



Using the Intel® License Manager for FLEXlm*

User's Guide

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Contents

1	About this Guide	5
1.1	Related Publications.....	5
1.2	Conventions and Symbols.....	5
2	About the Intel® License Manager for FLEXIm*	7
2.1	Supported Platforms	7
2.2	License Types	9
2.2.1	Node-Locked License Configuration	9
2.2.2	Floating License Configuration	10
2.2.3	Sample License File	10
2.3	Latest Revision of User's Guide	11
2.4	Technical Support.....	12
3	Installing the Intel® License Manager for FLEXIm*	13
3.1	Identifying the Host Name and Host ID.....	13
3.1.1	Microsoft Windows*	13
3.1.2	Linux*	14
3.1.3	Mac OS* on Intel® Architecture	14
3.1.4	SGI* Altix*.....	14
3.1.5	IBM* AIX*.....	14
3.1.6	Sun* Solaris*	15
3.2	Registering Your Product Serial Number.....	15
3.3	Downloading and Installing the Product	15
3.3.1	Starting the Intel® License Manager for FLEXIm* on Windows*	16
3.3.2	Installing the Intel® License Manager for FLEXIm* on Linux* and Mac OS*	17
3.3.3	Starting the Intel® License Manager for FLEXIm* automatically on Linux* after reboot.....	17
3.3.4	Shutting Down or Removing the Intel® License Manager for FLEXIm* on Linux* and Mac OS*	18
3.3.5	Verifying the Intel® License Manager for FLEXIm* on Linux* and Mac OS*	18
3.3.6	Compatible Versions of Intel® License Manager for FLEXIm* and Vendor Daemons.....	18
4	Using the Client Application for the First Time	19
4.1	Installing Client application.....	19
4.2	Setting INTEL_LICENSE_FILE Environment Variable	19
4.2.1	Counted Licenses and Alternatives	20
4.3	Combining Multiple License Files	21
5	Troubleshooting.....	25
5.1	Creating Debug Logs for License Checkout Issues	25
5.2	Information Needed for Support Requests.....	27
5.2.1	Client Information	27
5.2.2	FLEXIm* Server Information	27



5.3	Common Issues	28
5.3.1	Client and Server Not Able to Connect Due to Windows Firewall	28
5.3.2	License Checkout Failing Due to Terminal Server Client or Remote Desktop Connection on Windows	29
6	Appendices	30
6.1	Appendix A: Troubleshooting Guide.....	30



1 About this Guide

This guide helps you get started using the Intel® License Manager for FLEXIm* with your Intel® Software Development Product. This guide contains the following chapters and appendices:

- *1: About This Guide* – Describes the contents of this guide, related publications, and conventions used in this guide.
- *2: About the Intel® License Manager for FLEXIm** – Describes the supported platforms, license types, and how to obtain technical support.
- *3: Installing the Intel® License Manager for FLEXIm** – Describes the necessary steps in identifying host name and host id, registering your product serial number, downloading and installing the product, using the product for the first time and troubleshooting.
- *4: Using the Client Application for the First Time* – Describes how to set up the client application and use it for the first time.
- *5: Troubleshooting* – Explains how to create a debug log, how to open a support request, and addresses common issues and how to fix them.
- *Appendices* – Contains flowcharts showing troubleshooting steps.

1.1 Related Publications

For information on FLEXIm* software created by Macrovision Corporation, see <http://www.macrovision.com> for information on Intel Software Development Products, see <http://developer.intel.com/software/products>.

1.2 Conventions and Symbols

The following conventions are used in this document.

Table 1 Conventions and Symbols used in this Document

This type style	Indicates an element of syntax, reserved word, keyword, filename, computer output, or part of a program example. The text appears in lowercase unless uppercase is significant.
-----------------	---



This type style	Indicates the exact characters you type as input. Also used to highlight the elements of a graphical user interface such as buttons and menu names.
<This type style>	Indicates a placeholder for an identifier, an expression, a string, a symbol, or a value. Substitute one of these items for the placeholder.
Hyperlink	Indicates hyperlink.



2 About the Intel® License Manager for FLEXIm*

Before you can use Intel® Software Development Products, you must have the correct license installed for the Intel products. The Intel® License Manager for FLEXIm* is a collection of software components that helps you manage your license file in a multiple-user environment. The Intel License Manager for FLEXIm* is included with your product purchase or can be downloaded separately. This document describes the installation and use of the Intel License Manager for FLEXIm* for [supported platforms](#).

Counting the number of concurrent users is the main function of the Intel License Manager for FLEXIm*. You only need the Intel License Manager for FLEXIm* when you have a counted license (see [License Types](#)). For uncounted license types, you need to install the license file, but not the Intel License Manager for FLEXIm*. See your product documentation for more information on installing the license file for an uncounted license.

2.1 Supported Platforms

While Intel Software Development Products are engineered for the Microsoft Windows* platform, Linux* platform and Mac OS* platform, the Intel License Manager for FLEXIm* is supported on all of the following platforms:

Microsoft* Windows* for IA-32, Intel® 64 and IA-64 architectures

Linux IA-32 architecture

- RedHat* 7.x, Red Hat 8 (2.4.7 kernel with 2.2.4 glibc or equivalent kernel and glibc), RedHat* 9.0 (2.4.20 kernel with 2.3.2 glibc or equivalent kernel and glibc), RedHat* EL3 (2.4.21 kernel with 2.3.2 glibc or equivalent kernel and glibc), SLES 9.x, RedHat* EL4, SLES 10 (and systems with equivalent kernel and glibc).

Linux IA-64 architecture (Intel® Itanium®)

- RedHat* 7.x (2.4.9 kernel with 2.2.4 glibc or equivalent kernel and glibc), RedHat* EL3 (2.4.21 kernel with 2.3.2 glibc or equivalent kernel and glibc), SLES 9.x, RedHat* EL4, SLES 10 (and systems with equivalent kernel and glibc).

SGI* Altix* IA-64 architecture (Intel® Itanium®)



- RedHat* EL3 (2.4.21 kernel with 2.3.2 glibc or equivalent kernel and glibc), RedHat* EL4 on SGI* Altix*. This license manager is different than RedHat* EL3 license manager described above. SGI* Altix* Propack 3, 4 users should use this license manager.

