Installation and Licensing Guide

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Acknowledgments

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Chapter 4
System Requirements

This section describes supported platforms and software requirements.

IDL

A network interface card (NIC or Ethernet) is required for software-based node-locked and floating licenses. The following table describes the supported platforms and operating systems for IDL.

Platform	Vendor	Hardware	Operating System	Supported Versions
Windows	Microsoft	Intel/AMD x86 32-bit	Windows	XP SP2, Vista
		Intel/AMD x86_64 64-bit	Windows	XP SP2, Vista
Macintosh [a]	Apple	PowerPC 32-bit	OS X	10.5.1
	Apple	Intel 32-bit	OS X	10.5.1
	Apple	Intel 64-bit	OS X	10.5.1
UNIX [a]	SUN	SPARC 32-bit	Solaris [c]	10
	SUN	SPARC 64-bit	Solaris [c]	10
	SUN	Intel/AMD x86_64 64-bit	Solaris [e]	10
	various	Intel/AMD x86 32-bit	Linux [b, c]	Kernel version 2.6.9 glibc version 2.3.4 gtk2 version 2.4.13
	various	Intel/AMD x86_64 64-bit	Linux [b, c, d]	

Table 4-1: Hardware Requirements for IDL

[a] For UNIX and Mac OS X, the supported versions indicate that IDL was either built on (the lowest version listed) or tested on that version. You can install and run IDL on other versions that are binary compatible with those listed.

[b] The LINUX version of IDL is built on RedHat 4. If your version of Linux is compatible with the listed kernel and glibc versions, you should be able to install and run IDL.

[c] The IDL Workbench requires the GTK+ library version 2.4 or later. Printing functionality in the Workbench requires GTK+ library version 2.10 or later. If GTK+ version 2.4 or later is not available, IDL will only run in console mode.

[d] On 64-bit Linux systems, the IDL Workbench requires that your platform's 32-bit compatibility libraries be installed.

[e] The IDL Workbench and Online Help are not supported on Solaris x86 64-bit machines. Documentation is available on the DVD for Solaris x86 platforms.

32-bit and 64-bit Versions

On UNIX and Macintosh Intel platforms that provide 64-bit support, you can run IDL as either a 32-bit or a 64-bit application. When both versions are installed, the 64-bit version is the default. You can run the 32-bit version by specifying the `-32` switch at the command line, as follows:

```
% idl -32
```

or

```
% idlde -32
```

Under Microsoft Windows, the 32-bit and 64-bit versions are started via separate Start menu entries.

On Macintosh Intel 64-bit machines, you can double-click on the 32-bit Macintosh applescript (.app) files.

Graphics Hardware

Some IDL features take advantage of graphics hardware that supports the OpenGL 2.0 interface to improve rendering performance, if such hardware is present. Your video card should support OpenGL 2.0 or higher to take advantage of these features. Be sure to update your video card drivers with the most recent version.

Platform Support Questions and Answers

This topic describes the platform support requirements for IDL 7.1. Platform support requirements change over time; for the most current information, visit the ITT Visual Information Solutions web site: http://ittvis.com/ProductServices/IDL/PlatformSupport.aspx.

Software Requirements

The following table describes the software requirements for IDL:

Platform	Software Requirements
Windows	Internet Explorer 5.0 or higher
Macintosh	Apple X11 X-Windows manager

Table 4-2: Software Requirements for IDL

Feature Support by Operating System

The following table shows marks indicating which platforms support the corresponding feature. IDL technologies not listed in this table are assumed to work on all supported platforms.

re	Windows		OS X			Linux		Solaris		
	Intel 32-bit	Intel 64-bit	PPC 32-bit	Intel 32-bit	Intel 64-bit	Intel 32-bit	Intel 64-bit	SPARC 32-bit	SPARC 64-bit	Intel 64-b
X: WIDGET_ACTIVEX mActiveX object)	●									
Object –Export (via Export Bridge nt)	●	●								
Object –Import (IDLcomIDispatch	●									
ner	●	●				●	●	●	●	
I Network Services	●	●	●			●		●		
I Read/Write (IDLffDicomEx object)	●	●	●			●		●		
I Read (IDLffDicom object)	●		●	●		●	●	●	●	
e format (IDLffDXF object)	●					●		●		
vanced Math and Stats Numerical Library)	●		●	●		●	●	●	●	
(IDLffMrSID)	●									
Procedure Calls (RPCs)			●	●		●	●	●	●	●
rkbench and Online Help	●	●	●	●	●	●	●	●	●	

Table 4-3: Feature Support: IDL 7.1

Chapter 5
Installing IDL or ENVI for Windows

This chapter covers the following topics:

Introduction

You must have Administrator privileges or be a member of the Administrator group to install IDL or ENVI. If you do not have such privileges, the installation process cannot modify the system configuration of the machine, so it will fail. After you have installed IDL or ENVI, you *do not* need Administrator privileges to run it.

After you have installed IDL or ENVI (see "Installing IDL or ENVI for Windows" on page 15), use the License Wizard to retrieve and install a license. You can run the License Wizard at any time by selecting **Start → All Programs → IDL *x.x* → License Wizard** or **Start → All Programs → ENVI *x.x* → License Wizard**.

Warning

You must have Administrator privileges to install licenses or to install, start, or stop the License Manager.

Installing IDL or ENVI for Windows

This section describes how to install IDL or ENVI on Windows platforms.

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 or ENVI.

The installation process installs the software first and then runs the License Wizard. You can run the License Wizard later if you cannot obtain your license number at the time of install.

To install IDL or ENVI:

1. Insert the installation disk in the appropriate drive. After a short delay, the autorun program starts. If the autorun program does not start automatically, select **Start** → **Run**. In the **Run** dialog, click **Browse** to locate the drive, select `autorun_win.exe` and click **OK**.
2. Click **Install 32-bit *software*** or **Install 64-bit *software*** (where *software* refers to IDL or ENVI) from the autorun program. The **InstallShield Wizard** dialog appears.
3. Click **Next**. The **License Agreement** dialog appears.
4. Read the license agreement, then click **Yes** to continue. The **Choose Destination Location** dialog appears.

   The default installation folder displays, which is `\Program Files\ITT` on the local hard drive. Click **Next** to install in the default folder.

   To install in a different location, click **Browse**. In the **Choose Folder** dialog, select an alternate location and click **OK**.

   If you are installing 64-bit IDL or ENVI, the installer installs all of the files for 32-bit and 64-bit versions. For information on running IDL or ENVI in either mode, see "Running IDL or ENVI on Windows" on page 18.

   If you are installing ENVI, and the IDL version on which ENVI is based is already installed on your system, ENVI is automatically installed below that IDL distribution in the `\products` folder. The **Destination Folder** dialog will not appear, and you will not be able to choose a path for your ENVI installation. If you do not want ENVI installed in this path, you must uninstall that IDL version. You can then install ENVI.

   Click **Next** to accept the directory that is displayed. The **Select Features** dialog appears.

5. The typical installation features are indicated by check marks. Clicking a feature displays information about that option. Select the features you want to install by checking the boxes for those features.

   Click **Next** to continue. The **File Type Associations** dialog appears.

6. You can choose which file type extensions to register with IDL or ENVI. The file types are IDL Binary File (`.sav`), IDL Program File (`.pro`), IDL iTools (`.isv`), and Workbench Visualization Export File (.vexp). All of the types are selected by default. If you are installing ENVI, you can also register the JPIP URL file type with ENVI Zoom on 32-bit platforms only. Change these selections as needed, and click **Next**.

7. If you chose to install the DICOM Network Services module, you will be asked if you want to configure the network services to start automatically at boot time. Click **Yes** or **No** to continue.

8. The **Start Copying Files** dialog appears. Click **Next**. The **Setup Status** dialog appears and shows the installation progress.

9. When installation is complete, the License Wizard starts. See "Using the License Wizard" on page 46.

   Note

   If you choose not to run the License Wizard as part of the installation process, you can click **No**. You can run IDL or ENVI in timed demonstration mode and run the License Wizard later by selecting
   Start → All Programs → IDL *x.x* → License Wizard or
   Start → All Programs → ENVI *x.x* → License Wizard.

10. A dialog notifies you that the installation was successful. You can choose to display the release notes. Click **Finish.**

    Your installation is now complete.

If you are prompted to reboot after installation, you may need to run the License Wizard by selecting one of the following:

- **Start → All Programs → IDL *x.x* → License Wizard**
- **Start → All Programs → ENVI *x.x* → License Wizard**

To modify or repair your installation, open the **Control Panel** in Windows and continue with one of the following options:

- Windows XP: Double-click **Add or Remove Programs**. The **Add or Remove Programs** dialog appears. Click **IDL *x.x*** or **ENVI *x.x***, and click **Change**. The

Setup Maintenance dialog appears, where you can modify the installed components or repair your installation.

- Windows Vista: From the Control Panel, select **Programs** → **Programs and Features**. Click **IDL *x.x*** or **ENVI *x.x***, and click **Uninstall/Change**. The **Setup Maintenance** dialog appears, where you can modify the installed components or repair your installation.

Installing IDL or ENVI Silently and Unattended

You can install IDL or ENVI unattended by creating an install script. Run this function using the `/s` and `/f1` parameters on the `setup32.exe` file (`setup64.exe` for 64-bit software) for the installation. Choose a syntax below to run the install script, depending on your platform (32-bit or 64-bit). The command is one line:

```
<DVD>:\windows\setup32.exe /s /f1"<DVD>:\windows\unattend32.iss"
```

Or,

```
<DVD>:\windows\setup64.exe /s /f1"<DVD>:\windows\unattend64.iss"
```

The `setup`*`xx`*`.exe` files and sample `unattend`*`xx`*`.iss` response files are located on the installation DVD under the `windows` directory. The sample `unattend.iss` is set up to install the default features. Use this file as an example to create your own `.iss` file.

To record your own `unattend`*`xx`*`.iss` response file, run the installer with the following command:

```
<DVD>:\windows\setup32.exe /r /f1"C:\unattend.iss"
```

OR,

```
<DVD>:\windows\setup64.exe /r /f1"C:\unattend.iss"
```

Note

If you are running the silent installer on Windows Vista, you must have elevated privileges to run the above commands.

Select the desired features and responses during this installation. The resulting response file can be used with future silent installations.

Prerequisites

For the silent installer to be successful, the target system must have the MSI Installer Engine version 3.1, which is available directly from Microsoft.

Running IDL or ENVI on Windows

To run IDL under Windows, select **Start** → **All Programs** → **IDL *x.x*** → **IDL**.

To run ENVI under Windows, select **Start** → **All Programs** → **ENVI *x.x*** → **ENVI**.

Note

If you have 64-bit IDL or ENVI installed, you can select either 32-bit or 64-bit IDL or ENVI from the Windows **Start** menu. The commands above start 64-bit IDL or ENVI if you are on a 64-bit platform. You can start 32-bit IDL or ENVI by selecting **Start** → **All Programs** → **IDL *x.x*** → **IDL (32-bit)** → **IDL** or **Start** → **All Programs** → **ENVI *x.x*** → **ENVI (32-bit)** → **ENVI**.

To run ENVI + IDL under Windows, select **Start** → **All Programs** → **ENVI *x.x*** → **ENVI + IDL**.

Running ENVI Zoom on Windows

Select one of the following options. The ENVI Zoom interface appears when the program is loaded and started.

- Select **Start** → **All Programs** → **ENVI *x.x*** → **ENVI Zoom**.
- If you have 64-bit ENVI installed, you can select either 32-bit or 64-bit ENVI Zoom from the Windows **Start** menu. The command above starts 64-bit ENVI Zoom if you are on a 64-bit platform. You can start 32-bit ENVI Zoom by selecting **Start** → **All Programs** → **ENVI *x.x*** → **ENVI (32-bit)** → **ENVI Zoom**.
- From the ENVI main menu bar, select **File** → **Launch ENVI Zoom**. You can open both ENVI and ENVI Zoom from the same IDL session.
- If you are running IDL or ENVI + IDL, type `envizoom` at the IDL command line.

