

# Mentor<sup>®</sup> Standard Licensing Manual

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# Chapter 1

## Mentor Standard Licensing Overview

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Mentor software uses the Mentor Standard Licensing (MSL) system to administer software licenses. MSL is based on FlexNet™ licensing and uses the FlexNet license file format. Mentor uses FlexNet Publisher certificate-based licensing only.

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### Note



Mentor uses the term *license file* instead of *certificate*.

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MSL has two implementations:

- MGLS (Linux<sup>1</sup>/UNIX) — Mentor Graphics Licensing System
- PCLS (Windows) — PC Licensing System

Licenses are delivered to you as a result of booking an order or requesting an evaluation. The authorization codes, which are in the license file, enable Mentor applications.

If you do not have a signed agreement with Mentor Graphics Corporation, the terms of our standard [End User License Agreement](#) apply.

This manual provides instructions and information for the system or license administrator on how to use MGLS and PCLS to license Mentor software.

The “Mentor Standard Licensing Overview” chapter discusses the following:

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## FlexNet Licensing Components

FlexNet Licensing provides a FlexNet-enabled application that communicates with the license server, a license manager daemon that contacts the client applications and passes the connection

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to the appropriate vendor daemon, a Mentor vendor daemon that tracks license status, and a file that stores licensing data.

- **FlexNet-Enabled Application Program** — The application program uses MSL and communicates with the license server.
- **License Manager Daemon (lmgrd)** — The lmgrd daemon handles initial contact with the client application programs and passes the connection to the appropriate vendor daemon. The lmgrd daemon also starts and restarts the vendor daemons.

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**Note**



Node-locked uncounted (mobile compute) licenses do not require lmgrd or mgcld.

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- **Vendor Daemon (mgcld)** — The Mentor vendor daemon, mgcld, keeps track of the licenses that are checked out. If the mgcld process terminates for any reason, all users lose their licenses but usually regain them automatically when lmgrd restarts mgcld.
- **License File** — The license file is a text file where FlexNet stores licensing data. Mentor creates this license file, which contains information about the server and mgcld and at least one line of data, called the INCREMENT line, for each licensed product.

Each INCREMENT line contains an encryption code that is based on data on that line, the host ID of the server(s), and other Mentor-supplied data such as expiration date, count, and version.

For details about the license file's contents, see "[License File Format](#)" on page 8.

For more information about FlexNet components, refer to the *FlexNet Publisher License Administration Guide* published by Flexera Software.

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**Note**



Mentor uses FlexNet certificate-based licensing only.

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## Related Topics

[Types of Licenses Available](#)

# Mentor Standard Licensing Benefits

Mentor Standard Licensing (MSL) has many benefits, including a standard implementation of FlexNet licensing, a customized licensing environment, debugging capabilities, and tools to help with license configuration and management.

- **Standard implementation of FlexNet Licensing for Mentor applications** — MSL provides a consistent licensing implementation across all Mentor products and product lines, facilitating the management of application environments.

- **Licensing environment customization** — MSL enables system administrators to control connection timeouts, license file and licensing software locations, and access to specified licenses. For more information, refer to “[Environment Variables for Licensing](#)” on page 35.
- **Debugging capabilities** — MSL writes license information regarding check-out and check-in, queue, denial, and server status to a log file on the license server and client environment and transaction information in the application environment. For more information, refer to “[lmgrd](#)” on page 59 and “[MGLS\\_DEBUG\\_LOG\\_DIR](#)” on page 39.
- **Tools to help with license configuration and management** — To test license availability, MSL provides the `mgls_ok` utility for Linux/UNIX and the `pcls_ok` and `mgls_ok` utilities for Windows. MSL also supports standard FlexNet administration graphical user interface and command-line utilities. For more information, refer to “[Utilities for Licensing](#)” on page 53.

## Related Topics

[mgls\\_ok](#)

[pcls\\_ok](#)

# Types of Licenses Available

Various types of licenses can authorize Mentor applications, and each has specific characteristics.

## Floating

- Anyone on the network can use the license. The licenses are tied to a server host ID provided by a system host ID, network interface, or hardware key.
- A license server is required. The license server tracks how many licenses are available and how many are currently in use. You can use the options file to configure license servers to allow access only to certain groups or individuals.
- Licenses must be served from the computer whose host ID matches the host ID listed on the SERVER line of the license file.
- The license file contains both a SERVER and DAEMON line, and the quantity on each INCREMENT line is greater than zero (0).

## Node-Locked Uncounted (Mobile Compute)

- For Windows only.

- The license is locked to a particular piece of hardware, either an Ethernet address or hardware key, and the hardware must be installed and operational for the license to work.
- The license file does not contain SERVER or DAEMON lines, and the quantity on each INCREMENT line is zero (0). “Zero” identifies this as a special kind of license, not that licenses are unavailable.
- A license server is not required.

### **Node-Locked Counted**

- The license is locked to a particular piece of hardware, either an Ethernet address, host ID, or hardware key. The devices provide a unique identifier for the license.
- The software runs only on the system that has the particular piece of hardware installed.
- A license server is required. The license server tracks how many licenses are available and how many are currently in use. You can use the options file to configure license servers to allow access only to certain groups or individuals.
- The license file contains both a SERVER and DAEMON line, and the quantity on each INCREMENT line is greater than zero (0).
- The license must be served from the computer whose host ID matches the host ID on the SERVER line of the license file.
- The difference between floating and node-locked counted licenses is that node-locked counted licenses have a host ID field (HOSTID=) on each INCREMENT line.

### **Related Topics**

[License File Format](#)

[Vendor Daemon Options File](#)

## **License File Format**

Mentor delivers licenses to you as a result of booking an order or requesting an evaluation. The authorization codes, which are in the license file, enable Mentor applications. The license file adheres to a standard format determined by your type of license.



Figure 1-1. License File Example

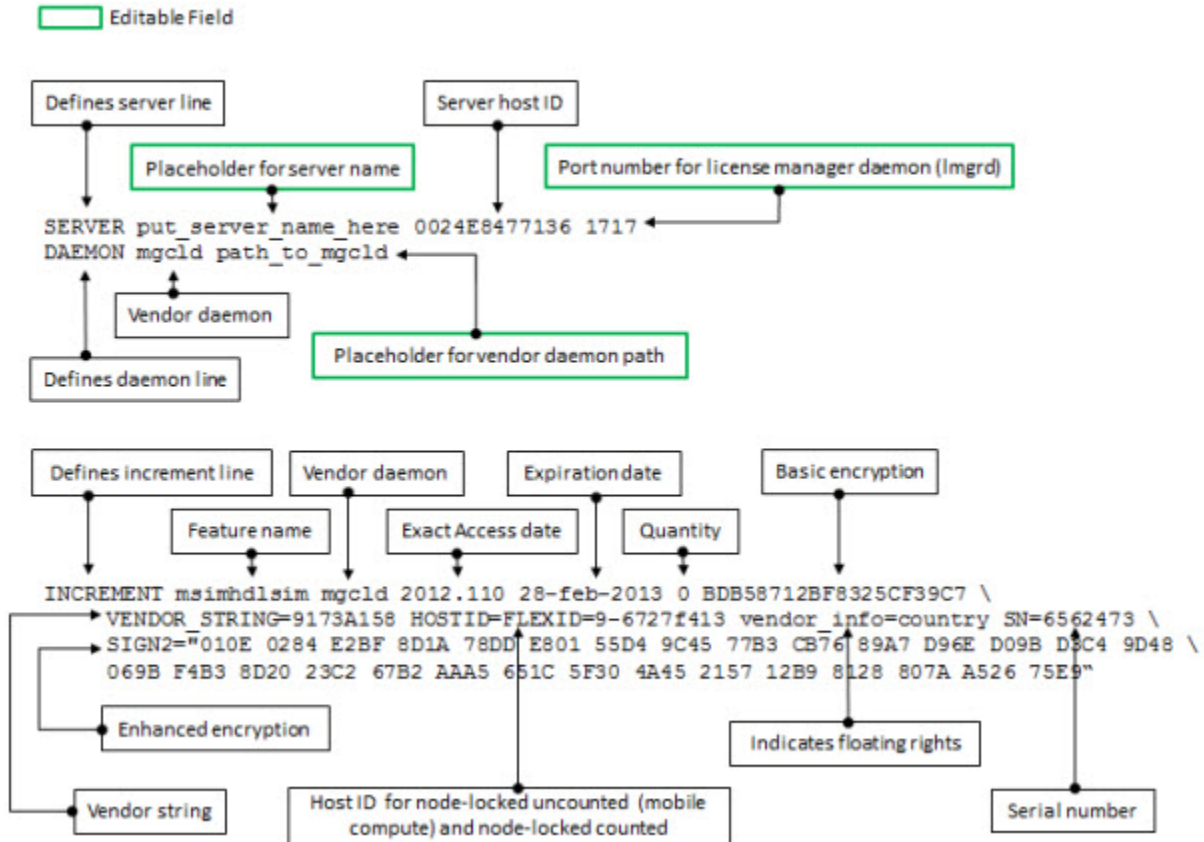


Figure 1-1 identifies the functional fields within a Mentor license file. Optionally, you can add other fields. See the *FlexNet Publisher License Administration Guide* published by Flexera Software for more information. This example applies to all types of Mentor licenses, so refer to the following descriptions of each field to determine which apply to your license environment.

### SERVER Section

- **Defines server line** — (Floating and node-locked counted licenses only.) Tells the FlexNet license manager daemon (lmgrd) to expect information about the server.
- **Placeholder for server name** — (Floating and node-locked counted licenses only.) Shows a placeholder that you must replace with your server's host name.
- **Server host ID** — (Floating and node-locked counted licenses only.) Shows the server host ID, which must match that of your server. The host ID can be the system host ID (Solaris), Ethernet (Linux and Windows), or a hardware key/dongle (Windows only). Do not change this field. To verify the host ID, use `lmutil lmhostid` or `LMTOOLS`. For additional methods, refer to ["Determining the Hostid for Licensing"](#) on the Mentor Communities site.

- **Port number for license manager daemon (lmgrd)** — (Floating and node-locked counted licenses only.) Tells the license manager which TCP/IP port to use. You can change this to any available port.
- **Defines daemon line** — (Floating and node-locked counted licenses only.) Tells the license manager to expect information about a vendor daemon.
- **Vendor daemon** — (Floating and node-locked counted licenses only.) Tells the license manager that the information that follows applies to the Mentor vendor daemon, mgcld.
- **Placeholder for vendor daemon path** — (Floating and node-locked counted licenses only.) Shows a placeholder that you must replace with the path to mgcld, including the filename.

#### INCREMENT Section

- **Defines increment line** — Tells the license manager or license client to process the next fields as license feature information.
- **Feature name** — Defines the name of the feature, which the application checks out at run time.
- **Vendor daemon** — Designates this as a license feature that the Mentor vendor daemon or license client uses.
- **Exact Access date** — Shows the date relating to the version of the product you are currently running. For applications to run, your Mentor products must have minimum license versions. Keeping the support contracts current for your products ensures that you will always be able to run the latest versions. For more information, refer to ["Exact Access Licensing"](#) on Account Center.
- **Expiration date** — Shows the date the license (authorization code) expires. This date corresponds to the end of your support contract term plus three months. For more information, refer to ["Authorization Code Duration Policy/Guideline"](#) on Account Center.
- **Quantity** — Defines the quantity of each license feature. For floating or node-locked counted licenses, the value is an integer equaling 1 or greater. For mobile compute licenses that are not counted by a license manager, the value is always 0. This field helps you determine whether your licenses are floating or mobile compute. For more information about license types, refer to ["License Models, Servers, Types Policy Guideline"](#) on Account Center.
- **Basic encryption** — Shows the 20-digit basic encryption number that secures the license feature.
- **Vendor string** — Shows the string that Mentor assigns for security.

- **Host ID for node-locked uncounted (mobile compute) and node-locked counted** — Locks the feature to a specific host ID. The host ID can be the system host ID (Solaris), Ethernet (Linux and Windows), or a hardware key/dongle (Windows only). To verify the host ID, use lmutil [lmhostid](#) or [LMTOOLS](#). For additional methods, refer to "[Determining the Hostid for Licensing](#)" on the Mentor Communities site.
- **Indicates floating rights** — (Floating licenses only.) Reflects geographic usage rights defined by your license agreement.
- **Serial number** — Shows the unique ID that Mentor uses to look up license information.
- **Enhanced encryption** — Shows the enhanced encryption for securing the license feature.

## Determine Your Host ID for Licensing

You must provide your host IDs to Mentor to obtain the licenses for the products you have purchased.

You can determine your host ID by using lmutil [lmhostid](#) or [LMTOOLS](#). For additional methods, refer to "[Determining the Hostid for Licensing](#)" on the Mentor Communities website.

## Additional Licensing Resources

Mentor provides a range of industry-leading support services that keep design teams productive and up-to-date with Mentor products.

A Mentor support contract includes the following:

- **Software Updates** — Get the latest releases and product enhancements to keep your environment current.
- **Mentor Graphics Support Center** — Access our online knowledge base, personalized to your Mentor products.
- **Support Forums** — Learn, share, and connect with other Mentor users.
- **Technical Support** — Collaborate with Mentor support engineers to solve complex design challenges.
- **Regular Communications** — Receive the latest knowledge base articles and announcements for your Mentor products.
- **Mentor Ideas** — Share ideas and vote for your favorites to shape future products.

More information is available here:

<https://support.mentor.com/>

If your site is under a current support contract, but you do not have a Support Center login, register today:

<https://support.mentor.com/register>

For answers to your account questions, refer to the [Account](#) page on Account Center.

For answers to frequently asked licensing questions and to collaborate with Mentor community members and technical experts, visit the Licensing and Installation Mentor Communities site:

[Licensing and Installation Mentor Communities site](#)

# Chapter 2

## Basic License Administration

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Mentor Standard Licensing (MSL) provides the ability to install and configure your licensing software on Linux/UNIX and Windows systems.

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# License Configuration and Management for Linux/UNIX

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Mentor provides the ability to configure and manage your licensing on Linux/UNIX systems.

## Note



Mentor does not support hardware keys (dongles) on Linux/UNIX systems.

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## Installing and Configuring a License Server on Linux/UNIX

You must perform certain tasks to install licensing on a license server for the first time.

### Prerequisites

- You determined which machines you will use as license servers and determined their host IDs. For information on the latter, refer to “[Determine Your Host ID for Licensing](#)” on page 11.
- You received your Mentor license file either by email or Account Center download. If you have questions, contact Mentor.
- You ensured that the proper networking components are installed and correctly configured. For Mentor licensing software to work correctly, workstation hardware and operating system versions must be at a level adequate to support the current versions of software. For hardware and operating system information, refer to your application’s configuration information.
- You ensured that TCP/IP is configured on your network.

### Procedure

1. From Account Center (<https://account.mentor.com>), click **Licenses > Licensing Software** to show a list of Licensing releases.
2. Click the most recent Licensing release. The window expands to show four tabs: **Files**, **Important Info**, **Documentation**, and **System Requirements**.

3. From the **Files** tab, click the Licensing release name. The Release Information and Downloads window opens.
4. To download the release, click the MGLS file that corresponds to your platform.
5. Copy the downloaded file to the directory where the licensing software is to be installed and navigate to the location.
6. Unzip the file.

For example (Linux 64-bit, FlexNet v11.13.0.2):

```
$ gzip -d mgl_s_v9-13_5-2-0.aol.tar.gz
```

---

**Note**



After unzipping the file, the `.gz` suffix no longer appears on the original file. For example: `mgl_s_v9-13_5-2-0.aol.tar`.

---

7. Untar the resulting file.

For example:

```
$ tar -xvf mgl_s_v9-13_5-2-0.aol.tar
```

The command creates a licensing software subdirectory for MGLS. For example: `mgl_s_v9-13_5-2-0.aol`. Inside this subdirectory is the `bin` directory that contains `lmgrd`, `mgcld` (the Mentor vendor daemon), and FlexNet utilities.

