# Using the Intel® License Manager for FLEXlm*

**User's Guide**

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# *Contents*

# 1 About this Guide

This guide helps you get started using the Intel® License Manager for FLEXlm* 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 FLEXlm** – Describes the supported platforms, license types, and how to obtain technical support.

*3: Installing the Intel® License Manager for FLEXlm** – 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.

*6: Checklist* – Order of steps for Intel® License Server for FLEXlm* server/client installation.

*Appendices* – Contains flowcharts showing troubleshooting steps.

## 1.1 Related Publications

For information on FLEXlm* and FlexNet* software created by Flexera Software, see http://www.flexerasoftware.com. For information on Intel® Software Development Products, see http://developer.intel.com/software/products. More information about Intel® Software Development Product licenses and their usage is available in the knowledgebase at http://software.intel.com/en-us/articles/intel-software-development-products-download-registration-licensing-kb-home/.

# 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 FLEXlm*

The Intel® License Manager for FLEXlm* is a collection of software components that helps you manage your license file in a multiple-user environment. Before you can use Intel® Software Development Products, you must have the correct license installed for the Intel products. The Intel® License Manager for FLEXlm* can be downloaded separately from your product if you purchased a floating or counted node-locked license. This document describes the installation and use of the Intel® License Manager for FLEXlm* for supported platforms.

Counting and controlling the number of concurrent users of a software product is the primary function of the Intel® License Manager for FLEXlm*. You only need the Intel® License Manager for FLEXlm* when you have a floating or counted node-locked license (see License Types). For other license types, you need to install the license file, but not the Intel® License Manager for FLEXlm*. See your product documentation for more information on installing the license file.

## 2.1 Supported Platforms

The Intel® License Manager for FLEXlm* is supported on the following platforms:

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

- Linux* IA-32 and Intel® 64 LSB (Linux Standards Based) compliant architectures

- Linux* IA-64 architecture on Red Hat* Enterprise Linux* 4

- Mac OS* X IA-32 and Intel® 64 architectures

More information about downloading the Intel® License Manager for FLEXlm* license server that best matches your license host server OS can be found in the Intel® License Manager for FLEXlm* downloads section of this guide.

You can run the Intel® License Manager for FLEXlm* on any supported platform, with Windows*, Linux*, or Mac OS* X 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 Windows*, Linux*, or Mac OS* X applications.

## 2.2  License Types

Before installing the Intel® License Manager for FLEXlm*, you should be familiar with the different license types and how they are used with Intel® Software Development Products. License types supported by the Intel® License Manager for FLEXlm* are:

- Floating License (counted)

- Node-Locked License (counted or uncounted)

- Single-User License (uncounted)

Only **counted** license types require the Intel® License Manager for FLEXlm*. Node-locked and floating license types are used in multiple-user environments, and the Intel® License Manager for FLEXlm* 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 FLEXlm* "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 FLEXlm* 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 FLEXlm* are installed. The Intel® Software Development Products are not installed on remote systems. For example, a user might use a remote login program, such as Telnet or an SSH client, to log into an account on the central system and use the command-line window to 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 FLEXlm*.

## 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 number of concurrent users or running application instances is not limited by the license file. Please refer to the End User License Agreement during the installation of your 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 for Linux* Intel® Fortran Compiler for Linux* | X | X |

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 for Windows* | | X |
| C | Linux | Intel® C++ Compiler for Linux* Intel® Fortran Compiler for Linux* | | X |
| D | Linux | Intel® Fortran Compiler for Linux* | | X |
| E | Mac OS* X | Intel® C++ Compiler for Mac OS* X | | X |

In the example above, the Intel® License Manager for FLEXlm*, running on Node A, counts the number of licenses in use. The license file on each node must have identical `SERVER` and `VENDOR` line information.

## 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*, and Mac OS* X products that rely on the Intel® License Manager for FLEXlm* to serve and count licenses.