Running the IDL Virtual Machine on Windows

To run a `*.sav` file in the IDL Virtual Machine, you can launch the IDL Virtual Machine and open the `*.sav` file, or launch the`*.sav` file in the IDL Virtual Machine from the command line.

To open a `*.sav` file from the IDL Virtual Machine:

1. Select **Start** → **All Programs** → **IDL *x.x*** → **IDL Virtual Machine** or **Start** → **All Programs** → **ENVI *x.x*** → **IDL Virtual Machine** to launch the IDL Virtual Machine and to display the IDL Virtual Machine window.
2. Click anywhere in the window to dismiss the IDL Virtual Machine splash screen and to display the file selection menu.
3. Locate and select the `*.sav` file, and double-click or click **Open** to run it.

Note

If you select a data save file, the IDL Workbench will be launched and the data restored.

To run a `*.sav` file from the command-line prompt:

1. Open a command-line prompt. Select **Start** → **Run**, and enter `cmd`.
2. Change directory (`cd`) to the *`ITT_DIR`*`\IDL`*`xx`*`\bin\bin.`<*`platform`*> directory where <*`platform`*> is `bin.x86` (32-bit machines) or `bin.x86_64` (64-bit machines).
3. Enter the following at the command-line prompt:

   ```
   idlrt -vm=<path><filename>
   ```

   where <*`path`*> is the path to the `*.sav` file, and <*`filename`*> is the name of the `*.sav` file.

   Note

   If a license is available on the machine running the `*.sav` file, double-clicking the `*.sav` file will run it in the licensed runtime version of IDL. To force the `*.sav` file to run in the Virtual Machine, run it from the command line with the `-vm` argument.

Running IDL Save Files on Windows

To run a `*.sav` file in the runtime version of IDL, do either of the following:

- Double-click the `*.sav` file to launch the application. If an IDL license is not available, the application will run in the IDL Virtual Machine.

Note

If the file is an application save file, it will run in runtime. If the file is a data save file, the IDL Workbench will be launched and the data restored.

- Open a command-line prompt. Select **Start** → **Run**, and enter `cmd`. Change directory (`cd`) to the *ITT_DIR*`\bin\bin.`<*platform*> directory, where <*platform*> is `bin.x86` (32-bit machines) or `bin.x86_64` (64-bit machines). Enter the following at the command line prompt:

  ```
  idlrt <path><filename>
  ```

  where <*path*> is the path to the `*.sav` file, and <*filename*> is the name of the `*.sav` file.

Chapter 6
Installing IDL or ENVI for UNIX

This chapter covers the following topics:

Introduction

Check your OS version: make sure that you are running on one of the supported UNIX versions listed in "System Requirements" on page 7, or a UNIX version that is binary-compatible with one of these versions.

You must be running X Windows: the IDL or ENVI 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 or ENVI installation disk.)

After you have installed IDL or ENVI (see "Installing IDL" on page 24), use the License Wizard to retrieve and install a license. You can license IDL or ENVI later by typing `ittlicense` at the UNIX prompt after you have set up your environment as described in "Defining Environment Variables and Aliases" on page 27.

Installing IDL or ENVI for UNIX

This section describes how to install IDL or ENVI on UNIX platforms.

Mounting the DVD on Your System

IDL and ENVI for UNIX installation programs are distributed on a DVD. The DVD mounts as `idl`*`xx`* or `envi`*`xx`*). In some cases, you may need to create a `/dvd` directory.

The DVD mounts automatically. (On some systems, you must have root permissions to mount a removable disk. Consult your operating system documentation for instructions on mounting a DVD on your system.)

Note

Linux systems: The automount sometimes runs with incorrect permissions. Using the following unmount and mount commands ensures a smooth installation on Linux:

Insert the DVD into the DVD drive. The automount will run and display the DVD contents.

Open a terminal window and type the following commands.

```
umount /dev/hdc
mount -o ro -t udf /dev/hdc /media
```

Now you can proceed to the installation instructions below.

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

Installing IDL

Follow the steps below to install IDL or ENVI. If you are installing in a public directory, make sure you have root or similar permissions before running the installation script.

Note

These instructions apply to the installation DVD. If you have a CD-ROM, see the file `readme.txt` on the installation CD for instructions.

The installer process installs the software first and then runs the License Wizard.

1. Enter the following command at your UNIX prompt:

   `/bin/sh /`*`DVD-PATH`*`/install_unix.sh`

   where *`DVD-PATH`* is the path to your DVD drive.

   A warning message may appear that indicates you must be logged in as root if you plan to install IDL or ENVI in a public directory. Click **Yes** to continue. The **License Agreement** dialog appears.

2. To continue the installation, click **Yes** to accept the terms of the license agreement. The **IDL Installation** dialog appears.

3. Next to the **Set Directory** button is the directory under which the `idl`*`xx`* or `envi`*`xx`* directory will be created (where *`xx`* is the software version). The default installation directory is `/usr/local/itt`. The installation directory will be referred to as *`ITT_DIR`* for the remainder of the installation and licensing instructions. The dialog lists the required disk space to install and the available disk space in the selected directory. If you want to install in the default directory, proceed to Step 4.

   To change the default directory, click **Set Directory**. The **Select Installation Directory** dialog appears. If you do not have write permissions for a selected directory, it appears as gray text. The selected directory will be created for you if it does not already exist.

   If you are installing ENVI, and the IDL version on which ENVI is based is already installed on your system, you can install ENVI below that IDL distribution. If you want to install ENVI in this location, click **Set Directory** and choose the directory that contains the appropriate `idl`*`xx`* directory (the default location for IDL is `/usr/local/itt`). If you do not select the same path, another IDL distribution is installed with ENVI.

When you have selected the installation directory and have verified you have enough disk space, click **OK**.

4. The **IDL Installation** dialog shows the typical installation features. Select the features you want to install by checking the boxes for those features.

   Under Select Platforms to Install, the installer displays the platform on which you are running the installation script. Select the appropriate platforms for any machines that will run IDL or ENVI on your network.

   When the options shown in the dialog are correct, click **OK**. The **Installation Summary** dialog appears.

5. If the selections in the **IDL Installation Summary** dialog are correct and you have the required disk space available, click **Install**. The installation starts, showing the **Installation Progress** dialog.

6. Once the installation script has finished copying files to the installation directory, the **Product Environment** dialog appears, prompting you to create symbolic links.

   Symbolic links are shortcuts to the IDL or ENVI executables that you can create in your home directory or in any directory you specify that users can execute to start IDL or ENVI.

   Note

   If you choose not to create symbolic links at this time, click **No Links** and proceed to Step 7. You can create them after installing IDL or ENVI by doing the following:

   Use the *ITT_DIR*`/idl`*xx*`/bin/install` (or *ITT_DIR*`/idl`*xx*`/products/envi`*xx*`/bin/install`) executable to create the symbolic links for you. *ITT_DIR* denotes the installation directory. You must execute this script from *ITT_DIR*.

   If you want to create symbolic links, click **Create Links**. The **Product Links** dialog appears. To set up symbolic links, choose the directory in which to create them. This can be your home directory or any other directory from which you want to start IDL or ENVI. The default directory is `/usr/local/bin`, which is commonly already in your PATH system environment variable. To change from 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. To accept the settings, click **OK**.

7. If you chose to install the DICOM Network Services module, you will be asked if you want to configure the network services to start automatically at boot time. Click **Yes** or **No** to continue the installation.
8. To license IDL or ENVI now, click **Yes** in the **Licensing/Registration Program** dialog. See "Using the License Wizard" on page 46.

   You can license IDL or ENVI later by typing `ittlicense` at the UNIX prompt after running the `source` commands described in "Defining Environment Variables and Aliases" on page 27.) To license IDL or ENVI later, or to run IDL in seven-minute demonstration mode, click **No**. Without the license information, IDL will operate in demonstration mode for seven-minute intervals.
9. The **Installation Complete** dialog appears. Click **Exit**.

Unmounting the DVD from Your System

You can now unmount the DVD using one of the following commands, where *DVD-Device* is the name of your DVD drive:

```
unmount /DVD-Device
```

Or,

```
eject /DVD-Device
```

Setting Up the Environment

Before you can run IDL or ENVI on a UNIX platform, you must set up each user's environment on the machine that will be running it. Each user will need to complete the following tasks:

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

Defining Environment Variables and Aliases

Three setup scripts (`idl_setup`, `idl_setup.ksh`, and `idl_setup.bash`) are provided for IDL, and three scripts (`envi_setup`, `envi_setup.ksh`, and `envi_setup.bash`) are provided for ENVI. These scripts set all required environment variables and aliases for IDL and ENVI. You should modify the `.cshrc`, `.profile`, or `.bashrc` file for each user who will be accessing IDL or ENVI, so that these settings are automatically executed whenever a user logs in.

To modify the `.cshrc`, `.profile`, or `.bashrc` files, complete the following steps:

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

   For C shell users, add the following line to your `.cshrc` files:

   `source` *`ITT_DIR`*`/idl`*`xx`*`/bin/idl_setup`

   Or,

   `source` *`ITT_DIR`*`/idl`*`xx`*`/products/envi`*`xx`*`/bin/envi_setup`

   For Korn shell users, add the following line to your `.profile` files:

   `.` *`ITT_DIR`*`/idl`*`xx`*`/bin/idl_setup.ksh`

   Or,

   `.` *`ITT_DIR`*`/idl`*`xx`*`/products/envi`*`xx`*`/bin/envi_setup.ksh`

   For Bash shell users, add the following line to your `.bashrc` files:

   `.` *`ITT_DIR`*`/idl`*`xx`*`/bin/idl_setup.bash`

   Or,

   `.` *`ITT_DIR`*`/idl`*`xx`*`/products/envi`*`xx`*`/bin/envi_setup.bash`

   where *`ITT_DIR`* is the main installation directory and *`xx`* is the software version.

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

   For C shell: `source .cshrc`

   For Korn shell: `. .profile`

   For Bash shell: `. .bashrc`

Note

For additional information on configuring Linux systems, see the **Licensing** section of the Tech Support Frequently Asked Questions page on the ITT Visual Information Solutions web site.

Running IDL or ENVI on UNIX

You can start IDL, ENVI, or any of the following executables by entering one of the following commands.

Note

For versions of UNIX that provide both 32- and 64-bit architectures, IDL and ENVI run in 64-bit mode by default. You can run the commands in 32-bit mode by entering a `-32` flag after the command (e.g., `idl -32`). If these commands do not produce the expected results, you may need to set environment aliases. See "Setting Up the Environment" on page 27.

Command	Description
`envi_rt`	Starts ENVI.
`envi`	Starts ENVI + IDL.
`envihelp`	Starts ENVI Help.
`envizoom`	Starts ENVI Zoom.
`envizoom_help`	Starts ENVI Zoom Help.
`idl`	Starts IDL in command line access mode.
`idlde`	Starts IDL Workbench.
`idl -vm`	Starts IDL Virtual Machine.
`idl -rt`	Starts the runtime version of IDL.
`ittlicense`	Starts the License Wizard.
`idldemo`	Starts the IDL Demo Applications. You can also type `demo` at the IDL prompt after you have started IDL.
`idlhelp`	Starts the IDL online help.

Table 6-1: Startup Commands

For information on other startup options, see Command Line Options for IDL Startup in *Using IDL*.

Running the IDL Virtual Machine on UNIX

To run a `*.sav` file in the IDL Virtual Machine:

1. Enter `idl -vm=<path><filename>.sav` at the system command prompt, where *<path>* is the path to the `*.sav` file, and *<filename>* is the name of the `*.sav` file. The IDL Virtual Machine window displays.
2. Click anywhere on the IDL Virtual Machine window to close the window and run the `*.sav` file.