8. Save your licenses in a file on your local hard drive.

If you received the license file as an attachment to an email or downloaded the file from Account Center, copy and save the file to a directory that permits you to edit the file. If the licensing information is embedded in an email, copy the contents of the email to a file that permits you to edit the file. Edit the file to remove any email header information. The license file must adhere to the following:

- Be plain-text only
- Have a name that does not contain any spaces
- End in `.dat`, `.lic` or `.txt`

You are not restricted as to where you put the license file. However, you should keep a backup copy of your license file in a safe location.

9. Open the license file in a text editor.
10. Specify the server name.

Edit the `SERVER` line in the license file with the correct license server host name. For example:

Before

```
SERVER put_server_name_here 0024e8477136 1717
```

After

```
SERVER enterprise 0024e8477136 1717
```


If you are administering licenses using a redundant server configuration, you must supply the host name for each license server in your configuration.

11. If necessary, change the port number in the license file from the default value of 1717 to an open port on your system.

If you are using a redundant server configuration, you must perform this task for each server listed in the license file that cannot use port 1717.

---

### Caution

 Running multiple networked applications on the same port can introduce instability into the environment and cause unpredictable results that may be extremely difficult to diagnose. Ensure that the port number you choose is dedicated to license server communications only.

---

12. If you are using a redundant server configuration, copy the license file to the other license servers in your configuration.

Each redundant license server requires a local copy of the same license file.

13. Edit the DAEMON line to include the path to the vendor daemon mgcld.

---

### Note

 Firewalls can interfere with licensing communication. For more information, refer to [“Firewall Considerations”](#) on page 78.

---

Locate the path to the vendor daemon in the licensing software directory that you created in Step 7. For example: `/usr1/mgls_v9-13_5-2-0.aol/bin/mgcld`. You must use the absolute path to the daemon. An absolute pathname begins with a “/” (slash). Currently, FlexNet does not allow an environment variable in this pathname. You can add the path to the daemon options file on the DAEMON line. For more information, refer to [“Vendor Daemon Options File”](#) on page 77.

The following is an example of an edited DAEMON line without a daemon options file:

```
DAEMON mgcld /usr1/mgls_v9-13_5-2-0.aol/bin/mgcld
```

14. Optionally, adjust the order of your INCREMENT lines to help control license consumption. For more information, refer to [“License Ordering in a License File”](#) on page 78.
15. If you want to customize license usage, edit the daemon options file.

For more information, refer to [“Vendor Daemon Options File”](#) on page 77.



16. Start the license manager daemon on the license server.

```
$ lmgrd -c license_file
```

Where *license\_file* is the path to the license file you configured in the previous steps.

You also can create a server debug log file. For example:

```
$ lmgrd -c license_file -l logfile
```

Then you can use the Linux/UNIX **tail -f logfile** command to monitor the status of the license server.

---

**Note**



We recommend that you do not run license servers as “root.”

---

17. Verify that the server is valid and has started.

```
$ lmutil lmstat [-c {license_file | port@host}]
```

The command reports the server and daemon status and the product usage.

---

**Note**



If you do not set LM\_LICENSE\_FILE, you must use the -c switch with all lm\* commands.

---

18. For redundant servers, repeat this process for each server in the cluster.

## Related Topics

[License File Format](#)

[How to Start a License Server Automatically on Linux/UNIX](#)

[LM\\_LICENSE\\_FILE](#)

[lmstat](#)

# Configuring Licensing on a Client Workstation on Linux/UNIX

After you start a license server, you can configure licensing on a client workstation.

## Prerequisites

- You performed “[Installing and Configuring a License Server on Linux/UNIX](#)” on page 14.

## Procedure

- Set the licensing environment variables to find the licensing software, and set the environment variables for the application to find the license file.

You must set either the `LM_LICENSE_FILE` variable or the `MGLS_LICENSE_FILE` variable to point to the license file location.

2. Validate the server environment.

Use `lmstat` to check that the server is running and a feature is available.

```
$ lmutil lmstat -a [-c {license_file | port@host}]
```

The `lmstat` command reports the server and daemon status and the product usage.

---

**Note**

---



If you do not set `LM_LICENSE_FILE`, you must use the `-c` switch with all `lm*` commands.

---

3. Use `mgls_ok` to verify that a client can check out a specific license feature.

```
$ mgls_ok license_name
```

## Related Topics

[LM\\_LICENSE\\_FILE](#)

[MGLS\\_LICENSE\\_FILE](#)

[lmstat](#)

[mgls\\_ok](#)

# Adding a New License on Linux/UNIX

You may need to add new licenses to your existing license server if, after you install your software and licenses, you decide to purchase additional Mentor licenses for your existing software.

## Prerequisites

- You performed “[Installing and Configuring a License Server on Linux/UNIX](#)” on page 14.

## Procedure

1. Set the license environment variables.

You must set either `LM_LICENSE_FILE` or `MGLS_LICENSE_FILE` so that the licensing software can find the location of the license file or server. For more information, refer to “[Environment Variables for Licensing](#)” on page 35.

2. Edit the license file with the new licenses.

Use a text editor to add the new `INCREMENT` lines to the existing license file.


3. Use `lmreread` to reread the license file if the server is running.

```
$ lmutil lmread [-c {license_file | port@host}]
```

---

**Note**

---

 If you do not set LM\_LICENSE\_FILE, you must use the -c switch with all lm\* commands.

---

4. Validate the server environment.

Use lmstat to check that the server is up and that a feature is available.

```
$ lmutil lmstat -a [-c {license_file | port@host}]
```

This command reports the server and daemon status and product usage.

5. Use mgls\_ok to verify that a client can check out a specific license feature.

```
$ mgls_ok license_name
```

## Related Topics

[License File Format](#)

[lmread](#)

[lmstat](#)

[mgls\\_ok](#)

[Removing Expired Licenses From Your License File](#)


## Replacing a License File on Linux/UNIX

You may need to replace a license file if you receive a renewed license.

---

**Note**

---

 If you are managing a license file with term-based licenses, we recommend that you do not completely replace your license file. Instead, refer to “[Adding a New License on Linux/UNIX](#)” on page 18.

---

## Prerequisites

- You performed “[Installing and Configuring a License Server on Linux/UNIX](#)” on page 14.

## Procedure

1. Set the license environment variables.

You must set LM\_LICENSE\_FILE or MGLS\_LICENSE\_FILE to the path of the license file. This enables the licensing software to find the location of the license file.

2. Shut down the license manager.

The license daemons write their last messages to the log file, close the file, and exit. All licenses that were checked out are rescinded. When the license manager restarts, the applications attempt to reacquire their licenses.

Follow these steps:

- a. Use `lmutil lmdown -c` to shut down the license daemons and confirm the shutdown.

```
$ lmutil lmdown -c {license_file | port@host}
```

---

**Note**



If you do not set `LM_LICENSE_FILE`, you must use the `-c` switch with all `lm*` commands.

---

- b. If you started the daemon with a server debug log file, check the log to ensure the daemons have exited.

```
$ tail -f logfile

6/24 12:00(lmgrd)SHUTDOWN request from davem at node davem
6/24 12:00(lmgrd)Shutting down mgcld
6/24 12:00(mgcld)daemon shutdown requested-shutting down
```

3. Replace the license file.

Rename the old license file and save the new license file in its place.

4. Copy the `SERVER` and `DAEMON` lines from the old license file and paste them in place of the `SERVER` and `DAEMON` lines in the new license file.
5. Start the license manager daemon on the license server.

```
$ lmgrd -c license_file
```

Where *license\_file* is the file that you configured in “[Installing and Configuring a License Server on Linux/UNIX](#)” on page 14.

You also can create a server debug log file.

```
$ lmgrd -c license_file -l logfile
```

Then you can use the Linux/UNIX **`tail -f logfile`** command to monitor the status of the license server.

6. Verify that the server is valid and has started.

```
$ lmutil lmstat -a [-c {license_file | port@host}]
```

The `lmstat` command reports the server and daemon status and the product usage.

7. Verify that a client can check out a license.

Use `mgls_ok` to ensure that a client can check out a specific license feature.

```
$ mgls_ok license_name
```

## Related Topics

[Vendor Daemon Options File](#)

[LM\\_LICENSE\\_FILE](#)

[MGLS\\_LICENSE\\_FILE](#)

[lmdown](#)

[lmgrd](#)

[lmstat](#)

[mgls\\_ok](#)

[Adding a New License on Linux/UNIX](#)

# Upgrading to a Newer Version of Licensing Software on Linux/UNIX

You may need to support applications that require a newer version of licensing software.

## Prerequisites

- From Account Center, you downloaded the most recent version of MGLS for your platform: <https://account.mentor.com/licenses/download>

## Procedure

1. Shut down the license manager.

The license daemons write their last messages to the log file, close the file, and exit. All licenses that were checked out are rescinded. When the license manager restarts, the applications attempt to reacquire their licenses.

- a. Use **lmdown -c** to shut down the license daemons and confirm the shutdown.

```
$ lmutil lmdown -c {license_file | port@host}
```

---

### Note



If you do not set LM\_LICENSE\_FILE, you must use the -c switch with all lm\* commands.

---

- b. If you started the daemon with a server debug log file, check the log to ensure the daemons have exited.

```
$ tail -f logfile
```


```
6/24 12:00(lmgrd)SHUTDOWN request from davem at node davem
6/24 12:00(lmgrd)Shutting down mgcld
6/24 12:00(mgcld)daemon shutdown requested-shutting down
```

2. Install the current release on the workstation running your Mentor license server by renaming the existing mgls package and copying the new mgls\_version.vco in its place. The vco definitions are as follows:

- **ss5** = Solaris
- **ixl** = Linux 32-bit
- **aol** = Linux 64-bit
- **ira** = AIX

---

**Note**

 Renaming your old mgls package and copying the new mgls package in its place or creating symbolic links to the package ensures that your current paths to scripts, license files, \$PATH, and so on continue to resolve.

---

3. Restart the license manager and generate a server debug log file.

For example:

```
$ lmgrd -c license_file -l debug_log_path
```

4. Verify that the license server is updated to the newer version by examining the server debug log file.

For example:

```
$ more debug_log_path

17:29:54 (lmgrd) Starting vendor daemons ...
17:29:54 (lmgrd) Started mgcld (internet tcp_port 33767 pid 29237)
17:29:54 (mgcld) FlexNet Licensing version v11.13.0.2 build 162702 x64_lsb
17:30:29 (mgcld) Server started on server for:
--More-- (50%)
```

## Related Topics


[lmdown](#)

# Uninstalling Licensing Software on Linux/UNIX

You may want to remove the licensing software.

---

**Note**

 If you are using licensing from within an application tree, this procedure does not apply.

---

## Prerequisites

- You performed “[Installing and Configuring a License Server on Linux/UNIX](#)” on page 14.

## Procedure

1. Shut down the license manager.

The license daemons write their last messages to the log file, close the file, and exit. All licenses that were checked out are rescinded. When the license manager restarts, the applications attempt to reacquire their licenses.

- a. Use **lmdown -c** to shut down the license daemons and confirm the shutdown.

```
$ lmutil lmdown -c {license_file | port@host}
```

---

### Note



If you do not set LM\_LICENSE\_FILE, you must use the -c switch with all lm\* commands.

---

- b. If you started the daemon with a server debug log file, check the log to ensure the daemons have exited.

```
$ tail -f logfile
```

```
6/24 12:00(lmgrd)SHUTDOWN request from davem at node davem
6/24 12:00(lmgrd)Shutting down mgcld
6/24 12:00(mgcld)daemon shutdown requested-shutting down
```

2. Delete the mglsv\*.vco folder.

For example:

```
$ rm -Rf mglsv9-13_5-2-0.aol
```

## Related Topics

[lmdown](#)

# How to Start a License Server Automatically on Linux/UNIX

If you want the license server to start automatically when a system reboots, use a startup script.

For information about scripts that you can customize for your own purposes, refer to "[Scripts for Starting Mentor License Servers on Linux/Unix](#)" on Support Center.

# License Configuration and Management for Windows

---

Mentor provides the ability to configure and manage your licensing on Windows systems using the Mentor® Install Program (MIP).

|   |           |
|---|-----------|
| <b>Installing and Configuring a License Server on Windows .....</b>       | <b>24</b> |
| <b>Configuring Licensing on a Client Workstation on Windows.....</b>      | <b>26</b> |
| <b>Adding a New License on Windows.....</b>                               | <b>27</b> |
| <b>Replacing a License File on Windows .....</b>                          | <b>28</b> |
| <b>Upgrading to a Newer Version of Licensing Software on Windows.....</b> | <b>28</b> |
| <b>Uninstalling Licensing Software on Windows.....</b>                    | <b>32</b> |
| <b>How to Start a License Server Automatically on Windows.....</b>        | <b>34</b> |

## Installing and Configuring a License Server on Windows

You must perform certain tasks to install licensing on a license server for the first time.

### Prerequisites

- You have an account with administrator privileges.
- You determined which machines you will use as license servers and determined their host IDs. For information on the latter, refer to “[Determine Your Host ID for Licensing](#)” on page 11.
- You received your Mentor license file either by email or Account Center download. If you have questions, contact Mentor.
- You ensured that the proper networking components are installed and correctly configured. For Mentor licensing software to work correctly, workstation hardware and operating system versions must be at a level adequate to support the current versions of software. For hardware and operating system information, refer to your application’s configuration information.
- You ensured that TCP/IP is configured on your network.

### Procedure

1. From Account Center (<https://account.mentor.com>), click **Licenses > Licensing Software** to show a list of Licensing releases.
2. Click the most recent Licensing release. The window expands to show four tabs: **Files**, **Important Info**, **Documentation**, and **System Requirements**.



3. From the **Files** tab, click the Licensing release name. The Release Information and Downloads window opens.
4. To download the release, click the PCLS file that corresponds to your platform.
5. Save the Windows .zip file to a location on your system.
6. Extract the files.
7. Open the extracted folder.

For example:

```
pcls_v9.13.5.2
```

8. Double-click the *setup.bat* file. This opens the Install Mentor Licensing window.
9. Click the button in the lower right corner of the window, either **Next**, **Upgrade**, or **Install**.

If you click **Upgrade** or **Install**, a dialog box opens asking if you would like to configure licensing. Click **Yes**.

10. From the Configure Licensing window, choose **Import license file**.

---

#### Note



Plug in the hardware key if you have one. Cancel any attempts by the Windows operating system to install the driver.

---

This option reads the license file and determines what configuration is needed. Mobile compute (node-locked) licenses are imported to a common file (*C:\MentorGraphics\License\_Files\license.txt*) and hardware key drivers are installed, if applicable. Floating licenses are not imported into the common license file. However, if Mentor licensing software is installed, licensing server setup is offered.

11. Click **Next**. A licensing server file is created (*C:\MentorGraphics\License\_Files\server\_<hostid>.txt*). If a license file for the server already exists, the floating licenses are merged into the existing server license file.
12. Click **Done** and then click **No** or, if you have more licenses to configure, click **Yes**.

## Results

A Windows service is created for your license server. Now, every time you reboot your machine, the license server starts automatically.

## Related Topics

[How to Start a License Server Automatically on Windows](#)

# Configuring Licensing on a Client Workstation on Windows

You can configure your mobile compute (node-locked uncounted) or your floating/node-locked counted licensing with MIP.

## Prerequisites

- You have an existing license file or the port number and host name of the license servers.

## Procedure

1. From Account Center, download the most recent version of PCLS: <https://account.mentor.com/licenses/download>.
2. Save the Windows .zip file to a location on your system.
3. Extract the files.
4. Open the extracted folder.

For example:

```
pcls_v9.13.5.2
```

5. Double-click the *setup.bat* file. This opens the Install Mentor Licensing window.
6. Click the button in the lower right corner of the window, either **Next**, **Upgrade**, or **Install**.

If you click **Upgrade** or **Install**, a dialog box opens asking if you would like to configure licensing. Click **Yes**.

7. To configure your mobile compute (node-locked uncounted) licensing, follow these steps. If you do not need to configure mobile compute licensing, skip to Step 8.
  - a. In the Configure Licensing window, select “Import license file” and click **Next**.
  - b. In the Import License File window, type the pathname in the “Import licenses from” field or click **Browse** to navigate to the license file.
  - c. Click **Next**.

If MIP detects authorization codes locked to hardware keys in the license file, the Select Hardware Key window opens. Select the drivers you want to install. Select **Skip** or **Install**. For more information, refer to “Selecting the Hardware Key Driver” in the *Installing Mentor Graphics Software Online Help* manual.