Mac* OS

- Version 10.4.4-10.4.8 (Tiger) on Intel® IA-32 architecture

IBM* AIX*

- IBM* AIX* 4.3 and 5.0. Support for this FLEXlm server is very limited in nature. We recommend using License Servers for Windows* or Linux* on Intel® architectures.

Sun* Solaris*

- Solaris 7 and 8 and equivalent systems. Support for this FLEXlm server is very limited in nature. We recommend using License Servers for Windows* or Linux* on Intel® Architectures.

The table below provides mapping between some operating systems and appropriate license managers for those operating systems:

OS version	IA-32 Architecture	IA-64 Architecture	Intel® 64 Architecture
RedHat 7, 7.x	flexlm.Linux.tar.gz	flexlm.Linux.ia64.tar.gz	NA
RedHat 8	flexlm.Linux.tar.gz	NA	NA
RedHat 9	flexlm.Linux.RHL9.tar.gz	NA	NA
RedHat EL3	flexlm.Linux.EL3.tar.gz	flexlm.Linux.ia64.EL3.tar.gz	flexlm.Linux.EL3.tar.gz
RedHat EL4	flexlm.Linux.EL3.tar.gz	flexlm.Linux.ia64.EL3.tar.gz	flexlm.Linux.EL3.tar.gz
SGI Altix Propack 3,4	NA	flexlm.Linux.ia64.EL3_SGIAltix.tar.gz	NA
SLES 9	flexlm.Linux.EL3.tar.gz	flexlm.Linux.ia64.EL3.tar.gz	flexlm.Linux.EL3.tar.gz
SLES 10	flexlm.Linux.EL3.tar.gz	flexlm.Linux.ia64.EL3.tar.gz	flexlm.Linux.EL3.tar.gz
Mac OS 10.4.3	flexlm.Mac.i386.tar.gz	NA	NA
Mac OS 10.4.4	flexlm.Mac.i386.tar.gz	NA	NA
Windows	flexlm.windows.ia32.zip	flexlm.windows.ia64.zip	flexlm.windows.ia32.zip

You can run the Intel License Manager for FLEXlm* on one of the supported platforms listed above, with Windows*, Linux* or Mac OS* applications running on separate network nodes. For example, you can install the Intel License Manager for FLEXlm* and license file on a Linux* Operating System to manage floating licenses for the Windows*, Linux* or Mac OS* applications.



2.2 License Types

Before installing the Intel® License Manager for FLEXIm*, you should be familiar with the different license types and how they are used with Intel® Software Development Products. Some of the most commonly-used licenses include:

- Evaluation License (uncounted)
- Noncommercial-Use License (uncounted)
- Academic (counted or uncounted)
- Single-User License (uncounted)
- Node-Locked License (counted or uncounted)
- Floating License (counted)

Only the “counted” license types require the Intel License Manager for FLEXIm*. Node-locked and floating license types are used in multiple-user environments, and the Intel License Manager for FLEXIm* monitors the number of concurrent users permitted in the [license file](#). For example, if your license permits 20 users, then the Intel License Manager for FLEXIm* “checks out” a license to the first 20 users. Whenever the license count is less than 20, other licensed users may check out a license from the Intel License Manager for FLEXIm* to run their application.

The differences between node-locked and floating license types are:

- With [node-locked license types](#), users access the Intel Software Development Product using an account on a central (node-locked) system on which both the Intel Software Development Product and the Intel License Manager for FLEXIm* are installed. The Intel Software Development Products are not installed on remote systems. For example, a user might use Telnet to log into an account on the central system and use the command-line window and run the Intel Software Development Product on the node-locked system. Also, Windows* Terminal Server* and related X-window capabilities allow more than command-line window use.
- With [floating license types](#), users access the Intel Software Development Product on their local system, while the license use is controlled by one central system running the Intel License Manager for FLEXIm*.

2.2.1 Node-Locked License Configuration

There are two versions of the node-locked license:

- **Counted** – the license limits the number of concurrent users.
- **Uncounted** – the license does not limit the number of concurrent users. Please refer to End User License Agreement during the installation of Intel® product for usage policy.



In both cases only the node running the application and Intel License Manager for FLEXlm* needs a license file. Consider the example illustrated in the following table:

Node	Operating System	Applications	Intel® License Manager for FLEXlm*	License File
A	Linux*	Intel® C++ Compiler Intel® Fortran Compiler	X	X
B	Windows*			
C	Mac* OS			

In this example, the Intel® C++ Compiler for Linux*, the Intel® Fortran Compiler for Linux*, the Intel License Manager for FLEXlm*, and license file all run on Node A. Anyone on the network who can connect to Node A may run either application, as long as a license is available.

2.2.2 Floating License Configuration

With a floating license you can manage, from a single node, applications running on different nodes. Consider the example illustrated in the table below:

Node	Operating System	Application	Intel® License Manager for FLEXlm*	License File
A	Linux*		X	X
B	Windows*	Intel® C++ Compiler		X
C	Linux*	Intel® C++ Compiler Intel® Fortran Compiler		X
D	Linux*	Intel® Fortran Compiler		X
E	Mac* OS	Intel® C++ Compiler		X

In example above, the Intel License Manager for FLEXlm* running on Node A counts the number licenses in use. The license file on each node must be identical, but may use a different file name, provided all file names include a .lic extension.

2.2.3 Sample License File

The sample counted license file below is for an Intel License Manager for FLEXlm* installed on Linux. The same license file is used with Windows*, Linux* or Mac OS* products that rely on the Intel License Manager for FLEXlm* to serve and count licenses.



```

Sample FLEXlm* Counted License

SERVER mslid073 000629856A25 28518
VENDOR INTEL
PACKAGE I000000000002L INTEL 2003.1025 12222F8900CF \
  COMPONENTS="CCompW CCompL CCompM" OPTIONS=SUITE ck=86
SIGN=8BF3D0867076
FEATURE I000000000002L INTEL 2003.1025 permanent 20 FD312CFD3BA9 \
  VENDOR_STRING=SUPPORT=INT HOSTID=ANY PLATFORMS="i86_n ia64_n
i86_r \
  i86_re it64_lr it64_re i86_mac" DUP_GROUP=UH ck=127
SN=INT2002917543 \
SIGN=A3A79E168CD2
    
```

The essential components of the sample license file are listed below along with their corresponding values:

- **Host name:** mslid073
- **Host id (Imhostid):** 000629856A25
- **Port Number:** 28518
- **Supported Software Products:** CCompW (Intel® C++ Compiler for Windows*), CCompL (Intel® C++ Compiler for Linux*), CCompM (Intel® C++ Compiler for Mac OS*)
- **Supported Product Platforms:** i86_n (Windows* on IA-32 architecture), i86_r, i86_re (Linux* on IA-32 architecture), ia64_n (Windows* on IA-64 architecture), it64_lr, it64_re (Linux* on IA-64 architecture), i86_mac (Intel®-based systems running Mac OS*)
- **Intel Support Expiration Date:** 2003.1025 (October 25, 2003).
- **Product Expiration Date:** permanent (Never expires).
- **License Count:** 20.