To launch the IDL Virtual Machine and select a `*.sav` file to open:

1. Enter `idl -vm` at the system command prompt. The IDL Virtual Machine window is displayed.
2. Click anywhere on the IDL Virtual Machine window to display a file selection menu.
3. Open a `*.sav` file from the file selection menu.

Running IDL Runtime Applications on UNIX

To run a `*.sav` file in the runtime version of IDL:

1. Enter `idl -rt=<path><filename>.sav` at the system command prompt, where *<path>* is the path to the `*.sav` file, and *<filename>* is the name of the `*.sav` file.
2. The application contained in the `*.sav` file is run in the runtime version of IDL.

Note

When a `*.sav` file is run with the `idl -rt` command on a machine without an IDL license, it will run in the IDL Virtual Machine.

Chapter 7
Installing IDL or ENVI for Macintosh

This chapter covers the following topics:

Installing IDL or ENVI for Macintosh

IDL and ENVI require Apple X11 to display graphics. If X11 is not already installed, install Apple X11 from the Mac OS X installation disks. Then, install IDL or ENVI.

Installing IDL or ENVI

You must have Administrator privileges to install IDL or ENVI in a public directory. The installer process installs the software first and then runs the License Wizard.

Note

For license types that require the FLEXnet license manager, you must have root privileges to install the boot time startup script. Note that root privileges are different than Administrator privileges.

1. Insert the IDL or ENVI installation disk in the appropriate drive. The software volume window appears. If the window does not appear, double-click the disk icon.
2. Double-click the **Install_Mac** icon. The **Introduction** dialog appears.
3. Click **Next** to begin installation. A warning message may appear that indicates you must have administrator privileges if you plan to install IDL or ENVI in a public directory. Click **Yes** to continue. The **License Agreement** dialog appears.
4. To continue the installation, accept the terms of the ITT Visual Information Solutions license agreement. Click **Next**. The **Choose Install Folder** dialog appears.
5. The default installation directory displays, which is `/Applications/itt` in the default directory. Click **Next** to install in the default directory.

   To install in a different directory, click **Choose** and select another location.

   Note

   The path must not contain any spaces in the folder names. If the installation folder or any folder in the path to the installation folder contains spaces in its name, IDL and ENVI will not run. Rename the folder without spaces before you install, or use the default `/Applications/itt` installation path.

   The **Restore Default Folder** button returns the path selection to the default.

   The installation directory contains the IDL or ENVI software. For example:

`/Applications/itt/idl`*`xx`*

Or,

`/Applications/itt/idl`*`xx`*`/products/envi`*`xx`*

The installation directory will be referred to as *`ITT_DIR`* for the remainder of the installation and licensing instructions. The *`xx`* refers to the software version.

If you are installing ENVI, and the IDL version upon which ENVI is based is already installed on your system, you can install ENVI below the IDL distribution. If you want to install ENVI in this location, click **Set Directory** and choose the directory that contains the `itt/idl`*`xx`* directory (the default location for IDL is `/Applications`). If you do not select the same path, another IDL distribution is installed with ENVI.

Click **Next** to begin the installation.

6. In the **Choose Install Set** dialog, choose your software installation options. The typical installation features are indicated by check marks. Clicking a feature displays information about that option. Select the features you want to install by checking the boxes for those features.

   Note

   The DICOM Network Services option is available only on PPC, not on Intel platforms.

   Click **Next** to proceed. The **Pre-Installation Summary** dialog appears.

7. Confirm the installation settings and options, and click **Install** to begin installation or click **Previous** to modify the installation options. The dialog shows the installation progress.

8. If you chose to install DICOM Network Services (PPC only), you will be asked if you want to configure the network services to start automatically at boot time. Uncheck the check box if you do not want to start the Dicomex Storage SCP Service at boot time. Click **Next** to continue.

   The DICOM installation script requires root or sudo privileges. If the operation is unsuccessful, a dialog appears that indicates you must manually execute the DICOM installation script (*`ITT_DIR`*`/idl`*`xx`*`/bin/dicomexstorscp_install`).

   When the software installation is complete, the **License Wizard** dialog appears.

9. To run the License Wizard, click **Next**. See "Using the License Wizard" on page 46. To run it at a later time, clear the selection and click **Next**.

   Note

   To run the License Wizard later, launch the `LicenseWizard` applescript from the *`ITT_DIR`*`/idl`*`xx`* directory.

10. The **Install Complete** dialog appears. Click **Done** to exit the installer.

Setting Up Your Environment

Installing your license and automatically configuring the license server with the `LicenseWizard` Applescript application does not require special setup of the Apple X11 shell environment.

However, if you need to issue any license-utility line commands or start an IDL or ENVI session from an Apple X11 shell prompt, you might need to set up your shell environment before issuing the commands. See "Defining Environment Variables and Aliases" on page 27 for details.

Note

For additional information on configuring your system, see the Tech Support Frequently Asked Questions page on the ITT Visual Information Solutions web site.

Running IDL or ENVI under Macintosh

You can run IDL or ENVI in one of two ways:

- From an Applescript application
- From a UNIX X-Windows prompt

You can also enable accelerators that use the **Alt** key to work with the Macintosh **Apple** key (also known as the **Command** key). For details, see the topic “Enabling Alt Key Accelerators on Macintosh” in IDL Help.

Running IDL or ENVI from Applescript

To run IDL or ENVI, click on one of the Applescript applications in the *ITT_DIR*/idl*xx* directory. Table 7-1 describes the complete list of applications.

Note

For versions of Macintosh OS that provide both 32- and 64-bit architectures, IDL and ENVI run in 64-bit mode by default. Each applescript (e.g. `idl.app`) has a 32-bit version (e.g. `idl32.app`) if you prefer to run in 32-bit mode. If these applescripts do not produce the expected results, you may need to set environment aliases. See “Setting Up Your Environment” on page 34.

Icon Name	File Name	Description
envi+idl	envi+idl.app	Starts command-line ENVI + IDL.
envi	envi.app	Starts an ENVI session.
ENVIZoom	ENVIZoom.app	Starts ENVI Zoom.
ENVIHelp	ENVIHelp.app	Starts ENVI Help.
ENVIZoomHelp	ENVIZoomHelp.app	Starts ENVI Zoom Help.
IDLWorkbench	IDLWorkbench.app	Starts the IDL workbench.
idl	idl.app	Starts command-line IDL.
idlvm	idlvm.app	Starts an IDL Virtual Machine session.
IDLDemos	IDLDemos.app	Starts the IDL Demo application.

Table 7-1: Applescript Applications

Icon Name	File Name	Description
IDLHelp	IDLHelp.app	Starts IDL Help.
LicenseWizard	LicenseWizard.app	Starts the License Wizard.
DICOMNetwork-Services	DICOMNetworkServices.app	Starts the DICOM Network Services.

Table 7-1: Applescript Applications (Continued)

Manually Creating an Alias to an IDL or ENVI Applescript

To manually create a Macintosh alias to an IDL or ENVI Applescript, on your desktop or other convenient location:

1. Open a Finder window, and navigate to the *ITT_DIR*/idl*xx* directory of your IDL or ENVI installation.
2. Identify the Applescript icon for which you would like to create an alias, for example, IDLWorkbench.
3. While holding the **Option** and **Command** keys on your keyboard, click and drag the target icon to your desktop. Copying or moving the Applescript to another location (rather than creating a Macintosh alias) will cause the Applescript to fail.

Running IDL or ENVI from the Command Line

This section covers how to run IDL or ENVI from the X-Windows prompt on Mac OS X.

1. Launch X11 from the /Applications/Utilities folder. X11 displays a UNIX X-Windows command line in an OS X window.
2. Before you can run IDL or ENVI, you must set up each user's environment on the machine that will be running it. See "Defining Environment Variables and Aliases" on page 27.
3. You can now start IDL or ENVI or any of the following executables by entering one of the following commands at the command line:

All available commands are listed in Table 7-2.

Command	Description
`envi`	Starts command-line ENVI+IDL in an Xterminal window.
`envi_rt`	Starts an ENVI session.
`envizoom`	Starts an ENVI Zoom session.
`envihelp`	Starts ENVI Help.
`envizoom_help`	Starts ENVI Zoom Help.
`idl`	Starts IDL in command-line access mode.
`idlde`	Starts IDL Workbench.
`idl -vm`	Starts IDL Virtual Machine.
`idl -rt`	Starts the runtime version of IDL.
`ittlicense`	Starts the License Wizard.
`idldemo`	Starts the IDL Demo Applications. You can also type `demo` at the IDL prompt after you have started IDL.
`idlhelp`	Starts IDL Help.

Table 7-2: Startup Commands

For versions of Mac OS X that provide both 32- and 64-bit architectures, run the commands in Table 7-2 in 32-bit mode by entering a `-32` flag after the command (e.g., `idl -32`). If these commands do not produce the expected results, you need to set environment aliases. See "Setting Up Your Environment" on page 34.

For information on other startup options, see Command Line Options for IDL Startup in *Using IDL*.

Running the IDL Virtual Machine under Macintosh

You can run the IDL Virtual Machine from Applescript or from the command line.

Running from Applescript

To start the IDL Virtual Machine, double-click on `idlvm.app` (or `idlvm32.app` for 32-bit) in the *`ITT_DIR`*`/idl`*`xx`* directory.

Running from the Command Line

To run a `*.sav` file in the IDL Virtual Machine:

1. Start X11.
2. Enter `idl -vm=<path><filename>.sav` at the X11 Terminal prompt, where *<path>* is the path to the `*.sav` file, and *<filename>* is the name of the `*.sav` file. The IDL Virtual Machine window is displayed.
3. Click anywhere on the IDL Virtual Machine window to close the window and to run the `*.sav` file.

To launch the IDL Virtual Machine and select a `*.sav` file to open:

1. Start X11.
2. Enter `idl -vm` at the X11 Terminal prompt. The IDL Virtual Machine window is displayed.
3. Click anywhere on the IDL Virtual Machine window to display the file selection menu.
4. Open a `*.sav` file from the file selection menu.

Running IDL Runtime Applications under Macintosh

To run a `*.sav` file in the runtime version of IDL:

1. Start X11.
2. Enter `idl -rt=<path><filename>.sav` at the X11 Terminal prompt, where *<path>* is the path to the `*.sav` file, and *<filename>* is the name of the `*.sav` file.
3. The application contained in the `*.sav` file is run in the runtime version of IDL.

   When a `*.sav` file is run with the `idl -rt` command on a machine without an IDL license, it will run in the IDL Virtual Machine.

Chapter 8
Licensing IDL and ENVI

This chapter covers the following topics:

Licensing Methods

Access to IDL and ENVI is controlled by a software application that ensures a proper license is available. Licensing options include IDL Virtual Machine, demonstration (IDL), evaluation, flexible single-user, node-locked, and floating, which are all discussed in the following sections. If you are installing our software to run an application provided by a third-party developer, consult the licensing instructions that accompany the application.

You can retrieve product licenses from the ITT Visual Information Solutions Web site using the License Wizard. In some cases, ITT may send you license information by e-mail or fax.

IDL Virtual Machine

The IDL Virtual Machine is a freely distributable version of IDL that can run IDL programs that are compiled as `*.sav` files. The IDL Virtual Machine runs without an IDL license, so it can be installed on any machine to run the IDL applications you develop. (The IDL Virtual Machine is not related to the Java Virtual Machine. For more information on the IDL Virtual Machine, see “Application Programming” in IDL Help.)

The IDL Virtual Machine is installed automatically as part of a full IDL or ENVI application installation.

Demonstration Mode (IDL)

Demonstration mode allows you to run a limited version of IDL in seven-minute demonstration mode. You do not need to request or enter a license file.

Evaluation License

Evaluation licenses are temporary trial licenses allowing access to certain IDL or ENVI 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 (IDL only). Request an evaluation license through the ITT Visual Information Solutions Web site.