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**Sample FLEXlm\* Counted License**

```
SERVER mslid073 000629856A25 28518
VENDOR INTEL
PACKAGE I00000000002L INTEL 2003.1025 12222F8900CF \
  COMPONENTS="CCompW CCompL CCompM" OPTIONS=SUITE ck=86 \
  SIGN=8BF3D0867076
FEATURE I00000000002L 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 (lmhostid):** 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* X)

- **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* X)

- **Intel Support Expiration Date:** 2003.1025 (October 25, 2003).

- **Product Expiration Date:** permanent (Never expires).

- **License Count:** 20.

**Note:** While host name and port numbers can be changed, editing many parts of the license file renders the entire license file invalid.

## 2.3    Technical Support

Every new license purchase or renewal of an Intel® Software Development Product includes one year of support services and free product upgrades, which provides access to Intel® Premier Support. Customers also receive support through the Intel® Software Development Products Forum.

If you purchased a CD-ROM version of your product, then you must register your product with the Intel® Software Development Products Registration Center (https://registrationcenter.intel.com/) to activate your access to Intel® Premier Support (https://premier.intel.com/) or the Intel® Software Development Products Forum (http://software.intel.com/en-us/forums/). All license types for the eligible products listed above, 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 floating or counted node-locked 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

## 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 counted licenses. The **lmhostid** utility can be found in the install location where the Intel® License Manager for FLEXlm* is installed.

## 3.1.3 Mac OS* X 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 counted licenses. The **lmhostid** utility is installed in the same location as the Intel® License Manager for FLEXlm*.

# 3.2 Registering Your Product Serial Number

Next, register each product serial number at the Intel® Software Development Products 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 FLEXlm*.

- 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.

- If you intend to install and configure three redundant license host servers, you must specify the host name and host id for each of your license host server systems when you register your floating or node-locked license(s). If you have three license host servers specified, at least two of them must be running and accessible from your client systems at all times.

- To change your license host server information in your floating or node-locked license, i.e. when you need to move your license host server to a new system, please follow the instructions in the next section (Changing Server/Host Data for Your Product License).

Go to the Intel® Software Development Products 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 Changing Server/Host Data for Your Product License

**Note:** If your floating or node-locked licenses are active, you may make changes to the host id information for your licenses. If your floating or node-locked licenses have expired support, you must submit an issue to Intel® Premier Support or to the Downloads, Licensing and Registration User Forum to request that an Intel Support Engineer modify your license host id information.

1. Login to the Intel® Software Development Products Registration Center (https://registrationcenter.intel.com/) by clicking the **Registered Users Login** button in the lower section of the web page and entering your **Login ID** and **Password** on the next page. You will see a list of all products you have registered.

2. On the **My Products** page, for each product you have registered, you will see the product name, component names, links to the latest versions available for download and posted date of the version available for download. [**Note:** Expired registrations are shown only if you check the **Show Expired Registrations** check box at the top of the page.]

3. Click on any of the product names to see your product subscription history. This includes serial number and support status with license expiration date. You will also be provided with links to manage the license information and links to renew your subscriptions. [**Note:** Expired serial numbers can be viewed by checking the **Show Expired Serial Numbers** check box on the top right corner of this page.]

4. Click on the **Manage** link for the serial number you wish to change.

5. You will be provided with the license file information page. Click on the **Modify Host Information** link at the bottom of this page.

6. Enter the new server/host information and click **Submit**. If you do not get any errors, click on **Resend license file to my email**. You will receive your new license file via email shortly.

7. After you receive your updated .lic license file, you must replace the old license file with the new one on your license host server system(s). If you use a combined license file (see the Combining Multiple License Files section in this user guide), you must update your combined license file with the new license information.

8. After your new license file or updated combined license file is on your license host server system(s), you must restart your license host server process on the license host server system(s) so your new license file or updated combined license file will be re-read.

For more information, please see http://software.intel.com/en-us/articles/change--serverhost-data-node-locked-or-floating-license/.

# 3.4    Redundant License Host Servers

Intel software product licenses can support up to three redundant license host server systems. Please follow the steps below to ensure your floating licenses and your license host server systems have been properly set up for the multiple license server configuration.

1.  Please ensure that your host ids and host names are unique for the three servers. Using a duplicate host name and host ID will not allow the license file to generate successfully during registration.

2.  If you intend to install and configure three redundant license host servers, you must specify the host name and host id for each of your license host server systems when you register your floating or node-locked license(s).

