

Using the License  
Manager

April 2001

**DOC-GU60321-EN**

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**Parametric Technology Corporation, 140 Kendrick Street, Needham, MA 02494-2714  
8 January 2001**

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# Preface

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*Using the License Manager* is intended for system administrators responsible for the setup and maintenance of license files for the following software applications:

- CADD5
- CV-DORS
- Electrical Design Entry (EDE)
- MEDUSA
- Optegra
- DIMENSION III

## Related Documents

The following documents may be helpful as you use *Using the License Manager*:

- *PTC Customer Service Guide*
- Installation guides and release notes for your application(s)

## Book Conventions

The following table illustrates and explains conventions used in this book.

Convention	Example	Explanation
Menu selections	Vault > Check Out > Lock	Indicates a command that you can choose from a menu.
Command buttons and options	Mandatory check box, Add button, Description text box	Names selectable items from dialog boxes: options, buttons, toggles, text boxes, and switches.
User input and code	Wheel_Assy_details -xvf /dev/rst0 Enter command> <b>plot_config</b>	Enter the text in a text box or on a command line. Where system output and user input are mixed, user input is bold.
System output	CT_struct.aename	Indicates system responses.
Parameter and variable names	tar -cvf /dev/rst0 filename	Supply an appropriate substitute for each parameter or variable; for example, replace filename with an actual file name.
Commands and keywords	The ciaddobj command creates an instance of a binder.	Shows command syntax.
Text string	"SRFGROUPA" or 'SRFGROUPA'	Shows text strings. Enclose text strings with single or double quotation marks.
Integer	n	Supply an integer for <i>n</i> .
Real number	x	Supply a real number for <i>x</i> .
#	# mkdir /cdrom	Indicates the root (superuser) prompt on command lines.
%	% rlogin remote_system_name -l root	Indicates the C shell prompt on command lines.
\$	\$ rlogin remote_system_name -l root	Indicates the Bourne shell prompt on command lines.
>	> copy filename	Indicates the MS-DOS prompt on command lines.
Keystrokes	Return or Control-g	Indicates the keys to press on a keyboard.

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## Online User Documentation

Online documentation for each Optegra book is provided in HTML if the documentation CD-ROM is installed. You can view the online documentation from an HTML browser or from the HELP command.

You can also view the online documentation directly from the CD-ROM without installing it.

From an HTML Browser:

1. Navigate to the directory where the documents are installed. For example,  
\$APPLICATION\_INSTALL\_DIRECTORY/data/html/htmldoc/  
(UNIX)  
%APPLICATION\_INSTALL\_DIRECTORY%\data\html\htmldoc\  
(Windows NT)
2. Click `mainmenu.html`. A list of available Optegra documentation appears.
3. Click the book title you want to view.

From the Documentation CD-ROM:

1. Mount the documentation CD-ROM.
2. Point your browser to:  
CDROM\_mount\_point/htmldoc/mainmenu.html (UNIX)  
CDROM\_Drive:\htmldoc\mainmenu.html (Windows NT)

## Printing Documentation

A PDF (Portable Document Format) file is included on the CD-ROM for each online book. See the first page of each online book for the document number referenced in the PDF file name. Check with your system administrator if you need more information.

You must have Acrobat Reader installed to view and print PDF files.

The default documentation directories are:

- \$APPLICATION\_INSTALL\_DIRECTORY/data/html/pdf/doc\_number.pdf (UNIX)

- %APPLICATION\_INSTALL\_DIRECTORY%\data\html\pdf\doc\_number.pdf (Windows NT)

## Resources and Services

For resources and services to help you with PTC (Parametric Technology Corporation) software products, see the *PTC Customer Service Guide*. It includes instructions for using the World Wide Web or fax transmissions for customer support.

## Documentation Comments

PTC welcomes your suggestions and comments. You can send feedback in the following ways:

- Send comments electronically to [doc-webhelp@ptc.com](mailto:doc-webhelp@ptc.com).
- Fill out and mail the PTC Documentation Survey located in the *PTC Customer Service Guide*.

# Introduction to License Manager

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License Manager software controls access to application software programs. As a system administrator, you need to understand how License Manager works, how to plan for its implementation at your site, and how to perform the administrative tasks associated with it. This chapter provides an overview of License Manager, including the following topics:

- License Manager Revision Level
- Operating System Revision Levels
- Software Application Revision Levels
- License Manager Components
- License Manager Architecture
- How License Manager Components Interact
- License Manager Configuration Planning

# License Manager Revision Level

The latest release of License Manager is based on *FLEXlm* 5.12.

Please note: The HTML version of the 5.12 *FLEXlm User Guide* is also included with the UNIX distribution in `/usr/cvswlm/htmlman` or in the online documentation for the product.

This book provides additional reference information you may find useful. Unless you are also using other *FLEXlm*-licensed products, however, you do not need to consult the *FLEXlm User Guide* to administer License Manager at your site.

## Operating System Revision Levels

Any license server system running License Manager must be at the following operating system level:

**Table 1-1 Operating System Levels**

Platform	Operating System	Level
Compaq Alpha	Tru64 UNIX	V4.0E and V4.0F
Compaq Alpha	VMS*	7.1
HP PA RISC	HP-UX	HP-UX 11.00, HP-UX 11.00i
IBM RS6000	AIX	4.3.3.0-02
PC	Windows NT Alpha*	4.0 (with Service pack 4 and above)
PC	Windows NT	4.0 (with Service pack 4, 5, or 6a), Windows 2000
SGI MIPS	IRIX	6.5
Sun	SunOS	4.1.4
Sun SPARC	Solaris	2.6 (CDE and Open Windows), 7 (2.7), and 8 (2.8)

\* MEDUSA only

Please note: If a license server is at an earlier level than the operating system level specified, upgrade it before you begin the procedures in this book.



# Software Application Revision Levels

The following table lists the applications and current revision or release levels supported by License Manager.

**Table 1-2 License Manager Software Application Support**

<b>Application</b>	<b>Revision</b>
CADDS 4X	6.3
CADDS 5i	12
CV-DORS	12
DIMENSION III	12
Electrical Design Entry (EDE)	4.4
MEDUSA	2000i <sup>2</sup>
MEDUSA Classic	14.1.1
Optegra	6

Please note: In general, information in this book also applies to earlier or later revision numbers, unless indicated otherwise in the release notes for each application.

## License Manager Components

The following is an overview of the License Manager components:

- License file
- Application daemons
- License daemon
- Activity log file
- License Manager administrative commands

## License File

Licensing data is stored in a text file called the license file. This file contains descriptions of the following:

- System or systems that can run the license daemons
- Application daemons
- Restrictions for the licensed features

A floating license allows anyone on a network that can reach the license server via TCP/IP to use the licensed software, up to the concurrent usage limit specified in the license file.

The license file contains three kinds of statements:

- SERVER
- DAEMON
- FEATURE

## SERVER Statements

SERVER statements describe the license server or servers that can run the license daemons.

A license server is a computer system that is running both the license daemon and application daemon software. Daemons are processes that serve applications. The license server system contains the dynamic information regarding feature usage. Multiple license servers used for backup can also logically be considered the license server.

## DAEMON Statements

DAEMON statements describe the various application daemons. Each DAEMON statement can point to a file that defines the restrictions for access to the licensed application features.