Note: Editing any portion of the license file except host name or port number renders the entire license file invalid.

2.3 Latest Revision of User's Guide

The latest information about Intel License Manager for FLEXlm* and use of FLEXlm in Intel software products can be found at:

<ftp://download.intel.com/support/performancetools/licenseMgr4FLEXlm.pdf>



2.4 Technical Support

When you purchase an Intel® Software Development Product, you receive Intel® Premier Support and free product upgrades for one year.

If you purchased a CD-ROM version of your product, then you must register your product with the Intel® Registration Center (<https://registrationcenter.intel.com/>) to activate your access to Intel® Premier Support (<https://premier.intel.com/>). All [license types](#), except the noncommercial-use license, qualify for Intel® Premier Support accounts.



3 Installing the Intel® License Manager for FLEXlm*

You only need to install the Intel License Manager for FLEXlm* if you are using a counted license (see [License Types](#)). Once you have purchased an Intel® Software Development Product, follow these steps to install the Intel License Manager for FLEXlm* and invoke your product:

1. [Identify host name and host id](#)
2. [Register your product serial number](#)
3. [Download and install the product](#)

If you have a counted license or a node locked license, if you change the media access control (MAC) address or physical address of the system on which the FLEXlm server is installed, you must request a new license file from Intel® Premier Support. When requesting a new license, please provide the hostname and the lmhostid. See the following section for how to obtain the hostname and lmhostid for your system.

3.1 Identifying the Host Name and Host ID

The host name and host ID are system-level identifiers on [supported platforms](#) that are used in the [license file](#) to identify the node on which you plan to install the Intel License Manager for FLEXlm* and license file. To enable you to obtain a counted license, these unique values must be available when you register your product. For node-locked licenses, you will also need the host name and host id of the node from which your applications will run, if different from the node for the Intel License Manager for FLEXlm*. Follow these directions to obtain the host name and host id for each supported platform:

3.1.1 Microsoft Windows*

1. From the **Start** menu, click **Run...**
2. Type `cmd` in the **Open:** field, then click **OK**.
3. Type `ipconfig /all` at the command prompt, and press **Enter**.

In the resulting output, host name is the value that corresponds to `Host Name`, and `host id` is the value that corresponds to `Physical Address`.



For example, if the output of `ipconfig /all` included the following:

```
Host Name . . . . . : mycomputer
. . . . .
Physical Address . . . . . : 00-06-29-CF-74-AA
```

then host name is `mycomputer` and the host ID is `00-06-29-CF-74-AA`.

3.1.2 Linux*

1. Run the `hostname` command to display the host name.
2. Run the command `/sbin/ifconfig eth0` to display the hardware address.

For example, if the `/sbin/ifconfig eth0` command returns `HWaddr 00:D0:B7:A8:80:AA`, then the host ID is `00:D0:B7:A8:80:AA`.

It is strongly recommended that users run the `lmhostid` utility to obtain the `hostid` value required to generate the counted licenses. The `lmhostid` utility can be found in the install location to which Intel License Manager for FLEXlm* is installed.

3.1.3 Mac OS* on Intel® Architecture

1. Run the `hostname` command to display the host name.
2. Run the command `/sbin/ifconfig en0 ether` to display the hardware address.

The following is an example of an address that could be returned by this command:

```
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
ether 00:13:20:60:23:4f
```

It is strongly recommended that users run the `lmhostid` utility to obtain the `hostid` value required to generate the counted licenses. The `lmhostid` utility is installed to the same location as the Intel License Manager for FLEXlm*.

3.1.4 SGI* Altix*

If you are using SGI* Altix*, you must run the `lmhostid` utility to obtain the `hostid` value required to generate the counted licenses. The `lmhostid` utility can be found in the install location to which Intel License Manager for FLEXlm* is installed.

3.1.5 IBM* AIX*

1. Run the `hostname` command to display the host name.
2. Run the command `uname -m`. This will display a 12-character string.

Remove the first two and last two digits, and use the remaining eight digits as the host id.



For example, if the `uname -m` command returns `000123456700`, then the host id is `01234567`.

3.1.6 Sun* Solaris*

1. Run the `hostname` command to display the host name.
2. Run the command `hostid`. This will display the system's host id.

For example, if the `hostid` command returns `123a1234`, then the host id is `123a1234`.

3.2 Registering Your Product Serial Number

Next, register each product serial number at the Intel® Registration Center (<https://registrationcenter.intel.com/>). The registration process is required for the following reasons:

- For electronically-transferred products, registration is the only means to obtain the required license file and download location for the software.
- For boxed (CD-ROM) products, registration is the only means to activate Intel® Premier Support and receive product updates. Note: CD-ROM products are encoded with a Single-User license. Therefore, they cannot be used with the Intel License Manager for FLEXIm*.
- For counted licenses, registration is the process by which the [host name and host id](#) are sent to Intel® Premier Support (<https://premier.intel.com/>) for license creation.

Go to the Intel® Registration Center and complete each step. If you do not have an existing Intel® Premier Support account for your product, click on **Register for Intel® Premier Support** on the screen thanking you for registration.

3.3 Downloading and Installing the Product

After you register your product serial number, you will receive e-mail instructions to download your Intel® Software Development Product. Obtain your product download by going to the URL included in the instructions.

After downloading your product, begin by unpacking the installation program, if necessary. See the product Release Notes for installation details. When you begin the product installation, you will need to identify the location of the license file you received with your product. The installation will proceed only if you have a valid license file.