The following is a sample evaluation license key (using ENVI as an example):

```
Product:            ENVI+IDL X.X
Expiration:         1-Sep-20XX
Key:                ABC123DEF456GHI7-123
```

Flexible Single-User License

Flexible single-user licenses are permanent licenses tied to a specific single user. After you purchase a flexible single-user license from ITT Visual Information Solutions or your local distributor, you will receive instructions on how to obtain a license key via the Web, by e-mail, or by fax.

You can install a flexible single-user license for up to three machines for the exclusive use of the designated user. You must run the License Wizard (see "Using the License Wizard" on page 46) on each machine to automatically generate and retrieve a license via the ITT Visual Information Solutions Web site.

The host ID information is required for all machines tied to the flexible single-user license. The host ID field contains the physical addresses (in hexadecimal format) of your machines, separated by spaces. Once you have reached the three-machine limit and you replace any of your machines, you can regenerate the flexible single-user license key using the License Wizard or by contacting ITT Visual Information Solutions Technical Support or your local distributor. You will need to know the host ID for the new machine. You can get this information through the License Wizard.

The following are sample flexible single-user license keys:

IDL

```
# License Number(s): 000012
INCREMENT idl idl_lmgrd x.xxx 1-jan-0000 uncounted 1234567890abcdef \
 VENDOR_STRING="216033John Doe" HOSTID="000123456abc \
 000abcdef123" PLATFORMS="i86_n x64_n i86_re i86_r amd64_re \
 ppc_mac i86_mac" NOTICE=PERSONAL_USE ck=96
```

ENVI

```
# License Number(s): 000011-12
INCREMENT idl idl_lmgrd x.xxx 1-jan-0000 uncounted 1234567890abcdef \
 VENDOR_STRING="213785-12John Doe" HOSTID="000123456abc \
 000abcdef123" PLATFORMS="i86_n x64_n i86_re i86_r amd64_re \
 ppc_mac i86_mac" NOTICE=PERSONAL_USE ck=116
INCREMENT envi idl_lmgrd x.xxx 1-jan-0000 uncounted 1234567890abcdef \
 VENDOR_STRING="213785-12John Doe" HOSTID="000123456abc \
 000abcdef123" PLATFORMS="i86_n x64_n i86_re i86_r amd64_re \
 ppc_mac i86_mac" NOTICE=PERSONAL_USE ck=62
```

Node-Locked License

Node-locked licenses tie a single IDL or ENVI application to a single machine. This method of licensing requires a machine's unique host ID to be incorporated into a license file. After you purchase a node-locked license from ITT Visual Information Solutions or your local distributor, you will receive instructions on how to obtain a license key via the Web, by e-mail, or by fax. Entering and saving the license file enables IDL or ENVI functionality on the machine for which you have sent the host ID. Server-based, node-locked licenses require you to run the License Manager.

IDL

A Windows unserved, single-user, node-locked license has the following format:

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

A UNIX/Macintosh/Linux single-user, server-based, node-locked license has the following format:

```
# License Number(s): 000111
SERVER ourserver 00aabb11ccdd 1700
USE_SERVER
DAEMON idl_lmgrd
INCREMENT idl idl_lmgrd x.000 0-jan-0000 10 0A0000A00A000AA0A \
   VENDOR_STRING=”000111Single Node-Locked UNIX License” \
   HOSTID=0000aaaaa0aa0a ck=000
FEATURESET idl_lmgrd ABC123DEF456GHI7
```

ENVI

A Windows ENVI+IDL unserved, single-user, node-locked license key has the following format:

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

A UNIX/Macintosh/Linux ENVI+IDL single-user, server-based, node-locked license has the following format:

```
# License Number(s): 000111
SERVER myserver 00aabb11ccdd 1700
USE_SERVER
DAEMON idl_lmgrd
INCREMENT idl idl_lmgrd X.XXX 0-jan-0000 10 0A0000A00A000AA0A \
    VENDOR_STRING="000111Single Node-Locked UNIX License" \
    HOSTID=0000aaaaa0aa0a ck=000
INCREMENT envi idl_lmgrd X.XXX 0-jan-0000 1 0B0000B00B000BB0B \
    VENDOR_STRING="000111Single Node-Locked UNIX License" \
    HOSTID=0000aaaaa0aa0a ck=000
FEATURESET idl_lmgrd ABC123DEF456GHI7
```

Floating License

Floating (or client/server) licenses can allow one or more on non-specific network machines to concurrently access IDL or ENVI. With IDL or ENVI installed and licensed on the server machine, the License Manager (installed on the server) handles license requests from remote client machines. (You can also install a separate ITT FLEXlm License Server to serve licenses. See "Setting the LM_LICENSE_FILE Environment Variable" on page 48.)

As the server administrator, you can also choose how users access the floating licenses. You can reserve licenses for individuals or groups, or you can allow all users to share access to the licenses. If you have a team of 20 people and you have purchased IDL or ENVI with 10 floating licenses, you can reserve licenses for certain individuals in the group, or let all team members share access to the 10 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 serving licenses or being licensed, floating licenses (and server-based node-locked licenses) additionally require the installation of a License Manager.

IDL and ENVI use the Macrovision FLEXnet License Manager. The License Manager runs continuously on your system, waiting for a request from IDL or ENVI. 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 IDL or ENVI. See "Installing the License Manager" on page 47 for more information.

Following are sample floating license keys:

IDL

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

ENVI

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

Floating licenses or server-based node-locked licenses include SERVER, DAEMON, and FEATURESET information. The license server may be installed and run only on the server indicated in the SERVER line of the license key.

A path on the DAEMON line of a server-based license file is optional:

```
SERVER myserver 000012345678 1700
USE_SERVER
DAEMON idl_lmgrd
...
```

On Windows, a DAEMON line path is required only if the License Manager daemon program (`lmgrd.exe`) used to start the License Manager and the vendor daemon program (`idl_lmgrd.exe`) are not located in the same directory.

If you do use a DAEMON line path on a Windows license server, use a quoted path that extends to the vendor daemon program file (`idl_lmgrd.exe`). For example:

```
DAEMON idl_lmgrd "C:\Program Files\ITT\idlXX\bin\bin.x86\idl_lmgrd.exe"
```

On Unix, Linux, or MacOS X, specify a DAEMON line path to the `bin` subdirectory of the main IDL directory of the IDL or ENVI installation. For example, on Unix and Linux:

```
DAEMON idl_lmgrd /usr/local/itt/idl/bin
```

On Mac OS X:

```
DAEMON idl_lmgrd /Applications/itt/idl/bin
```

Note

For additional information, see the Tech Support Frequently Asked Questions page on the ITT Visual Information Solutions web site.

Using the License Wizard

The License Wizard is launched during the final step of your IDL or ENVI installation. You can use the License Wizard to generate a node-locked, floating, or flexible single-user from the ITT Visual Information Solutions Web site. If you already have a license but have not installed it, you can use the License Wizard to install it in the correct directory.

Note

If your license requires a license server, the License Wizard also allows you to install the License Manager to run at boot time. Depending on the operating system, the Wizard allows you start the License Manager. On Windows systems, you can access License Manager administration tool. In most cases, the License Wizard provides the easiest way to configure your License Manager.

Running the License Wizard after Installation

After your IDL or ENVI installation is complete, the **License Wizard** dialog appears. Click **Yes** to run the License Wizard, or **No** to run the License Wizard later.

You can start the License Wizard later by one of the following methods:

- Windows: **Start** → **Programs** → **IDL** *xx* → **License Wizard** or **Start** → **Programs** → **ENVI** *xx* → **License Wizard**.
- Unix: type `ittlicense` at the Unix command prompt from the *ITT_DIR*`/idl`*xx*`/bin` directory. You must first run the `source` commands described in "Defining Environment Variables and Aliases" on page 27.
- Macintosh: Launch the `LicenseWizard` applescript from the *ITT_DIR*`/idl`*xx* directory.

Using the License Manager

With a floating or server-based node-locked license, you need to start the License Manager before IDL or ENVI can access a network license and run in licensed mode. You can also set up your system so that the License Manager automatically starts when you boot your system.

You only need to start the License Manager on the designated license server, not on separate license client machines accessing the licenses from the network. However, you do need to set up client machines to access IDL/ENVI and the license server machine.

Carefully consider the machine you have chosen as your license server 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 and the network connection to that 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.

Jump to the following topics for more information:

- “Installing the License Manager” on page 47
- “Configuring Client Access to the License Manager” on page 48
- “Working with the License Manager” on page 51
- “Using the Same License Manager for Different Applications” on page 57
- “Upgrading a Network License Manager” on page 65
- “Viewing License Files” on page 67
- “Modifying License Files” on page 67
- “Customizing Floating Licenses” on page 69

Installing the License Manager

The License Wizard allows you the option to install the License Manager to run at boot time if your license requires it. If your license type changes — for example if you change from an evaluation license to an activated license — you may need to install the License Manager after you have already installed IDL or ENVI. To run the License Wizard on a computer with an IDL or ENVI installation, but without running

the IDL or ENVI installer, see "Running the License Wizard after Installation" on page 46.

You can install the License Manager on a computer that does not have an IDL or ENVI installation. The License Manager installer is located in the `flexlm` subdirectory of your IDL or ENVI installation disk. See the Readme file in that directory for instructions on running the stand-alone License Manager installer.

Configuring Client Access to the License Manager

The License Wizard provides an easy way to configure access to the License Manager. In most cases, working through the License Wizard will correctly configure IDL or ENVI to communicate with the License Manager by placing a copy of the `license.dat` file in the correct location.

If your site uses the same License Manager to license multiple products, or if IDL or ENVI is not properly licensed after using the License Wizard, refer to the following sections.

Manually Copying the license.dat File

The License Wizard can place a copy of your site's `license.dat` file in the correct place on your local machine. If you choose to manually copy the `license.dat` file instead, place it in the `license` subdirectory of your ITT product directory. If the `license` directory does not already exist, you can create it. If your ITT product is installed in the default location, the license directory would be:

Windows:

```
C:\Program Files\ITT\License
```

UNIX:

```
/usr/local/itt/license
```

Macintosh:

```
/Applications/itt/license
```

Setting the LM_LICENSE_FILE Environment Variable

If your site has a License Manager running on a server machine, you can configure your client machine to ask for licenses from the server by setting the LM_LICENSE_FILE environment variable.

Windows

To define the LM_LICENSE_FILE environment variable, do the following:

1. Open the **System** control panel.
2. Click the **Advanced** tab, and click the **Environment Variables** button. Click the **New** button below the System Variables box and enter the following information:
   A. In the **Variable Name** field, type LM_LICENSE_FILE in uppercase letters.
   B. In the **Variable 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 the word SERVER.

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

      ```
      C:\Program Files\ITT\License\mylicense.dat;1700@hal
      ```
3. Save the settings.

UNIX and Macintosh OS X

To define the LM_LICENSE_FILE environment variable, do the following:

1. Modify your `.cshrc`, `.profile`, or `.bashrc` file using any 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 Manager. The syntax for defining the environment variable is:

   ```
   port@host
   ```

   For example, if you are running the License Manager on a machine named "hal" with a port of 1700, then enter the following:

   For C shell: `setenv LM_LICENSE_FILE 1700@hal`

   For Korn or Bash shell: `export LM_LICENSE_FILE=1700@hal`

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

   ```
   /usr/local/myapplication/license.dat:1700@hal
   ```

   Or,

   ```
   $LM_LICENSE_FILE:1700@hal
   ```

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

   For C shell: `source .cshrc`

   For Korn shell: `. .profile`

   For Bash shell: `. .bashrc`

Configuring FLEXnet Licensing Through a Firewall

Some firewalls require the system administrator to specify which ports are available outside the firewall. If this is the case, the administrator should define the TCP port that both `lmgrd` and the vendor daemon `idl_lmgrd` will use. Explicitly specify the vendor daemon port in your license file as follows (using the server above). This is an example only; these are not absolute values:

```
SERVER myserver 00aabb11ccdd 1700
USE_SERVER
DAEMON idl_lmgrd PORT=1701
```

The “PORT=” entry on the DAEMON line allows explicit selection of both externally available ports. You can use any open, unused port numbers. 1700 is the TCP port reserved for use by the `lmgrd` process, while 1701 is the port used by the vendor daemon process `idl_lmgrd`. Neither port number should be used by other processes.