## FEATURE Statements

FEATURE statements describe the licensed features. In general, a feature is anything that needs to be counted. The meaning of feature varies. For example, a feature could be any of the following:

- An application software system consisting of hundreds of programs
- A single program
- A specific version of a program
- A part of a program
- A piece of data (restricted via the routines that access it)

The only restriction on the number of features that a program uses is that all features must be controlled by the same application daemon.

For more information on the license file, see “Installing and Setting Up the License File” on page 2-7.

## Application Daemons

Application daemons are processes that search the license file to determine license availability and dispense licenses for the requested application features. These daemons contain special encryption codes. The application daemons are located as follows:

### UNIX

```
/usr/CVswlm/application/application
```

For example:

```
/usr/CVswlm/epd/epd
```

### Windows NT

```
C:\CVswlm\application\application.exe
```

For example:

```
C:\CVswlm\epd\epd.exe
```

## License Daemon

The license daemon (`lmgrd`) controls license distribution. When an application requests a license, the license daemon instructs the application daemon to search for an available application license. The license is distributed to the requesting workstation if the workstation and user are authorized to use that license. The license daemons are located as follows:

### UNIX

```
/usr/CVswlm/bin/lmgrd
```

### Windows NT

```
C:\CVswlm\bin\lmgrd.exe
```

## Activity Log File

The activity log file contains an entry for each license acquired or released. All failed attempts to acquire licenses are recorded here. The activity log files are located as follows:

### UNIX

`/usr/CVswlm/application/CVswlm-log`

For example:

`/usr/CVswlm/epd/CVswlm-log`

### Windows NT

For Windows NT, the location is the one you specify with the `-l` option of `lmgrdinstall`. The following location is suggested:

`C:\CVswlm\application\CVswlm-log`

For example:

`C:\CVswlm\epd\CVswlm-log`

See page A-2 for more detailed information about the contents of the log file.

## License Manager Administrative Commands

License Manager administrative commands are briefly described in the following table. See Appendix B, “License Manager Administrative Commands” for more detailed information.

**Table 1-3 License Manager Administrative Command Summary**

<b>Command</b>	<b>Description</b>
<code>lmgrd</code>	Searches for a license file containing all required information about applications and features. The license daemon ( <code>lmgrd</code> ) is a standard component of License Manager (UNIX). You cannot alter this daemon.
<code>lmgrdinstall</code>	Installs License Manager on Windows NT.
<code>lmutil lmdown</code>	Shuts down the license daemons on all license servers.

**Table 1-3 License Manager Administrative Command Summary**

Command	Description
<code>lmutil lmhostid</code>	Prints the host ID of any machine supported by License Manager software.
<code>lmutil lmremove</code>	Removes a single user license for a specified feature. This could be necessary, for example, if a licensed user was running software on a system that later failed. This situation sometimes causes the license to remain unusable. This command allows the license to return to the pool of available licenses.
<code>lmutil lmreread</code>	Causes the license daemon to reread the license file and start any new application daemons that have been added. In addition, all preexisting daemons will be signaled to reread the license file for changes in feature licensing information.
<code>lmutil lmstat</code>	Displays status information, as follows: <ul style="list-style-type: none"><li>— Which daemons are running</li><li>— Users of individual features</li><li>— Users of features served by a specific daemon</li></ul>
<code>lmutil lmver</code>	Reports the FLEXlm version of a library or binary file.

## License Manager Architecture

License Manager supports product-independent application daemons executing under a common license daemon shared by all products using License Manager. With this feature, you can tailor License Manager for maximum product performance. It also allows you to accommodate client-dependent requirements.

The license file contains all the product features, its daemon name, and the license server identification parameters. A single licensing transaction requires:

- The license file
- The license daemon
- A single application daemon
- An application program

## How License Manager Components Interact

License Manager components interact as follows:

1. When a user tries to use a particular application feature, the application searches the license file for the location of the application daemon.
2. The application daemon checks with the license daemon (`lmgrd`). The license daemon oversees the operation of the application daemons.
3. The license daemon instructs the application daemon to search the license file to determine if a license for the feature exists and is available.
4. If it is possible to do so, the application daemon grants the license. If it is not, the user receives an error message and cannot access the feature.
5. All actions by the application daemon are recorded in the activity log file.

The license and application daemons must reside on the license server. Exact duplicates of the license file must reside on or be accessible by all workstation clients serviced by that license server. The application can reside on the same workstation as the license server or on a different workstation.

Any workstation on a network that can reach the license server via TCP/IP can use the licensed software, up to the concurrent usage limit specified in the license file.

## License Manager Configuration Planning

Configuration planning information and recommendations follow.

### Backup Protection

At any given time, only one license server is active. However, to provide backup capability, you must set up additional license servers (no more than three). The active license server is called the master license server. The backup license servers are called slave license servers. The master and slave license servers communicate with each other at specific intervals.

Without backup capability, when a single license server goes down, License Manager ceases to function for all clients to that server. This is true until the license server is functioning again. After a license server has gone down, it is

too late to designate a backup server, because the licenses are hard coded to the CPU of the license server.

For a configuration of three license servers, when the master license server goes down, either one of the remaining servers still running takes over as the master license server. License Manager continues to function, distributing licenses.

## Servers

You determine the number of license servers (1 or 3). Each license server must be on a different machine. The machines need not be the same kind.

When you are running three license servers, work is still possible if one of the servers goes down or is off the network. If the master license server goes down, License Manager can continue to distribute licenses if the number of slave license servers still up and running is greater than 50% of the total number of designated license servers.

A slave server has the license daemon, the application daemons, and the license files in the same way as the master server.

## Considerations

While planning system configuration, consider the following:

- Use three license servers for any configuration that includes three or more workstations, providing the servers are in the same local area network.
- Select stable workstations as license servers. Do not use workstations that are frequently restarted or shut down.
- License servers need not be of the same machine architecture. All License Manager platforms can operate in a heterogeneous manner.
- Whenever you need to shut down a license server workstation, be sure to deactivate the License Manager first. Issue the `lmutil lmdown` command to do so.
- Monitor the size of the activity log files, and periodically archive and/or remove them. These files exist only on the master license server where the license server is started.





# License Manager Tasks

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This chapter describes License Manager tasks. It includes the following topics:

- License Manager Task Overview
- Determining Your Configuration
- Obtaining the Host ID
- Requesting a Software License
- Installing and Setting Up the License File
- Setting Up Client Workstations for License Manager Access
- Setting the LM\_LICENSE\_FILE Variable
- Setting Up Licensing Options
- Starting License Manager
- Testing License Manager
- Installing Additional Licenses
- Troubleshooting License Manager Problems

# License Manager Task Overview

Installing License Manager requires that you complete the following tasks:

1. Select your license server systems and obtain their host IDs.
2. Use the Software Configuration Tool available from the PTC web site or complete the Software Configuration Worksheet provided by PTC.
3. Contact PTC Customer Service to receive your license file.
4. Determine how the new license file relates to any other license files that may already be on your system and install it on the license servers.
5. Make sure that each client workstation has access to the license file and the `LM_LICENSE_FILE` environment variable information.
6. Determine if an options file is desired, and if so, set it up.
7. Start `lmgrd` (the license daemon).

Checklists for UNIX and Windows NT installations follow. Installation procedures are explained in detail beginning on page 2-4.

## UNIX Installation Checklist

Use this checklist and the information that follows to guide your UNIX installation process.

\_\_\_ Verify the configuration for your license servers.

\_\_\_ Obtain the host ID for each license server.

