IDL

Installation Guide
for Open VMS®

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Acknowledgments

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Before You Begin

- **Locate Your RSI Registration Form** — You may have already received your RSI Registration form by electronic mail or fax. It provides your license account information and additional information about licensing IDL. If you haven't received it, first install IDL and then see "Obtaining an RSI Registration Form" on page 27 for more information. You do not need this form to install and run IDL in demonstration mode.

- **Check Your VMS Version** — Make sure that you are running on the VMS version listed in "IDL 5.4 System Requirements" on page 6.

IDL 5.4 System Requirements

The following are the system requirements for installing IDL 5.4.

Disk space required — 245184 Blocks

Operating System required — Open VMS 7.1

Modes of IDL Installation

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

Demonstration Mode

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

See for more information on how to install and run IDL in demonstration mode.

Purchased/Permanent Installation

- Full access with no time or functionality constraints.

Running IDL in Demonstration Mode

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

1. **Install IDL.** See "Installing IDL for VMS" on page 10.

2. **Run IDL.** See "Running IDL" on page 20. IDL will start in demonstration mode which allows you to run a 7-minute session after which the application will exit.

Tip

Try running the IDL Demo Applications that illustrate some of the many ways IDL can help visualize data. See "Running the IDL Demo Applications" on page 9 for more information.

Running the IDL Demo Applications

The IDL Demo Applications illustrate some of the many ways IDL can help visualize data. To start the IDL Demo Applications, enter idldemo after you have installed and licensed IDL (see "Installing IDL for VMS" on page 10) or after you have installed IDL in demonstration mode (see "Running IDL in Demonstration Mode" on page 8.)

Installing IDL for VMS

This section describes how to install and license IDL 5.4 for VMS.

Note

Depending on your system configuration, you may need to be logged in as SYSTEM (or some other suitably privileged account) to install.

A Note on Updating an Existing IDL Distribution

If you are updating an existing IDL distribution, it is important not to delete the existing IDL until the new one is installed and tested. In this case, you should:

- Rename the existing IDL directory to another name such as OLD_IDL.DIR.

- Install the new version of IDL using the following instructions.

- If you have placed your own files in the old IDL directory, you should move them to the new one. It is best to avoid adding or changing files in the IDL distribution tree as such modifications make upgrades more difficult.

- Once you are sure the new installation is working and you do not require any files in the old distribution, you can delete the old distribution to reclaim disk space. Do not delete the old distribution until you have received a new license file for the new version.

1. Mount the IDL CD-ROM

Mount the IDL CD-ROM by entering the following command (on a single line):

```
$ MOUNT/MEDIA_FORMAT=CDROM/
UNDEFINED_FAT=(FIXED:NONE:32256) DKA400: IDL_54
```

This command assumes that your CD-ROM device is named DKA400. Substitute the correct name for your device as appropriate.

2. Select the IDL Directory

IDL needs to access certain files from the distribution when it runs. The directory that holds these files is called the *main IDL directory.* You need to decide where to locate this directory on your system.

Requirements for the Main IDL Directory

The main IDL directory must be available to all the workstations that run IDL. In a multiple workstation server/client configuration, all the machines that run IDL share the same main directory. Therefore, the main directory must be in a file system that is available to all the clients.

Note

Because VMS has a directory nesting limitation of eight levels, IDL must be installed in a root level directory. If you install IDL in a subdirectory, you may encounter directory nesting errors during installation.

Recommendations for the Main Directory

Although the location and name of the main IDL directory are arbitrary, we suggest using SYS$SYSDEVICE:[IDL].

Create the IDL Main Directory

When you have decided upon a location for the main IDL directory, you must create that directory using the VMS CREATE /DIRECTORY command.

Enter the following command from the VMS prompt:

```
$ CREATE /DIRECTORY IDL-directory
```

where *IDL-director*y is the name of the directory you have chosen. For example, if you have chosen SYS$SYSDEVICE:[IDL] as the main IDL directory, you would enter:

```
$ CREATE /DIRECTORY SYS$SYSDEVICE:[IDL]
```

3. Move to the Main IDL Directory

Use the VMS SET DEFAULT command to move to the main IDL directory. Enter:

```
$ SET DEFAULT IDL-directory
```

where *IDL-director*y is the name of the directory you have chosen. For example, if you have chosen SYS$SYSDEVICE:[IDL] as the main IDL directory, you would enter:

```
$ SET DEFAULT SYS$SYSDEVICE:[IDL]
```

4. Copy the IDL Distribution

Copy the IDL distribution from the CD-ROM to your main IDL directory by entering:

```
$ BACKUP DKA400:[VMS]DIST.BCK/SAVE_SET/SELECT=
[DIST...]*.* [...]
```

5. Dismount the CD-ROM

Dismount the CD-ROM by entering:

```
$ DISMOUNT DKA400:
```

6. Uncompress the Distribution Files

Uncompress the IDL distribution files by entering:

```
$ @[.BIN]UNPACK
```

7. Assign Logical Names

To ensure that logical names used by IDL are defined every time you boot your system, insert the following command into your system startup file:

```
$ @IDL-directory:[BIN]IDL_SETUP SYSLOG
```

Each time you boot your system, this command will be executed to set up the logical names for IDL. In order for IDL to work before the next system reboot, you must also execute the above line from the VMS system prompt.