If MIP detects node-locked licenses in the license file and they match the current machine’s host ID, MIP automatically creates the common file (*C:\MentorGraphics\*


*License\_Files\server\_<hostid>.txt*). If the licenses do not match the current machine's host ID, the Common License File window opens. Select either:

- **Licenses for Matching HostIDs ONLY** — Imports licenses only for the machine you are using.
- **Licensing for ALL HostIDs in license file** — Imports all licenses. This is useful if hardware keys are not currently attached.

d. Click **Next**.

---

**Note**

 If you are prompted to configure a license, follow the procedure in “[Installing and Configuring a License Server on Windows](#)” on page 24.

---

- e. If you are configuring other licenses, a dialog box confirms that the configuration is complete and asks if you have more licenses to set up.
  - Click **Yes** to return to the Configure Licensing window.
  - Click **No** to restart MIP using the updated licensing information.
- 8. To configure your floating/node-locked counted licensing and enable license consumption from the license server, follow these steps. If you do not need to configure floating/node-locked counted licensing, skip Step 8.
  - a. In the Configure Licensing window, select “Point to a license server” and click **Next**.
  - b. In the Add Server window, specify the port number and host name. The default port number is 1717. You can set this number to any port number that is currently not in use.

Click **Test** to verify that the license manager is running on the designated host name and port number.
  - c. Click **Next**. A dialog box confirms that the configuration is complete and asks if you have more licenses to set up.
    - Click **Yes** to return to the Configure Licensing window.
    - Click **No** if you are finished.

## Adding a New License on Windows

You may need to add new licenses to your existing licenses if, after you install your software and licenses, you decide to purchase additional Mentor licenses for your existing software.

## Prerequisites

- You performed [“Installing and Configuring a License Server on Windows”](#) on page 24 or [“Configuring Licensing on a Client Workstation on Windows”](#) on page 26.

## Procedure

1. Choose **Start > All Programs > Mentor Graphics Licensing > Configure Licensing**.
2. Repeat either of the following options:
  - Steps 10 through 12 of [“Installing and Configuring a License Server on Windows”](#) on page 24
  - Step 7 of [“Configuring Licensing on a Client Workstation on Windows”](#) on page 26

## Results

The installer comments out expired licenses in your license file. If your license file has soon-to-expire licenses, you must comment them out or remove them manually. For more information, refer to [“Removing Expired Licenses From Your License File”](#) on page 79.

# Replacing a License File on Windows

You may need to replace a license file if you receive a renewed license.

## Prerequisites

- You performed [“Installing and Configuring a License Server on Windows”](#) on page 24.

## Procedure

1. Choose **Start > All Programs > Mentor Graphics Licensing > Configure Licensing**.
2. Repeat Steps 10 through 12 of [“Installing and Configuring a License Server on Windows”](#) on page 24.

## Results

The installer comments out expired licenses in your license file. If your license file has soon-to-expire licenses, you must comment them out or remove them manually. For more information, refer to [“Removing Expired Licenses From Your License File”](#) on page 79.

# Upgrading to a Newer Version of Licensing Software on Windows

You may need to support applications that require a newer version of licensing software.

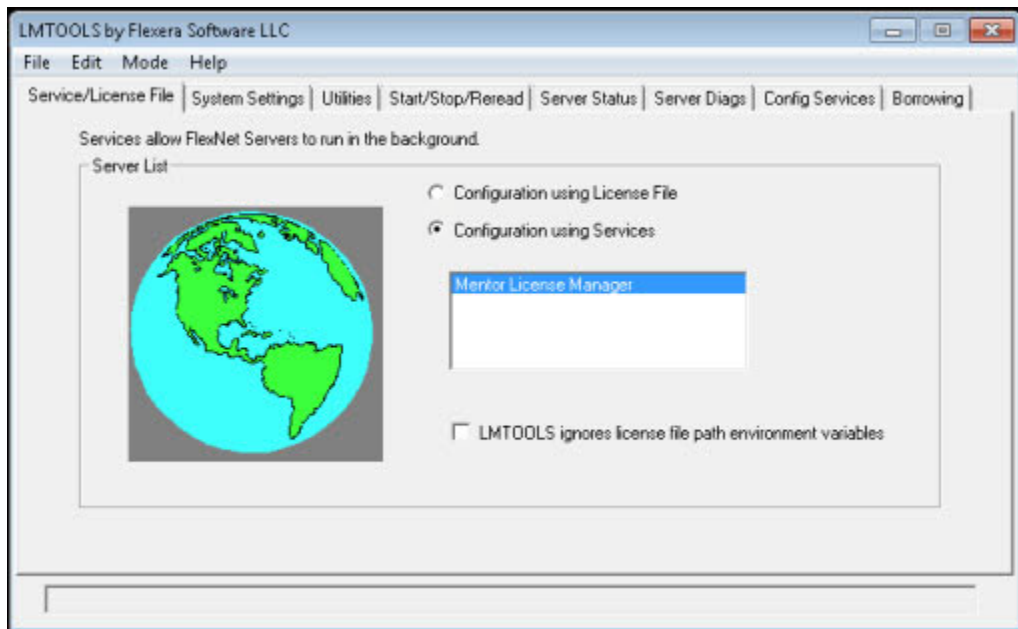
## Prerequisites

- You have an account with administrator privileges

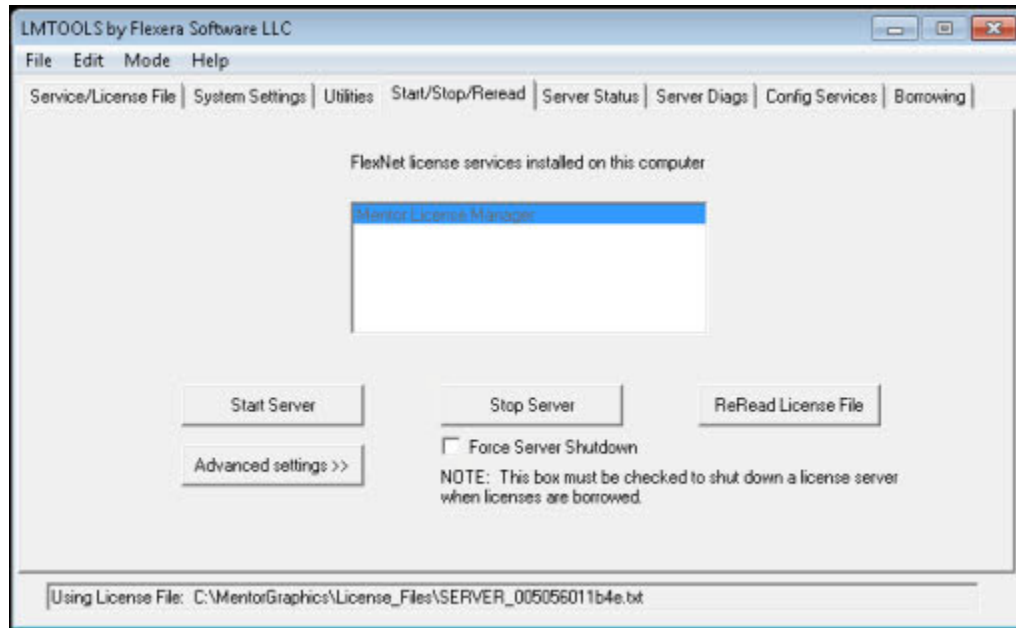
- From Account Center, you downloaded the most recent version of PCLS: <https://account.mentor.com/licenses/download>

## Procedure

1. Shut down the license manager.
  - a. Choose **Start > All Programs > Mentor Graphics Licensing > Imtools**. The LMTOOLS window opens in the **Service/License File** tab.

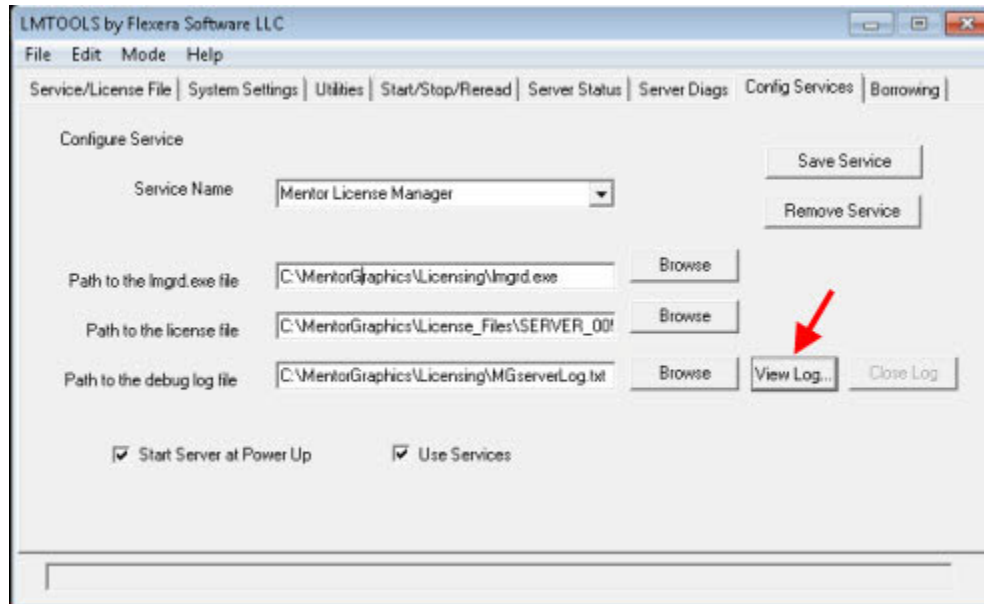


- b. Select Configuration using Services and select your service.
- c. Click the **Start/Stop/Reread** tab and click the **Stop Server** button.

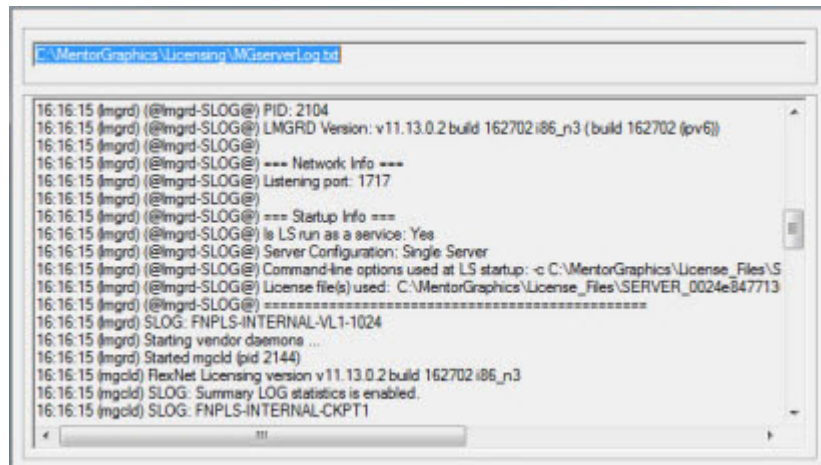


- d. Close the LMTOOLS window.
2. Install the current PCLS on the workstation running your Mentor license server.
  - a. From Account Center, download the most recent version of PCLS: <https://account.mentor.com/licenses/download>.
  - b. Save the Windows .zip file to a location on your system.
  - c. Extract the files.
  - d. Double-click the setup file. This opens the Install Mentor Licensing window.
  - e. Click **Update**.
3. Ensure that the DAEMON line in the license file points to the correct location of *mgcld.exe*.  
For example:
 

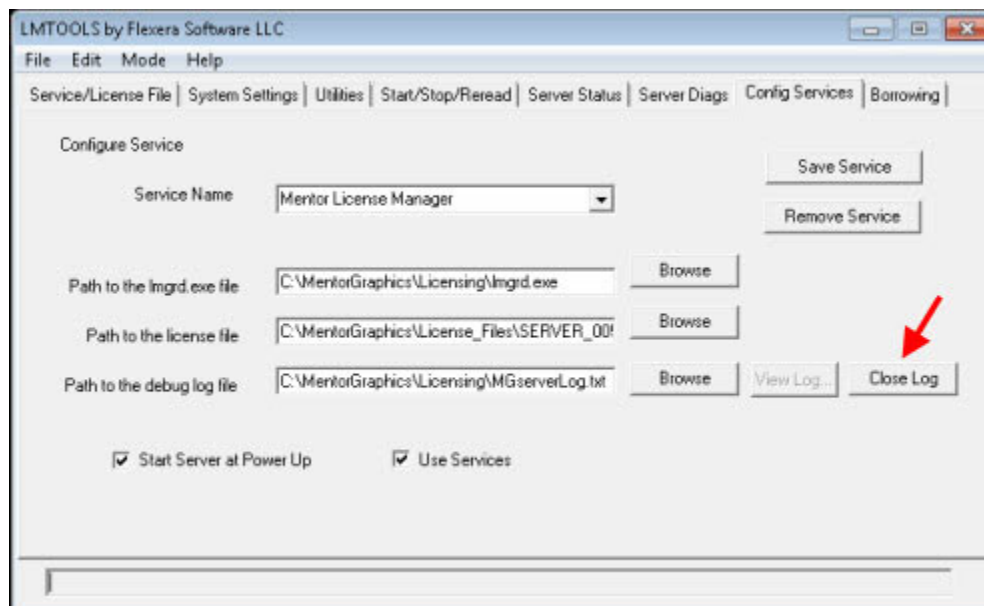
```
C:\MentorGraphics\Licensing\mgcld.exe
```
4. Restart the server and verify that the daemons are running and the version is correct.
  - a. Choose **Start > All Programs > Mentor Graphics Licensing > lmtools**. The LMTOOLS window opens in the **Service/License File** tab.
  - b. Select Configuration using Services and select your service.
  - c. Click the **Start/Stop/Reread** tab and click the **Start Server** button.
  - d. Click the **Config Services** tab and click the **View Log** button.



- e. A window opens showing the server debug log file. Scroll the log file window to verify that the daemons are running and the version is correct.



- f. Click the **Close Log** button in the **Config Services** tab.



g. Close the LMTOOLS window.

## Related Topics

[License File Format](#)

[LMTOOLS](#)

# Uninstalling Licensing Software on Windows


You may want to remove the licensing software.

## Prerequisites

- You performed “[Installing and Configuring a License Server on Windows](#)” on page 24 or “[Configuring Licensing on a Client Workstation on Windows](#)” on page 26.