\_\_\_ Use the Software Configuration Tool available from the PTC web site or complete the Software Configuration Worksheet located in the *PTC Customer Service Guide* and return it to the company as instructed.

\_\_\_ When you receive your license file, copy it to this location:

`/usr/CVswlm/application/application.licenses`

For example:

`/usr/CVswlm/epd/epd.licenses`

\_\_\_ Edit the license file for your site as necessary.

- \_\_ Make sure that each client workstation has access to the license file and the `LM_LICENSE_FILE` environment variable information.
- \_\_ Check the `LM_LICENSE_FILE` environment variable setting and edit it, if necessary, with the following command:  

```
setenv LM_LICENSE_FILE file
```
- \_\_ If necessary, modify information in the `DAEMON` options file (path is specified as the last field on the `DAEMON` line in the license file).
- \_\_ Start License Manager by entering:  

```
/usr/CVswlm/application/rc.CVswlm
```

For example:  

```
/usr/CVswlm/epd/rc.CVswlm
```
- \_\_ Test License Manager by entering:  

```
lmutil lmstat -a -c license_file
```

If the installation has been successful, a message that the applications are available appears and the applications can be accessed.

## Windows NT Installation Checklist

Use this checklist and the information that follows to guide your Windows NT installation process.

- \_\_ Verify the configuration for your license servers.
- \_\_ Obtain the host ID for each license server.
- \_\_ Use the Software Configuration Tool available from the PTC web site or complete the Software Configuration Worksheet located in the *PTC Customer Service Guide* and return it to the company as instructed.
- \_\_ When you receive your license file, copy it to this location:  

```
C:\CVswlm\epd\epd.lic
```
- \_\_ Edit the license file for your site as necessary. Note that the `DAEMON` line may be supplied in UNIX format. If so, edit this line.

\_\_ Make sure that each client workstation has access to the license file and the `LM_LICENSE_FILE` environment variable information.

\_\_ Check the `LM_LICENSE_FILE` environment variable information and edit it, if necessary, with the following command:

```
set LM_LICENSE_FILE=C:\file;
```

\_\_ If necessary, modify information in the `DAEMON` options file (path is specified as the last field on the `DAEMON` line in the license file).

\_\_ Add License Manager as a Windows NT service.

```
cd \CVswlm\bin
lmgrdinstall -e C:\CVswlm\bin\lmgrd.exe -c C:\CVswlm\epd\epd.lic -l
C:\CVswlm\epd\CVswlm-log
```

Please note: Enter the `lmgrdinstall` command line above as one continuous (unwrapped) line. Do not press `ENTER` till the end.

\_\_ Restart the system.

\_\_ Test License Manager by entering:

```
lmutil lmstat -a -c license_file
```

If the installation has been successful, a message that the applications are available appears and the applications can be accessed.

## Determining Your Configuration

The first step in license management is to plan how your applications will be managed by the systems you select as license servers. See “License Manager Configuration Planning” on page 1-8 for information to guide your decision.

## Obtaining the Host ID

Once you have determined which systems will be designated as license servers, obtain the correct host ID for each license server. Use one of the following procedures, depending on your situation.

## Existing License Servers

If the license server has License Manager already installed, use the following procedure to obtain the host ID.

### UNIX

Enter:

```
/usr/CVswlm/bin/lmutil lmhostid
```

### Windows NT

Enter:

```
C:\CVswlm\bin\lmutil lmhostid
```

## From the CD-ROM

If the license server does not have License Manager installed, use the following procedure to obtain the host ID directly from the CD-ROM.

### UNIX

Mount the application CD-ROM and enter:

```
CDROM_mount_point/cpu_id
```

Please note: This command is only available for new CADDs, Optegra, and MEDUSA media.

### Windows NT

Insert the application CD-ROM and enter:

```
CDROM_drive:\cpu_id
```

Please note: This command is only available for new CADDs, Optegra, and MEDUSA media.

## New License Servers

If the `cpu_id` and the `lmutil lmhostid` commands are unavailable, use one of the commands listed in the following table to obtain the host ID.

**Table 2-1 Alternative Commands for Obtaining Host IDs**

Platform	Command	Notes
Compaq Tru64 UNIX	<code>pfstat</code>	Use the address displayed, minus the colon (:).  Note: Your kernel must have been built with the <code>PACKETFILTER</code> kernel option.
HP	<code>echo `uname -i`   dc</code>	Use the address displayed.
IBM	<code>uname -m</code>	This returns a 12-digit number. Delete the first, second, eleventh, and twelfth displayed digits. The remaining eight digits are the host ID.
SGI	<code>echo `cat /etc/sysinfo -s`   dc</code>	Use the address displayed.
Sun	<code>hostid</code>	Use the address displayed.
PC	<code>IPCONFIG/ALL</code>	Use the physical address displayed.

## Requesting a Software License

After you have determined the host IDs for the license servers you require, request the appropriate software license or licenses. To do this, either:

- Use the Software Configuration Tool located in the License Management area of the PTC web site ([www.ptc.com](http://www.ptc.com)).
- Complete the Software Configuration Worksheet located in the *PTC Customer Service Guide* and return it to the company as instructed.

## Installing and Setting Up the License File

When you receive your license file, install it in the following locations:

### UNIX

```
/usr/CVswlm/application/application.licenses
```

For example:

```
/usr/CVswlm/epd/epd.licenses
```

### Windows NT

```
C:\CVswlm\epd\epd.lic
```

Please note:

- Do not alter the default location. Always install the license file on drive C.
- If extra networking software is installed on a license server (for example, DECNET) the host ID may change and a new license will then be needed.
- On the machine running the license server, *FLEXlm* software (including the license file) should be on a local disk.

## License File Format

In the license file, the `SERVER`, `DAEMON`, and `FEATURE` statements consist of the following information:

```
SERVER hostname hostid port-number
```

<b>hostname</b>	System name.  Note that the system name can also appear as a series of numbers separated by dashes as follows:  SERVER 00-A0-C9-A3-9F-E6 00A0C9A39FE6 1730  Replace the series of numbers and dashes with the system name as follows:  SERVER howdy 00A0C9A39FE6 1730
<b>hostid</b>	Alphanumeric string returned by the <code>lmutil lmhostid</code> command.
<b>port-number</b>	TCP/IP port number used by default:  1700—For EDE 1701—For CADD5 1708—For cvlm 1710—For CVpvs 1720—For MEDUSA_LMD 1730—For EPD 1740—For DIMENSION III  Note that you may change these port numbers if they are already in use at your site.

**DAEMON** daemon-name path options

<b>daemon-name</b>	Name of the daemon used to serve features in the file.
<b>path</b>	Path name to the executable code for this daemon.
<b>options</b>	Path name of your specified options file for this daemon, if one exists.

**FEATURE** name daemon version exp\_date #user code vendor\_string

<b>name</b>	Name given to the feature.
<b>daemon</b>	daemon-name from a DAEMON line. The specified daemon serves this feature.
<b>version</b>	Latest (highest-numbered) version of this feature that is supported (three decimal places).
<b>exp_date</b>	Expiration date in the following format: dd-mmm-yyyy, (for example, 22-mar-2003).
<b>#user</b>	Number of licenses for this feature.
<b>code</b>	Encryption code for this feature line.
<b>vendor-string</b>	Company-defined string.