If you are using counted licenses, you will also be required to install Intel License Manager for FLEXIm*. License manager is not required for uncounted licenses. You can download the Intel® License Manager for FLEXIm* using either of the following options:

Option Number 1:

Login to the [Intel® FLEXIm* License Servers catalog](http://support.intel.com/support/performance/sb/CS-023219.htm) (<http://support.intel.com/support/performance/sb/CS-023219.htm>). The most recent version of the User Guide for the Intel® License Manager for FLEXIm* is also available from the web site.

Option Number 2:

1. Login to the Intel® Registration Center at <https://registrationcenter.intel.com/>.
2. Select **Product Downloads**.
3. Select **Intel License Manager for FLEXIm*** from the product list.
4. Select the appropriate operating system from the dropdown list.
5. Click on the hyperlink for each license server file you want to download.

You must download the FLEXIm* server corresponding to the operating system where you are planning to install it, not for the operating system where you are planning to run the client applications (Intel® Software Products).

3.3.1 Starting the Intel® License Manager for FLEXIm* on Windows*

1. Download the .zip file for Windows* License Manager.
2. Unzip the file downloaded from previous steps.
3. Run the setup for license manager installation. Provide the path to license file during the installation of License Manager. Finish the installation process. The license manger should start automatically as a service.

If you do not have license file during the installation process, you can still install the license manager by checking the option to install without license file. After installing the Intel License Manager for FLEXIm* without the license file, you must start the License Manager before running your product. Follow these steps to start the Intel License Manager for FLEXIm* on Windows*:

1. From the Windows* **Start** menu, select **Programs > Intel® Software Development Tools > Intel® FLEXIm License Manager > Configure Intel® FLEXIm License Manager**.
2. Select the license file.
3. Click **Apply** and close the window.



You will also be required to follow the above steps if you wish to restart the License Manager with a different license file.

3.3.2 Installing the Intel® License Manager for FLEXlm* on Linux* and Mac OS*

Follow the steps below to install the software for the Intel License Manager for FLEXlm on Linux or UNIX systems. Also follow these steps to install FLEXlm* server on Mac OS:

1. Place the downloaded package `flexlm.<platform>.tar.gz` in the directory to which you wish to extract its files. This need not be the same location in which you plan to install the Intel License Manager for FLEXlm* files.
2. Extract the files from the package with the following command:

```
tar -zxvf flexlm.<platform>.tar.gz
```

This command extracts the files and prepares you for installation.
3. Move to the `flexlm/` directory created by the above step.
4. Run the `Install_INTEL` script and follow the directions to install and configure the Intel License Manager for FLEXlm*.

3.3.3 Starting the Intel® License Manager for FLEXlm* automatically on Linux* after reboot

To set up the Intel License Manager for FLEXlm* to start automatically follow the steps below.

For Linux, add the following steps to the system startup files (for example, `/etc/init.d/rcX.d` directories, where X is 1, 2, 3, or 5) to ensure that the FLEXlm* server starts after reboot. It is important that network has been initialized before the FLEXlm server is started. Ensure that there is a white space (" ") between each argument. It is recommended that server start up be done as root.

1. `cd <server-directory>`
2. ``pwd`/lmgrd.intel -c `pwd`/<licensefile> -l `pwd`/<log file>`

Ensure that the change directory is set to the one created in Step 1 above. The `-c <license file>` should point to the license file copied to the server directory from the registration e-mail. Use the full path. The `-l <log file>` will capture information that will be useful for debugging unanticipated server or license check-out problems. Use the full path.



3.3.4 Shutting Down or Removing the Intel® License Manager for FLEXlm* on Linux* and Mac OS*

To shut down or remove the Intel License Manager for FLEXlm* from Linux*, UNIX or Mac OS* systems, follow these steps:

1. Move to the <server-directory>.
2. Execute the command:
`lmdown -c <license file>` (use the full path)
3. Killing the `lmgrd.intel` and `INTEL` processes is not recommended. However, if `lmdown` cannot successfully shut down the Intel License Manager for FLEXlm*, you may need to kill those processes.
4. To permanently remove the Intel License Manager for FLEXlm*, delete the lines that were added to the system startup files (for example, `/etc/init.d/rcX.d` directories, where X is 1, 2, 3, or 5). This step only applies to some Linux systems.

3.3.5 Verifying the Intel® License Manager for FLEXlm* on Linux* and Mac OS*

Follow these steps to verify that the Intel License Manager for FLEXlm* is running on Linux, UNIX or Mac OS systems:

1. Move to the <server-directory>.
2. Execute the command `lmstat -c <license file>`. Use the full path.

3.3.6 Compatible Versions of Intel® License Manager for FLEXlm* and Vendor Daemons

In a complex installation of multiple FLEXlm* licensed products, which include daemons from different vendors, a single `lmgrd` is used to manage the use of all licensed products. You can use any `lmgrd` whose product version (`lmgrd -v`) is greater than or equal to all of the vendor daemons' product versions. If your `lmgrd` version is less than any of the vendor daemons versions, server start-up failures may result.



4 Using the Client Application for the First Time

You must complete the following steps to use the Intel License Manager for FLEXIm* for the first time:

1. Install the client application
2. Set the `INTEL_LICENSE_FILE` environment variable
3. Combine multiple license files

4.1 Installing Client application

If you are using counted licenses, you can install the client application without starting the FLEXIm server by providing the complete path to the complete license file during the installation process. The complete license file includes:

- SERVER line(s)
- VENDOR line
- PACKAGE line(s)
- FEATURE/INCREMENT line(s)

Note: You cannot use the `port@server` mechanism or the `USE_SERVER` mechanism during the installation of client application. You would need a complete license file residing on the client system during the process of installing a client application.

4.2 Setting `INTEL_LICENSE_FILE` Environment Variable

Once you have installed the FLEXIm* license server and installed the client application, you must set the `INTEL_LICENSE_FILE` environment variable. For Intel® compilers and some other Linux*-based products, you set this variable in the configuration file. You must set this variable for FLEXIm license authentication. If this variable is not set, you will be required to set this variable, whether you are using a Windows*-based product, a Linux*-based product or a Mac OS*-based product.