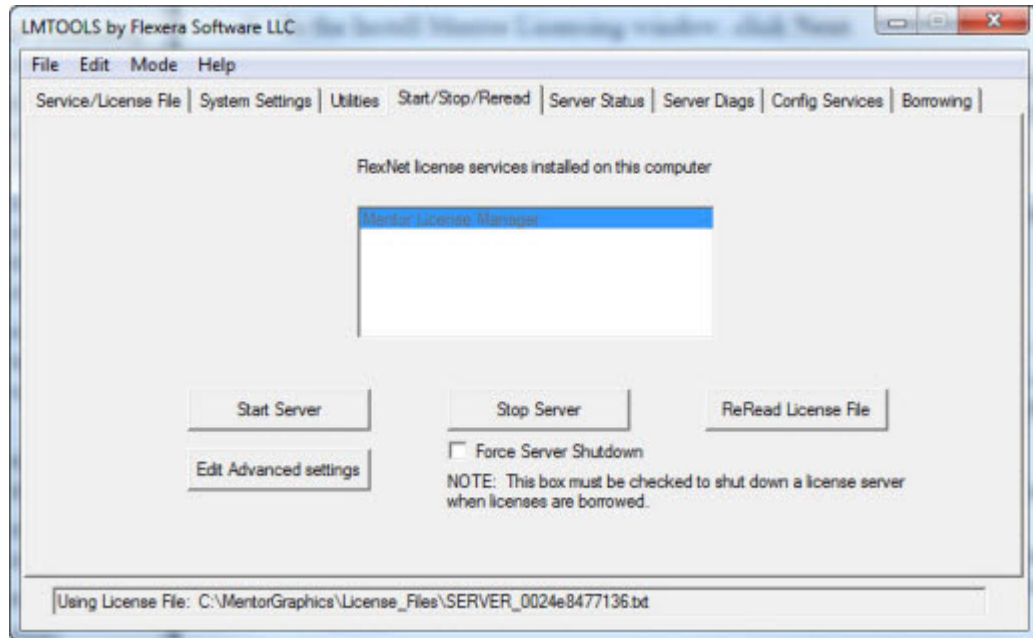
## Procedure

### Note

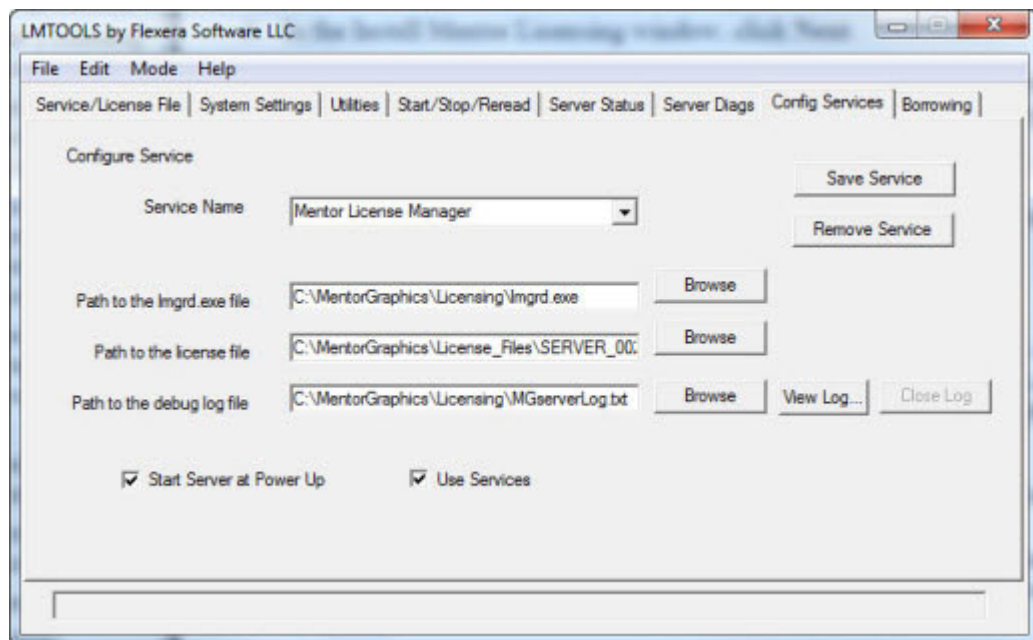
 If you are uninstalling licensing on a client workstation, only perform Step 5.

1. Choose **Start > All Programs > Mentor Graphics Licensing > Imtools**. The LMTOOLS window opens.
2. Shut down the license manager.
  - a. Click the **Start/Stop/Reread** tab.





- b. Select the service you want to stop and click the **Stop Server** button.
3. Remove the license service.
  - a. Click the **Config Services** tab.



- b. Select the service you want to remove and click the **Remove Service** button.
4. Close the LMTOOLS window.
5. Remove the licensing software.

- a. Choose **Start > All Programs > Mentor Graphics Licensing > Remove Licensing**.
- b. Type Y and press the Enter key.

## Related Topics

[LMTOOLS](#)

# How to Start a License Server Automatically on Windows

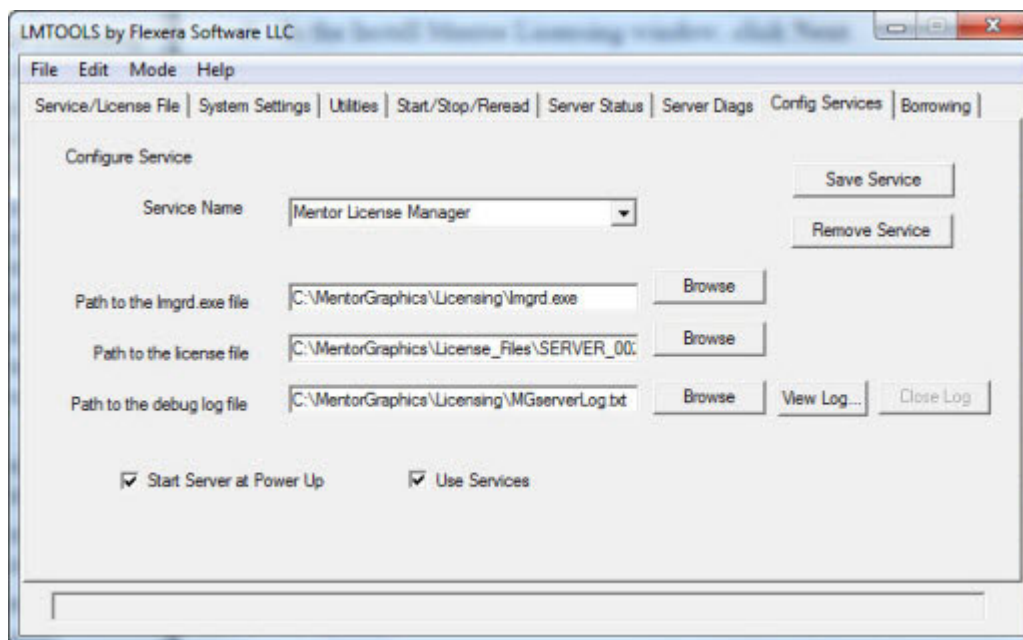
If you use MIP, a license server starts automatically when the system reboots. If you do not use MIP, you can set the license server to start automatically with LMTOOLS.

## Prerequisites

- You have an account with administrator privileges.

## Procedure

1. Choose **Start > All Programs > lmtools**. The LMTOOLS window opens.
2. On the **Config Services** tab, select the Start Server at Power Up and Use Services check boxes.



3. Click the **Save Service** button and then click **Yes** to save the service settings.

## Related Topics

[LMTOOLS](#)

# Chapter 3

## Environment Variables for Licensing

---

You can control your licensing environment with environment variables, most of which are optional. Either the LM\_LICENSE\_FILE or MGLS\_LICENSE\_FILE environment variable is required.

The applications and utilities use the LM\_LICENSE\_FILE FlexNet environment variable or the MGLS\_LICENSE\_FILE Mentor environment variable to determine the location of the license files or servers. For Mentor applications, the MGLS\_LICENSE\_FILE setting overrides the LM\_LICENSE\_FILE setting.

---

### Note



To add, delete, or edit environment variables on Windows systems, refer to “[How to set an environment variable on Windows](#)” on Support Center.

---

**Table 3-1. Environment Variable Summary**

| Environment Variable               | Description   |
|------------------------------------|---|
| <a href="#">LM_LICENSE_FILE</a>    | LM_LICENSE_FILE is the FlexNet client environment variable and, if MGLS_LICENSE_FILE is not set, is the first place Mentor applications check to determine the license file or server location.                           |
| <a href="#">MGLS_LICENSE_FILE</a>  | MGLS_LICENSE_FILE is a Mentor-specific client environment variable and is the first environment variable Mentor applications check to determine the license file or server location.                                      |
| <a href="#">MGLS_CONN_TIMEOUT</a>  | Use the MGLS_CONN_TIMEOUT environment variable to specify a timeout value, in seconds, for a TCP/IP connection between an application and the license server. Choose a value based on the network load and configuration. |
| <a href="#">MGLS_DEBUG_LOG_DIR</a> | Use the MGLS_DEBUG_LOG_DIR environment variable to enable Mentor licensing system debugging. Setting this variable creates a client debug log file.   |
| <a href="#">MGLS_EXP_WARN_DAYS</a> | Use the MGLS_EXP_WARN_DAYS environment variable to set the number of days before the license expiration date that warning messages are displayed to stderr.   |

**Table 3-1. Environment Variable Summary (cont.)**

| Environment Variable  | Description   |
|---|---|
| <a href="#">MGLS_HOME</a>   | Use the MGLS_HOME environment variable to define the location of the licensing software.  |
| <a href="#">MGLS_INCLUDE_LICENSES</a> and <a href="#">MGLS_EXCLUDE_LICENSES</a> | Use the MGLS_INCLUDE_LICENSES and MGLS_EXCLUDE_LICENSES client-side environment variables to control access to certain licenses.              |
| <a href="#">MGLS_LICENSE_SEARCH</a>   | Use the MGLS_LICENSE_SEARCH environment variable to change the license search behavior to emulate the default behavior on UNIX.               |
| <a href="#">MGLS_LICENSE_SOURCE</a>   | Use the MGLS_LICENSE_SOURCE environment variable to specify the order of the features that licensing considers in license check-out requests. |

## LM\_LICENSE\_FILE

OS: Linux/UNIX, Windows

LM\_LICENSE\_FILE is the FlexNet client environment variable and, if MGLS\_LICENSE\_FILE is not set, is the first place Mentor applications check to determine the license file or server location.

---

### Caution



Make sure you specify the server information correctly; pointing to a nonexistent server or unresolvable host name negatively impacts performance.

---

LM\_LICENSE\_FILE operates the same as MGLS\_LICENSE\_FILE, so refer to [MGLS\\_LICENSE\\_FILE](#) for details.


## MGLS\_LICENSE\_FILE

OS: Linux/UNIX, Windows

MGLS\_LICENSE\_FILE is a Mentor-specific client environment variable and is the first environment variable Mentor applications check to determine the license file or server location.


We encourage you to use MGLS\_LICENSE\_FILE for optimum performance of Mentor applications. Using MGLS\_LICENSE\_FILE to point to licenses for your Mentor tools speeds the license check-out process and other licensing-related activity.

### Caution

 Make sure you specify the server information correctly; pointing to a nonexistent server or unresolvable host name negatively impacts performance.

If you have multiple products from different vendors that use FlexNet Licensing, using both the MGLS\_LICENSE\_FILE and LM\_LICENSE\_FILE environment variables enable Mentor-licensed products to obtain their licenses from MGLS\_LICENSE\_FILE and products from other vendors to obtain their licenses from LM\_LICENSE\_FILE.

### Note

 Standard FlexNet Licensing commands such as `lmutil`, `lmstat`, and `lmrread` do not recognize the MGLS\_LICENSE\_FILE variable, so use the `-c` switch with those commands to explicitly point to the license location. For example:

```
lmutil lmstat -a -c port@host:path_to_license_file
```

The description in this section also pertains to the LM\_LICENSE\_FILE environment variable, so you can substitute “LM\_LICENSE\_FILE” wherever you see “MGLS\_LICENSE\_FILE.”

### MGLS\_LICENSE\_FILE Syntax

On Linux/UNIX, use a colon (:) to separate independent license sources. For example:

```
license_file_pathname1:license_file_pathnameN:port@host1:port@hostN
```

On Windows, use a semicolon (;) to separate independent license sources. For example:

```
license_file_pathname1;license_file_pathnameN;port@host1;port@hostN
```

When you define multiple servers, the application utilizes the license servers in the order they appear in the license file variable. For example, if you set your environment variable to

```
license_server1:license_server2
```

the application requests a license from `license_server1` and, if that license is in use or not available, the application requests the license from `license_server2`.

### MGLS\_LICENSE\_FILE Length

The total length of the MGLS\_LICENSE\_FILE is dynamic and depends on the environment. In particular, the number of available file descriptors affects the number of license server or file entries. The basic licensing technology, FlexNet, limits each `port@host` entry to 1024 characters and a license path entry to 4096 characters. Your environment may have additional constraints.

### Method to Reference a License Server

You can reference a license server by using the `port@host` syntax. This method enables you to contact a license server without needing to know the pathname to the license file that the license server is using.

The following example references an independent server.

```
MGLS_LICENSE_FILE=1717@host
```

The following example indicates the path to a group of redundant servers.

```
MGLS_LICENSE_FILE=1717@host1,1717@host2,1717@host3
```

### Method to Reference a License File (Mobile Compute)

To reference a license file, use the pathname to the license file.

The following example indicates the pathname to the license file.

```
MGLS_LICENSE_FILE=C:\MentorGraphics\License_Files\license.dat
```

### Method to Reference Multiple Server Configurations

To point to multiple server configurations, combine any of the syntax in a colon-separated list for Linux/UNIX or a semicolon-separated list for Windows.

The following example points to multiple server configurations.

Linux/UNIX:

```
MGLS_LICENSE_FILE=1717@independent:1717@redundant1,1717@redundant2,  
1717@redundant3
```

Windows:

```
MGLS_LICENSE_FILE=1717@independent;1717@redundant1,1717@redundant2,  
1717@redundant3
```

## Related Topics

[LM\\_LICENSE\\_FILE](#)

# MGLS\_CONN\_TIMEOUT

OS: Linux/UNIX, Windows

Use the MGLS\_CONN\_TIMEOUT environment variable to specify a timeout value, in seconds, for a TCP/IP connection between an application and the license server. Choose a value based on the network load and configuration.

If you have a heavily loaded or very large network, set MGLS\_CONN\_TIMEOUT to a relatively large value, one minute for example. This allows time for connection retries so that the application can connect with the license daemon at invocation.

- Maximum value = 600 seconds (10 minutes)
- Default value = 10 seconds

## MGLS\_DEBUG\_LOG\_DIR

OS: Linux/UNIX, Windows

Use the MGLS\_DEBUG\_LOG\_DIR environment variable to enable Mentor licensing system debugging. Setting this variable creates a client debug log file.

The client debug log file helps you troubleshoot basic licensing problems with client applications such as improperly installed licensing software, license files that cannot be located, or license files that are defined in multiple locations. The client debug log file does not contain any output from the server-side processes lmgrd or mgld.

---

### Note



Setting the MGLS\_DEBUG\_LOG\_DIR environment variable negatively impacts performance, so only turn on this variable for debugging purposes. Unset the MGLS\_DEBUG\_LOG\_DIR environment variable when troubleshooting is complete.

---

The client debug log file contains information about the following:

- Licensing environment variables
- Licensing software files (location and version)
- License file search paths
- Licensing errors

Set the MGLS\_DEBUG\_LOG\_DIR environment variable to a directory where you want the client debug log files written. The directory must exist and be writable by the user invoking the client application, or no log file is generated.

The client debug log file is a text file with the process ID of the application embedded in the log file name (for example: *debug\_log.7852.txt*). Each invocation of the application creates a new log file and does not overwrite nor append existing log files.

## MGLS\_EXP\_WARN\_DAYS

OS: Linux/UNIX

Use the MGLS\_EXP\_WARN\_DAYS environment variable to set the number of days before the license expiration date that warning messages are displayed to stderr.

- Maximum value = 90 days
- Minimum value = 1 day
- Default value = 15 days (Your site may require earlier notification.)

**Note**



Setting the value to zero (0) returns the setting to the default value.

---

## MGLS\_HOME

OS: Linux/UNIX

Use the MGLS\_HOME environment variable to define the location of the licensing software.

Set MGLS\_HOME to the MGLS directory within your application tree. This enables you to run the MGLS licensing utilities (mgls\_ok, for example). You do not need to set MGLS\_HOME to run Mentor applications.

### Related Topics

[mgls\\_ok](#)

## MGLS\_INCLUDE\_LICENSES and MGLS\_EXCLUDE\_LICENSES

OS: Linux/UNIX, Windows

Use the MGLS\_INCLUDE\_LICENSES and MGLS\_EXCLUDE\_LICENSES client-side environment variables to control access to certain licenses.

These environment variables are similar to the FlexNet options file INCLUDE and EXCLUDE functionality, except that the restriction occurs on the client side instead of the server side.

**Caution**



Do not mix the use of client-side variables with server-side restrictions (the FlexNet options file), at least for the same feature name. This could result in failure to check out the required licenses.

---

While the MGLS\_INCLUDE\_LICENSES and MGLS\_EXCLUDE\_LICENSES environment variables are useful for controlling whether users can access certain licenses (for example: expadvpack\_c), you should be careful when setting these variables. You could unknowingly restrict your machine from accessing any licenses. When possible, set these variables inside a script that invokes the application (for example: Xpeditio<sup>®</sup> xPCB Layout) so that the restriction does not impact all Mentor applications.

### Example 1

The following example specifies to request only the expadvpack\_c license.