## License File Example

This example illustrates a license file with a set of three server nodes, any two of which must be running for the system to function, and 10 application features.

```
SERVER sample1 77F3DF7E 1730
SERVER sample2 8083364f 1730
SERVER sample3 80930da0 1730
DAEMON epd /usr/CVswlm/epd
FEATURE 0401 epd 10.000 31-dec-2002 15
ACF69597830E65DEFF13 ck=45
FEATURE 1301 epd 10.000 31-dec-2002 3
CC363557E318162C3366 ck=231
FEATURE 1302 epd 10.000 31-dec-2002 3
CC363567E318162D3366 ck=242
FEATURE 3125 epd 10.000 31-dec-2002 3
CC16C597E9220C523BD8 ck=224
FEATURE 3126 epd 10.000 31-dec-2002 3
CC16C567E9220C4F3BD8 ck=242
FEATURE 3180 epd 10.000 31-dec-2002 3
CCF6B587DB140C4F3BD8 ck=42
FEATURE 4110 epd 10.000 31-dec-2002 3
BC26C5F7E134FC5B24D3 ck=25
FEATURE OptegraLocator epd 4.000 31-dec-2002 4
8C96F5871E0142599245 ck=15
FEATURE OptegraNavigator epd 4.000 31-dec-2002 3
AC165537076D310F8C88 ck=37
FEATURE OptegraVault epd 4.000 31-dec-2002 1
6C2605F75160C763AA7A ck=253
```

## License File Modifications for Windows NT

For Windows NT, the license file provided may be in UNIX format. Check the DAEMON statement provided with the file. Windows NT requires an additional Windows NT activation license in the license file.

If the DAEMON line appears like this:

```
DAEMON epd /usr/CVswlm/epd
```

Edit the line to read like this:

```
DAEMON epd C:\CVswlm\epd\epd
```

## Setting Up Client Workstations for License Manager Access

Each client workstation needs access to the current license file. You can provide this for your users in one of the following ways:

- Make a copy of the license file on each workstation. The copy must be an exact duplicate of the license file on the master license server and it must reside in the same directory. In this case, licenses (except for MEDUSA) will use the default `LM_LICENSE_FILE` environment variable setting to gain access and you do not need to change this variable setting.
- Make a copy of the license file on each workstation in a different directory. In this case, edit the default `LM_LICENSE_FILE` environment variable setting, as described in the next subsection.
- Set the `LM_LICENSE_FILE` environment variable with a TCP/IP port number and host name, associating a license server name with this port number first, as described in the next subsection.
- Provide a mount point for the license file on each workstation.

### Setting the `LM_LICENSE_FILE` Variable

You can use the `LM_LICENSE_FILE` environment variable to specify:

- Multiple license files, along with a new default path location.
- A TCP/IP port number and host name.
- MEDUSA — Do not use the `LM_LICENSE_FILE` variable. Instead, use the `MEDUSA_LICENSE_PATH` variable. This variable will be automatically set in the appropriate file for your installation. You may set `MEDUSA_LICENSE_PATH` to the same values as `LM_LICENSE_FILE`.

### Setting `LM_LICENSE_FILE` with a Path

Use the `LM_LICENSE_FILE` environment variable to specify license files to be used and to establish a new default location for the license files.

Please note: Changing the default location for license files is not recommended.

Applications can process a series of license files by setting `LM_LICENSE_FILE` to a path. You do not have to set this variable for running these applications, however.

If the `LM_LICENSE_FILE` environment variable is set, its value overrides the default license files. If this variable is set in your environment (for example, because you use other software that is licensed by *FLEXlm*), you must make sure that the correct files are included in it. Otherwise, you will receive a licensing error and will not be able to bring up the application.

Set the `LM_LICENSE_FILE` environment variable as follows:

## UNIX

```
setenv LM_LICENSE_FILE file1:file2:file3:....:filen
```

Applications will then try using `file1`; if this fails, `file2` will be tried, and so on.

Depending on the software you have installed, the following default license files may be in use at your site:

- CADD5, EDE, MEDUSA, Optegra —  
/usr/CVswlm/epd/epd.licenses
- CADD5 (earlier versions) — /usr/CVswlm/cadds/cadds.licenses
- Selected NC commands — /usr/CVswlm/cadds/cadds.licenses
- EDE (earlier than Revision 4.4) —  
/usr/CVswlm/theda/theda.licenses
- DIMENSION III — /usr/CVswlm/CVDIMIII/CVDIMIII.licenses
- Various (including older versions of the above) —  
/usr/CVswlm/cvml/cvml.licenses

## Windows NT

```
set LM_LICENSE_FILE=C:\file1;C:\file2;
```

Applications will then try using `file1`; if this fails, `file2` will be tried, and so on.

Please note: You can add this environment variable to the `login.bat` file.

## Setting LM\_LICENSE\_FILE with a Port Number

You can set the `LM_LICENSE_FILE` environment variable with a TCP/IP port number and host name, associating a server name with this port number first.

### UNIX

```
setenv LM_LICENSE_FILE port@host
```

For example,

```
setenv LM_LICENSE_FILE 1730@upton
```

### Windows NT

```
set LM_LICENSE_FILE=port@host
```

For example,

```
set LM_LICENSE_FILE=1730@upton
```

## Setting Up Licensing Options

You can optionally customize the use of application software with the DAEMON options file. Use this file to:

- Reserve licenses for specified users or groups of users
- Allow or disallow the use of software to certain people
- Log activity for the use of an optional report writer

To use an options file, do the following:

1. Create an options file using the correct format.
2. Specify the path to the options file as the final field on the license file DAEMON line.

For example:

## UNIX

```
DAEMON epd /usr/CVswlm/epd  
/usr/CVswlm/epd/epd.options
```

## Windows NT

```
DAEMON epd C:\usr\CVswlm\epd  
c:\usr\CVswlm\epd\epd.options
```

Please note: Enter each of the preceding lines as one continuous (unwrapped) line. Do not press ENTER till the end.

## Daemon Options File Format

Create the DAEMON options file using the following format.

```
RESERVE number feature {USER | HOST | DISPLAY | GROUP} name  
INCLUDE feature {USER | HOST | DISPLAY | GROUP} name  
EXCLUDE feature {USER | HOST | DISPLAY | GROUP} name  
INCLUDEALL {USER | HOST | DISPLAY | GROUP} name  
EXCLUDEALL {USER | HOST | DISPLAY | GROUP} name  
{INCLUDE | INCLUDEALL} INTERNET address  
{EXCLUDE | EXCLUDEALL} INTERNET address  
GROUP name list_of_users  
NOLOG {IN | OUT | DENIED | QUEUED}  
REPORTLOG file
```

Please note: Lines beginning with a crosshatch (#) are ignored and can be used as comments. If the file name in the REPORTLOG line starts with a plus sign (+), the Activated Report Log file will be opened for appending information.

## Daemon Options File Keywords

Use the following keywords to specify licensing options in this file:

### RESERVE

Ensures that application software will always be available to one or more users or on one or more host computer systems.

### INCLUDE

Specifies which users can access software.

### EXCLUDE

Specifies which users cannot access software.

### GROUP

Specifies groups of users. These groups can then be used within other commands.

### REPORTLOG

Overrides the startup file name as specified in the startup script.

### NOLOG

Filters specified types of messages from the daemon's log output.

### INCLUDEALL or EXCLUDEALL

These keywords work like INCLUDE and EXCLUDE, except that they apply to all features.