On Windows* follow these steps, or the equivalent:

1. Click **Start > Settings > Control Panel > System > Advanced > Environment Variables**
2. Under system variables click **New**.
3. Enter `INTEL_LICENSE_FILE` in the text box for **Variable Name**.
4. In the **Variable value** text box, input the full path to the folder where one or more licenses reside.
5. Click **OK > OK > OK**.

On Linux*, UNIX* and Mac* OS systems, the commands used to set the environment variables depend on the shell.

- C shell, use the `setenv` command:

```
% setenv INTEL_LICENSE_FILE </path/to/license/file>
```

- Bourne shell (sh), Korn shell (ksh), and bash shell, use the `export` and assignment commands:

```
$ export INTEL_LICENSE_FILE=</path/to/license/file>
```

where, `</path/to/license/file>` should be the folder in which one or more license files reside. You can provide multiple path values to the `INTEL_LICENSE_FILE` variable by using ":" as a separator. For example,

```
$ export INTEL_LICENSE_FILE=/opt/intel/licenses:$HOME/intel/licenses
```

4.2.1 Counted Licenses and Alternatives

If the Intel® software product you are using is enabled for counted licenses, which require a FLEXlm server, you do not need to use the exact copy of the counted license on the local system from which you run the Intel software product; there are two alternatives:

- **Alternative 1**

`USE_SERVER` mechanism for counted licenses: on the systems from which you will execute Intel Software Development tools, you can use a license file with `USE_SERVER` directive. The license file would be in the following format:
`SERVER <server name> <hostid> <port>`
`USE_SERVER`

where `<server name>`, `<hostid>` and `<port>` all come from the `SERVER` line in the license file which was used to install the FLEXlm server. The `INTEL_LICENSE_FILE` environment variable should point to the license file.

- **Alternative 2**

`port@host` mechanism for counted licenses: on the systems from which you will execute Intel Software Development tools, you can set the `INTEL_LICENSE_FILE` variable to `port@host`. The host and port information are in the `SERVER` line in the license file used to install the FLEXlm* server.

The `port@host` mechanism does not work if you use it in a license file instead of setting the `INTEL_LICENSE_FILE` environment variable to `port@host`.



4.3 Combining Multiple License Files

Combine multiple license server files into a single license file by performing these steps:

1. Concatenate the files.
2. Remove the duplicate `SERVER` and `VENDOR` lines.

Note: The expiration dates can be different and the number of seats can be different in license files but the `lmhostid` and `hostname` values in the license files should be the same.

If you are combining multiple counted license files for a single product, you need to make sure that following additional requirements are being met:

1. Only one license file has `FEATURE` line and all other license files have `INCREMENT` lines (see example below on how `File0001.lic` and `File0002.lic` were combined into a single license file `File0003.lic`).

If this requirement is being met, you can simply concatenate the license files and remove the duplicate server and vendor lines by making sure that the license with `FEATURE` line is the first key in the combined license file and licenses with `INCREMENT` lines follow it (`File0003.lic`).

2. Or, all the license files of the same product have `INCREMENT` lines instead of `FEATURE` lines (see below how `File0004.lic` and `File0005.lic` were combined into a single license file `File0006.lic`).

If this requirement is being met, you can simply concatenate the license files and remove the duplicate server and vendor lines (`File0006.lic`).

If you are combining multiple counted license files where each counted license file is for a unique product, you can simply concatenate them and remove the duplicate server and vendor lines.

Examples are provided below for demonstration purposes only.

In the example below, both the `File0001.lic` and `File0002.lic` are for Intel® C++ Compiler for Windows*. `File0001.lic` has `FEATURE` line and is for 20 seats while `File0002.lic` has `INCREMENT` line and has 20 seats. You can merge these two license files into a single license file `File0003.lic` which can serve 40 seats.



File0001.lic

```
SERVER svr025.testserver.com 832d87d8 28518
SERVER svr026.testserver.com 832d7b86 28518
SERVER svr027.testserver.com 832d895e 28518
VENDOR INTEL <path to the vendor daemon options file (optional)>
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=CCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
FEATURE I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA35123769 SIGN=E7EDE36EB6AE
```

File0002.lic

```
SERVER svr025.testserver.com 832d87d8 28518
SERVER svr026.testserver.com 832d7b86 28518
SERVER svr027.testserver.com 832d895e 28518
VENDOR INTEL <path to the vendor daemon options file (optional)>
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=CCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2
\
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA376935123769 SIGN= EB6AE E7EDE36
```

File0003.lic - Combined single file for Intel® C++ Compiler for Windows*

```
SERVER svr025.testserver.com 832d87d8 28518
SERVER svr026.testserver.com 832d7b86 28518
SERVER svr027.testserver.com 832d895e 28518
VENDOR INTEL <path to the vendor daemon options file (optional)>
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=CCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
FEATURE I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA35123769 SIGN=E7EDE36EB6AE
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=CCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2
\
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA376935123769 SIGN= EB6AE E7EDE36
```



In the next example below, both the File0004.lic and File0005.lic are for Intel® Visual Fortran Compiler for Windows*. Notice that both File0004.lic and File0005.lic have INCREMENT line (no FEATURE lines) and are for 20 seats. You can merge these two license files into a single license file File0006.lic which can serve 40 seats.

File0004.lic

```

SERVER svr025.testserver.com 832d87d8 28518
SERVER svr026.testserver.com 832d7b86 28518
SERVER svr027.testserver.com 832d895e 28518
VENDOR INTEL <path to the vendor daemon options file (optional)>
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=FCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA12373569 SIGN=DE36EE7EB6AE

```

File0005.lic

```

SERVER svr025.testserver.com 832d87d8 28518
SERVER svr026.testserver.com 832d7b86 28518
SERVER svr027.testserver.com 832d895e 28518
VENDOR INTEL <path to the vendor daemon options file (optional)>
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=FCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA35912376 SIGN=E7EEDE36EB6A

```

File0006.lic - Combined single file for Intel® Visual Fortran Compiler for Windows*

```

SERVER svr025.testserver.com 832d87d8 28518
SERVER svr026.testserver.com 832d7b86 28518
SERVER svr027.testserver.com 832d895e 28518
VENDOR INTEL <path to the vendor daemon options file (optional)>
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=FCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA12373569 SIGN=DE36EE7EB6AE
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=FCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA35912376 SIGN=E7EEDE36EB6A