#### Linux/UNIX:


```
#!/bin/sh
MGLS_INCLUDE_LICENSES=expadvpack_c
export MGLS_INCLUDE_LICENSES
$SDD_HOME/common/linux/bin/ExpeditionPCB
```

#### Windows:

```
SET MGLS_INCLUDE_LICENSES=expadvpack_c
START %SDD_HOME%\common\win32\bin\ExpeditionPCB.exe
```

---

#### Caution

 When you set the MGLS\_INCLUDE\_LICENSES environment variable, only the specified feature names can be requested. Set MGLS\_INCLUDE\_LICENSES inside a script instead of an environment variable so that the value does not impact all Mentor applications.

---

#### Example 2

##### Linux/UNIX:

The following example specifies to invoke xPCB Layout and have the tool ignore (exclude) the expadvpack\_c license.

```
#!/bin/sh
MGLS_EXCLUDE_LICENSES=expadvpack_c
export MGLS_EXCLUDE_LICENSES
$SDD_HOME/common/linux/bin/ExpeditionPCB
```


##### Windows:

The following example has a mix of atomic xPCB Layout licenses (wgpcb, wgascentl2, wgascentlx, and so on), as well as the expadvpack\_c composite. The example specifies to ignore the expadvpack\_c composite and request the atomic licenses instead.

```
SET MGLS_EXCLUDE_LICENSES=expadvpack_c
START %SDD_HOME%\common\win32\bin\ExpeditionPCB.exe
```

---

#### Caution

 When you set the MGLS\_EXCLUDE\_LICENSES environment variable, the specified feature names cannot be checked out. Set MGLS\_EXCLUDE\_LICENSES inside a script instead of an environment variable so that the value does not impact all Mentor applications.

---

#### Example 3

##### Linux/UNIX:

The following example specifies to never request an expadvpack\_c or expadvtech\_c license.

```
#!/bin/sh
MGLS_EXCLUDE_LICENSES=expadvpack_c:expadvtech_c
export MGLS_EXCLUDE_LICENSES
$SDD_HOME/common/linux/bin/ExpeditionPCB
```

Windows:

The following example specifies to never request a padses\_c, padsls\_c or dxdesigner040\_c license.

```
SET MGLS_EXCLUDE_LICENSES=padses_c;padsls_c;dxdesigner040_c
START %SDD_HOME%\common\win32\bin\ExpeditionPCB.exe
```

---

**Note**



When including a list of features, use the colon (Linux/UNIX) or semi-colon (Windows) as the delimiter.

---

## MGLS\_LICENSE\_SEARCH

OS: Windows

Use the MGLS\_LICENSE\_SEARCH environment variable to change the license search behavior to emulate the default behavior on UNIX.

When set to 1, this environment variable, which is only applicable to PCLS, restricts Mentor applications from searching for licenses beyond the first defined license location.

---

**Caution**



Setting MGLS\_LICENSE\_SEARCH limits the license search for *all* Mentor applications, so make sure you do not want to search other defined license locations. Setting MGLS\_LICENSE\_SEARCH is not normally necessary.

---

Mentor applications on Windows search for the following license locations.

| Sequence | Type                 | Location  |
|----------|----------------------|---|
| 1        | environment variable | MGLS_LICENSE_FILE   |
| 2        | registry value       | <i>HKEY_LOCAL_MACHINE\SOFTWARE\MentorGraphics\Licensing\MGLS_LICENSE_FILE</i> |
| 3        | environment variable | LM_LICENSE_FILE   |
| 4        | registry value       | <i>HKEY_LOCAL_MACHINE\SOFTWARE\FLEXLM License Manager\LM_LICENSE_FILE</i>     |

| Sequence | Type | Location                     |
|----------|------|------------------------------|
| 5        | file | <i>C:\flexlm\license.dat</i> |

By default, Windows licensing searches through all license locations until either a license is obtained or no licenses are found.

### Example

First you set MGLS\_LICENSE\_FILE and LM\_LICENSE\_FILE and then set

```
MGLS_LICENSE_SEARCH=1
```

The search stops at the MGLS\_LICENSE\_FILE environment variable and searches no further; the search does not continue to the LM\_LICENSE\_FILE environment variable. If the MGLS\_LICENSE\_FILE environment variable contains multiple servers or paths, all are searched.

### Related Topics

[MGLS\\_LICENSE\\_FILE](#)

[LM\\_LICENSE\\_FILE](#)

## MGLS\_LICENSE\_SOURCE

OS: Linux/UNIX, Windows

Use the MGLS\_LICENSE\_SOURCE environment variable to specify the order of the features that licensing considers in license check-out requests.

For example, you can use MGLS\_LICENSE\_SOURCE to ensure that a particular license is consumed before any other license. Colons (in Linux/UNIX) and semicolons (in Windows) separate the feature names in the list, and licensing searches through these names from left to right.

### Examples

The following Linux/UNIX example specifies for the viewdraw040 license and then the padses\_c license to be consumed before any other license.

```
MGLS_LICENSE_SOURCE=viewdraw040:padses_c:ANY
```

The following Windows example specifies for the padses\_c license to be consumed before any other license.

```
MGLS_LICENSE_SOURCE=padses_c;ANY
```




# Chapter 4

## Troubleshooting Licensing Issues

---

If you experience licensing problems, first check that the license is available and that the environment variables are set correctly. Mentor provides additional help through various troubleshooting tools.

### Caution

 Changing your system's date and time may prevent Mentor applications from checking out a license.

---

|   |           |
|---|-----------|
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| <b>Check License Availability on Windows .....</b>                                | <b>45</b> |
| <b>Check the License Server Status .....</b>                                      | <b>46</b> |
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| <b>Debug the Client Licensing Environment With the Client Debug Log File.....</b> | <b>47</b> |
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## Check License Availability on Linux/UNIX

Make sure you have the required license in a license file available for use. On Linux/UNIX systems, running the `mgl_s_ok` utility attempts to check out and check back in a specified license and then reports success or failure.

For example:

```
$MGLS_HOME/bin/mgl_s_ok license_name
```

### Related Topics

[mgl\\_s\\_ok](#)

## Check License Availability on Windows

Make sure you have the required license in a license file available for use. On Windows workstations, running the `pcls_ok` utility attempts to check out and check back in a specified license and reports any problems.

## Related Topics

[pcls\\_ok](#)

# Check the License Server Status

Run a status report to see server, daemon, and product usage.

Issue the following command:

```
lmutil lmstat -a [-c {license_file | port@host}]
```

The lmstat command performs the following actions:

- Checks license usage
- Reports the number of installed and available licenses for the specified product
- Lists all active licenses
- Lists all users of the specified feature
- Checks product availability

---

### Caution



The frequency of lmstat requests and the volume of data each request returns can adversely affect the license server performance.

---

## Related Topics

[lmstat](#)

# Verify That the Environment Variables are Set Correctly

Make sure that the environment variables are set to the correct values. You must set at least the MGLS\_LICENSE\_FILE or LM\_LICENSE\_FILE environment variable.

On Windows, you can use pcls\_ok to check your licensing environment variables.

For details about the required and optional environment variables and their correct settings, refer to “[Environment Variables for Licensing](#)” on page 35.

## Related Topics

[pcls\\_ok](#)

[mgls\\_ok](#)

# Debug the Client Licensing Environment With the Client Debug Log File

Use the client debug log file to troubleshoot basic licensing problems with client applications. The license client creates this log file upon exiting if you have set the MGLS\_DEBUG\_LOG\_DIR environment variable to the path of a writable directory.

## Related Topics

[MGLS\\_DEBUG\\_LOG\\_DIR](#)

## Common Problems and Solutions

You may have problems with starting an application or with the server workstation.

Refer to [Table 4-1](#) for client and [Table 4-2](#) for server troubleshooting suggestions.

**Table 4-1. License Troubleshooting — Client**

| Problem  | Probable Cause  | Solution  |
|--|---|---|
| No license was found for the feature or no such feature exists.<br><br>Security system wasn't properly initialized:<br>License request for <feature_name> feature failed | The MGLS_LICENSE_FILE or LM_LICENSE_FILE environment variable is not set or is not set correctly. | Make sure the MGLS_LICENSE_FILE or LM_LICENSE_FILE environment variable is set properly.  |
|  | The referenced server or license file does not contain the requested license feature.             | Make sure the specified license server contains the requested license feature or that the correct license server or license file is specified in the MGLS_LICENSE_FILE or LM_LICENSE_FILE environment variable. Set the MGLS_DEBUG_LOG_DIR environment variable and examine the client debug log file for more information about licenses that the application is requesting but may not be able to find. |
|  | The specified license file is corrupt or does not exist.  | Verify that the license file exists and test the checkout of the feature name with pcls_ok or mgl_s_ok.   |

**Table 4-1. License Troubleshooting — Client (cont.)**

| Problem   | Probable Cause   | Solution   |
|---|--|--|
| <p>The application cannot connect to the license server.</p> <p>FLEXnet Licensing error: -15,10.<br/>System Error: 10061<br/>"WinSock:<br/>Connection refused</p> | The license server is down.  | Verify that the server is running. Use <code>lmutil lmstat</code> .  |
|   | The network is down or mis-configured.   | Use standard network commands such as <code>ping</code> to check the network.  |
|   | The system does not recognize the host name in the license file.   | Use the <code>ping</code> and <code>nslookup</code> commands to ensure that the host name resolves to the correct IP address. If the network configuration requires a fully qualified domain name, include this on the <code>SERVER</code> line of the license file. |
|   | A firewall is blocking access to the license server.   | Refer to “ <a href="#">Firewall Considerations</a> ” on page 78.   |
|   | The specified port number is incorrect.  | Verify that the port number specified in the <code>MGLS_LICENSE_FILE</code> or <code>LM_LICENSE_FILE</code> environment variable is the same as the port number defined on the <code>SERVER</code> line of the license file.   |
|   | The <code>lmgrd</code> process is running on the license server, but the <code>mgcld</code> process failed to start or has exited. | Check the path to <code>mgcld</code> in the license file and restart the license server.   |



**Table 4-1. License Troubleshooting — Client (cont.)**

| Problem  | Probable Cause  | Solution   |
|--|---|--|
| License file/server does not support this version.   | The version of the license in the license file is older than the version the application requires.  | <p>Make sure the version (YYYY.MM0) on the INCREMENT line of the license file is current.</p> <ol style="list-style-type: none"> <li>1. Set the MGLS_DEBUG_LOG_DIR environment variable and examine the Transaction section of the client debug log file for information about the version of the license(s) the application requires.</li> <li>2. Compare that information with the version of the licenses in the license file.</li> </ol> <p>Check Account Center for your latest license file and, if the license file is not current, contact Mentor for a support renewal quote.</p> |
| Vendor daemon is too old.  | The version of the application being run requires a newer license server (lmgrd/mgclid); one or more license servers specified in the MGLS_LICENSE_FILE or LM_LICENSE_FILE environment variable are not up to date. | Make sure you are running the latest versions of the licensing software on your license server. For details, refer to Knowledge Base article <a href="#">MG66951</a> on Support Center.  |
| Invalid host. The host ID of this system does not match the host ID specified in the license file. | A mismatch exists between the host ID on the INCREMENT line of the license file and the host ID of the system running the application.  | To verify whether the host IDs match, use the lmhostid command on Linux/UNIX and the LMTOOLS utility on Windows. If the host ID does not match the host ID in the license file, contact Mentor to acquire a new license file.  |
|  | The hardware key driver is not installed or the key is not plugged in.  | Install the hardware key driver and make sure the key is plugged in.   |

**Table 4-1. License Troubleshooting — Client (cont.)**

| Problem  | Probable Cause   | Solution  |
|--|--|---|
| Application takes a long time to launch or open a project.   | The MGLS_LICENSE_FILE and/or LM_LICENSE_FILE environment variable includes license servers that are unreachable, not running, or nonexistent.  | Verify that all servers in the list are running and reachable through the network. Remove any entries that do not resolve. Remove duplications between the MGLS_LICENSE_FILE and LM_LICENSE_FILE environment variables.   |
|  | The network between the client and server has high latency, resulting in slow response time or a timeout while waiting for a license.  | Address the high network latency issue between the client and the license server.   |
| When attempting to invoke a Linux/UNIX application, you receive the following error:<br><br>Child communication failure Licensing system communication failure (from: Core/licensing/MGLS_run07) | <p>The license server has exceeded the number of file descriptors available to its operating system. Each license request uses one TCP/IP socket, which, in turn, uses one file descriptor.</p> <p>If the LM_LICENSE_FILE or MGLS_LICENSE_FILE environment variable points to multiple license servers (for example, four), the mgl_async process connects to all four servers, and therefore uses four file descriptors.</p> <p>Each operating system has a limited number of file descriptors; the default in some operating system shells is 64. If several users simultaneously attempt to obtain licenses, and each user connects to multiple file servers, you could reach the file descriptor limit and receive this error.</p> | <p>This problem has two possible solutions:</p> <ul style="list-style-type: none"> <li>• Increase the number of file descriptors available to the operating system. Use the ulimit command to display and adjust the number of available file descriptors.</li> <li>• Reduce the number of servers listed in the LM_LICENSE_FILE or MGLS_LICENSE_FILE environment variable.</li> </ul> <p><b>Note:</b> The occurrence of a child communication failure heavily depends on the network configuration and the number of simultaneous users.</p> |

**Table 4-2. Licensing Troubleshooting — Server**

| Problem  | Probable Cause  | Solution   |
|--|---|--|
| <p>When attempting to start the license server, mgcld returns a message that the server has the wrong host ID.</p> <p><code>Invalid host.</code></p> | You are running the license server on the wrong machine.  | Verify the host ID. On Linux/UNIX, use <code>lmhostid</code> , and on Windows, use <code>LMTOOLS</code> . If the host ID does not match the host ID in the license file, contact Mentor to acquire a new license file. |
|  | The hardware key driver is not installed or the key is not plugged in.  | Install the hardware key driver and make sure the key is plugged in.   |
| <p>Inconsistent encryption code.</p>   | A non-editable field in the license file was modified.  | Do not modify any host ID fields or INCREMENT lines in the license file. You can download a valid copy of your license file from Account Center.   |
|  | The license file was generated incorrectly.   | Contact Mentor.  |
| <p>UNSUPPORTED message appears in the server debug log file along with</p> <p><code>License Server does not support this feature</code></p>          | <p>A client application requests a license, incorrectly assuming the server has the license.</p> <p>The <code>MGLS_LICENSE_FILE</code> or <code>LM_LICENSE_FILE</code> environment variable is set to a license file that is different from the license file the server is using.</p> | Set the <code>MGLS_LICENSE_FILE</code> or <code>LM_LICENSE_FILE</code> environment variable to <code>port@host</code> .  |
| <p>The license server crashes, hangs, or stops serving licenses and complains about file descriptors.</p>  | The license server has run out of system resources.   | Use the <code>ulimit</code> command to display and increase the number of available file descriptors in the license server environment.  |
| <p>When starting a license server, the server debug log file reports</p> <p><code>File not found</code></p>  | The path to <code>mgcld</code> is incorrect.  | Edit the <code>DAEMON</code> line in the license file to point to the correct <code>mgcld</code> path.   |

## Related Topics

[lmhostid](#)

[lmstat](#)

[LMTOOLS](#)

[mgls\\_ok](#)

[pcls\\_ok](#)

[LM\\_LICENSE\\_FILE](#)

[MGLS\\_LICENSE\\_FILE](#)

[MGLS\\_DEBUG\\_LOG\\_DIR](#)

[License File Format](#)

## Contact Mentor Support

If you still need help solving your licensing problem, other resources are available.

If your site is currently under support, you can search technical solutions on Support Center or open a Service Request online at <https://support.mentor.com/en/service-request/open>.

If your site is under a current support contract, but you do not have a Support Center login, register today at <https://support.mentor.com/register>.

For online licensing support, access the [Request Help](#) page on Account Center.

# Appendix A

## Utilities for Licensing

Mentor and FlexNet licensing utilities provide the ability to manage your licenses and license servers.

|                                 |           |
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## Syntax Conventions

The Syntax section of each utility's command description uses conventions that help clarify the command's usage.