### USER

Indicates that **name** represents a specified user.

### HOST

Indicates that **name** represents a specified host.

### DISPLAY

Indicates that **name** represents a specified display.

## GROUP

Indicates that **name** represents a specified group.

## IN

Licenses that are released by applications.

## INTERNET

Indicates a specified Internet address. It can be specified as a.b, a.b.c, a.b.c.d where any combination of the variables (a, b, c, or d) can be specified using an asterisk (\*). The Internet specification can be used with the **INCLUDE**, **INCLUDEALL**, **EXCLUDE**, and **EXCLUDEALL** options. Users from the specified network address would be allowed or denied access to the licenses.

## OUT

Licenses that have been granted to applications.

## DENIED

Licenses that were not available to be granted to applications.

## QUEUED

License request that was queued because the license was not currently available and the application requested the next available license.

## Daemon Options File Example

The following **DAEMON** options file reserves one copy of feature 4500 for user **pat**, three copies for user **lee**, and one copy for anyone on a computer with the hostname of **terry**. In addition, **QUEUED** messages are omitted from the log file, and user **joe** is not allowed to use the 4500 feature:

```
RESERVE 1 4500 USER pat
RESERVE 3 4500 USER lee
RESERVE 1 4500 HOST terry
EXCLUDE 4500 USER joe
NOLOG QUEUED
```

## Starting License Manager

To start License Manager, perform the following.

### UNIX

Enter:

```
/usr/CVswlm/application/rc.CVswlm
```

For example:

```
/usr/CVswlm/epd/rc.CVswlm
```

You can now run the application software.

After the license file is installed, the license and application daemons should automatically start when the machine starts. If `cvinstall` has not been run, add the license daemon startup to the system's startup scripts.

### Windows NT

1. Add the License Manager as a Windows NT service.

```
cd \CVswlm\bin  
lmgrdinstall -e C:\CVswlm\bin\lmgrd.exe -c C:\CVswlm\epd\epd.lic -l  
C:\CVswlm\epd\CVswlm-log
```

**Please note:** Enter the `lmgrdinstall` command line as one continuous (unwrapped) line. Do not press `ENTER` till the end.

2. Restart the system.

**Please note:** Use the `lmgrdinstall -r` command to remove License Manager as a Windows NT service.

You can now run the application software.

When you install CADDs or Optegra on Windows NT, you can install the License Manager as a service. Specify **YES** at the prompt to make your Windows NT workstation a license server. If you are obtaining licenses from another license server on the network, specify **NO**.



Use the following command to install the License Manager as a service:

```
c:\CVswlm\epd\installswlm.bat
```

If you specify **NO** at the prompt, you are prompted to set the `LM_LICENSE_FILE` variable. This variable defines an alternative location for the license file or allows you to specify a TCP/IP host address for the license file. This is optional because you can install a copy of the server license file in `c:\CVswlm\epd\epd.lic` at any time.

If you select License Management, a *FLEXlm* icon is installed in the Services control panel. Use this icon to start and stop the License Manager.

## Testing License Manager

You can test License Manager availability by entering the following:

```
lmutil lmstat -a -c license_file
```

A message that applications are now available appears. If it does not, check the troubleshooting suggestions on page 2-18 or contact Customer Service.

## Installing Additional Licenses

To install additional licenses:

1. Compare the new file with your existing license file using the following default path name:

UNIX

```
/usr/CVswlm/application/application.licenses
```

Windows NT

```
C:\CVswlm\epd\epd.lic
```

2. Edit your existing license file to reflect all changes to existing line items and add new line items. When you are finished, your existing license file must be an exact duplicate of the new license file.

Please note: Even a slight deviation in these license files will prevent you from operating your application.

3. After you update your license file, make it accessible to all workstations using that license server.

- If your license server is running, execute the `lmutil lmreread` command.
- If your license server is not running, verify that License Manager files are installed and start the application's License Manager.

You can now run the application software you have installed.

## Running Multiple Applications on Windows NT

If you are running more than one application license daemon on Windows NT, create a single license file to serve all applications. To do this, follow these steps:

1. Select one of the current license files as the default.

Please note: If you have already installed an `lmgrd` process as a Windows NT service, use that license file as the default.

2. Cut and paste all lines from the other application license files into the default file.
3. Issue the `lmgrdinstall` command (do this if `lmgrd` was not previously installed as a Windows NT service). Otherwise, restart the system to activate the new licenses. Use the `LM_LICENSE_FILE` environment variable to point the applications to the default license file.

You can also have the same number of files as the applications that are running. If there are several license files and applications, point each of the applications to the respective license file.

## Troubleshooting License Manager Problems

The most common problems with License Manager are:

- Incorrect host ID specified on the `SERVER` line in the license file.
- Incorrect `DAEMON` path specified in the license file.

If you are experiencing problems with License Manager, verify these items first. If these specifications are correct, see the debugging and reporting problems suggestions that follow.

## Debugging License Manager Problems on Windows NT

Follow these steps if License Manager is not working on Windows NT after installation:

1. Open the Task Manager and make sure that `lmgrd.exe` is running.
2. If the daemon is running, check that the license was read correctly:

Go to `c:\Cvswlm\bin` and enter:

```
lmutil lmstat -a -c c:\CVswlm\epd\epd.lic
```

3. If the daemon does not start, check the `CVswlm-log` file in `c:\CVswlm\epd`.

Please note: Check the log file to determine where problems are occurring. If there is no specific indication as to what has happened, continue with the steps below.

4. Use the `lmutil lmhostid` command to check the host ID.
5. If the host ID output consists of all zeros, enter the following command:

```
set LM_NO_SNMP=1
```

6. Re-enter the `lmutil lmhostid` command to check the host ID again.
7. If this command now outputs a non-zero host ID, click the Control Panel, the System icon, and then set the following as a system variable:

```
set LM_NO_SNMP=1
```

8. Restart the machine and confirm that `lmutil lmhostid` now displays a non-zero host ID.
9. Check that the host ID obtained by executing `IPCONFIG/all` is the same one as that obtained by executing `lmutil lmhostid`.
10. Use the Control Panel and stop the `FLEXlm` service if it is running.

11. Restart License Manager by entering the following:

```
lmgrd -app -c license_file
```

This command line may display an error message that indicates the error. Contact Customer Service if you need further help.

**12.** For MEDUSA on Windows NT APLHA only with FX!32 software installed, check that the following executables are in the FX!32 disabled list and add any that are missing:

- uiengine.exe
- draft.exe
- lmgrd.exe
- epd.exe
- lmutil.exe

## Reporting License Manager Problems

License problems are usually difficult to reproduce. When reporting a licensing problem, please provide the following:

- Exact error messages and any log files generated.
- License file.
- System configuration. On Windows NT, this can be obtained using the Windows NT diagnostic tool.

# Application-Specific Information

---

This chapter provides information that applies specifically to the following:

- CADD5
- EPD License File
- Optegra
- MEDUSA

## CADD5

The information that follows will be of interest to CADD5 users at your site.

### Protection Against Loss of Server Connection

To help you save your work in the event you lose your connection to the license server while in CADD5, a shutdown period has been implemented. If you are disconnected from the license server, the following message is displayed in the CADD5 startup window and you will hear a beep:

```
License server not available, CADD5 5 exiting in N
minutes
Please contact your System Administrator
'File Part' to save your work immediately
```

The N in this message is from 15 minutes to 1 minute. To avoid loss of work, file your current part during the 15-minute period. FILE ASSEMBLY and FILE PART are the only CADD5 commands that can be accessed once you lose your connection to the license server.