The `LMGRD` port number can also be any open, unused port number, although this and the `DAEMON` port number must be different.

Accessing the licenses should not be any different than it would be in the absence of a firewall, except that the `license.dat` and `LM_LICENSE_FILE` system variables may need to use the server’s fully qualified domain name or IP address. IDL license clients must be able to connect to both ports, regardless of whether the clients are inside or outside the firewall.

Please consult your system administrator for details about configuring and opening TCP ports in a firewall. This discussion also pertains to personal firewalls, including the Windows firewall.

Working with the License Manager

If your license type requires a License Manager, you must ensure that the License Manager is running. The License Wizard will step you through the process of installing the License Manager and configuring your system so that it starts automatically. This section describes how to start the License Manager manually or configure it to start automatically if you are not using the License Wizard.

Starting the License Manager

Note

If the license unit count on your `license.dat` file's INCREMENT line is "0" or "uncounted," then you do not need to start the License Manager.

Windows

On Windows platforms, the LMTools support utility lets you start, stop, and see the status of the License Manager. (The License Wizard also starts LMTools.) You must have Administrator privileges. To start the License Manager on Windows:

1. Select one of the following:
   - **Start → Programs → IDL *x.x* → LMTools**
   - **Start → Programs → ENVI *x.x* → LMTools**

   The **LMTools** dialog appears.
2. Click the **Config Services** tab and select the name of the License Manager service. If you installed the License Manager using the License Wizard, the default name is "ITT FLEXlm License Manager." To start the License Manager automatically at boot time as a service, check **Use Services** and **Start Server at Power Up** boxes. Click **Save Services** to save any configuration changes.
3. Choose the **Start/Stop/Reread** tab and click **Start Server** to start the License Manager.

Note

For more on configuring the ITT License Manager service, see "Creating Unique License Manager Services for Each Product" on page 59.

Unix and Macintosh

Starting the License Manager requires no special privileges on Unix and Macintosh. Note the potential security ramifications of running the License Manager from a

privileged account such as `root` or `Administrator`, as it can be started by any user. However, special privileges *are* required to *shut down* the License Manager. See "Stopping the License Manager" on page 54 for more information. The same special privileges are required to install and start scripts that start the License Manager at boot time

On UNIX and Macintosh platforms, start the License Manager by entering the following command.

Note

You may be required to set up the environment to run IDL or ENVI before running the command. See "Setting Up the Environment" on page 27.

```
ITT_DIR/idlxx/bin/lmgrd [-c license_path]
```

where *ITT_DIR* is the directory where you have installed IDL or ENVI, and *license_path* is the full pathname to the license file, including the license filename. The default license path is *ITT_DIR*`/license/license.dat`. If you have used this default location or have defined the LM_LICENSE_FILE environment variable (as described in "Configuring Client Access to the License Manager" on page 48), you do not need to specify the `-c license_path` option, although it is recommended to avoid ambiguity.

Multiple License Managers

If you have more than a single ITT FLEXnet License Manager running on a server, conflicts might exist among the License Managers. Before starting the License Manager, see "Using the Same License Manager for Different Applications" on page 57 for more detailed information on customizing your license file.

Note

For additional information, see the **Licensing** section of the Tech Support Frequently Asked Questions page on the ITT Visual Information Solutions web site.

Configuring the License Manager to Start Automatically on UNIX and Macintosh

In most cases, you want the License Manager to start automatically each time your system starts. This ensures that the system can provide a license when one is requested.

This section describes how to configure the License Manager to start automatically on UNIX and Macintosh platforms if you are not using the License Wizard. (The License Wizard automatically performs these steps.)

Use one of the following methods to configure the License Manager to start at boot time (root privileges are required).

- Log in as root and type the following at the command line:

```
cd ITT_DIR/idlxx/bin
lmgrd_install
```

- Refer to the comments in the `sys5_idl_lmgrd` script in the *ITT_DIR*`/idl`*xx*`/bin` directory to install and configure the boot time script manually.

The boot-time startup script works with all supported operating systems. Consequently, if you have previously configured a system boot-time script that is different than the `sys5_idl_lmgrd` script, after you have installed the IDL or ENVI boot-time startup script, be sure to modify your other boot-time script so that a second instance of the ITT License Manager will not be started on the same system. Running two instances of the same vendor's License Manager on the same system causes a conflict that prevents the License Manager from working correctly.

Checking the License Manager Status

To check the License Manager status:

Windows

1. Find the hostname and TCP/IP port number in the `SERVER` line of the license file (`license.dat`) used to start the License Manager service. For example, if the `SERVER` line looks like the following:

   ```
   SERVER myserver 12345678 1700
   ```

   Then the hostname is `myserver` and the TCP/IP port is `1700`.

2. Open a Windows Command prompt window, and change directories to the `idlxx\bin\bin.<`*platform*`>` directory of your IDL or ENVI installation. For example:

   ```
   cd /d C:\Program Files\ITT\idlxx\bin\bin.x86
   ```

3. Issue an `lmutil lmstat` command at the prompt. For example:

   ```
   lmutil lmstat -a -c 1700@myserver
   ```

   Where the TCP/IP port number and server hostname are those determined in Step 1. The output displays the status of licenses and users on the server.

UNIX and Macintosh

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 *ITT_DIR*`/idl`*xx*`/bin` directory, and enter a command using the following syntax:

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

For example: `lmstat -a -c 1700@myserver`

Optional flags for `lmstat` are shown in Table 8-1.

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 License 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 or the `port@host` setting. 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 *ITT_DIR*`/license/license.dat`.
`-s [server]`	This option displays the status of the specified server node(s).

Table 8-1: Optional Flags for lmstat

Note that IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a `.flexlmrc` file (in the user's home directory that starts the license service) or as an environment variable.

Stopping the License Manager

To stop the License Manager:

Windows

Administrative privileges may be required.

1. Select one of the following:
   - **Start → Programs → IDL *x.x* → LMTools**
   - **Start → Programs → ENVI *x.x* → LMTools**

   The **LMTools** dialog appears.

2. Click **Stop Server** in the **Start/Stop/Reread** tab to disable the selected License Manager. IDL will run in seven-minute demonstration mode without an available license.

UNIX and Macintosh

The `lmdown` program initiates a shutdown of all License Managers by sending a message to every License Manager asking it to shut down. If you selected the option at installation to use a log file, 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 IDL or ENVI process verifies its license, it will not be valid.

To run `lmdown`, change to your *ITT_DIR*`/idl`*xx*`/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 you do not specify the `-q` switch, `lmdown` asks for confirmation before asking the License Managers to shut down. If this switch is specified, `lmdown` does not ask for confirmation. It is recommended that you use the `-c` option to explicitly specify the license file or *port@host* reference when stopping the License Manager, especially when multiple License Managers are running on your network.
(For example: `lmdown -c 1700@myserver).`

Unauthorized use of the `lmdown` command can be disruptive; when the License Manager shuts down, all current IDL or ENVI sessions are terminated. Verify that the file access modes on your system are secure. It is recommended that you set the permissions for `lmdown` using the following UNIX command:

```
chmod 500 ITT_DIR/idlxx/bin/lmdown
```

Logging (UNIX and Macintosh)

The License Manager writes a log of its activities to its standard output. If you do not 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:

```
ITT_DIR/idlxx/bin/lmgrd > /dev/null
```

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

```
ITT_DIR/idlxx/bin/lmgrd > /dev/console
```

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

Reclaiming Unused Licenses (UNIX and Macintosh)

If you are running licensed IDL or ENVI when the machine crashes, the license that was in use might not 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.

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

To free a license, first gather information using the status command, `lmstat`. To run `lmstat`, change to your *ITT_DIR*`/idl`*xx*`/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 checked out from the server "hal7," which is being displayed on the host "josh":

```
robin hal7 josh/:0 (vx.x) (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
```

To free the license held by user "robin," note the user, host, and display values. Then remove the license with the following `lmremove` syntax:.

```
lmremove idl robin hal7 josh/:0
```

where `idl` (or `envi`) is the *feature*, `robin` is the *user*, `hal7` is the *host*, and `josh/:0` is the *display*. Other feature values 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.

To determine the possible values of the *feature* parameter, inspect the `license.dat` file.

Finding the Host ID (UNIX and Macintosh)

You need to know the host ID when combining license files from different vendors. (See "Combining License Files" on page 58.)

The `lmhostid` program obtains a unique FLEXnet host ID from your machine. To run `lmhostid`, change to the directory, *`ITT_DIR`*`/idl`*`xx`*`/bin`, and type `lmhostid` at the UNIX prompt. The output of `lmhostid` looks like this:

```
lmhostid - Copyright (C) 1989-2007 Macrovision
The FLEXnet host ID of this machine is "8002add0"
```

The system `hostid` command might not return the same required FLEXnet value that the `lmhostid` command returns.

Running Old and New Versions of IDL or ENVI Concurrently

In many cases, you can run older versions of IDL or ENVI concurrently with the most recent version. If a FEATURE line has the version number 7.100, for example, it will allow IDL 7.1 and all earlier versions of IDL to run. In some cases, new License Manager capabilities such as the INCREMENT line might prevent older versions of IDL or ENVI from working with the latest version of the License Manager.

You should start the License Manager from the latest IDL/ENVI distribution and use the new license file with the older IDL/ENVI distribution. The old IDL/ENVI license information should not be combined with the new license information. The License Manager should only be started once from the new distribution. It should not be started from an old IDL/ENVI distribution.

Using the Same License Manager for Different Applications

Macrovision's FLEXnet Publisher (formerly the FLEXnet License Manager) is used as the network license management facility for IDL and ENVI. Since this License Manager is not unique to ITT Visual Information Solutions software, you may need to run software from two or more software vendors that all use FLEXnet. In this case, you may find License Manager conflicts.

You have the following options if multiple products using FLEXnet have licenses served from the same license server:

- Combine all license files into a single license file
- Create unique License Manager services for each product

Combining License Files

If IDL/ENVI and other vendor products also using FLEXnet will be using the same license server to administer licenses, and if all of the vendor license files are compatible, you can combine the license files in a single license file.

Different FLEXnet vendor licenses are compatible for combination if the `LMHostid` value on the SERVER line for each file is exactly the same. For example, if the SERVER line in two different vendor license files is the following:

```
SERVER server1.acme.com 12345678 1700
```

and

```
SERVER server1 12345678 1800
```

You can combine the licenses into a single license file using either of the SERVER lines above, because the third item is the same in both (`12345678`).

Warning

Manually combining the information from multiple separated ITT Visual Information Solutions `license.dat` files that contain a SERVER line will invalidate the license and prevent the License Manager from running. The newest version of our product license file will normally work with previous versions of the supported products.

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.

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. For more information, see "Configuring Client Access to the License Manager" on page 48.

Windows

When you have edited the license file and saved it in the appropriate locations, restart the License Manager with the *most recent* version of the License Manager daemon (`lmgrd`) that you have installed. To determine the version of the License Manager daemon program (`lmgrd.exe`):

1. Launch a MS-DOS command prompt.

2. Change directory (use the `cd` command) to *`ITT_DIR`*`\idl`*`xx`*`\bin.<`*`platform`*`>`, where *`ITT_DIR`* is the main installation directory.
3. Enter the following command at the prompt:

```
lmgrd -version
```

The output should look something like the following example:

```
lmgrd v11.4.100.0 build 50818 i86_n3 ...
```

If an older version of `lmgrd` is used, the License Manager from the product with a more recent `lmgrd` may not operate correctly.