```



Below is an example where you can combine license files of different products into a single license file. File0003.lic is a combined license file for Intel® C++ Compiler for Windows* and File0006.lic is a combined license file for Intel® Visual Fortran Compiler for Windows*. You can combine these license files of two different products into a single license file (File0007.lic) by concatenating them and simply removing the duplicate vendor and server lines.

```
File0007.lic - Combined single file for Intel® C++ and Fortran Compiler for Windows
SERVER svr025.testserver.com 832d87d8 28518
SERVER svr026.testserver.com 832d7b86 28518
SERVER svr027.testserver.com 832d895e 28518
VENDOR INTEL <path to the vendor daemon options file (optional)>
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=CCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
FEATURE I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA35123769 SIGN=E7EDE36EB6AE
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=CCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA376935123769 SIGN= EB6AE E7EDE36
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=FCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA12373569 SIGN=DE36EE7EB6AE
PACKAGE I0000000000001 INTEL 2004.1003 2279DFB555D4
COMPONENTS=FCompW \
    OPTIONS=SUITE ck=88 SIGN=F452A16CA51C
INCREMENT I0000000000001 INTEL 2004.1003 permanent 20 2C55559573D2 \
    VENDOR_STRING=SUPPORT=COM HOSTID=ANY PLATFORMS="i86_n ia64_n"
\
    DUP_GROUP=UH ck=92 SN=SMSA35912376 SIGN=E7EEDE36EB6A
```



5 Troubleshooting

This chapter explains how to generate debug logs, lists the information you should provide to the when opening a support request, and provides solutions for some common problems.

5.1 Creating Debug Logs for License Checkout Issues

If your licensing does not work properly, review the steps above to verify the installation. If the problem persists after you verify correct installation, you should open a support case with Intel® Premier Support.

In preparation for opening the support case, set the environment variable `INTEL_LMD_DEBUG` to 1 and execute the product (see [Setting Environment Variables](#)). Doing so generates detailed information on the licensing failure. Please provide this information when filing a support issue. A product support engineer will then work closely with you to resolve the outstanding issue.

If you are running a command line application on Windows* set the debugging environment variable to appropriate value on the command line. For example:

- `SET INTEL_LMD_DEBUG = 1`
- View the current value of an environment variable. For example:
`SET INTEL_LMD_DEBUG` returns `INTEL_LMD_DEBUG = 1`
- **Set the environment variable to a file name. For example:** `SET INTEL_LMD_DEBUG="C:\temp\LicenseCheckout.log"`
- If the license debugging information is no longer needed, you can turn it off with the following command: `SET INTEL_LMD_DEBUG=""` or `unset INTEL_LMD_DEBUG`

Note: It is very important that you unset this debugging environment variable once your issue has been resolved or once you have submitted the support request. Not doing so will result in slower performance when the client application is running. Every time you submit a license checkout log, you must make sure that the old log is deleted and the new log has been created before it is attached to your support request.



If you are running a GUI application on Windows* set the debugging environment variable to appropriate value by following the steps below.

1. Click **Start > Settings > Control Panel > System > Advanced > Environment Variables**.
2. Under system variables click **New**.
3. Enter INTEL_LMD_DEBUG in the text box for **Variable Name**.
4. In the **Variable value** text box, input the full path to the log file in which you would like to capture the results. For example C:\temp\LicenseCheckout.log.
5. Click **OK > OK > OK**.

Note: It is very important that you unset this debugging environment variable once your issue has been resolved or once you have submitted the support request. Not doing so will result in slower performance when the client application is running. Every time you submit a license checkout log, you must make sure that the old log is deleted and the new log has been created before it is attached to your support request.

On Linux*, UNIX* or Mac* OS systems, the commands used depend on the shell in use.

- With the C Shell, use the `setenv` command to set an environment variable:

```
% setenv INTEL_LMD_DEBUG 1
```

- To remove the association of an environment variable and an external file with the C shell, use the `unsetenv` command:

```
% unsetenv INTEL_LMD_DEBUG
```

- With the Bourne shell (sh) and Korn shell (ksh) and bash shell, use the `export` command and assignment command to set the environment variable:

```
$ export INTEL_LMD_DEBUG $ INTEL_LMD_DEBUG = 1
```

Alternatively, you can set the INTEL_LMD_DEBUG environment variable to a file name. For example,

```
export INTEL_LMD_DEBUG="/tmp/licensecheckout.log"
```

- To remove the association of an environment variable and an external file with the Bourne, Korn, or bash shell, use the `unset` command:

```
$ unset INTEL_LMD_DEBUG
```

Note: It is very important that you unset this debugging environment variable once your issue has been resolved or once you have submitted the support request. Not doing so will result in slower performance when the client application is running. Every time you submit a license checkout log, you must make sure that the old log is deleted and the new log has been created before it is attached to your support request.



5.2 Information Needed for Support Requests

When opening a support request, you should provide the following information to the support team:

- Client information
- Flexlm* server information

5.2.1 Client Information

- Package ID of the product.
- Name of client application with all parameters.
- Operating system, architecture, kernel, glibc, and any service packs installed on the client system.
- Values to which the `LM_LICENSE_FILE` and `INTEL_LICENSE_FILE` environment variables are set.
- Copy of all the license files used on the client side.
- If you are using Linux, set `INTEL_LMD_DEBUG` to `/tmp/licensecheckout.log` and on Windows set `INTEL_LMD_DEBUG` to `C:\temp\licensecheckout.log` and run the client. Once the client finishes execution, attach the `licensecheckout.log` to the support issue.

If you are opening a support request about a segmentation fault issue, attach the stack dump.

5.2.2 FLEXlm* Server Information

This section is applicable only if you are using counted licenses.

- Operating system, architecture, kernel, glibc, and any service packs installed on the system on which the FLEXlm server is installed.
- The FLEXlm server file name that you downloaded and installed
- A copy of the server log file at one of the following locations, depending on your operating system:
 - Windows: `<install drive>:\program files\common files\intel\flexlm\iflexlmlog.txt`
 - Linux*, Unix* or Mac* OS: `<install location of servers>/lmgrd.intel.log`
- A copy of the license file you used to start the server
- Values to which the `LM_LICENSE_FILE` and `INTEL_LICENSE_FILE` environment variables are set.