If you are reconnected to the license server during this 15-minute period, the following message is displayed in the startup window and CADD5 operation will continue uninterrupted:

```
License Server OK ...
```

### Time-Out Functionality

A license time-out functionality has been implemented in CADD5 for the CADD5 software License Manager. This affects all licenses that currently reside in the `epd.licenses` file, except CVMAC, CVNC Batch Processing, CVNC Verifier, and CVGP II.

Core licenses (13xx except 1302), which are required to run CADD5, will not be timed out. Optional licenses will be exited, however, if you have not used the option for a predetermined length of time.

To set the time-out duration, type the following at the command level option while you are initializing CADD5:

```
% cadd5 -timeout duration
```

where `duration` can be set between 15 minutes (minimum) and 60 minutes (maximum). If no time-out duration is specified, the default value is automatically set to 15 minutes. This means that any option license set in a CADD5 session not used for a 15-minute period will automatically be released back to License Manager.

Frequently used licenses can be reserved so they do not time out. To reserve licenses, type the following at the command level option while you are initializing CADD5:

```
% cadd5 -reserve lic1 lic2 lic3 . . .
```

No licenses are reserved by default.

Please note: `cadd5 -help` displays all the available time-out options.

See *Installing CADD5 5i* for details on how to install, set up, and start the License Manager for CADD5 on UNIX and Windows NT and how to use the License Manager with the earlier versions of CADD5.

## EPD License File

The EPD license file uses the `/usr/CVswlm/epd/epd license daemon` on UNIX and the `\CVswlm\epd\epd.exe license daemon` on Windows NT. This allows all applications to gain access to licenses from a single license file, making implementation and administration of licenses easier and more flexible.

If you are upgrading to the latest CADD5, EPD.Connect, Optegra, Electrical Design Entry (EDE), or MEDUSA revision, upgrade the current license file(s) to the EPD license.

To determine which license file you need, consult the following table.

<b>Application</b>	<b>License Name</b>
CADDS 5 Revision 7.1 or later for all products, except Design Optimizer, CVGP11, and CADDS raster	EPD
All EPD.Connect and Optegra products, Revision 3.0 or later, except for the CATIA interface	EPD
MEDUSA NG, Revision 3.0 or later	EPD
MEDUSA, Revision 16.1 or later	EPD
EDE, Revision 4.3 or later	EPD
Design Optimizer, CVGP11, and CADDS raster	CADDS
EPD.Connect CATIA interface	Theorem
Previous releases of CADDS, Optegra, EDE, or MEDUSA	CADDS, cvlm, or MEDUSA_LMD
Previous releases of EDE	Theda
DIMENSION III	DIMENSION III

## Optegra

This section describes special licensing information for Optegra.

### Licensing Process

When an EPD.Connect session starts, all of its component processes secure against one `epdconnect` session license. In the `CVsw1m-log` file, it appears that one `epdconnect` license is acquired by each component process of the EPD.Connect session. This is not the case. For the EPD.Connect session, each component process requests an `epdconnect` license tied to the following:

- User ID of the user running the EPD.Connect session
- Host ID of the system that is running the EPD.Connect session
- `CMOM_DOMAIN` of the EPD.Connect session

This arrangement enables all of the EPD.Connect session components to secure against the same `epdconnect` license.

A request by each EPD.Connect component for an `epdconnect` license is logged in the same fashion. The initial request for an `epdconnect` license



by EPD.Connect acquires an `epdconnect` license for the session. A message to that effect is logged in the `CVswlm-log` file.

Each request after this does not acquire a new license. However, each request is logged as if another `epdconnect` license had been acquired by the EPD.Connect session.

If EPD.Connect cannot acquire an `epdconnect` license, an error message appears in the Startup window. This message states that an `epdconnect` license could not be acquired. EPD.Connect will still start if an Optegra Navigator license is available. In that case, the user will be able to use only Navigator functionality.

## EPD Interface for STEP AP203

If you are installing the STEP interface, you will need to update your license management software.

1. On your license server(s), run SLIC from the Optegra CD-ROM and select Software License Management 5.12. This installs a `theorem` license daemon in the directory `/usr/CVswlm/theorem`.
2. Create a `theorem.licenses` file in the same directory.
3. Request the `theorem` license required for STEP through your PTC representative. Upon receipt of the license, place the information in the `/usr/CVswlm/theorem/theorem.licenses` file.
4. Make sure that the `DAEMON` line in `/usr/CVswlm/theorem/theorem.licenses` reads as follows:  

```
DAEMON theorem /usr/CVswlm/theorem
```
5. Once you have created the `theorem.licenses` file, start the license server by either:
  - Entering:  

```
/usr/CVswlm/theorem/rc.CVswlm
```
  - Restarting the license server

For more information, see *Installing EPD.Connect, EPD Roles, and EPD.Visualizer*.

## Optegra Navigator Users and EPD.Connect

Existing Optegra Navigator users can install EPD.Connect and use a Navigator license to access the subset of functions for navigation. To receive all EPD.Connect functions, you can purchase an upgrade from your sales representative.

Functionality for Navigator Batch has not changed. However, NavigatorBatch has been renamed ConnectBatch and the startup script Navigator has been renamed Connect.

## Java Information Browser on Windows NT

Starting with EPD.Connect Revision 3.1, the Java Information Browser does not launch until you set the EPD\_LICENSE\_FILE variable. To do this,

1. Add the EPD\_LICENSE\_FILE variable in the connect.bat file located in %EPD\_HOME%\bin.
2. Add the following line after the EPD\_HOME entry:

```
set EPD_LICENSE_FILE=C:\CVswlm\epd\epd.lic
```

Please note: Make sure that there are no spaces before or after the equal sign (=). If there are spaces, the Information Browser does not start and the JRE window closes.

## MEDUSA

This section describes special licensing information for MEDUSA.

### MEDUSA\_LICENSE\_PATH

Do not use the LM\_LICENSE\_FILE variable. Instead, use the MEDUSA\_LICENSE\_PATH variable. This variable will be automatically set in the appropriate file for your installation.

## VMS

The security system on VMS does not support multiple servers.

DECNET is used to access the license server. This means that licenses may only be accessed by other VMS systems. The sharing of licenses with UNIX or Windows NT is not possible.

### License File

The license file `epd.dat` should be in:

```
medusa:[medsys.med.license]
```

Do not include a port number on the `SERVER` line.

On the `DAEMON` line, an additional integer at the end of the line is required. This is the DECNET object used. Set this additional integer to zero.

### lmutil Commands

To use the `lmutil` commands, `lmutil` must first be defined as a foreign command, as follows.

```
$lmutil ::= $medusa:[medsys.med.license]lmutil.exe
```

Enter the `lmutil` executable for those commands that work both on UNIX and the Windows NT machines.

## License System for MEDUSA 2000i<sup>2</sup>

MEDUSA 2000i<sup>2</sup> uses a new revision of the license security software. MEDUSA 2000i<sup>2</sup> products require a license file with a license revision number of 6.000.

### Setting Up the License for MEDUSA 2000i<sup>2</sup> on Windows NT

On Windows NT, Install Shield installs the license software in `c:\CVswlm`. You can start the license server on a Windows NT machine from a command

window or as a service. Use the option `-app` with `lmgrd` to start the license server in a command window.