Changes to an altered license file will not take effect until the License Manager is restarted using that license file.

Unix and Macintosh

IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a `.flexlmrc` file or as an environment variable. For more information, see "License Sources" on page 68.

If you are on a client machine, you can also set your environments to point to the *`port@host`* setting of the license server.

After saving the license files in the appropriate locations, restart the License Manager with the *most recent* version of the License Manager daemon (`lmgrd`) that you have installed. If an older version of `lmgrd` is used, the License Manager from the product with a more recent `lmgrd` will not operate correctly. To determine the version of `lmgrd`, run the `lmgrd` program with the `-version` switch. For example:

```
/usr/local/itt/idlxx/bin/lmgrd -version
```

The output should look something like the following:

```
lmgrd v11.4.100.0 build 50818 i86_n3 ...
```

If you do not combine license files or if the vendor license files are not compatible, you have the option of starting a separate License Manager for each vendor's license file on the same single license server.

Creating Unique License Manager Services for Each Product

As an alternative to combining the license information from multiple vendors' licenses and running a single instance of the FLEXnet License Manager service, you can install and start a separate instance of the FLEXnet License Manager service (with a unique name) for each separate vendor's license file.

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

Note

Make sure that only one instance of the FLEXnet License Manager will start on the server machine with respect to any IDL or ENVI license file. If an instance of the FLEXnet License Manager service is already running for IDL or ENVI on this same license server, then installing a second instance of the FLEXnet service for IDL or ENVI under a different name can cause a conflict when Windows is loaded. (To resolve such a conflict, stop all but one of the conflicting FLEXnet services immediately after logging on to that license server.)

If the products use different server sessions, a local or shared network copy of each vendor license file is required on each client machine, or a *port@host* reference might be necessary. The copy of the license file or *port@host* reference 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 or a *port@host* reference.

Windows

After verifying that there is not already an IDL or ENVI configured License Manager service running on your server machine, you can configure a uniquely named instance of the License Manager service for IDL or ENVI to avoid conflict with other vendors' License Managers.

Note

Only one instance of an ITT (or RSI) product FLEXnet License Manager service can be running on a machine at any one time. Running multiple instances of the ITT FLEXnet service at the same time will prevent the License Manager service from operating correctly.

To install a unique instance of the FLEXnet License Manager for an IDL or ENVI product license file:

1. Confirm that your updated license is already properly installed on the license server.
2. Select one of the following to start LMTools:
   - **Start → Programs → IDL *x.x* → LMTools**

- **Start → Programs → ENVI *x.x* → LMTools**

The **LMTools** dialog appears.

3. Click on the **Config Services** tab.
4. Select an existing service name if you have previously configured an ITT (or RSI) FLEXnet (formerly FLEXlm) License Manager service, you can select this item from the Service Name pull down list to modify. (A service name cannot be changed. If you want to use a different service name, use the instructions in the following step.)

   Or

5. If you are installing an ITT FLEXnet License Manager service for the first time, do the following:
   - Delete the currently shown text in the **Service Name** pull-down list. Note that this does not delete an existing service profile; it is simply a method to add a new profile.
   - In the blank **Service Name** field, enter the name of the new FLEXnet service to add. The default service name for ITT products is “ITT FLEXlm License Manager. “
   - Press the **Tab** key to leave the Service name field. Notice that any previously shown path settings will disappear. This does not affect the existing FLEXnet service profiles.
6. Configure or reconfigure the path settings for the FLEXnet service profile by browsing (with the Browse buttons) or entering file paths into the appropriate fields:
   - **Path to the lmgrd.exe file**—The default path for the License Manager daemon in IDL 7.1 is:

     ```
     C:\Program Files\ITT\IDL71\bin\bin.x86\lmgrd.exe
     ```

   - **Path to the license file**—The default path for IDL 7.1 is:

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

   - **Path to the debug log file**—The debug log file directory must exist, but the debug file itself does not need to already exist. The default path for IDL 7.1 is:

     ```
     C:\Program Files\ITT\license\lmgrd_log.txt
     ```

7. If you want the License Manager to start automatically at boot time as a service (recommended), check the **User Services** and **Start Server at Power Up** check boxes.
8. Click the **Save Services** button to save any configuration changes. Confirm saving the changes when prompted.
9. Finally, to start the License Manager, select the **Start/Stop/Reread** tab and click on the **Start Server** button. Exit LMTools. (Rebooting the system will also start the License Manager service.)

UNIX and Macintosh

IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a `.flexlmrc` file or as an environment variable. For more information, see "License Sources" on page 68.

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

For C shell:

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

For Korn or Bash shell:

```
export LM_LICENSE_FILE=/home/otherapp/license.dat
```

Add an IDL or ENVI license file 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 (enter the following command as one line):

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

For Korn or Bash shell (enter the following command as one line):

```
export LM_LICENSE_FILE=
/home/otherapp/license.dat:ITT_DIR/license/license.dat
```

Where *`ITT_DIR`* is the installation directory.

If a local or network copy of the license file is not available, you can use a *`port@host`* reference in the `LM_LICENSE_FILE` definition. For example:

For C shell

```
setenv LM_LICENSE_FILE /home/otherapp/license.dat:1700@server1
```

For Korn or Bash shell

```
export LM_LICENSE_FILE=/home/otherapp/license.dat:1700@server1
```

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. You can also determine the version by running the `lmgrd -version` command. If an older version of `lmgrd` is used, the License Manager daemon that uses the product with a more recent version of FLEXnet will not operate correctly.

For starting and stopping the License Manager in an environment that has multiple license servers running, it is recommended that you use the `-c` switch for `lmgrd` to specify which license server you want to reference. For example, to start the License Manager with respect to an ITT Visual Information Solutions license file in the default location, issue the following command (as one line):

```
/usr/local/itt/idlxx/bin/lmgrd -c
   /usr/local/itt/license/license.dat
```

Saving the License File in an Alternative Location

It is strongly recommended that you save your license file with the default path and filename in the following location:

Windows:

```
ITT_DIR\License\license.dat
```

UNIX and Macintosh:

```
ITT_DIR/license/license.dat
```

Where *ITT_DIR* is the root installation directory.

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 these for the license file, it must be accessible to the IDL or ENVI program that you 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 IDL or ENVI. For example, if you save your license file as:

```
C:\flexnet.files\ittlicense.dat
```

IDL and ENVI will not run properly until you define the LM_LICENSE_FILE variable. See “Configuring Client Access to the License Manager” on page 48 for more information on LM_LICENSE_FILE.

Windows

Use the following steps to save the license file to an alternative location:

1. Open the **System** control panel.
2. Click the **Advanced** tab, and click the **Environment Variables** button. Click the **New** button below the System Variables box and enter the following information:
   A. Type, in uppercase letters, `LM_LICENSE_FILE` in the **Variable Name** field.
   B. Type the path to the license file in the **Variable Value** field: in this example, `C:\flexnet.files\ittlicense.dat`. Replace this value with the actual path to your license file.
3. Save the settings.

UNIX and Macintosh

Use the following steps to save the license file to an alternative location:

1. Modify your `.cshrc`, `.profile`, or `.bashrc` file using any 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 Manager. The syntax for the defining the environment variable is:

   ```
   port@host
   ```

   For example, if you are running the License Manager on a machine named "hal" with a port of 1700, then enter the following:

   For C shell: `setenv LM_LICENSE_FILE 1700@hal`

   For Korn or Bash shell: `export LM_LICENSE_FILE=1700@hal`

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

   ```
   /usr/local/myapplication/license.dat:1700@hal
   ```

   Or,

   ```
   $LM_LICENSE_FILE:1700@hal
   ```

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

   For C shell: `source .cshrc`

   For Korn shell: `. .profile`

   For Bash shell: `. .bashrc`

Upgrading a Network License Manager

Windows

When the License Wizard installs the License Manager, it also automatically configures a service named “ITT FLEXlm License Manager” using default file settings.

If a previously configured License Manager with a different name is running on the same server administering your IDL or ENVI license file, it is recommended that you stop, then disable or remove, the previously configured service to avoid a potential system conflict caused by simultaneously running two License Managers on one machine.

To manually stop and remove the old License Manager service:

1. Select one of the following:
   - **Start → Programs → IDL *x.x* → LMTools**
   - **Start → Programs → ENVI *x.x* → LMTools**

   The **LMTools** dialog appears.
2. Select the **Config Services** tab.
3. From the **Service Name** drop-down list, select the older License Manager name that you would like to remove.

   You can identify the operational status of configured services in the Services control panel utility. If the **Status** field is “Started,” the service is currently running.

   If the machine is serving licenses for other products that use the FLEXnet License Manager service, and you are unsure which is the unnecessary ITT Visual Information Solutions License Manager service, contact your system or network administrator for assistance.
4. Select the **Stop/Start/Reread** tab. The selected License Manager service is highlighted.
5. Click **Stop Server** to stop the service. If the selected service is not currently running, then clicking **Stop Server** displays a **Status** field message that verifies that LMTools is unable to stop the selected service (e.g., “Unable to Stop Server”).
6. After stopping the service, return to the **Config Services** tab and click **Remove Service** to complete the removal of the old License Manager.

UNIX

If you are upgrading to a newer version of IDL or ENVI, you should use the version of the FLEXnet License Manager that shipped with the latest version of IDL or ENVI. Newer versions of FLEXnet support applications that were built to work with older versions of FLEXnet. Using a newer version of IDL or ENVI with an older version of the License Manager (`lmgrd`) might not allow IDL or ENVI to operate correctly.

To determine the version of your License Manager, run the `lmgrd` program with the `-version` switch. For example:

```
/usr/local/itt/idlxx/bin/lmgrd -version
```

To upgrade the License Manager to run at boot time, issue the following commands at the command line:

```
cd ITT_DIR/idlxx/bin
lmgrd_install
```

Macintosh

To avoid problems, use the License Wizard or `lmgrd_install` to upgrade your License Manager. Root privileges are required to successfully use this command. If your system was manually configured to launch a previous version of the License Manager at boot time, you might need to uninstall or disable the older, manually created, `/Library/StartupItems`. Simultaneously running more than one License Manager on the same machine can result in a License Manager conflict.

The IDL or ENVI License Manager installation script creates a `Library/StartupItems` item called IDL_LMGRD. If you have another item in this folder with a different name (e.g., ITT_LICENSE) that launches the License Manager, remove the older, conflicting item.

Using License Files

The license file controls:

- Which products can run
- Which machines they can run on
- How many copies can run concurrently

The following is an example of an IDL license file. This example is built for the license server “hal,” which has the LMHostid “0000c09a23f0” and the designated port number “1700.” This license has five floating licenses. The last line in the license file is the FEATURESET line, which ties all the FEATURE and INCREMENT lines together:

```
SERVER hal 0000c09a23f0 1700
USE_SERVER
DAEMON idl_lmgrd
INCREMENT idl idl_lmgrd x.x00 1-jan-0000 30 5BC6A081FA3009FA5673 \
   VENDOR_STRING="1234-1Acme Datawack Corp" ck=16
FEATURESET idl_lmgrd 96C31B1FB71BCAE9
```

The FEATURE or INCREMENT lines of the license file determine which products are available. The *x.x* refers to the IDL version. 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.

The FEATURE or INCREMENT line for the floating license shows 30 license units. This is not an error. Each `idl` or `idl_rt` counted license requires 6 license units (10 for Solaris Sparc) on the FEATURE or INCREMENT line. The number of license units is a platform-dependent scale factor times the number of licenses you own. For example, if you have 3 Windows floating licenses, this field is set to 18.

Viewing License Files

To access the text of your license file through the License Wizard, open the License Wizard. See “Using the License Wizard” on page 46 for details. You must be logged in as root or have write permissions on the licensing directory to modify the license file.