3.  Please double-check that all your floating or node-locked licenses are registered for the same three unique, correct host names/host ids. If you need to update any of your floating or node-locked licenses to correct the host names/host ids, please follow the instructions in the previous section (Changing Server/Host Data for Your Product License). You must also follow these instructions when you move one or more of your license host servers to a new system.

4.  Please make sure at least two license host servers are up and running when the license is checked out from the client system. That is to say, the Intel® License Manager for FLEXlm* should be started by selecting the right license file(s) on at least two license host servers where it is installed.

    **Note:** If your floating or node-locked licenses are active, you may make changes to the host id information for your licenses. If your floating or node-locked licenses have expired support, you must submit an issue to Intel® Premier Support or to the Downloads, Licensing and Registration User Forum to request that an Intel Support Engineer modify your license host id information.

5.  If you are using a three-server redundant configuration then at least two must be up and running to make a "quorum" and permit licenses to be checked out. If you do not intend to have all three of the servers running at all times, we recommend using a single license server instead of a three-way redundant license server configuration.

6.  If you have only one server running of the three servers keyed into the license, you will likely see the `-97` error (see below) for "`vendor daemon is down`", so you also check that the daemon is running on each server system.

    ```
    FCompW: The desired vendor daemon is down
    a) Check the lmgrd log file, or
    b) Try the lmreread command:
    Feature: FCompW
    Vendor:Host: sl-ecs-snag-01
    License path: 28518@sl-ecs-snag-01;C:\PROGRA~2\Intel\Compiler\
      Fortran\100~1.026\Ia32\Bin\*.lic
    FLEXlm error: -97,121
    ```

# 3.5     Downloads and Installs

## 3.5.1     Product File Downloads

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.

If you have a current product license, you can download any version of the software, and if your current product license is entitled to Intel® Premier Support, you have access to submit questions through the Intel® Premier Support system.

Once the support period has expired, downloads are only available to you for product versions with a Build Date on or before your license Support Expiration date.

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.

## 3.5.2     Intel® License Manager for FLEXlm* downloads

If you are using counted licenses, you will also be required to install Intel® License Manager for FLEXlm*. Do not use the Intel® License Manager for FLEXlm* for uncounted (Single User) licenses – only for floating and node-locked licenses (see License Types).

Remember that the OS of the server system where the Intel® License Manager for FLEXlm* is installed is irrelevant to the OS for the license(s) it supports.  So the Intel® License Manager for FLEXlm* can be installed on Windows*, Linux*, or Mac OS* X machines regardless of the OS for each of your floating and node-locked Intel® Software Development Product licenses.

You can download the Intel® License Manager for FLEXlm* from Intel® Software Development Products Registration Center by following these steps:

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

You must download the Intel® License Manager for FLEXlm* 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 Development Products) Products). For example, you can install the license server on a Mac OS* X system to manage Intel product license seats for Windows*, Linux* and/or Mac OS* X software products.

The most recent version of the User Guide for the Intel® License Manager for FLEXlm* is also available from the web site.

For more information about downloading the Intel® License Manager for FLEXlm*, see the Intel® License Manager for FLEXlm* Servers knowledgebase article.

## 3.5.3    Starting the Intel® License Manager for FLEXlm* on Windows

1. Download the Windows* Intel® License Manager for FLEXlm* that matches your environment.
2. Run the self-extracting executable downloaded in the previous step.
3. Provide the path to the license file during the installation of Intel® License Manager for FLEXlm*.
4. Finish the installation process. The license manager should start automatically as a service.

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

1. From the Windows* **Start** menu, select **Programs > Intel® Software Development Products > Intel(R) License Manager for FLEXlm > Configure Intel(R) License Manager for FLEXlm**.
2. Select the license file.
3. Click **Apply** and close the window.

**Note:** You will also be required to follow the above steps if you wish to restart the license server with a different license file.

## 3.5.4    Installing the Intel® License Manager for FLEXlm* on Linux* and Mac OS* X

Follow the steps below to install the software for the Intel® License Manager for FLEXlm* on Linux* or Mac OS* X systems:

1. Place the downloaded package `<l|m>_isl_server_<architecture>.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 <l|m>_isl_server_<architecture>.tar.gz`
   This command extracts the files and prepares you for installation.

3. Use the cd command to 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*.

5. To run the license server, the user must have executable access to the binary files **lmgrd** and **INTEL**.  If executable access gets lost during extraction and/or copying from a Windows* system, you can use a command like one of the two listed below to set executable access for the file:
   ```
   chmod 775 /flexlm/INTEL
   ```
      or
   ```
   chmod +x "`pwd`/flexlm/lmgrd"
   ```
      or
   ```
   chmod +x "$(pwd)/flexlm/lmgrd"   (non-csh)
   ```

## 3.5.5    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 Intel® License Manager for FLEXlm* server starts after reboot. It is important that the network has been initialized before the license server is started. Ensure that there is a white space (" ") between each argument. It is not necessary for server startup be done as root.