To use MEDUSA 2000i<sup>2</sup> on Windows NT, a Windows NT activation license `med_ntact` is required.

Please note: Presently, the lack of this license only results in the display of a dialog box that must be closed before MEDUSA can proceed.

Find the identification for the host machine using the `lmutil` command in the `medsys` license directory with the `lmstat` argument.

On UNIX and VMS, a system that is running a license server for the old `medusa_lmd` daemon can also run a license server for EPD. However, on UNIX, you must use a different port number.

# Daemon Log Files

---

This appendix describes the daemon log files generated by License Manager. It includes the following topics:

- Log Files
- Informational Messages
- Configuration Problem Messages
- Daemon Software Error Messages

## Log Files

Application daemons generate log files in the following format:

hh:mm:ss ( DAEMON NAME ) message

hh:mm:ss	Time that the message was logged.
DAEMON NAME	Either license daemon or application daemon. If a single copy of the daemon cannot handle all the requested licenses, an optional underscore (_) followed by a number indicates that this message comes from a forked daemon.
message	The message text.

You can use the log file messages to:

- Diagnose configuration problems
- Diagnose daemon software errors
- Determine when new licenses are needed

## Informational Messages

CONNECTED to node\_name

This daemon is connected to its peer on node node\_name.

CONNECTED, master is master\_name

The license daemons log this message when a quorum is up and a master has been selected.

DEMO mode supports only one SERVER host.

An attempt was made to configure a demo version of the software for more than one server host.

DENIED: N feature to user (hh:mm:ss)

The user is denied access to N licenses of feature.

EXITING DUE TO SIGNAL nnn

EXITING with code nnn

All daemons list the reason the daemon has exited.

EXPIRED: **feature**

The **feature** has passed its expiration date.

IN: **feature** by user (N licenses)  
(used: hh:mm:ss)

The user checked back in N licenses of **feature** at hh:mm:ss.

IN server died: **feature** by user (N licenses)  
(used: hh:mm:ss)

The user checked in N licenses because the server died.

License Manager server started

The license daemon started.

Lost connection to host

A daemon can no longer communicate with its peer on the node **host**. This can cause the clients to have to reconnect or cause the number of daemons to go below the minimum number. In that case, clients may start exiting. If the license daemons lose the connection to the master, they will kill all the application daemons; application daemons will shut themselves down.

Lost quorum

The daemon lost its quorum. The daemon will process only connection requests from other daemons.

MASTER SERVER died due to signal **nnn**

The license daemon received fatal signal **nnn**.

MULTIPLE **xxx** servers running.

Please kill, and restart license daemon

The license daemon detected multiple copies of application daemon **xxx** running. Kill all **xxx** daemon processes and restart the license daemon.

OUT: **feature** by user (N licenses) (hh:mm:ss)

The user checked out N licenses of **feature** at hh:mm:ss.

Removing clients of children

The top-level daemon logs this message when a child daemon dies.

RESERVE feature for HOST name

RESERVE feature for USER name

A license of **feature** is reserved for either user **name** or host **name**.

Restarted xxx (internet port nnn)

Application daemon xxx was restarted at Internet port nnn.

Retrying socket bind (address in use)

The license servers try to bind their sockets for approximately six minutes if they detect address-in-use errors.

Selected (EXISTING) master node.

This license daemon selected an existing master (node) as the master.

SERVER shutdown requested.

A daemon was requested to shut down using a user-generated kill command.

[NEW] Server started for: feature list

A (possibly new) server was started for the features listed.

Shutting down xxx

The license daemon is shutting down the application daemon xxx.

SIGCHLD received. Killing child servers

An application daemon logs this message when a shutdown was requested by the license daemon.

Started name

The license daemon logs this message whenever it starts a new application daemon.



Trying connection to node

The daemon is attempting a connection to node.

## Configuration Problem Messages

BAD CODE for feature\_name

The specified feature name has an incorrect encryption code.

CANNOT OPEN options file file\_name

The options file specified in the license file could not be opened.

Couldn't find a master

The daemons could not agree on a master.

hostname: Not a valid server host, exiting

This daemon was run on an invalid host name.

hostname: Wrong hostid, exiting

The host ID is wrong for the host name.

license daemon: lost all connections

All the connections to a server have been lost. This probably indicates a network problem.

lm\_server: lost all connections

All the connections to a server have been lost. This probably indicates a network problem.

lost lock, exiting

An error occurred in closing a lock file.

Unable to re-open lock file

The application daemon has a problem with its lock file, usually because of an attempt to run more than one copy of the daemon on a single node. Locate the other daemon that is running with a `ps` command, and kill it with `kill -9`.

NO DAEMON line for daemon

The license file does not contain a DAEMON line for the daemon.

NO DAEMON line for name

An application daemon cannot find its own DAEMON name in the license file.

NO DAEMON lines, exiting

There are no DAEMON lines in the license file. Because there are no application daemons to start, there is nothing to do.

No license service found

The TCP license service did not exist in `/etc/services`.

No license data for feature, feature unsupported

There is no feature line for the feature in the license file.

No features to serve!

An application daemon found no features to serve. This could be caused by incorrect data in the license file.

Unknown host: hostname

The host name specified on a SERVER line in the license file does not exist in the network database (probably `/etc/hosts`).

UNSUPPORTED FEATURE request: feature by user

The user requested a feature that this application daemon does not support. This can happen for several reasons: the license file is incorrect, the feature has expired, or the daemon is accessing the wrong license file.

# Daemon Software Error Messages

No internet port number specified

An application daemon was started without an Internet port.

read: error message

An error in a read system call was detected.

select: message

An error is detected in a select system call.

Server exiting

The server is exiting. This is normally due to an error.



# License Manager Administrative Commands

---

This appendix contains reference information for the following License Manager administrative commands:

- `lmgrd`
- `lmgrdinstall`
- `lmutil lmdown`
- `lmutil lmhostid`
- `lmutil lmremove`
- `lmutil lmreread`
- `lmutil lmstat`
- `lmutil lmver`

Please note: The commands described in this appendix can be located as follows:

## UNIX

`/usr/CVswlm/bin`

## Windows NT

`C:\CVswlm\bin`

# lmgrd

## Purpose

Looks for a license file containing all required information about applications and features (UNIX).

## Syntax

```
lmgrd [-c license_file] [-t timeout] [-s interval]
```

## Description

Use this command to install License Manager on UNIX.

The license daemon (`lmgrd`) is a standard component of License Manager. You cannot alter this daemon. The license daemon does allow you to set the license file location and the server-to-server connection time-out interval. When invoked, it looks for a license file containing all required information about applications and features.

## Modifiers

`-c license_file`

Use the appropriate license file path.

`-t timeout`

Specify the time-out interval, in seconds, during which the daemons must complete their connections to each other. The default value is 10 seconds. A larger value may be desirable if the daemons are being run on busy systems or a very heavily loaded network.

`-s interval`

Specify the log file timestamp interval in minutes. The default is 360 minutes.

## Example

```
lmgrd -c /epd/epd.licenses
```

# lmgrdinstall

## Purpose

Installs License Manager on Windows NT.

## Syntax

```
lmgrdinstall -e lmgrd.exe [-c license_file][-l logfile]
```

## Description

Use this command to install License Manager on Windows NT.

## Modifiers

`-e lmgrd.exe`

Specify the executable, `lmgrd.exe`.