5.3 Common Issues

This section contains descriptions of two common issues and provides solutions to those issues.

5.3.1 Client and Server Not Able to Connect Due to Windows Firewall

Problem: The firewall for Windows* XP with Service Pack 2 prevents the client application from connecting to the FLEXlm server on Windows* XP.

Solutions: Windows* XP with Service Pack 2 comes with a firewall which is turned on by default. If the firewall is turned on your FLEXlm* license server daemon and Intel License Manager for FLEXlm* license server vendor daemon will stop functioning. You can find more information about the firewall in Service Pack 2 at msdn.microsoft.com.

There are two methods to make the FLEXlm* license server daemon and the Intel License Manager for FLEXlm* license server vendor daemon function properly.

Method A:

Add a program exception to allow the FLEXlm* license server daemon and the Intel License Manager for FLEXlm* license server vendor daemon to use required ports. You must execute both step 4 and step 5. Failure to do so causes the FLEXlm license server not to work.

1. Click **Start >Run**. Type `wscui.cpl`, and click **OK**.
2. In the **Windows Security Center** window, click **Windows Firewall**.
3. On the **Exceptions** tab, click **Add Program**.
4. In the list of programs, look for `lmgrd.intel.exe`.
 - a. If `lmgrd.intel.exe` is in the list of programs, select it and click **OK**.
 - b. If `lmgrd.intel.exe` is not in the list of programs, click **Browse** to locate it in `C:\Program Files\Common Files\Intel\FLEXlm`.
 - c. Select `lmgrd.intel.exe`. Click **Open** and **OK**.
5. In the list of programs, look for `INTEL.exe`.
 - a. If `INTEL.exe` is in the list of programs, select it and click **OK**.
 - b. If `INTEL.exe` is not in the list of programs, click **Browse** to locate it in `C:\Program Files\Common Files\Intel\FLEXlm`.
 - c. Select `INTEL.exe`. Click **Open** and **OK**.

Method B:

Add a port exception to allow the FLEXlm* license server daemon, Intel License Manager for FLEXlm* license server vendor daemon and application using these daemons to communicate as usual. You must execute both step 4 and step 5. Failure to do so causes the FLEXlm license server not to work.

1. Click **Start > Run**. Type `wscui.cpl`, and click **OK**.



2. In the **Windows Security Center** window, click **Windows Firewall**.
3. Click on the **Exceptions** tab and click **Add Port**.
 - a. In the Dialog Box, enter Intel FLEXlm license server vendor daemon in the **Name** field.
 - b. Enter the TCP-IP port number of the Intel FLEXlm license server daemon in the Port number field. (You can obtain the port number by looking at IFLEXLmLog.txt, which is created under C:\Program Files\Common Files\Intel\FLEXlm. IFLEXLmLog.txt is in a line with the following type: INTEL using TCP-port X, where X is the port number.)
 - c. Click OK.
4. Click on **Add Port**.
 - a. In the Dialog Box, enter FLEXlm License Server Daemon in the **Name** field.
 - b. Enter the TCP-IP port number of FLEXlm License Server Daemon in the Port number field. (You can obtain the port number by looking at the IFLEXLmLog.txt, which is created under C:\Program Files\Common Files\Intel\FLEXlm. IFLEXLmLog.txt is in a line of the following type: lmgrd tcp-port using tcp-port Y, where Y is the port number.)
 - c. Click **OK**.

5.3.2 License Checkout Failing Due to Terminal Server Client or Remote Desktop Connection on Windows

Problem: You cannot use client applications on Windows* from a remote desktop connection or terminal sever client to checkout a license.

Solution: Using new client applications on Windows* with an old license may prevent the license checkout mechanism from working. You may therefore see the following error message: Terminal Server remote client not allowed.

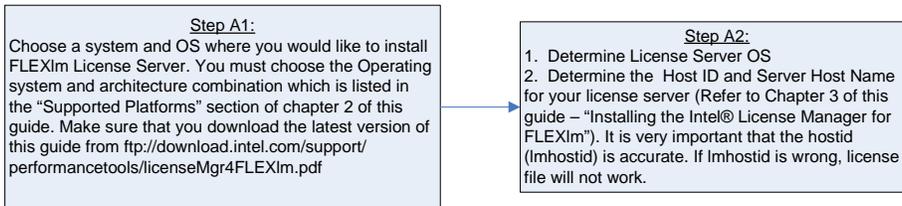
If you see this message, please contact the support team to obtain a new license file that allows you to use Windows*-based products from a remote desktop connection or terminal server. Please note that this message applies to new Windows*-based products only and applies to uncounted licenses, also known as single user licenses.



6 Appendices

6.1 Appendix A: Troubleshooting Guide

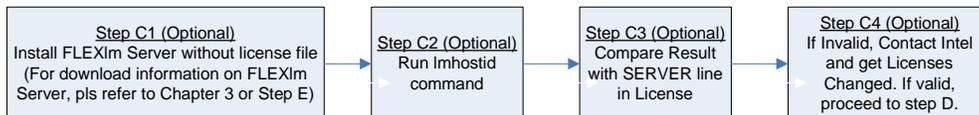
Step A – Identify the OS and architecture for installing FLEXlm* Server (Intel(R) License Manager for FLEXlm*)



Step B – Register your serial number at Intel® Registration Center

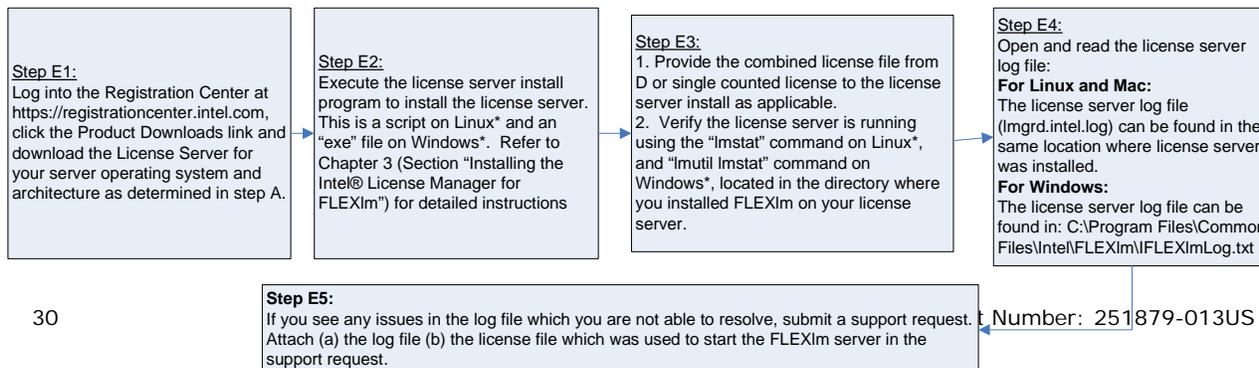
1. Go to <https://registrationcenter.intel.com>
2. Register your serial number using Host ID and Server Host Name from step A2 above.
3. Receive the License File via email attachment from the Registration Center

