt after you have started IDL.
idlman	Runs IDL online manuals.
idlhelp	Displays the IDL Online Help. You can also enter ? at the IDL> prompt after you have started IDL.

Note

If you have problems starting IDL, any other executable, or it runs in demonstration mode after completing the licensing steps, see

Troubleshooting Your IDL Installation

If you have problems starting IDL or it runs in demonstration mode after completing the licensing steps, complete the following troubleshooting steps and try starting IDL again. If the problem persists, see the Troubleshooting section of the *License Management Guide* located in the /info/docs directory on your IDL CD-ROM.

1. **Is the proper executable file in your command search path?**
   Enter the following UNIX command:

   ```
   which idl
   ```

   which tells you if it is in your command search path and where it is. If this command does not report the path:

   ```
   RSI-Directory/idl_5.3/bin/idl
   ```

   (where *RSI-Directory* is the main installation directory) see "Setting Up and Running IDL" on page 21.

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 permissions set for all categories. Set execute permissions by entering:

   ```
   chmod ugo+x RSI-Directory/idl_5.3/bin*/*
   ```

3. **Does IDL know the location of the main IDL directory.** The environment variable IDL_DIR must be defined to the path to the IDL directory. Enter the following UNIX command:

```
echo $IDL_DIR
```

IDL_DIR should be set to *RSI-Directory*/idl_5.3. If not, you probably have not run the idl_setup or idl_setup.ksh file. Enter the following:

For C shell:

```
setenv IDL_DIR RSI-Directory/idl_5.3
```

For Korn shell:

```
export IDL_DIR='/RSI-Directory/idl_5.3'
```

4. **Is the license manager daemon running?** The lmstat license manager utility provides information on the status of the license manager. Enter:

```
RSI-Directory/idl_5.3/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. Exit IDL and stop the license manager daemon:

```
RSI-Directory/idl_5.3/bin/lmdown
```

Restart the license manager and direct the output of the daemon to a file. Enter:

```
RSI-Directory/idl_5.3/bin/lmgrd > logfile
```

Examine the resulting file *logfile* for error messages. If any error messages are present, see the *License Management Guide* located in the /info/docs directory on your IDL CD-ROM.

5. **Is the LM_LICENSE_FILE environment variable set improperly?** Enter the command:

```
echo $LM_LICENSE_FILE
```

LM_LICENSE_FILE should be set to the location of your license file.

If this environment variable points to a different license file and you have used the default location of
RSI-Directory/license/license.dat for your IDL license file, you will need to unset it prior to starting IDL by entering the following.

For C shell:

```
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.

6. **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.

7. **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 mean 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 from Research Systems. Check for capitalization and spaces. Shut down the license manager by entering:

```
RSI-Directory/idl_5.3/bin/lmdown
```

and restart it by entering:

```
RSI-Directory/idl_5.3/bin/lmgrd
```

If you are still having problems, see

Installing Adobe® Acrobat® Reader

IDL online manuals (which are installed with IDL) require Adobe Acrobat Reader with Search 3.0 or greater. Acrobat Reader 3.0 with Search has been included on your IDL CD-ROM in the /unix/rdr_srch directory along with installation instructions in the instguid.txt file.

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

Obtaining an RSI Registration/Licensing Form

If you have purchased either a software-based node-locked license or a floating license, you must obtain a registration/licensing form from Research Systems or your local office or distributor. This registration/licensing form contains licensing information you will need in order to license IDL.

Before your registration/licensing form can be created, you will need to supply some information about your computer. IDL includes a built-in electronic registration program to help you with this process. This program automatically retrieves the required information from your system.

Note

The electronic registration program will not be able to retrieve the correct information if you do not have a TCP/IP addressable network communication card (for example an ethernet card) and you do not have the TCP/IP service set up on your system.

To obtain a registration/licensing form, complete the following steps:

1. **Start the electronic registration program.** Enter
   RSI-Directory/idl_5.3/bin/rsi_register, where
   RSI-Directory is the name of the directory in which you
   installed IDL (the default is /usr/local/rsi).

2. **Enter your information.** In the Product Licensing dialog,
   complete the following information:

   • Contact Person — Enter the name of the person to whom the
     registration form should be sent.

   • Email Address — Enter the email address to which to send the
     registration form.

   • Installation Number — Enter the installation number found on
     the Research Systems Product Installation Form. You should
     have already received this form by electronic mail or fax. If
     you have not received the form, contact Research Systems
     technical support. See "If You Need Assistance Installing
     IDL" on page 32.

   • Site Notice — Enter the name that you want to appear when
     you launch IDL, in the form "licensed for use by <your site
     notice>." This is typically your company name, department,
     or project.

   • License type — Select the type of license you purchased.

- Node Locked LMHostid — This value is automatically generated by the registration program. Do not modify this value.

- Server Hostname — This value is automatically generated by the registration program. Do not modify this value.

- Server LMHostid — This value is automatically generated by the registration program. Do not modify this value.

- Comment — Enter any comments you may have.

3. **Send your registration information to RSI.** Click Accept on the Product Licensing dialog. The information you entered is displayed at the top of the next dialog. Copy all of this information into an email message, and send the email to register@rsinc.com. If you do not have email, you can fax this text to Research Systems at 303-786-9909. A registration form will be generated and sent to you at the email address or fax number you supplied.

Note

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

If You Need Assistance Installing IDL

If you have problems with your installation, contact Research Systems technical support for assistance:

- E-mail: support@rsinc.com
- Phone: 303-413-3920
- Fax: 303-786-9909
- Web page: http://www.rsinc.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.