**Table A-1. Conventions for Command-Line Syntax**

| Convention      | Example  | Usage   |
|-----------------|--|---|
| Regular font    | lmdown -all  | Standard text indicates a literal command or argument that you enter. |
| <b>Boldface</b> | mgls_ok <i>feature_name</i>                              | Indicates a required argument.  |
| <i>Italic</i>   | -vendor <i>vendor_daemon</i>                             | Indicates a user-supplied argument.                                   |
| [ ]             | lmdown [-force]  | Brackets enclose optional arguments. Do not enter the brackets.       |
| { }             | lmreread [-c { <i>license_file</i>   <i>port@host</i> }] | Braces enclose arguments to show grouping. Do not enter the braces.   |

**Table A-1. Conventions for Command-Line Syntax (cont.)**

| Convention | Example   | Usage  |
|------------|---|--|
|            | lmstat [-c { <i>license_file</i>  <br><i>port@host</i> }] | The vertical bar indicates an either/or choice between items. Do not include the bar in the command. |

## Utilities

Mentor provides command-line and graphical user interface (GUI) utilities for Linux/UNIX and Windows systems.

This section provides, in alphabetical order, reference information for Mentor and *some* FlexNet command-line and GUI licensing utilities. The beginning of each utility description shows the applicable operating system.


On Linux/UNIX, find the Mentor commands in the `.../mgls/bin` directory in the application tree or in the `mgls_<version>.<vco>/bin` directory in the licensing tree. For example: `/usr1/mgls_v9-13_5-2-0.aol/bin`.

On Windows, access the GUI utilities through the **Start** menu, and find the command-line utilities in the `C:\MentorGraphics\Licensing` directory.

For detailed information about the FlexNet Licensing utilities, refer to the *FlexNet Publisher License Administration Guide* published by Flexera Software.

---

### Note

 Mentor Standard Licensing currently does not support the `lmadmin` command. Use the commands listed in this appendix to manage your license server, and disregard the `lmadmin` documentation in the *FlexNet Publisher License Administration Guide*.

---

**Table A-2. Utility Summary**

| Utility                  | Description   |
|--------------------------|---|
| <a href="#">lmdown</a>   | (FlexNet) Shuts down selected license daemons on all systems in the license file list. This is useful when you need to make changes or updates to the licensing software.   |
| <a href="#">lmgrd</a>    | (FlexNet) Starts a license server. <code>lmgrd</code> is the main license daemon program for FlexNet Licensing and handles requests from the end user's applications.   |
| <a href="#">lmhostid</a> | (FlexNet) Reports the host identification (host ID) number of a system.   |
| <a href="#">lmreread</a> | (FlexNet) Tells the license daemon to reread the license file and start any new vendor daemons that have been added. This command is useful for adding new licenses or for picking up simple changes to the options file such as defining a new <code>LM_PROJECT</code> . |
| <a href="#">lmstat</a>   | (FlexNet) Reports the status of all network licensing activities, including license files, daemons that are running, users of individual features, and users of features served by a specific vendor daemon.  |

**Table A-2. Utility Summary (cont.)**

| Utility                    | Description  |
|----------------------------|--|
| <a href="#">LMTOOLS</a>    | (FlexNet) Starts, stops, and configures FlexNet license servers; retrieves system information, including host IDs; and obtains server status. While LMTOOLS performs other functions, these are the most commonly used.  |
| <a href="#">mgls_admin</a> | (MGLS) Displays version information for the MGLS environment.  |
| <a href="#">mgls_ok</a>    | (MGLS/PCLS) Checks out and checks in a specified feature and reports success or failure.   |
| <a href="#">pcls_ok</a>    | (PCLS) Checks out and checks in a specified license and reports any problems. This application, which is useful for verifying the license file, reports the version of the licensing software and displays the environment and registry settings for MGLS_LICENSE_FILE and LM_LICENSE_FILE and for the default location <i>C:\flexlm\license.dat</i> . |



# Imdown

OS: Linux/UNIX, Windows

(FlexNet) Shuts down selected license daemons on all systems in the license file list. This is useful when you need to make changes or updates to the licensing software.

---

## Caution



Using the `Imdown` command shuts down the specified license server and causes users to lose their licenses.

---

## Syntax

```
lmutil Imdown [-c {license_file | port@host}] [-vendor vendor_daemon] [-q] [-all] [-force] [-help]
```

## Arguments

- `-c {license_file | port@host}`  
Uses the specified license file, which is the full path to the license file, or uses the specified license server port (*port@host*). We recommend that you always specify the `-c` switch. If you specify more than one component, you must separate each with a colon in Linux/UNIX or a semicolon in Windows.
- `-vendor [vendor_daemon]`  
Shuts down only the specified vendor daemon. The `lmgrd` daemon continues running.
- `-q`  
Prevents issuing a prompt or printing a header.
- `-all`  
Shuts down all servers if multiple servers are specified. The `-q` argument is implied with `-all`.
- `-force`  
If licenses are borrowed, restricts `Imdown` to run only from the system where the license server is running.

---

## Note



Mentor's implementation of FlexNet does not support license borrowing.

---

- `-help`  
Displays usage information and exits.


## Description

The `Imdown` command sends a message to every license daemon the `LM_LICENSE_FILE` environment variable points to requesting them to shut down. The license daemons write their last messages to the log file, close the file, and exit. All licenses that the daemons dispensed are

rescinded. Therefore, the next time a client program attempts to verify the license, the license will not be valid.

---

### Note

 Mentor recommends that you use `lmdown` or `LMTOOLS` to stop a license server. However, if `lmgrd` or `mgcld` fails to exit, use the `kill -9` command on Linux/UNIX systems or use the Task Manager to kill the processes on Windows systems.

---

You can use the `lmdown` command to shut down license servers configured for three-server redundancy. The servers shut down after a one-minute delay. To shut down only one of these license servers, you must shut down both the `lmgrd` and vendor daemon processes on that license server.

## Examples

The following example uses the *license.txt* license file to shut down the license daemons.

### **lmutil lmdown -c license.txt**

```
lmdown - Copyright (c) 1989-2013 by Flexera Software LLC. All Rights Reserved.
```

```
Port@Host      Vendors
1) 1700@mgcsrcvr mgcld

Are you sure (y/n)? y
1 FLEXnet License Server shut down
```

## Related Topics

[LMTOOLS](#)

# Imgrd

OS: Linux/UNIX, Windows

(FlexNet) Starts a license server. Imgrd is the main license daemon program for FlexNet Licensing and handles requests from the end user's applications.

## Syntax

```
Imgrd [-c license_file] [-l [+] debug_log_path] [-2 -p] [-local] [-x lmdown] [-x lmremove] [-z] [-v] [-help]
```

## Arguments

- **-c *license\_file***  
Uses the specified license file, which is the full path to the license file. If you specify more than one license file, you must separate each with a colon in Linux/UNIX or a semicolon in Windows.
- **-l [+] *debug\_log\_path***  
Writes debugging information to the specified server debug log file. This option uses the letter l. The *debug\_log\_path* is the full path to the server debug log file. To append the logging entries, prepend the *debug\_log\_path* with a plus (+) sign.
- **-2 -p**  
Allows only a FlexNet Licensing administrator who is root by default to use the lmdown, lmread, or lmremove commands. If a UNIX group called lmadmin exists, only members of that group can use the commands. The user root must be a member of the lmadmin group to use the commands. Using this option prevents Windows users from shutting down the license server with the lmdown command.
- **-local**  
Restricts lmdown to run from the same system as Imgrd.
- **-x lmdown**  
Disables the lmdown command. If lmdown is disabled, you must stop Imgrd by issuing the **kill pid** command on Linux/UNIX or by pressing Ctrl-Alt-Del on Windows. You also must stop the Imgrd and vendor daemon processes. On Linux/UNIX, do not use the -9 option with the kill command.
- **-x lmremove**  
Disables the lmremove command.
- **-z**  
(Windows only.) Runs Imgrd in the foreground. The machine displays separate windows for Imgrd and each vendor daemon. If you use the -l *debug\_log\_path* option, no windows are used.

- -v  
Prints Imgrd's version number and copyright and then exits.
- -help  
Displays usage information and exits.

## Description

The Imgrd command searches for a license file that contains information about vendors and features and starts a license server. We recommend that you do not run license servers as root.

## Examples

The following example uses the *license.txt* license file to start the license server and writes the debugging information to the *debug.log* file.

```
Imgrd -c license.txt -l debug.log
```

## Related Topics

[lmdown](#)

# Imhostid

OS: Linux/UNIX, Windows

(FlexNet) Reports the host identification (host ID) number of a system.

## Syntax

```
lmutil Imhostid [-n] [type] [-utf8]
```

## Arguments

- **-n**  
Returns as a string only the host ID itself, which is appropriate to use with HOSTID= in the license file. The switch suppresses the header text.
- ***type***  
Specifies the host ID type. The default is the host ID for the current platform.  
Valid host ID types are the following:
  - **-ether** — Ethernet address.
  - **-flexid** — Parallel or USB FLEXid hardware key identification. This applies only to platforms that support FLEXid hardware keys.
- **-utf8**  
Returns the host ID as a UTF-8 encoded string rather than as an ASCII string. Use this option if your host ID contains characters other than ASCII A through Z, a through z, or 0 through 9. To view a correct representation of the resulting host ID, use a text editor program that can display UTF-8 encoded strings.

## Examples

The following requests the host identification number of the system and shows an example of the type of output you receive.

### **lmutil Imhostid**

```
lmutil Imhostid - Copyright (c) 1989-2013 by Flexera Software LLCX. All  
Rights Reserved.  
The FlexNet host ID of this machine is "0020afe6112a"
```

## Imreread

OS: Linux/UNIX, Windows

(FlexNet) Tells the license daemon to reread the license file and start any new vendor daemons that have been added. This command is useful for adding new licenses or for picking up simple changes to the options file such as defining a new LM\_PROJECT.

---

### Caution



If you replace the license file or make changes to the options file that involve restricting access to licenses, we recommend that you use the `lmdown` command and then restart the license server instead of using the `Imreread` command. Scheduling a restart helps mitigate problems that may result when you remove access for a user or host that already has the license checked out.

---

## Syntax

```
lmutil Imreread [-c {license_file | port@host}] [-vendor vendor] [-all]
```

## Arguments

- `-c {license_file | port@host}`  
Uses the specified license file, which is the full path to the license file, or uses the license server port (*port@host*). If you specify more than one component, you must separate each with a colon in Linux/UNIX or a semicolon in Windows.
- `-vendor vendor`  
Specifies only one specific vendor daemon to reread the license file. Use the `lmgrd` command to restart the vendor daemon, if necessary.
- `-all`  
Instructs all instances of `lmgrd` to reread the license file if more than one `lmgrd` is specified.

## Description

The `Imreread` command enables the system manager to tell the license daemon to reread the license file. If data in the license file has changed, the new data can be loaded into the license daemon without its needing to be shut down and restarted.

The license daemon always rereads the original loaded file. If you need to change the path to the license file, you must shut down and then restart the daemon with the new license file path.

You cannot use `Imreread` if the server name or port numbers have been changed in the license file. For these changes to take effect, you must shut down and restart the daemon.

If you specify a vendor daemon name, only that vendor's licenses and options file are reread.

## Examples

The following example tells the license daemon to reread the *license.txt* license file and shows an example of the command results.

### **Imutil Imreread -c license.txt**

```
lmutil lmreeread - Copyright (c) 1989-2013 by Flexera Software LLC. All  
Rights Reserved.  
lmreeread successful
```

## Related Topics

[lmgrd](#)

## Imstat

OS: Linux/UNIX, Windows

(FlexNet) Reports the status of all network licensing activities, including license files, daemons that are running, users of individual features, and users of features served by a specific vendor daemon.

### Syntax

```
lmutil Imstat [-a] [-c {license_file | port@host}] [-f [feature_name]] [-i [feature_name]] [-S  
[DAEMON]] [-s [server_name]] [-t timeout_value] [-v] [-help]
```

### Arguments

- **-a**  
Displays all information.
- **-c {*license\_file* | *port@host*}**  
Uses the specified license file, which is the full path to the license file, or uses the license server port (*port@host*). If you specify more than one component, you must separate each with a colon in Linux/UNIX or a semicolon in Windows.
- **-f [*feature\_name*]**  
Displays all users of the specified feature. If you do not specify a feature, the command displays all usage information for all features.
- **-i [*feature\_name*]**  
Displays information from the INCREMENT line for the specified feature. If you do not specify a feature, the command displays information for all features.
- **-S [*DAEMON*]**  
Lists all users of the specified daemon's features. If you do not specify a daemon, the command lists all users of all daemon's features.
- **-s [*server\_name*]**  
Displays the status of all license files on the specified server. If you do not specify a server name, the command displays this status for all servers.
- **-t *timeout\_value***  
Sets the connection timeout to the specified value. This limits the amount of time Imstat spends attempting to connect to the specified server(s).
- **-v**  
Displays the FLEXlm version, revision, and patch.
- **-help**  
Displays the usage information.



## Description

The **lmstat** command provides information about the status of server systems, vendor daemons, or features and displays information received from the license server. The **lmstat** command does not provide information about the following:

- Unserved licenses
- Queued users
- Licenses shared due to duplicate grouping

To report on an uncounted license, the license must be added to a served license file and the application must be directed to use the license server for that license file (via *@host, port@host* or *USE\_SERVER*).

## Examples

The following example shows the results of using **lmstat** without any arguments; the system returns only the status and version information.

### **lmutil lmstat**

```
lmstat - Copyright (c) 1989-2013 by Flexera Software LLC. All Rights Reserved.
Flexible License Manager status on Fri 06/05/2015 10:39
License server status: 1700@mgcsrvr
  License file(s) on mgcsrvr: /usr1/mgc/mgc.licenses:

mgcsrvr: license server UP (MASTER) v11.11
Vendor daemon status (on mgcsrvr):
  mgcld: UP v11.11
```

The following example shows the results of using **lmstat** to request a list of all users of the **calibredrc** feature.

### **lmutil lmstat -f calibredrc**

```
lmstat - Copyright (c) 1989-2013 by Flexera Software LLC. All Rights Reserved.
Flexible License Manager status on Fri 06/05/2015 10:42
Users of calibredrc: (Total of 2 licenses issued; Total of 1 license in use)
  "calibredrc" v2014.08, vendor: mgcld
  floating license
    macd myhost myhost (v2014.08) (mgcsrvr/1700 102), start Fri 06/05
10:42
```

The following example shows the results of using **lmstat** to request the status of all network licensing activities.

### **Caution**



Be aware that **lmstat -a** generates a large amount of network activity.