Modifying License Files

You can modify only the following four data items in the license file:

- Hostnames (but not host IDs) on SERVER lines
- Port numbers on SERVER lines
- Options file pathnames on DAEMON lines (note that it is not necessary to specify option file pathnames with FLEXnet v6 or later).
- Pathnames on DAEMON lines

On Windows, you normally should not include a path on the DAEMON line of your server-based license file. However, if your License Manager daemon (`lmgrd.exe`) file and your vendor daemon file (`idl_lmgrd.exe`) are moved to separate directories, then you will need to edit the DAEMON line of your license file to reflect the actual location of your vendor daemon or vendor daemon directory. For example:

Windows:

```
DAEMON idl_lmgrd "C:\Otherdir\idlxx\bin\bin.<platform>\idl_lmgrd.exe"
```

UNIX:

```
DAEMON idl_lmgrd /otherdir/itt/idlxx/bin
```

Macintosh:

```
DAEMON idl_lmgrd /otherdir/itt/idlxx/bin
```

Note

Changing license file lines other than those discussed above will invalidate your license file, causing your installation to run only in demonstration mode (IDL only). Individually altering any FEATURE or INCREMENT lines destroys the file.

If you have multiple vendors using FLEXnet license management software, see "Using the Same License Manager for Different Applications" on page 57 for more detailed information on customizing your license file.

Changes to a modified license file will not take effect until the License Manager is restarted using that license file.

License Sources

FLEXnet stores the latest successful IDL or ENVI license information on UNIX and Mac OS X in a FLEXnet resource file called `.flexlmrc` in the user's home directory. This file defines a variable named IDL_LMGRD_LICENSE_FILE to indicate the license source. For example, the definition in the file might read as follows:

```
IDL_LMGRD_LICENSE_FILE=/usr/local/itt/license/license.dat
```

IDL continues to use this information until the IDL_LMGRD_LICENSE_FILE value is redefined, the `.flexlmrc` file is removed, or a system environment variable called IDL_LMGRD_LICENSE_FILE is defined in the shell environment used to start IDL.

Note that even if a system environment variable named IDL_LMGRD_LICENSE_FILE is defined, the IDL_LMGRD_LICENSE_FILE setting in the .flexlmrc file will continue to be referenced, but as a secondary license source if the IDL_LMGRD_LICENSE_FILE system environment variable does not supply a viable license source for the IDL session.

A license source defined by IDL_LMGRD_LICENSE_FILE in your `.flexlmrc` file or as a system variable will always hold precedence over any LM_LICENSE_FILE environment variable's definition. Only if IDL cannot successfully access a license source defined by IDL_LMGRD_LICENSE_FILE will it attempt to access a license defined by LM_LICENSE_FILE. Here is the order of license source precedence:

1. The IDL_LMGRD_LICENSE_FILE environment variable (ITT Visual Information Solutions product-specific)
2. The IDL_LMGRD_LICENSE_FILE definition in `.flexlmrc` (ITT Visual Information Solutions product-specific)
3. The LM_LICENSE_FILE environment variable (seen by all products using FLEXnet)
4. The `license.dat` file in the default location (*`ITT_DIR`*`\license\license.dat`)
5. The evaluation license (*`ITT_DIR`*`\license\*.lic`)

To override the `.flexlmrc` license source definition, define an IDL_LMGRD_LICENSE_FILE system environment variable that points to the desired license file. For example, for a C shell:

```
setenv IDL_LMGRD_LICENSE_FILE /usr/local/itt/license/license.dat
```

For a Korn or Bash shell:

```
export IDL_LMGRD_LICENSE_FILE=/usr/local/itt/license/license.dat
```

Customizing Floating Licenses

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

- Reserve licenses for specified users or groups of users
- Allow or disallow 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 in the following section. See "Sample Options Files: Reserving Licenses for a Group" on page 73 for examples.

Creating an Options File

Use a text editor to create an options file. For IDL and ENVI, the options file must be named `idl_lmgrd.opt` and must be saved in the same directory as `license.dat`. The default location in which to save the options file is the *`ITT_DIR`*`/license` directory.

Note

Whenever you modify the options file, 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.
- Limit the length of each line to fewer 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 keywords available for creating an options file:

Keyword	Example	Description

EXCLUDE	EXCLUDE *feature type type_name*
	`EXCLUDE idl USER bob`
	`EXCLUDE envi USER bob`
	Excludes user “bob” from using IDL or ENVI.
		Can exclude user, group, host, or host_group from using IDL or ENVI. EXCLUDE takes precedence over INCLUDE statements.

EXCLUDEALL	EXCLUDEALL *type type_name* `EXCLUDEALL GROUP misfit` Prevents the group “misfit” from using any of the features served by this vendor daemon.	Implicitly allows members of all groups except “misfit” to access all features served by this vendor daemon.
GROUP	GROUP *group user_list* `GROUP visitor sam kate` Defines users “sam” and “kate” as comprising the group “visitor”.	Defines a list of users to use as a group 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 to use as a group with other keywords such as INCLUDE or EXCLUDE.

INCLUDE	INCLUDE *feature type type_name*
	`INCLUDE idl GROUP visitor`
	`INCLUDE envi GROUP visitor`
	Allows only users in the group “visitor” to use IDL or ENVI.
		Includes only specifically identified users or groups. All others are implicitly outside of this group, and denied access.

Table 8-2: 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 served by this vendor daemon.	Specifies users or groups allowed use of all features served by this vendor daemon.

LINGER	LINGER *feature seconds*
	`LINGER idl 20`
	`LINGER envi 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 or ENVI. Rarely used.

MAX	MAX *#lic feature type type_name*
	`MAX 10 idl_rt GROUP research`
	`MAX 10 envi_rt GROUP research`
	Allows users in the "research" group to use at most 10 units of the "idl_rt" or "envi_rt" 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.

RESERVE	RESERVE *#lic feature type type_name*
	`RESERVE 10 idl USER sam`
	`RESERVE 10 envi USER sam`
	Reserves a single license for the user "sam".
		Ensures that a license will always be available to a specified user or group.

Table 8-2: Options File Keywords (Continued)

Sample Options Files: Reserving 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 or ENVI requires 6 license units on a UNIX workstation-class machine. 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
```

Or,

```
# reserve 5 ENVI licenses for the research group
RESERVE 5 envi 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 envi HOST main
# do not log license denials
NOLOG DENIED
```

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 or ENVI. An EXCLUDE statement takes precedence over an INCLUDE statement. If the user “josh” were working on a computer named “main,” he will not be able to access IDL or ENVI even though there is a license reserved for him.

Sample Options Files: Reserving Licenses for Individuals

The following options file reserves licenses for individuals from the “research” 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 within that group 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
```

Or,

```
# reserve one license for "kate"
RESERVE 1 envi USER kate
# reserve one license for "josh"
RESERVE 1 envi USER josh
# reserve 3 licenses for "hal"
RESERVE 3 envi USER hal
# do not log queue events
NOLOG QUEUED
```

Appendix 9
Troubleshooting Licensing

This appendix covers problems that you might encounter with licensing IDL and ENVI.

General Information

This section provides a list of other sources of information and assistance with licensing IDL and ENVI.

Other Resources

FLEXnet

The Acresso web site (http://www.accresso.com) contains online documentation and a FLEXnet FAQ. This information can be helpful when trying to combine licenses from different vendors.

Technical Support Library

Go to `www.ittvis.com/services/search.asp` and select the following for more information on troubleshooting IDL and ENVI licensing:

Category: **LICENSING**

For Further Help

If you have problems installing or licensing IDL or ENVI, contact ITT Visual Information Solutions Technical Support for assistance:

- Email: `support@ittvis.com`
- Phone: (303) 413-3920
- Fax: (303) 786-9909
- Web site: `http://www.ittvis.com`. Visit the Technical Support section on our Web site for Tech Tips and Frequently Asked Questions

International customers should contact their local ITT Visual Information Solutions office or distributor for technical support.

Evaluation Licenses

If you receive an error message with an evaluation license on any platform, locate the error message below for suggestions on resolving the problem.

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 IDL or ENVI license information. Exactly duplicate capitalization, spacing, and the date format as shown on your form.

The license information must not contain leading or trailing spaces. For an example of a correctly formatted evaluation license key, see “Evaluation License” on page 40.

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.

File Cannot Be Written

You might 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. For more information, see “Files Needed for Initialization of the Licensing Program Could Not Be Found” on page 81.

Permissions Error Message (Linux)

Following is a common error message that may appear while installing IDL or ENVI from a DVD on a Linux system:

```
sh /mnt/dvd/idlxx/unix/xinstall.sh
/mnt/dvd/xinstall.sh:
/mnt/dvd/unix/install/xinstall/xinstall.linux: Permission denied
/mnt/dvd/xinstall.sh:
/mnt/dvd/unix/install/xinstall/xinstall.linux: Permission denied
```

This error message usually occurs when the `user` option (which allows normal users to mount DVDs) is set on the DVD device in `/etc/fstab`. By default, the `user`

option prevents all users (including root) from executing programs on the DVD, even if the file's execute permission is set. The installation program tries to execute programs directly from the DVD, which causes the installation to fail. Perform the following steps to prevent this error:

1. Insert the DVD into the DVD drive. The automount will run and display the DVD contents.
2. Open a terminal window and type the following commands.

```
umount /dev/hdc
mount -o ro -t udf /dev/hdc /media
```

3. Now you can proceed with the installation.

The name of the DVD device (in this case, `/dev/dvd`) and its mount point (`/mnt/dvd`) may be different on your system. Consult the manpage for the `mount` command for a more detailed description of the `/etc/fstab` file and the options used in this procedure.

Flexible Single-User and Windows Node-Locked Licenses

This section suggests possible courses of action if you encounter problems with a license that does not require a license server. Solutions described here apply if you have one of the following license types:

- A flexible single-user license (available on Windows, Macintosh, and Linux platforms)
- A node-locked license on a Windows platform

If you have a different type of license, see "Licenses Requiring a License Server" on page 84.

Note

The sample error messages and license text in this section refer to IDL. They are the same for ENVI, except that the FEATURE and INCREMENT lines refer to `envi` and the current version number of ENVI.

Check the License Format

After installing the permanent license information via the License Wizard, 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 FLEXnet than this
program understands.
Feature:       idl
License path:  C:\Program Files\ITT\License\license.dat;C:\Program
Files\ITT\License\*.lic
FLEXlm error:  -90,313.  System Error: 2 ""

% LICENSE MANAGER: Invalid license file syntax
Feature:       idl
License path:  C:\Program Files\ITT\License\license.dat;C:\Program
Files\ITT\License\*.lic
FLEXlm error:  -2,134.  System Error: 2 ""
```

These errors might 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="000011vendor" HOSTID=00b012345678 PLATFORMS=i86_r \
   NOTICE=PERSONAL_USE ck=99
```

could be inadvertently changed to:

```
VENDOR_STRING=="000011vendor" HOSTID?00b012345678 PLATFORMS?i86_r \
   NOTICE?PERSONAL_USE ck?99
```

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

Correct format:

```
INCREMENT idl idl_lmgrd x.xxx 1-jan-0000 0 1234567890abcdef \
   VENDOR_STRING="000011ITT Visual Information Solutions" \
   HOSTID=00b012345678 ck=123
```

Incorrect format:

```
INCRMENT idl idl_lmgrd x.xxx 1-jan-0000 0
1234567890abcdef \
   VENDOR_STRING="000011ITT Visual Information Solutions" \
   HOSTID=00b012345678 ck=123
```

(Where *x.xxx* represents the current software version.)

For an example of a correctly formatted flexible single-user file, see "Flexible Single-User License" on page 41.

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. You can use the License Wizard to edit the license file information that has already been installed. You can also install your license information by connecting to the ITT Visual Information Solutions Web site via the License Wizard (see "Flexible Single-User License" on page 41).