```
1.  cd <server-directory>
2.  `pwd`/lmgrd –c `pwd`/<licensefile> -l `pwd`/<log file>
       or
    $(pwd)/lmgrd –c $(pwd)/<licensefile> -l $(pwd)/<log file>   (non-csh)
```

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 to the license file, including the full license file name.

The `-l <log file>` will capture information that will be useful for debugging unanticipated server or license check-out problems. Use the full path where the log file should be created, including the log file filename.

## 3.5.6 Verifying the Intel® License Manager for FLEXlm* on Linux* and Mac OS* X

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

1. Use the `cd` command to move to the `<server-directory>`.
2. Execute the command `lmstat -c <license file>`. Use the full path to the license file, including the full license filename.

## 3.5.7 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 startup failures may result.

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

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

1. Use the cd command to move to the `<server-directory>`.
2. Execute the command:
   `lmdown -c <license file>` (use the full path)
3. Killing the `lmgrd` 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.

# 4 *Using the Client Application for the First Time*

You must complete the following steps to use the Intel® License Manager for FLEXlm* 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 the Client Application

If you are using counted licenses, you can install the client application without starting the Intel® License Manager for FLEXlm* server by providing the full 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)

When using a license file to install a client application, you should put the license file into the default license folder for the operating system on which you are installing.

Windows*: `C:\Program Files\Common Files\Intel\Licenses`

Linux*: `/opt/intel/licenses/`

Mac OS* X: `/Users/Shared/Library/Application Support/Intel/Licenses/`

**Note:** You need a complete license file residing on the client system or access to a running license server during the process of installing a client application. You cannot use the `port@host` mechanism or the `USE_SERVER` mechanism during the installation of a client application unless the license server is running.

# 4.2 Setting the INTEL_LICENSE_FILE Environment Variable

Once you have installed the Intel® License Manager for FLEXlm* license server and installed the client application, the `INTEL_LICENSE_FILE` environment variable must be set. Most Intel® Software Development Products have an environment variables file (e.g. iccvars.sh for the Intel C++ Compiler for Linux*) that can be run to set up the `INTEL_LICENSE_FILE` variable correctly. This environment variable must be set for proper authentication of the product license file.

Other ways to set up the `INTEL_LICENSE_FILE` environment variable:

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. You may provide multiple path values separated by semicolons ";".
5. Click **OK > OK > OK**.

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

- Bash shell, Bourne shell (sh), and Korn shell (ksh) 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
  ```