### **Imutil Imstat -a**

```
Imstat - Copyright (c) 1989-2013 by Flexera Software LLC. All Rights Reserved.
Flexible License Manager status on Fri 06/05/2015 10:45
License server status: 1700@mgcsrvr
  License file(s) on mgcsrvr: /usr1/mgc/mgc.licenses:
mgcsrvr: license server UP (MASTER) v11.11
Vendor daemon status (on mgcsrvr):
  mgcld: UP v11.11
Feature usage info:
Users of calibredrc: (Total of 2 licenses issued; Total of 1 license in use)
  "calibredrc" v2014.08, vendor: mgcld
  floating license
    macd myhost myhost (v2014.08) (mgcsrvr/1700 102), start Fri 06/05
10:42
Users of msimhdlmix: (Total of 2 licenses issued; Total of 0 licenses in use)
```

# LMTOOLS

OS: Windows

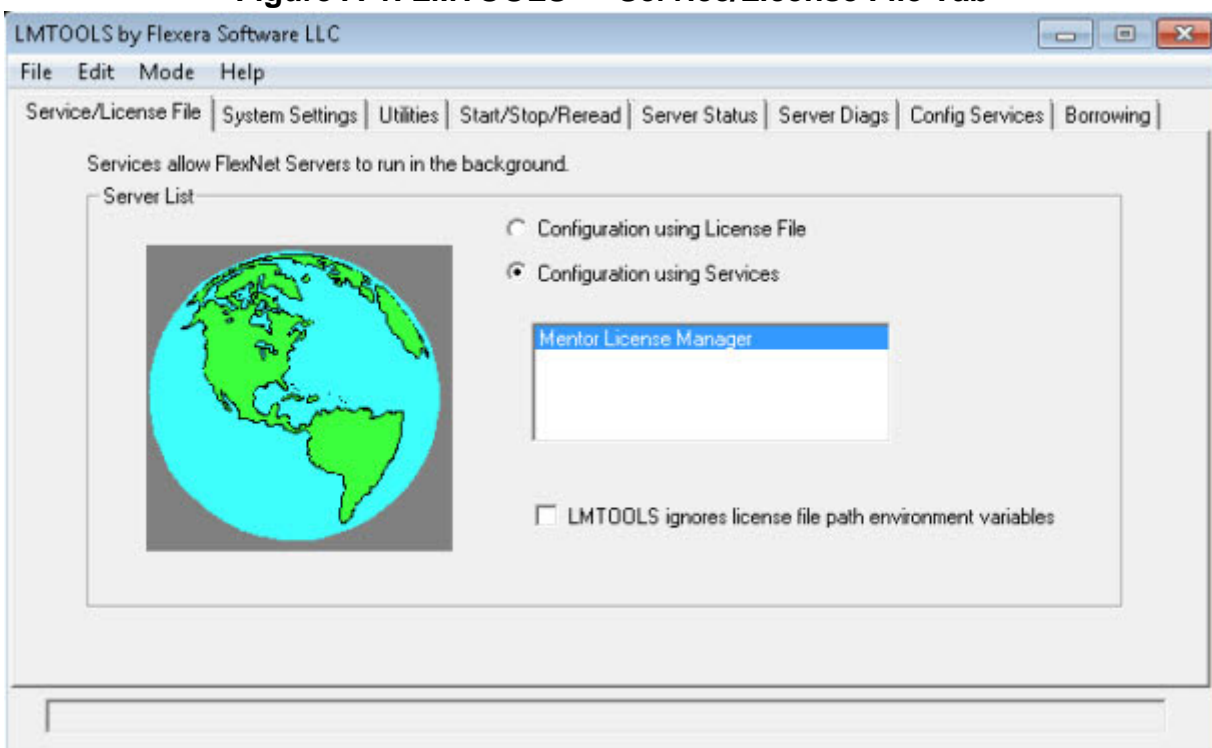
To access: **Start > All Programs > Mentor Graphics Licensing > lmtools**

(FlexNet) Starts, stops, and configures FlexNet license servers; retrieves system information, including host IDs; and obtains server status. While LMTOOLS performs other functions, these are the most commonly used.

## Description

LMTOOLS opens in the **Service/License File** tab. Select the “Configuration using Services” option.

**Figure A-1. LMTOOLS — Service/License File Tab**



This section describes the most commonly used tabs:

- [System Settings tab](#)
- [Start/Stop/Reread tab](#)
- [Config Services tab](#)

### Note



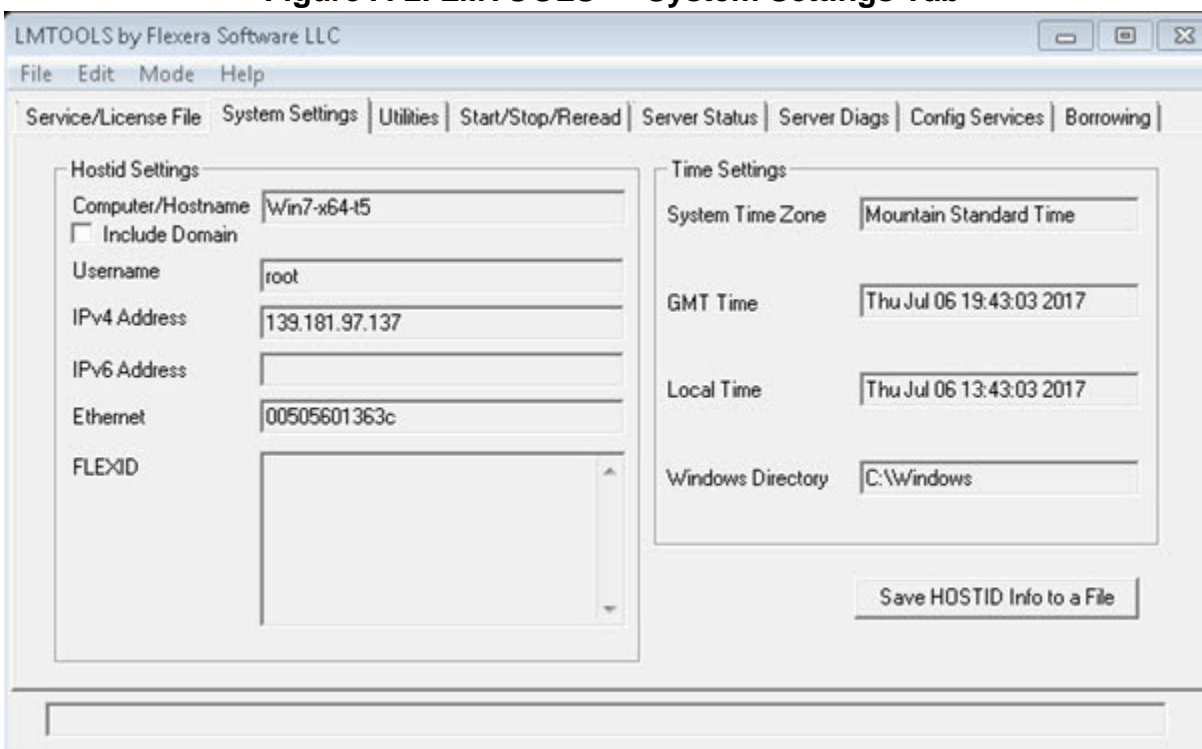
For a complete description of the LMTOOLS functionality, refer to the *FlexNet Publisher License Administration Guide*.

## Objects

- **System Settings** tab

Displays host ID and time settings for the current machine. This information is useful for obtaining host information, including the host id that licensing uses.

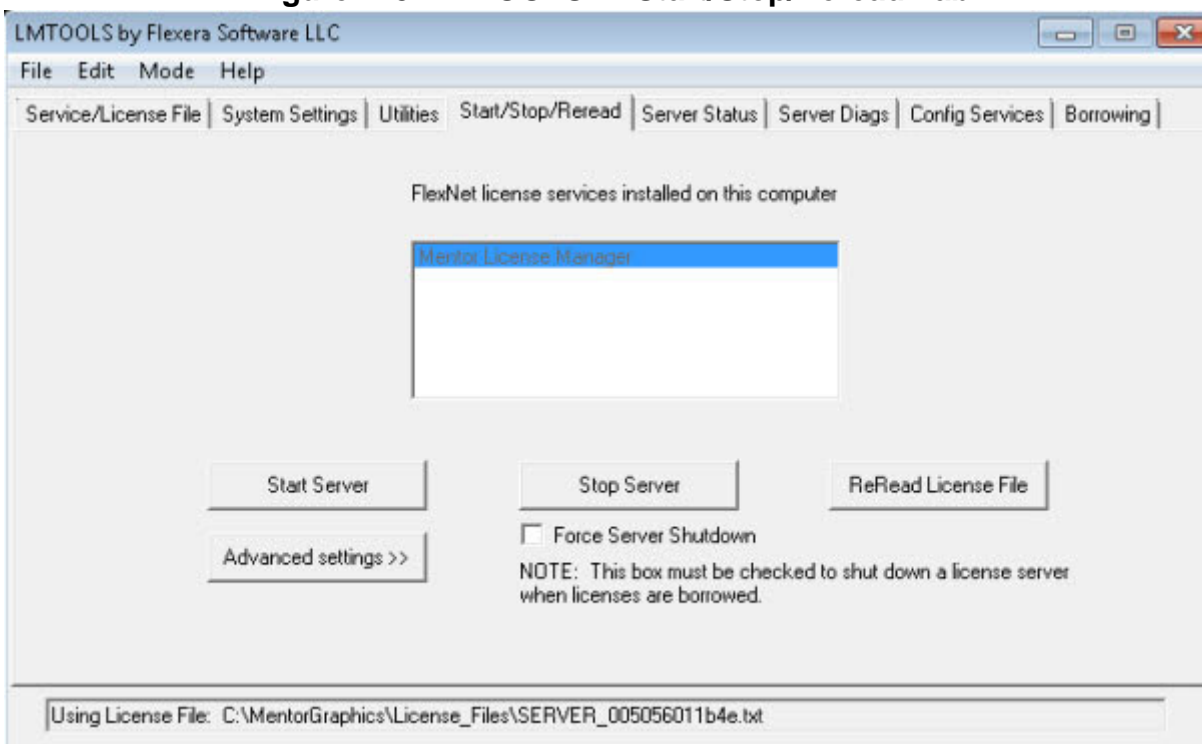
**Figure A-2. LMTOOLS — System Settings Tab**



To save the information that appears in this tab, click the **Save HOSTID Info to a File** button and type a path and filename.

- **Start/Stop/Reread** tab

Enables you to start or stop the server, or reread the license file.

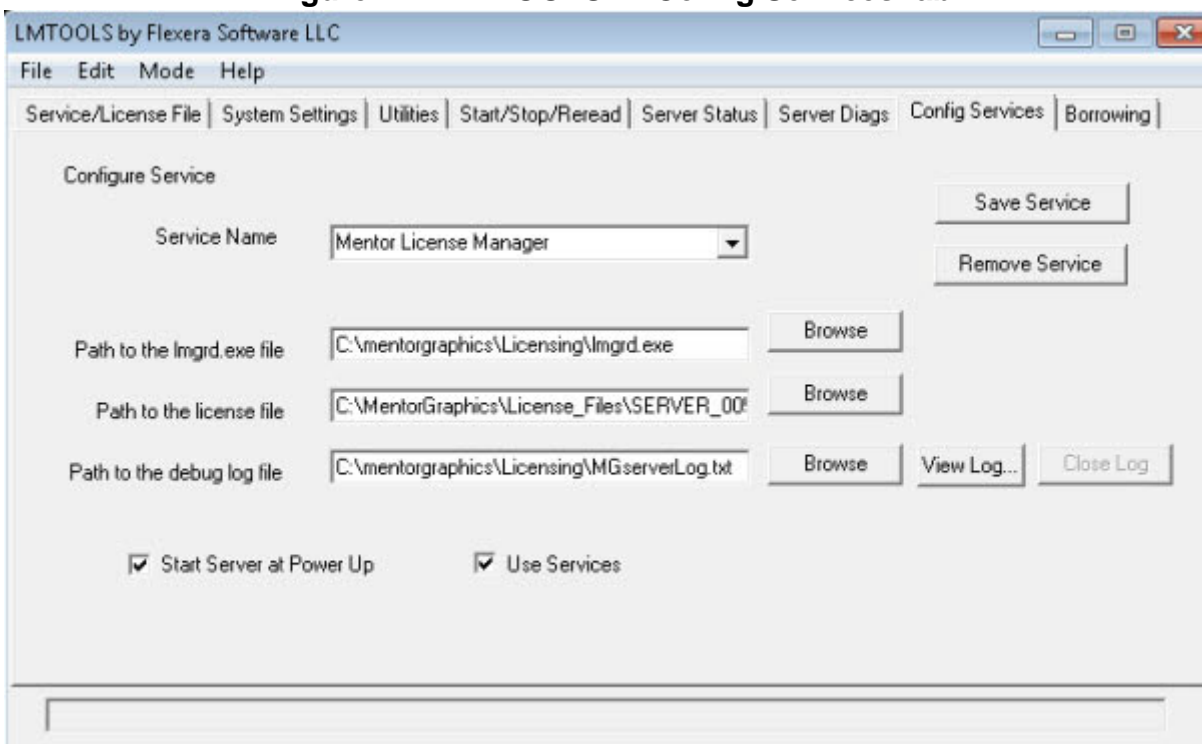
**Figure A-3. LMTOOLS — Start/Stop/Reread Tab**

If you are adding new licenses or picking up simple changes to the options file such as defining a new LM\_PROJECT, we recommend that you use the **ReRead License File** button. If you are replacing complete license files or making changes to the options file that involve restricting access to licenses, we recommend that you use the **Stop Server** and **Start Server** buttons. In the latter case, make sure you schedule the stop and start to mitigate any problems that could result if a user or host already has the license checked out.

- **Config Services tab**

Configures lmgrd as a Windows service, which starts the license server automatically when you reboot your machine. You must have administrator privileges.

**Figure A-4. LMTOOLS — Config ServicesTab**



**Table A-3. LMTOOLS — Config Services Tab Contents**

| Object                           | Description  |
|----------------------------------|--|
| Service Name field               | Specifies the name of the service you want to define. The default name is FlexNet Publisher Service.   |
| Path to the lmgrd.exe file field | Specifies the path and filename of the <i>lmgrd.exe</i> for this license server.   |
| Path to the license file field   | Specifies the path and filename of the license file for this license server.   |
| Path to debug log file field     | Specifies the path and filename of the server debug log file that this license server writes.  |
| <b>View Log</b> button           | Displays the server debug log file. On Windows, this is the only way you can view the log file.  |
| <b>Save Service</b> button       | Saves the new Windows service you just created.  |
| <b>Remove Service</b> button     | Removes the Windows service that is in the Service Name field. Click the down arrow in the Service Name field to select a different service. |

**Table A-3. LMTOOLS — Config Services Tab Contents (cont.)**

| Object                             | Description  |
|------------------------------------|--|
| Start Server at Power Up check box | Configures the license manager to start automatically as a Windows service at system reboot. This option is selectable only when you enable the Use Services option. |
| Use Services check box             | Makes the license manager a Windows service.   |

**Related Topics**[lmdown](#)[lmhostid](#)[lmreread](#)[lmstat](#)

## mgls\_admin

OS: Linux/UNIX

(MGLS) Displays version information for the MGLS environment.

---

### Note



To run `mgls_admin`, you must set `MGLS_HOME` to the `mgls` directory containing *bin*, *lib*, and *etc* subdirectories.

---

## Syntax

```
mgls_admin [-v] [-pi product_name] [-help]
```

## Arguments

- **-v**  
Displays version information for the MGLS environment.
- **-pi *product\_name***  
Displays the Mentor packaging information for the specified product. If *product\_name* is an atomic feature name, `mgls_admin` lists the composites that contain the atomic. If *product\_name* is a composite feature, `mgls_admin` lists the atomics in that composite.
- **-help**  
Provides additional information about the `mgls_admin` command. You can also use the shortened form of this switch, `-h`.

## Examples

The following example shows version information for the MGLS environment.

### **mgls\_admin -v**

```
mgls_admin: 9.13_3.2 Thu May 21 09:12:01 PDT 2015
mgls_admin: package information version v3.1_2.1v, written Wed May 20
17:01:10 2015
mgls_admin: mgls child version release: v2015_1 version: v9.13_3.2
```




## mgls\_ok

OS: Linux/UNIX, Windows

(MGLS/PCLS) Checks out and checks in a specified feature and reports success or failure.

---

### Note

 Linux/UNIX only: To run `mgls_ok`, you must set `MGLS_HOME` to the `mgls` directory containing the `bin`, `lib`, and `etc` subdirectories. Find the `mgls` directory in your application tree or in your licensing software location (for example: `/usr1/mgls_v9-13_5-2-0.aol`) and set `MGLS_HOME` to that location.

---

## Syntax

`mgls_ok [-v] [-silent] [-h] [-pd product_date] feature_name`

## Arguments

- `-v`  
Displays the `mgls_ok` version.
- `-silent`  
Specifies to not display the results.
- `-h`  
Displays help text for `mgls_ok`.
- `-pd product_date`  
Requests a license that has the specified product date (`yyyy.mm`).
- ***feature\_name***  
Specifies the name of the feature you want to check out and in. This is a required argument.

## Examples


The following example successfully checks out the feature named `msimhdlsim`.

### **mgls\_ok msimhdlsim**

```
checking availability of "msimhdlsim"  
license granted through "msimhdlsim"
```

---

### Note

 PCLS includes a Win64 version of `mgls_ok.exe` named `mgls_ok64.exe`. You can run this binary only on Win64 machines.