Step C - Verify License File Validity for the system where you intend to install FLEXlm Server
 This step needs to be executed on the system where you intend to install FLEXlm Server. Server Host ID and Hostname should match the license file if you already have a license file. You can get more information about how to obtain the Imhostid of the system on which you are planning to install FLEXlm Server by referring to Chapter 3 of this guide (Section titled – "Identifying the hostname and hostid"). Optionally you can follow steps C1, C2, C3 below
NOTE: If you have purchased counted licenses but do not have license file, you should generate the license file from <https://registrationcenter.intel.com>. You will be asked to provide the hostname and output of Imhostid from step A2 above. Refer to Chapter 3 of this guide for more details.



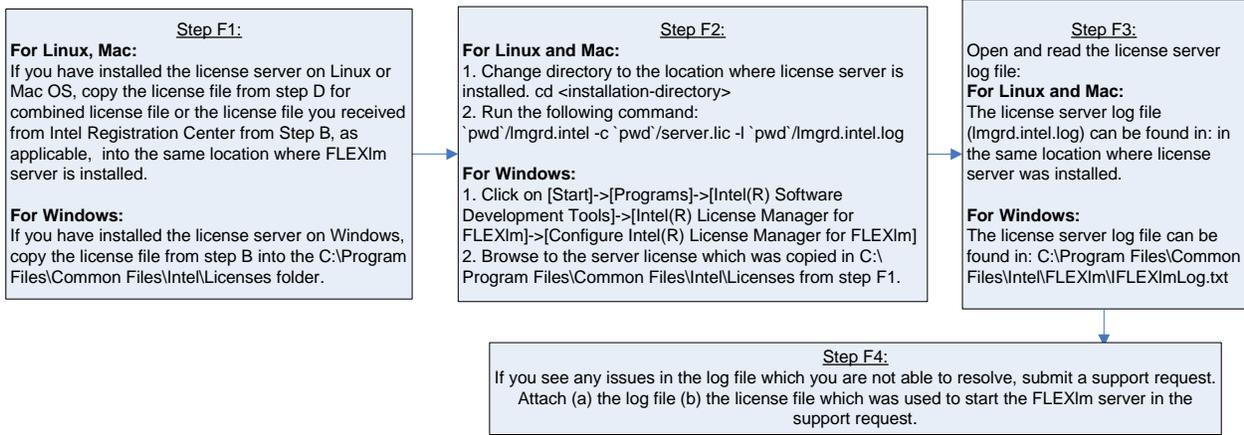
Step D – Combining multiple Intel license files into one license file (Go directly to Step C if you do not have multiple license files)
 If you have multiple counted license files for Intel products, follow the steps to merge multiple license files into one license file in the section "Combining Multiple License Files" section of this guide

Step E- Download and Install the FLEXlm Server

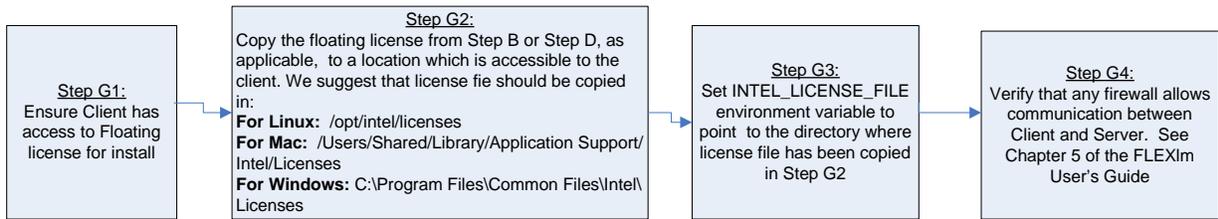




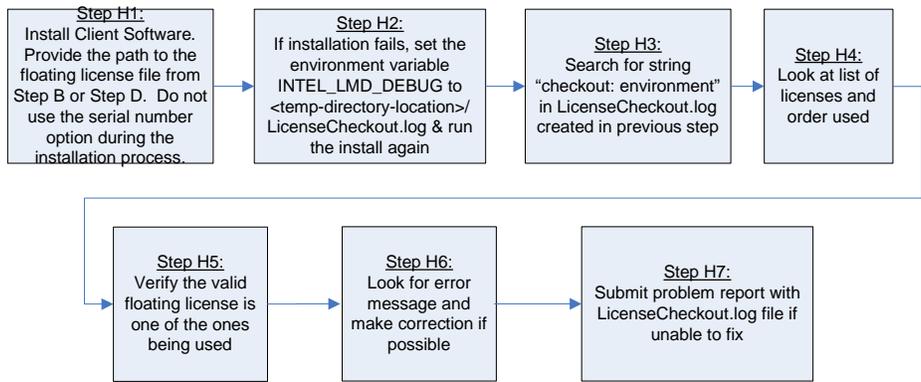
STEP F – Start the license server with the license file if you have license server pre-installed.
 Start the license server if the license server is already installed by following the instructions below. You need to follow Step F only if you have already installed license server without a license file. If you successfully started license server in Step E, you should skip this step.



Step G – Configure the client side systems before installing the client application
 The steps below provide a high level overview of what needs to be done to configure the client application.



Step H – Install the client application and make sure license checkout is successful.
 The steps below provide a high level overview of what needs to be done to ensure that license checkout succeeds. The steps below are applicable for the system where you are planning to install the client application.



Step H – Make sure that the product works.
 The steps below provide a high level overview of what needs to be done to ensure that license checkout succeeds.