- C shell, use the `setenv` command:

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

## 4.2.1 Counted Licenses and Alternatives

If the Intel® Software Development Product you are using is enabled for counted licenses, which require a license 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 Products, you can use a license file with the `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 license 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 Products, 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 Intel® License Manager for FLEXlm* server.

  **Note:** 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`.

## 4.2.2 How to Specify Ports for License Servers

Intel's license files specify two ports:

1. `SERVER <host_name> <host_id> <port1>`
2. `VENDOR INTEL port=<port2>`

Typically, Intel specifies `port1` to `28518` and `port2` is omitted, which causes the system to randomly assign the second port.  You may specify `port2` to a fixed value so that you can open that port through any firewalls between the client application and the server system running the Intel® License Manager for FLEXlm*.

When changing either port, you must ensure:

- The port numbers in all license files match on both the license host server and client systems.
- The license server is restarted to read the updates.
- The `INTEL_LICENSE_FILE` environment variable on the client systems is pointing to the correctly updated license file or `port@host`.

You may need to add a port exception to allow the FLEXlm* license server daemon, the Intel® License Manager for FLEXlm* vendor daemon, and the application using these daemons to communicate. See the Add a Port Exception section of this document for more information.

# 4.3 Combining Multiple License Files

## 4.3.1 Criteria for Combining License Files

Your product's license file(s) define the license server(s) by host name and hostid in the `SERVER` line(s) in the license file. License files may be combined provided they meet the following criteria:

1. The number of `SERVER` lines in each license file is the same.
2. The hostid fields of `SERVER` lines in each license file match.

**Note:** You are not required to combine compatible license files. There is no performance or system-load penalty for not combining the files.

Some possible reasons license files may <u>not</u> be compatible are:

- License files are set up to run on different server machines, so hostids are different.
- One file is set up for a single server (has only one `SERVER` line), the other is set up for a three-server redundant license server (has multiple `SERVER` lines).  For further information on using redundant servers, see Redundant License Host Servers and the information at http://software.intel.com/en-us/articles/redundancy-server-notes/.

## 4.3.2 Instructions for Combining 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:

- Only one license file has a `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 met, you can simply concatenate the license files and remove the duplicate `SERVER` and `VENDOR` lines by making sure that the license with the `FEATURE` line is the first key in the combined license file and licenses with `INCREMENT` lines follow it (File0003.lic).

- 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 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.

  **Note:** If you update your license file, be sure to do the following:

  - Verify that the license files on the client systems are the same as the license file on the license host server.

  - Restart the Intel® License Manager for FLEXlm* license server to force it to read the updated license file.

  - Verify that the `INTEL_LICENSE_FILE` environment variable is pointing to the right license file or the correct `port@host` settings.

## 4.3.3    Examples

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=SMSA37693512 \
    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, 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 lines (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
```

# 4.4　License Seat Check-out and Check-in

## 4.4.1　License Seat Allocation Overview

For an Intel® compiler product, the license seat is checked out (allocated) as soon as the compiler or debugger is started; and returned when the compiler or debugger work is "done".

**Note**: For performance libraries (Intel® Integrated Performance Primitives, Intel® Threading Building Blocks, and Intel® Math Kernel Library), and some other Intel® Software Development Products, license check-out is only done during product installation.

All floating license seats are available on a first-come first-served basis for check-out by any number of products installed on client systems that have been configured to check-out floating license seats from the license host server system.

However, if all license seats are allocated for the requested product, additional users are forced to wait for one of the client systems to release a floating license seat. This is automatically done in our products, and means that some users may experience delays if all license seats are simultaneously allocated. The wait time for a license seat is forever, until a license seat is available, and is not configurable by end users.

When all license seats are allocated, a new license check-out request will retry every 30 seconds until a license seat is available to be allocated to the request. A delay that results from the wait for a license seat may appear to the end user that the product is hung or that performance has suddenly degraded.

## 4.4.2  Allocation status

To determine how many floating license seats are checked-out, use the command `lmstat` in one of the following ways:

On the license host server system, execute one of the following commands:

Linux*
```
lmstat -a -c <license file>
```

Windows*
```
lmutil lmstat –a –c <license file>
```

`license file` is the full path including filename to the floating license file.

On the client system, execute one of the following commands:

Linux*
```
lmstat –a
```

Windows*
```
lmutil lmstat –a
```

**Sample lmstat Output**

The following is an example output of the `lmstat` command from a Linux* server running Intel® License Manager for FLEXlm*. The output includes information about the total number of licenses issued and total number in use.
```
$ ./lmstat –a