Host ID of This System Does Not Match the Host ID

After installing the permanent license information via the License Wizard, a form of the following error message appears when starting IDL or ENVI:

```
% 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:\Program
Files\ITT\License\license.dat;C:\Program Files\ITT\License\*.lic
  FLEXlm error:  -9,57.  System Error: 2 ""
```

Confirm that the node-locked host ID in the license matches the actual host ID of the machine that is running IDL or ENVI:

1. Start the License Wizard by clicking one of the following:
   - **Start → Programs → IDL *x.x* → License Wizard**
   - **Start → Programs → ENVI *x.x* → License Wizard**
2. Click **Request a license if you don't have internet access**.
3. Compare the **Host ID** value shown in the license request file with the HOSTID value in your IDL license file.

For example, the following IDL license feature line:

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

is built for the Host ID "00b012345678".

If the host ID information obtained from the License 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 ID of the machine on which you are installing is different from the host ID in the license, you must request another license. See "Using the License Wizard" on page 46 for more information.

Files Needed for Initialization of the Licensing Program Could Not Be Found

You might encounter this error when running the License Wizard if you do not have read permissions for the *ITT_DIR*/license directory, where *ITT_DIR* is the main installation directory. Possible ways to resolve this problem include the following actions:

- Obtain read permissions for the *ITT_DIR*/license directory
- Run IDL or ENVI as root, administrator, or the user who performed the original installation

If the error persists, the installation may be incomplete. Re-run the installation program to repair your IDL or ENVI installation.

License File Does Not Support This Version

After installing the permanent license information via the License 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: x.x > x.xxx
License path:  C:\Program Files\ITT\License\license.dat;C:\Program
Files\ITT\License\*.lic
FLEXlm error:  -21,126.  System Error: 2 ""
```

Where *x.x* is the more recent software version, and *x.xxx* is an older version.

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 license feature (2 lines):

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

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 that the correct version of the `license.dat` file is being referenced. See "License Sources" on page 68 for more information.

If you do not have a license with the correct version, you must request another license. See "Using the License Wizard" on page 46 for information on how to request a license.

Cannot Find License

After installing the license information via the License Wizard, an error message appears that indicates that the `license.dat` file cannot be found. Following is an example for Windows:

```
% 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:\Program Files\ITT\License\license.dat
License path:  C:\Program Files\ITT\License\license.dat
FLEXlm error:  -1,359.  System Error: 2 "No such file or directory"
```

Make sure that you have either installed the `license.dat` file in the default location:

Windows:
ITT_DIR`\License\license.dat`

Unix and Macintosh:
ITT_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 63 for more information.

Note

IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a `.flexlmrc` file or as an environment variable. For more information, see "License Sources" on page 68.

Additionally, be sure that you have read permissions for the `license.dat` file and for the default installation directory in which it resides.

Licenses Requiring a License Server

This section suggests possible courses of action if you encounter problems with a license that requires a license server. Solutions described here apply if you have one of the following license types:

- A floating license
- A node-locked license on a UNIX or Macintosh platform

If you have a different type of license, see "Flexible Single-User and Windows Node-Locked Licenses" on page 79.

If you see errors from the License Manager itself, see "Starting the License Manager" on page 51.

Note

Useful messages can be logged in the License Manager output log file that is designated at the time the License Manager is installed.

All Platforms

The following suggestions apply to problems with license-server licenses on any platform. Platform-specific solutions and commands are indicated where appropriate.

Verifying the License Manager Is Running

(Windows) - Open the LMTools utility:

- **Start → Programs → IDL *x.x* → LM Tools**
- **Start → Programs → ENVI *x.x* → LM Tools**

Click **Perform Status Enquiry** under the **Server Status** tab. If you receive a message that the License Manager cannot connect to the license server, see "Verifying You Have Correctly Copied Your License File" on page 86.

(Unix or Macintosh) - The `lmstat` License Manager utility provides information on the status of the License Manager. Enter the following at the command line:

```
ITT_DIR/idlxx/bin/lmstat
```

If you receive the following message:

```
Error getting status: Cannot connect to license server
```

the server is not running correctly.

Verifying the License Manager is Available from Your Machine

If IDL or ENVI displays the following error message at startup:

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

make sure that you can either:

- **(Windows)** - Use the network utility “ping” (ping servername at the MS-DOS prompt) to contact the server machine
- **(UNIX and Macintosh)** - Telnet to the server machine

If you can reach the server machine, ensure that the License Manager is running on that machine.

Stopping and Restarting the License Manager

(Windows) - Exit IDL or ENVI. Stop and then restart the License Manager using LMTools.

(UNIX or Macintosh) - Exit IDL or ENVI. Stop the License Manager, then restart it, directing the output of the License Manager to a file. Enter:

```
ITT_DIR/idlxx/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 start command:

```
ITT_DIR/idlxx/bin/lmgrd > logfile
```

Examine the resulting file *logfile* for error messages and refer to “Starting the License Manager” on page 51.

Correctly Setting the LM_LICENSE_FILE Environment

(Windows) - See “Saving the License File in an Alternative Location” on page 63 to check the setting of the LM_LICENSE_FILE environment variable. If LM_LICENSE_FILE points to a license file other than the ITT Visual Information Solutions product’s license file, stored in the `ITT_DIR\License` directory, you will need to correct this prior to starting IDL or ENVI.

If LM_LICENSE_FILE has already been defined for another software product, the definition of this license file can be appended using a semi-colon (;) as the delimiter. For example: `C:\Program Files\ITT\License\mylicense.dat;1700@hal`

(UNIX or Macintosh) - 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 or Bash 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. IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a `.flexlmrc` file or as an environment variable. For more information, see "License Sources" on page 68.

Verifying You Have Correctly Copied Your License File

If IDL or ENVI displays any of the following error messages at startup:

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

Or,

```
% LICENSE MANAGER: Invalid (inconsistent) license key
The license-key and data for the feature do not match.
This usually happens when a license file has been altered
```

Or,

```
Incorrect FEATURESET line in license file
```

some of the encrypted information in the license file is not correct. This problem can involve the server host ID, 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 ITT Visual Information Solutions. Check for proper capitalization and spacing. Shut down the License Manager service, make any necessary corrections, and restart the service with the corrected license file. For an example of a correctly formatted floating license key, see "Floating License" on page 43.

(UNIX and Macintosh) - Shut down the License Manager by entering:

```
ITT_DIR/idlxx/bin/lmdown
```

and restart it by entering:

```
ITT_DIR/idlxx/bin/lmgrd
```

Verifying the License Manager is Using the Correct License File

If IDL or ENVI 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 might be using the wrong license file.

(Windows) See "Configuring Client Access to the License Manager" on page 48 for details.

(UNIX and Macintosh) Reset the LM_LICENSE_FILE environment variable to point to the license file using the command:

```
setenv LM_LICENSE_FILE ITT_DIR/license/license.dat
```

IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a `.flexlmrc` file or as an environment variable. For more information, see "License Sources" on page 68.

Verifying the License File Contains the Correct Hostname

If IDL or ENVI 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.

UNIX and Macintosh

The following suggestions apply to problems with license-server licenses on UNIX and Macintosh platforms only.

Verifying the Proper Executable File is in Your Command Search Path

The UNIX or Macintosh command:

```
which idl
```

Or,

```
which envi
```

tells you if the executable file is in your command search path and where it is. You can verify that the search path is the problem by executing IDL or ENVI directly. If the command:

ITT_DIR/idl*xx*/bin/idl

Or,

ITT_DIR/idl*xx*/products/envi*xx*/bin/envi

runs the software, you know to check the search path.

Tip

See "Setting Up the Environment" on page 27 for details on how to ensure that you are running the correct executable file.

Verifying the File Permissions are Correct

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

```
chmod ugo+x ITT_DIR/idlxx/bin*/*
```

Verifying that IDL or ENVI Knows 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 *ITT_DIR*/idl*xx*. If not, you probably have not run the idl_setup, idl_setup.ksh, idl_setup.bash, envi_setup, envi_setup.ksh, or envi_setup.bash file. See "Setting Up the Environment" on page 27 for instructions.

Verifying Network Permissions Are Set Properly

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

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

make sure that the ethernet device 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.

Verifying Correct License File Information

If you receive an error message indicating that the license feature was not found, 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 "Configuring Client Access to the License Manager" on page 48 for more information.

IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a .flexlmrc file or as an environment variable. For more information, see "License Sources" on page 68.

License Manager Startup

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

License Manager Log Files

On UNIX and Macintosh systems, output from the License Manager is written to a file named `lmgrd_log.txt` in the `license` directory of the product installation directory.

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.

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.

No Features to Serve

If you receive either of the following error messages:

```
No such feature exists.
```

Or,

```
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.

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. There might also be some other software product using the default port number, 1700.

(Windows) - Stop the service using the LMTools utility and restart the service. Be sure that only one ITT Visual Information Solutions network License Manager has been configured to start automatically on that machine.

(UNIX or Macintosh) Issue the `lmdown` command multiple times, and restart the License Manager again. To shut down the License Manager, you can issue the following commands:

```
ITT_DIR/idlxx/bin/lmdown -c ITT_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.

If the problem occurs at boot time on UNIX or Macintosh, then it is possible that more than one instance of the boot time startup script or command was implemented on your system.

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.

No “License” Server Found

```
date time (lmgrd) No TCP "license" service exists.
```

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
```

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.

IDL might use a license source different from LM_LICENSE_FILE if IDL_LMGRD_LICENSE_FILE is defined in a `.flexlmrc` file or as an environment variable. For more information, see "License Sources" on page 68.

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.

Wrong Host ID for Server (Windows)

```
Wrong hostid on Server line for license file: C:\Program
Files\ITT\License\license.dat.
SERVER line says 000c0123454, hostid is 000c0abcde
Invalid host on SERVER line.
```

The host ID in the license file does not match the host ID of the machine. Verify that you are using the correct machine. Make sure that the license file has been correctly copied from the original information sent to you by ITT Visual Information Solutions.

If you need a corrected license file, use the License Wizard and select **Activate a license using the internet**. After logging on to the licensing web site, you can request a corrected license.

Path Not Found (UNIX / Macintosh)

```
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 *ITT_DIR*/idl*xx*/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 *ITT_DIR*. For example, if you have installed in the default path, this should be defined as `/usr/local/itt` (UNIX) or `/Applications/itt` (Macintosh).

Invalid Server Hostname (UNIX / Macintosh)

```
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.

Alternatively, if you have installed IDL on a laptop connected to a network that dynamically assigns IP addresses, make the following change to your `/etc/hosts` file:

Copy the hostname (not the host ID) of your laptop from the `SERVER` line in your `license.dat` file and add it to the `localhost` line of the `etc/hosts` file. For example, if the `localhost` line in your `/etc/hosts` file reads:

```
127.0.0.1   localhost
```

and the hostname for your laptop in the `license.dat` file is `mylaptop`, change the `localhost` line to read:

```
127.0.0.1   localhost mylaptop
```

If the server hostname is dynamically assigned, the license is used only by the license server machine. Another approach is to edit the license file so that the hostname on

the SERVER line is replaced with the loopback IP address 127.0.0.1. For example, if the SERVER line in the license data file reads:

```
SERVER mylaptop 0000123abcd 1700
```

use a plain text editor to change the line to read:

```
SERVER 127.0.0.1 0000123abcd 1700
```

Note

Improper changes to the `/etc/hosts` file can create network configuration problems. Consult a network administrator if you have questions about changing this file.

Alternatively, you can alter the hostname on the SERVER line of the license file to replace the existing hostname with the string `this_host`. For example:

```
SERVER this_host 12345678 1700
```

Using `this_host` allows your license to adapt to the current hostname of the license server machine. This is particularly useful for machines that dynamically acquire a hostname through a DHCP connection.