---

## pcls\_ok

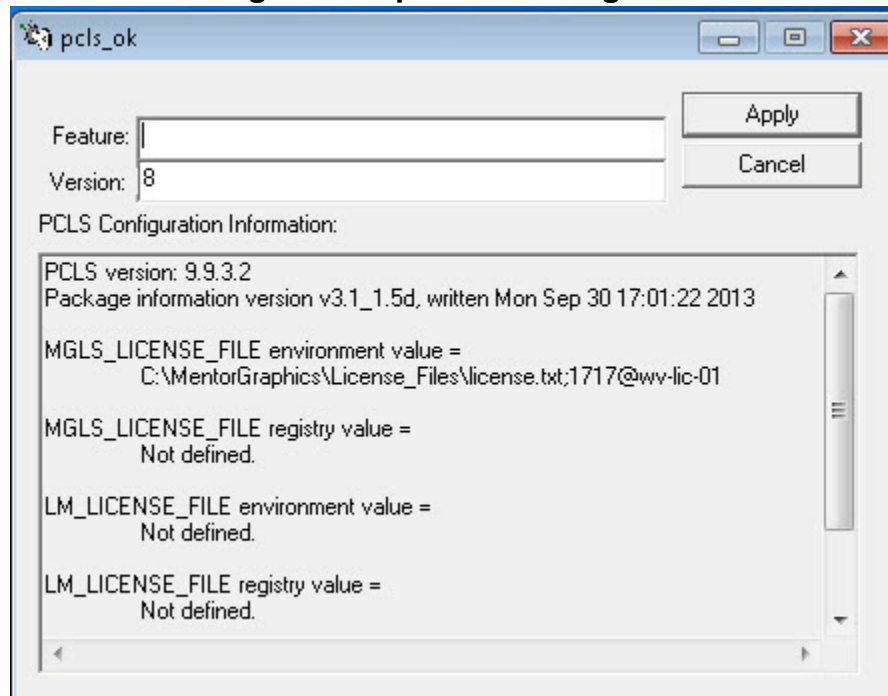
OS: Windows

To access: From the **Start** menu, choose **Mentor Graphics Licensing > pcls\_ok**

(PCLS) Checks out and checks in a specified license and reports any problems. This application, which is useful for verifying the license file, reports the version of the licensing software and displays the environment and registry settings for MGLS\_LICENSE\_FILE and LM\_LICENSE\_FILE and for the default location *C:\flexlm\license.dat*.

### Description

**Figure A-5. pcls\_ok Dialog Box**



### Fields

- **Feature**  
The name of the feature. This is the license name of the application you are trying to verify. In your license file, the feature name is to the right of the word INCREMENT.
- **Version**  
(Optional) The version number of the application you are trying to verify. For more information, see “Exact Access Date” in [“License File Format”](#) on page 8.

### Usage Notes

The pcls\_ok application attempts to check out and check back in the license you specify and generates a success or failure message. If you receive a success message, the licenses can be checked out successfully from that workstation. If the license checkout fails, a dialog appears

that provides you with more information about the cause of the failure. In the Mentor Install Program, use the **Manage Licensing > License Utilities** window and choose **Manual environment editor** to edit or rearrange your license environment settings.

---

**Note**

---



PCLS includes a Win64 version of *pcls\_ok.exe* named *pcls\_ok64.exe*. You can run this binary only on Win64 machines.

---



## Appendix B Advanced Topics

---

You may have need to restrict or customize license usage, determine the order of license checkout, make accommodations so that your company's firewall does not interfere with licensing communications, or manually remove expired licenses from your license file.

|   |           |
|---|-----------|
| <b>Vendor Daemon Options File .....</b>                       | <b>77</b> |
| <b>License Ordering in a License File.....</b>                | <b>78</b> |
| <b>Firewall Considerations .....</b>                          | <b>78</b> |
| <b>Removing Expired Licenses From Your License File .....</b> | <b>79</b> |

### Vendor Daemon Options File


Use the vendor daemon options file to restrict or customize license usage.

You can perform activities such as the following:

- Exclude an individual, group, or IP address range from using one particular INCREMENT line.
- Reserve an INCREMENT for an individual.

---

#### Note

 You can enable simple changes to the options file, such as defining a new LM\_PROJECT, with the lmreread command. However, if you make changes to the options file that involve restricting access to licenses, such as using RESERVE, you should shut down the license server with the lmdown command and then restart the license server. Scheduling a restart helps mitigate problems that may result when you remove access for a user or host that already has the license checked out.

---

The vendor daemon options file is a text file usually located in the same directory as your license file. This file contains FlexNet Licensing-specific options.

If you want to use the vendor daemon options file, type the pathname as the fourth field on a DAEMON line in your license file. Otherwise, omit the fourth field.

For descriptions of the keywords in the vendor daemon options file and the requirements for their use as well as options file examples, refer to the *FlexNet Publisher License Administration Guide* published by Flexera Software.

## Related Topics

[License File Format](#)

[lmreread](#)

[lmdown](#)

# License Ordering in a License File

The order of licenses in a license file can affect the order of license checkout.

For example, if Feature2 appears before Feature1 in the license file and both licenses can satisfy the license request, Feature2 would usually be checked out first, if available.

If multiple licenses are for the same feature name and each has different license attributes, the licensing software automatically sorts the licenses according to the following criteria:

- Node-locked before floating
- Earlier versions before later versions

You can override this order by adding the *sort=* attribute. For more information, refer to the *FlexNet Publisher License Administration Guide* published by Flexera Software.

## Related Topics

[License File Format](#)

# Firewall Considerations

Firewalls can interfere with licensing communication.

On Linux/UNIX systems, we recommend that you specify a static port number for the mgcld vendor daemon. You can do this by specifying *PORT=keyword* on the DAEMON line in your license file. For example:

```
DAEMON mgcld /opt/mgls/bin/mgcld PORT=4000
```

After you set the mgcld to run on a specific port, open that port on your firewall. For instructions on opening ports, refer to your firewall documentation.

On Windows systems, we recommend that you make exceptions for the licensing processes *lmgrd.exe* and *mgcld.exe* as well as any other vendor daemons that might be running. To make exceptions to processes, consult your Network Administrator.

# Removing Expired Licenses From Your License File

If you replace your license file with a renewed license file, you may need to manually edit the file to remove expired or soon-to-expire licenses.

This avoids receiving warning messages about expired licenses. Also, some applications error out if they detect expired licenses.

## Procedure

1. Open your license file in a text editor.
2. Either select and delete the expired or soon-to-expire INCREMENT lines or comment them out with the pound sign (#).

For example:

```
SERVER server1 0024E8477136 1717
DAEMON mgcld C:\MentorGraphics\Licensing\mgcld
#INCREMENT padses_c mgcld 2014.090 2-oct-2014 5 7E87F1468739DBB03968 \
#   VENDOR_STRING=A651CC29 SN=50387478 SIGN2="1FA7 FB2E 8DD6 B287 C11A \
#   2E21 1A99 B3C5 9A71 61F0 7C26 FC88 79BC E952 09CC 0248 CB29 0DE0 C288 \
#   B47D BBF7 5CC6 6A23 2F9C 691B DEE0 3DE6 8830 595E D6CB"
INCREMENT padses_c mgcld 2015.090 3-oct-2016 5 FE27C1D70CBBBE7903DE \
    VENDOR_STRING=6CD68B71 SN=50401278 SIGN2="1021 98B8 46A0 E391 CEB1 \
    AF07 873B 30ED 4D02 3B98 D5B3 4817 253A 1B40 BE50 03B3 8DB7 3CA0 5779 \
    8B4D 787C 7F9D 8D7B 8D54 46D7 6F1A 6416 59EC 222B 8D99"
```

3. Save your license file.
4. If you are using a mobile compute license, restart your application. If you are running a license server, use the `lmutil lmreread` command.

## Related Topics

[License File Format](#)

[lmreread](#)





# Glossary

---

## atomic license

A type of license that authorizes the use of a single function or a single application. A composite license contains atomic licenses.

## authorization code

The license that enables the Mentor software and related documentation for a certain period of time. *See also* [INCREMENT line](#)

## client

The host requesting a license from a server.

## cluster servers

*see* [redundant servers](#)

## composite license

A type of license that groups atomic licenses and usually ends in either an “\_c” or “\_s” suffix. A composite license typically authorizes a set of functionality within an application or across multiple applications.

## counted (served) license

A license configuration that uses a license manager. Counted licenses can be floating, where they can be checked out from any host on the network, or they can be node-locked, where they are generated for use by a specific computer. The server can be either redundant or independent.

## Exact Access Date

The date encoded in an INCREMENT line. Allows access to software updates for existing licensed software released prior to a support contract expiration date.

## feature name

The name of the license that the application checks out at runtime. The feature name is a field on the INCREMENT line in a license file. Feature names are either composite or atomic licenses.

## Flexera

The software company that produces FlexNet Licensing.

## FlexNet Licensing

The license manager that Flexera Software provides. The Mentor licensing software uses FlexNet Licensing as the basis for the licensing system.

## floating license

A type of license that any workstation can check out.

---

## hardware key/dongle

A device that plugs into a USB port and provides a unique host ID for the licensing system (Windows only).

## host ID

A unique hardware-based number for each machine. The host ID ties licenses to a specified server or workstation.

## INCREMENT line

The actual license that enables a product in the license file. The INCREMENT line includes fields that provide license feature information. *See also* [authorization code](#)

## independent server

A type of server that contains a unique set of license data. If an independent server is off the network, all licenses associated with the server are unavailable.

## license manager daemon

A generic term for one of two processes that runs on a license server and waits for requests from client applications. Mentor licensing includes two daemons: lmgrd and mgcld.

## license file

A text file that contains the customer site identification, license server and daemon information, and one or more INCREMENT line, which is the actual license for the supported products.

## license manager

*see* [license server](#)

## license server

A workstation that runs the license daemons and provides licenses to client workstations.

## lmgrd

The FlexNet license manager daemon.

## mgcld

The Mentor vendor daemon and a child of the lmgrd parent. The lmgrd and mgcld daemons run the license server and handle requests from the end-user's applications.

## MGLS

Mentor licensing system. This software contains the lmgrd, mgcld, and other utilities and programs to assist the system administrator with the license server setup.

## mobile compute license

*see* [node-locked uncounted license](#)

## node-locked license

A type of license that is tied to a particular system.

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### **node-locked uncounted license**

A type of license (Windows only) that is locked to a hardware key or Ethernet address of a workstation. This type of license, sometimes referred to as a mobile compute license, does not require a license server or network connection.

### **PCLS**

PC licensing system, which is essentially MGLS on Windows.

### **redundant servers**

Types of servers that are configured in a group of three license servers that contain the same license data. Redundant servers, also called cluster or triad servers, enable access to all licenses on the servers as long as at least two of the three servers are operational.

### **server ID**

The host ID of the license server machine.

### **triad servers**

*see* [redundant servers](#)

### **vendor daemon**

The daemon that dispenses licenses for the requested feature. The Mentor vendor daemon is mgld.



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**11. TERMINATION AND EFFECT OF TERMINATION.**

- 11.1. If a Software license was provided for limited term use, such license will automatically terminate at the end of the authorized term. Mentor Graphics may terminate this Agreement and/or any license granted under this Agreement immediately upon written notice if Customer: (a) exceeds the scope of the license or otherwise fails to comply with the licensing or confidentiality provisions of this Agreement, or (b) becomes insolvent, files a bankruptcy petition, institutes proceedings for liquidation or winding up or enters into an agreement to assign its assets for the benefit of creditors. For any other material breach of any provision of this Agreement, Mentor Graphics may terminate this Agreement and/or any license granted under this Agreement upon 30 days written notice if Customer fails to cure the breach within the 30 day notice period. Termination of this Agreement or any license granted hereunder will not affect Customer's obligation to pay for Products shipped or licenses granted prior to the termination, which amounts shall be payable immediately upon the date of termination.
- 11.2. Upon termination of this Agreement, the rights and obligations of the parties shall cease except as expressly set forth in this Agreement. Upon termination of this Agreement and/or any license granted under this Agreement, Customer shall ensure that all use of the affected Products ceases, and shall return hardware and either return to Mentor Graphics or destroy Software in Customer's possession, including all copies and documentation, and certify in writing to Mentor Graphics within ten business days of the termination date that Customer no longer possesses any of the affected Products or copies of Software in any form.
12. **EXPORT.** The Products provided hereunder are subject to regulation by local laws and European Union ("E.U.") and United States ("U.S.") government agencies, which prohibit export, re-export or diversion of certain products, information about the products, and direct or indirect products thereof, to certain countries and certain persons. Customer agrees that it will not export or re-export Products in any manner without first obtaining all necessary approval from appropriate local, E.U. and U.S. government agencies. If Customer wishes to disclose any information to Mentor Graphics that is subject to any E.U., U.S. or other applicable export restrictions, including without limitation the U.S. International Traffic in Arms Regulations (ITAR) or special controls under the Export Administration Regulations (EAR), Customer will notify Mentor Graphics personnel, in advance of each instance of disclosure, that such information is subject to such export restrictions.
13. **U.S. GOVERNMENT LICENSE RIGHTS.** Software was developed entirely at private expense. The parties agree that all Software is commercial computer software within the meaning of the applicable acquisition regulations. Accordingly, pursuant to U.S. FAR 48 CFR 12.212 and DFAR 48 CFR 227.7202, use, duplication and disclosure of the Software by or for the U.S. government or a U.S. government subcontractor is subject solely to the terms and conditions set forth in this Agreement, which shall supersede any conflicting terms or conditions in any government order document, except for provisions which are contrary to applicable mandatory federal laws.
14. **THIRD PARTY BENEFICIARY.** Mentor Graphics Corporation, Mentor Graphics (Ireland) Limited, Microsoft Corporation and other licensors may be third party beneficiaries of this Agreement with the right to enforce the obligations set forth herein.
15. **REVIEW OF LICENSE USAGE.** Customer will monitor the access to and use of Software. With prior written notice and during Customer's normal business hours, Mentor Graphics may engage an internationally recognized accounting firm to review Customer's software monitoring system and records deemed relevant by the internationally recognized accounting firm to confirm Customer's compliance with the terms of this Agreement or U.S. or other local export laws. Such review may include FlexNet (or successor product) report log files that Customer shall capture and provide at Mentor Graphics' request. Customer shall make records available in electronic format and shall fully cooperate with data gathering to support the license review. Mentor Graphics shall bear the expense of any such review unless a material non-compliance is revealed. Mentor Graphics shall treat as confidential information all information gained as a result of any request or review and shall only use or disclose such information as required by law or to enforce its rights under this Agreement. The provisions of this Section 15 shall survive the termination of this Agreement.
16. **CONTROLLING LAW, JURISDICTION AND DISPUTE RESOLUTION.** The owners of certain Mentor Graphics intellectual property licensed under this Agreement are located in Ireland and the U.S. To promote consistency around the world, disputes shall be resolved as follows: excluding conflict of laws rules, this Agreement shall be governed by and construed under the laws of the State of Oregon, U.S., if Customer is located in North or South America, and the laws of Ireland if Customer is located outside of North or South America or Japan, and the laws of Japan if Customer is located in Japan. All disputes arising out of or in relation to this Agreement shall be submitted to the exclusive jurisdiction of the courts of Portland, Oregon when the laws of Oregon apply, or Dublin, Ireland when the laws of Ireland apply, or the Tokyo District Court when the laws of Japan apply. Notwithstanding the foregoing, all disputes in Asia (excluding Japan) arising out of or in relation to this Agreement shall be resolved by arbitration in Singapore before a single arbitrator to be appointed by the chairman of the Singapore International Arbitration Centre ("SIAC") to be conducted in the English language, in accordance with the Arbitration Rules of the SIAC in effect at the time of the dispute, which rules are deemed to be incorporated by reference in this section. Nothing in this section shall restrict Mentor Graphics' right to bring an action (including for example a motion for injunctive relief) against Customer in the jurisdiction where Customer's place of business is located. The United Nations Convention on Contracts for the International Sale of Goods does not apply to this Agreement.
17. **SEVERABILITY.** If any provision of this Agreement is held by a court of competent jurisdiction to be void, invalid, unenforceable or illegal, such provision shall be severed from this Agreement and the remaining provisions will remain in full force and effect.
18. **MISCELLANEOUS.** This Agreement contains the parties' entire understanding relating to its subject matter and supersedes all prior or contemporaneous agreements. Any translation of this Agreement is provided to comply with local legal requirements only. In the event of a dispute between the English and any non-English versions, the English version of this Agreement shall govern to the extent not prohibited by local law in the applicable jurisdiction. This Agreement may only be modified in writing, signed by an authorized representative of each party. Waiver of terms or excuse of breach must be in writing and shall not constitute subsequent consent, waiver or excuse.