`-c license_file`

Use the appropriate license file path.

`-l logfile`

Specify the log file path name.

Please note: Use the following command to remove License Manager:

```
lmgrdinstall -r
```

# lmutil lmdown

## Purpose

Shuts down all license daemons.

Please note: Issue the `lmutil lmdown` command before you halt a license server.

## Syntax

```
lmutil lmdown [-c license_file]
```

## Description

Sends a message to every license daemon requesting it to shut down. The license daemons write out their last messages to the log file, close the file, and exit. All licenses given out by those daemons are rescinded. The next time a client program tries to verify a license, it will not be valid.

## Modifiers

`-c license_file`

Use the appropriate license file path.

## Example

```
lmutil lmdown -c /epd/epd.licenses
```

```
lmdown-Copyright (C) 1989-1997  
Globetrotter Software, Inc.
```

```
Shutdown node spider  
Shutdown node bonedry  
Shutdown node aphids
```



# lmutil lmhostid

## Purpose

Reports the host ID of a system.

## Syntax

```
lmutil lmhostid
```

## Description

Calls the License Manager version of `gethostid` and displays the results.

## Modifiers

None.

## Example

```
lmutil lmhostid
```

```
lmhostid - Copyright (C) 1989-1997  
Globetrotter Software, Inc.
```

```
The FLEXlm host ID of this machine is "230016c6"
```

# lmutil lmremove

## Purpose

Removes specific licenses and returns them to a license pool.

## Syntax

```
lmutil lmremove [-c license_file] feature user  
host[display]
```

## Description

Allows you to remove a single user license for a specified feature. This could be necessary, for example, if a licensed user were running software on a node that later failed. This situation sometimes causes the license to remain unusable. `lmutil lmremove` allows the license to return to the pool of available licenses.

## Modifiers

`-c license_file`

Use the appropriate license file path.

`feature`

Supply the name of the feature checked out by the user.

`user`

Supply the name of the user whose license you are removing.

`host`

Supply the host name where the user is working.

`display`

Supply the name of the display where the user is working.

**Please note:** Issue the `lmutil lmstat` command to determine the specific user and host, and to display information to include with the `lmutil lmremove` command.

# lmutil lmreread

## Purpose

Causes the license daemon to reread the license file.

## Syntax

```
lmutil lmreread [-c license_file]
```

## Description

Causes the license daemon to reread the license file. This can be useful if the data in the license file has changed. The new data can be loaded into the license daemon without shutting down and restarting it.

In addition, all previously existing daemons will be signaled to reread the license file for changes in feature licensing information.

This command uses the license file from the command line or the default file to find the license daemon and sends it the command to reread the license file. The license daemon always rereads the original file loaded.

If you need to change the path to the license file read by the license daemon, shut down the daemon and restart it with the new license file path.

You cannot use `lmutil lmreread` if the server node names or port numbers have changed in the license file. In this case, you must shut down the daemon and restart it for those changes to take effect.

`lmutil lmreread` does not change any option information specified in an options file. If the new license file specifies a different options file, that information is ignored. If you need to reread the options file, shut down the daemon and restart it.

## Modifier

`-c license_file`

Use the appropriate license file path.

## Example

```
lmutil lmreread -c /epd/epd.licenses
```

```
lmreread - Copyright (C) 1989-1997  
Globetrotter Software, Inc.
```

```
informed node spider
```

```
informed node bonedry
```

```
informed node aphids
```

# lmutil lmstat

## Purpose

Reports the status of License Manager daemons and feature usage.

## Syntax

```
lmutil lmstat [-a] [-A] [-c license_file] [-f[feature]]  
[-l[regular_expression]] [-s[server]] [-S[DAEMON]]  
[-t[timeout]]
```

## Description

Provides information about the status of the server nodes, application daemons, application features, and users of each feature. Information can optionally be qualified by specific server nodes, application daemons, or features.

`lmutil lmstat` allows you to monitor the status of all network licensing activities, including:

- Which daemons are running
- Users of individual features
- Users of features served by a specific DAEMON

## Modifiers

-a	Display all.
-A	List all active licenses.
-c	Use the appropriate license file path.
-f [feature]	List all users of the specified feature(s).
-l [regular_expression]	List all users of the features matching the given regular expression.
-s [server]	Display the status of the specified server or server node(s).
-S [DAEMON]	List all users of the specified daemon's features.
-t timeout	Specify the time-out interval, in seconds, during which daemons must complete their connections to each other. The default value is 10 seconds. A larger value may be desirable if the daemons are being run on busy systems or a very heavily loaded network.

## Examples

```
lmstat -a -c /epd/epd.licenses

lmstat - Copyright (C) 1989-1997
Globetrotter Software, Inc.

Flexible License Manager status on Thu 8/26/99 8:58

License server status:

peabody: license server UP (MASTER)

sherman: license server UP

gorby: license server UP

Vendor daemon status (on peabody)

application: UP

Feature usage info:

Users of 1303: (10 licenses available)

root at sherman on /dev/console (v1.000),
```

```
started Wed 8/25/99 at 12:30
```

```
Users of 1301: (10 licenses available)
```

```
Users of 1302: (10 licenses available)
```

```
Users of 1304: (10 licenses available)
```

```
Users of 1305: (10 licenses available)
```

```
Users of 1306 (10 licenses available)
```

This information tells you that the master server, peabody, is up and running, and that there are a total of 10 licenses for the 1303, 1301, 1302, 1304, 1305, and 1306 feature numbers. Note that even when licenses are in use, this number will not change. The output shows that 1303 has 10 licenses available. There are actually only 9, because user `root` at workstation `sherman` is using a license.

```
lmutil lmstat -c /epd/epd.licenses -113
```

```
lmstat - Copyright (C) 1989-1997,  
Globetrotter Software, Inc.
```

```
Flexible License Manager status on Wed 8/25/99  
13:05
```

```
Feature usage info:
```

```
Users of 1301: (1 licenses available) root at dukie  
on /dev/console (v1.000), started Wed 8/25/99 13:01
```

```
Users of 1307: (1 licenses available)
```

```
Users of 1320: (1 licenses available)
```

```
lmutil lmstat -c license_file -f1301
```

```
Flexible License Manager status on Wed 8/25/99  
13:06
```

```
Feature usage info:
```

```
Users of 1301: (1 licenses available) root at dukie  
on /dev/console (v1.000), started Wed 8/25/99 13:01
```

```
lmutil lmstat -c license_file -s dukie
```

```
lmstat - Copyright (C) 1989-1997,  
Globetrotter Software, Inc.
```

```
Flexible License Manager status on Wed 8/25/99  
13:09
```

```
License server status:
```

```
dukie: license server UP (MASTER)
```

```
Vendor daemon status (on dukie) :
```

```
application: UP
```



# lmutil lmver

## Purpose

Reports the FLEX $lm$  version of a library or binary file.

## Syntax

```
lmutil lmver [filename]
```

## Description

Scans the contents of a binary or library file for the FLEX $lm$  version string and displays it. If no modifier is supplied, `lmutil lmver` assumes that the file name is `lmgr.a` and attempts to find and display the version from that file.

## Modifier

`filename`

Specify the FLEX $lm$  binary or library file name.

## Example

```
lmutil lmver lmgrd
```

```
FLEX $lm$  v5.12 (lmgr.a), Copyright (C) 1989-1997,  
Globetrotter Software, Inc.
```



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