Security Note

Make sure that the file:

    IDL-directory:[BIN]IDL_SETUP.COM

does not have file protections that would allow non-privileged users to write to it. Otherwise, other users could add commands to it that would be executed from SYS$MANAGER:SYSTARTUP_VMS.COM at the next system boot. This applies to all command files executed by privileged users, not just IDL_SETUP.COM.

8. Define the IDL Command

Define the IDL command by inserting the following line into your SYS$MANAGER:SYSLOGIN.COM file:

    $ @SYS$SYSDEVICE:[IDL.BIN]IDL_SETUP DCLSYM

This command defines the IDL command automatically each time a user logs in. In order for the IDL command to work during the current login session, you must also execute the above line from the VMS system prompt.

Licensing IDL for VMS

To license IDL, complete the following steps:

1. Obtain Your RSI Registration Form

If you haven't received your RSI Registration form by electronic mail or fax, see to obtain a license file.

2. Save Your Licensing Information to a File

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

3. Save Your License File in the Main IDL directory

The license file must be located in the main IDL directory:

    IDL-directory:[000000]license.dat

Tip

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

4. Starting the License Manager

The license manager daemon (or daemons in the case of multiple servers) must be running before you can use IDL. The license server daemon is a detached VMS process that handles the task of checking IDL license units in and out.

If you are running only type MU licenses, you do not need to start the license manager daemon. You can skip this step and proceed with "Running IDL" on page 20.

The START_LMGRD command file can only be invoked by a privileged user such as SYSTEM.

Start the daemon by entering the following:

    $ @*IDL-directory*:[BIN]START_LMGRD

                                        Licensing IDL for VMS

Note

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

Starting The Daemon At Boot Time

To have the license server daemon automatically start every time your servers are booted, you should add the license manager startup command (described above) to the system startup script.

You must modify the system startup script to start the daemon. Such changes may be lost when you update the operating system. Keep notes on the changes made, so that you can properly customize new operating system releases.

Edit the System Startup File

The call to START_LMGRD.COM should be placed in the system startup file after the call to IDL_SETUP.COM and after DECnet is started (the license manager requires the use of DECnet). The lines in the system startup file will appear similar to:

```
$ @SYS$SYSDEVICE:[IDL.BIN]IDL_SETUP SYSLOG
$ @IDL_DIR:[BIN]START_LMGRD
```

For operating system versions 7.x, this file is named:

```
SYS$MANAGER:SYSTARTUP_VMS.COM
```

Creating DECnet Logical Links

Each IDL invocation requires a pair of DECnet logical links. A typical default for the maximum number of logical links is 32. Therefore, you should increase this parameter on your server node. Setting the number of links to 100 should allow for 30 IDL sessions with a sufficient number of links available for other uses.

To increase the number of available logical links, execute the following series of Network Control Program (NCP) commands:

```
$ MCR NCP
```

Run the Network Control Program:

```
NCP> SHOW EXEC CHAR
```

Examine the current network characteristics. Look for the line starting with "Maximum Links" to determine the current number of allowed logical links. Set the current number of allowed logical links to 100.

```
NCP> SET EXEC MAX LINKS 100
```

The effect of the SET command lasts only until the next system reboot. Execute the following command to make the changes permanent, setting the number of links to the same number as in the SET command.

Running IDL

Run your IDL installation by first running the IDL setup file:

```
$ @IDL-directory:[BIN]IDL_SETUP
```

and then starting IDL.

```
$ IDL
```

Log into each workstation for which IDL is installed, and make sure IDL runs on all of them.

If the installation is successful, IDL prints out some header lines followed by the IDL prompt. If IDL is properly installed, it will not print any error messages. If IDL has not been successfully licensed, it will start in demonstration mode.

If IDL starts in demonstration mode, see "Troubleshooting Your IDL Installation" on page 24.

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

$idl/de	Starts the IDL Development Environment.
$idl	Starts IDL without its Motif Graphical User Interface.
$idldemo	Starts the IDL demo applications. You can also enter demo at the IDL> prompt after you have started IDL.

`$idlhelp`   Displays the IDL Online Help. You can also enter ?
              at the IDL> prompt after you have started IDL.