lmstat - Copyright (c) 1989-2003 by Macrovision Corporation. All rights
reserved.
Flexible License Manager status on Wed 6/16/2010 02:11
License server status: 28518@spd16
License file(s) on spd16:

/tmp/jsmith/bin/flexlm_ia32_RH8/spd16.lic:

spd16: license server UP (MASTER) v9.2

Vendor daemon status (on spd16):

INTEL: UP v9.2

Feature usage info:

Users of I00000000000000000080000000000: (Total of 2 licenses issued;
Total of 0 licenses in use)

Users of FCompL: (Total of 2 licenses issued; Total of 0 licenses in use)
```

# 5    *Troubleshooting*

This chapter explains how to generate debug logs, lists the information you should provide 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 previous sections to verify the installation. If the problem persists after you verify correct installation, you should open a support case with Intel® Premier Support or the Intel® Software Development Products Download, Registration & Licensing User Forum.

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 the 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 the 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* or Mac OS* X systems, the commands used depend on the shell in use.

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

  `$ export 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`

- 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`

**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. This is the name of the file you downloaded and installed.

- 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.

- A copy of all license files used on the client system. It is important to copy the license files themselves rather than copy/pasting the contents as this can mask other potential problems with the files.

- On Linux* or Mac OS* X, 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 Intel® License Manager for FLEXlm* server is installed.

- The Intel® License Manager for 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 * or Mac OS* X: `<install location of servers>/lmgrd.log`

- A copy of the license file you used to start the server. It is important to copy the license files themselves rather than copy/pasting the contents as this can mask other potential problems with the files.

- 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 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 server 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.

## 5.3.2 Client and Server Not Able to Connect Due to Windows Firewall

**Problem:** The firewall for Windows* XP with Service Pack 2 or above prevents the client application from connecting to the Intel® License Manager for FLEXlm* server on Windows* XP.

**Solutions:** Windows* XP with Service Pack 2 or above 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 may stop functioning. You can find more information about the firewall 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.

### 5.3.2.1 Add a Program Exception in Windows* XP

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. Click on the **Exceptions** tab and click **Add Program**.
4. In the list of programs, look for `lmgrd.exe`.
   a. If `lmgrd.exe` is in the list of programs, select it and click **OK**.
   b. If `lmgrd.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**.

## 5.3.2.2    Add a Port Exception in Windows* XP

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. 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**.
4. In the dialog box, enter `Intel(R) License Manager for FLEXlm Vendor Daemon` in the **Name** field.
5. Enter the TCP/IP port number of the INTEL vendor daemon in the **Port number** field.
   a. This is the port number specified on the `VENDOR` line of the license file.
   b. You can also obtain the port number from the log file **IFLEXLmLog.txt** in the C:\Program Files\Common Files\Intel\LicenseServer folder in a line like this:
      `INTEL using TCP-port <port>`

6. Click **OK**.
7. Click **Add Port** again.
8. In the dialog box, enter `FLEXlm License Server Daemon (lmgrd.exe)` in the **Name** field.
9. Enter the TCP/IP port number of the FLEXlm* license server daemon in the **Port number** field.
   a. This is the port number specified on the `SERVER` line of the license file.
   b. You can also obtain the port number from the log file **IFLEXLmLog.txt** in the C:\Program Files\Common Files\Intel\LicenseServer folder in a line like this:
      `lmgrd using tcp-port <port>`

10. Click **OK**.