Note
If you have problems starting IDL, any other executable, or it runs in
demonstration mode after completing the licensing steps, see
"Troubleshooting Your IDL Installation" on page 24.

Running Older Versions of IDL Concurrently with IDL 5.4

It is sometimes possible to run older versions of IDL using the IDL 5.4 license manager. If you have both IDL 5.4 and older versions of IDL installed on the same network, consult the VMS section of the *License Management Guide* located in the info/docs directory on your IDL CD-ROM.

Installing IDL as a Known Image

On systems where multiple users run IDL simultaneously, it can be advantageous to install IDL as a known image. The read-only sections of IDL will be shared among users, thereby conserving memory.

To install IDL as a known image, use the VMS INSTALL utility to install IDL_DIR:[BIN.BIN_ALPHA]IDL.EXE with the OPEN, SHARED, and HEADER_RESIDENT attributes.

Note

IDL is designed to run with normal user privileges. Therefore, you should never install it with special privileges.

Troubleshooting Your IDL Installation

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

1. Is the IDL symbol properly defined?

    The VMS command:

        $ SHOW SYMBOL IDL

    will tell you the full pathname for IDL. You can verify if the search path is the problem by executing IDL directly. If the command:

        $ RUN [*IDL-directory*.BIN.BIN_ALPHA]IDL

    (where *IDL-directory* is the main IDL directory) works, you know that the logical definition is incorrect.

2. Check that the server daemon is running.

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

        $ @*IDL-directory*:[BIN]SETUP_LMGR_SYMBOLS
        $ LMSTAT

3. Stop and restart the license manager.

   Stop the license manager, then restart it, directing the output of the daemon to a file. Enter the following commands at the server machine:

   ```
   $ @IDL-directory:[BIN]SETUP_LMGR_SYMBOLS
   $ LMDOWN
   ```

   Restart the license manager, directing the output to a log file:

   ```
   $ @IDL_DIR:[BIN]START_LMGRD LOGFILE
   ```

   Examine the resulting file LOGFILE.ERR for error messages.

4. Do you receive one of the following error messages?

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

   If you receive the error message shown above, there is an error in the FEATURE or INCREMENT line in your license file. Check the contents of the license file to confirm that they are the same as the file Research Systems sent you.

   ```
   %Unable to open validation file:
   IDL_DIR:[000000]idl.genver. no such file or
   directory.
   ```

   If you receive the error message shown above, either your license file does not have read permission, the filename is spelled incorrectly, or there is not a LICENSE.DAT file in the main IDL directory. Check that the file is located in the main IDL directory,

that it has the name LICENSE.DAT and that its file protections
include read permission (use the command DIR/FULL
LICENSE.DAT).

```
%Unexpected validation error.
```

If you receive the error message shown above, IDL is unable to
access the LICENSE.DAT file or an invalid demonstration license
file is located in the main IDL directory. Check that the correct
license file is located in the main *IDL-directory*, that it has the
name LICENSE.DAT and that its file protections include read
permission (use the command DIR/FULL LICENSE.DAT).

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

If you receive the error message shown above, the license server
is not running or your network is not working properly. Check that
the network is operating (for example, SET HOST to another
machine). If you can remotely log into another machine, ensure
that the license manager is running by entering:

```
$ @IDL-directory:[BIN]SETUP_LMGR_SYMBOLS
$ LMSTAT
```

Obtaining an RSI Registration Form

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

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

Note

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

To obtain a license file, complete the following steps:

1. **Start the electronic registration program.** Enter

   @*IDL-directory*:[BIN]RSI_REGISTER.COM

   where *IDL-Directory* is the name of the main installation directory you selected previously (the default is SYS$SYSDEVICE:[IDL]).

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

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

   - Email Address — Enter the e-mail address to which to send the registration form.

   - Installation Number — Enter the installation number found on the Research Systems Product Installation Form. You should have already received this form by electronic mail or fax. If you have not received the form, contact Research Systems technical support. See "Contacting Research Systems" on page 30.

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

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

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

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

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

- Comments — Enter any comments you may have.

3. **Send your registration information to RSI.** Click Accept on the Product Licensing dialog. The information you entered is displayed at the top of the next dialog. The registration program also generates a file named rsi_register.txt in SYS$LOGIN and automatically mails the file to Research Systems for you.

If you do not have e-mail on your system, you can fax this text to Research Systems at 303-786-9909. A license file will be generated and sent to you at the e-mail address or fax number you supply.

Note

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

Contacting Research Systems

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

- E-mail: support@ResearchSystems.com
- Phone: (303) 413-3920
- Fax: (303) 786-9909
- Web page: http://www.ResearchSystems.com — Visit the Tech Tips section on our Web page for Frequently Asked Questions.

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