# *6* *Checklist for Intel® License Manager for FLEXlm\* Server/Client Installation*

**Note:** Many of the following steps should be repeated when a floating product license is renewed or added to an existing set of floating licenses and when a combined license file is updated.

## 6.1 License Host Server System Checklist

| Your Status | Step | Task Description | For more information |
|---|---|---|---|
| | 1 | Download the latest Intel® License Manager for FLEXlm* User Guide | http://software.intel.com/en-us/articles/license-manager-for-flexlm-users-guide |
| | 2 | Download the Intel® License Manager for FLEXlm* that best matches your license host server OS and platform | http://software.intel.com/en-us/articles/performance-tools-for-software-developers-intel-flexlm-license-servers/ |
| | 3 | Verify your license host server machine's host name and host id. If you are using three redundant license host server systems, verify the host name and host id for all three machines. | http://software.intel.com/en-us/articles/how-to-find-host-id-for-floating-licenses/ |
| | 4 | Verify your floating licenses are registered with the correct host name and host id specified. If you are using three redundant license host server systems, verify all three host names and host ids are specified for each floating license. | Log in to the Intel® Software Development Products Registration Center at https://registrationcenter.intel.com/ |
| | 5 | If any of your floating licenses have incorrect or out-of-date host name or host id information, follow the instructions in the user guide to correct the information in the floating license(s) and obtain updated license file(s). | http://software.intel.com/en-us/articles/change--serverhost-data-node-locked-or-floating-license/ |
| | 6 | If you wish to combine you floating license files into one file, follow the instruction in the Combining Multiple License Files section of this user guide. | http://software.intel.com/en-us/articles/how-do-i-combine-multiple-license-files/ |

| Your Status | Step | Task Description | For more information |
|---|---|---|---|
| | 7 | Verify that all individual floating license files or the combined license file resides on your license host server system. Ensure there are no Single User, evaluation, or Beta licenses residing in the FLEXlm* license folder on your license host server system. | On Linux*: /opt/intel/flexlm/<br><br>On Mac OS* X: /opt/intel.flexlm/<br><br>On Windows*: C:\Program Files\Common Files\Intel\LicenseServer\ |
| | 8 | If you have specified three redundant license host server systems in your floating licenses, at least two of the three redundant license hosts servers must be up and running at all times. | http://software.intel.com/en-us/articles/redundancy-server-notes/ |
| | 9 | Install your Intel® License Manager for FLEXlm* server binary on your license host server system. If you have specified three redundant license host server systems in your floating licenses, complete all three license host server installations. | Follow the instructions in Chapter 3: Installing the Intel® License Manager for FLEXlm*. |
| | 10 | Start your license host server process by following the instructions in Chapter 3: Installing the Intel® License Manager for FLEXlm*. | If you are using Windows* Vista, Windows* 7, or Windows* Server 2008 system, please see the information at http://software.intel.com/en-us/articles/installing-license-server-on-vista/. |
| | 11 | Ensure your license server is running using the `lmstat` command. | http://software.intel.com/en-us/articles/when-is-a-floating-license-seat-checked-out-and-checked-in/ |

## 6.2     Client Systems Checklist

| Your Status | Step | Task Description | For more information |
|---|---|---|---|
| | 1 | Download the latest Intel® License Manager for FLEXlm* User Guide | http://software.intel.com/en-us/articles/license-manager-for-flexlm-users-guide |
| | 2 | Install the Intel® Software Development Products your users will be running on each client system. If using a copy of the complete server license file to install the product, you need to use an exact copy and place it in the default license file folder. | Follow the instructions for installing a client product in the Installing the Client Application section of the user guide. |
| | 3 | Set the `INTEL_LICENSE_FILE` environment variable on each client system. | http://software.intel.com/en-us/articles/how-to-set-intel_license_file-environment-variable/ |
| | 4 | Launch your Intel® Software Development Product. | If problems occur with floating license seat check-out, please follow the steps in Chapter 5: Troubleshooting of the user guide to capture a debug log and submit an issue. Be sure to include:<br><br>1. OS and architecture for your license host server system(s)<br>2. The name of the specific Intel® License Manager for FLEXlm* package you downloaded and installed.<br>3. The serial number for the floating license you are using.<br>4. The environment variable settings for `INTEL_LICENSE_FILE` and `LM_LICENSE_FILE`.<br>5. A copy of each floating license file you are using.<br>6. The combined license file (if applicable).<br>7. Host server name and host id for all license host servers.<br>8. Captured output of `lmstat` command.<br>9. License server and client-side debug logs |

# 7 *Appendices*

## 7.1 Appendix A: Latest Revision of User's Guide

The latest information about the Intel® License Manager for FLEXlm* and use of FLEXlm* in Intel® Software Development Products can be found at:

http://software.intel.com/en-us/articles/license-manager-for-flexlm-users-guide/

# 7.2    Appendix B: Troubleshooting Guide

**Step 1.  Identify the OS and architecture for installing the Intel® License Manager for FLEXlm\*.**

    a.    Choose a system and OS where you would like to install the Intel® License Manager for FLEXlm\*. You must choose an operating system and architecture combination listed in the Supported Platforms section of the user guide. **Note:** Make sure you have downloaded the latest version of the user guide from http://software.intel.com/en-us/articles/license-manager-for-flexlm-users-guide.

        1.    Determine the license server OS.

        2.    Determine the host name and host id of your license server system. Refer to Installing the Intel® License Manager for FLEXlm\* in the user guide.

        **Note:** It is very important that the host id is accurate. If it is not accurate, the license file will not work.

**Step 2.  Register your serial number at the Intel® Software Development Products Registration Center.**

    a.    Go to https://registrationcenter.intel.com/.

    b.    Register your serial number using the host name and host id from the previous step.

    c.    Receive the license file as an attachment via email from the Intel® Software Development Products Registration Center

**Step 3.  Verify the validity of the license file for the system where you intend to install the Intel® License Manager for FLEXlm\*.**

    a.    **Note:** This step needs to be executed on the system where you intend to install the license server.

    b.    The server's host id and hostname (collected in Step 1 above) should match the information in the license file. The following optional steps may help ensure you have a valid license file:

        1.    Install Intel® License Manager for FLEXlm\* without specifying a license file. (Refer to Installing the Intel® License Manager for FLEXlm\* in the user guide for further information about downloading and installing the license server).

        2.    Run the `lmhostid` command (on Windows\*, use `lmutil lmhostid`).

        3.    Compare the output with the `SERVER` line in your license file.

        4.    If the host id values do not match, follow the instructions in the Changing Server/Host Data for Your Product License section to obtain a corrected license file.

**Step 4.  Combine multiple license files into one license file.**

    a.    See the section Combining Multiple License Files in the user guide for further details.

**Step 5. Download and Install the Intel® License Manager for FLEXlm\*.**

a.  Log in to the Intel® Software Development Products Registration Center at https://registrationcenter.intel.com, click the **Product Downloads** link, and download the license server for your operating system and architecture as determined in **Step 1**.

b.  On Linux\* or Mac OS\* X, you must unpack the .tar.gz file.

c.  Execute the license server install program to install the license server. On Linux\* and Mac OS\* X, this is a script. On Windows\*, it is a self-extracting executable. (Refer to the Installing the Intel® License Manager for FLEXlm\* chapter of the user guide for detailed instructions).
Provide the combined license file from **Step 4** above or a single counted license to the license server install as applicable.

d.  Verify the license server is running using the `lmstat` command (on Windows\*, use `lmutil lmstat`). These command binaries are available in the folder where you installed Intel® License Manager for FLEXlm\*.

e.  Open and read the license server log file.
1.  For Linux\* and Mac OS\* X, the license server log file (`lmgrd.log`) can be found in the license server install location.
2.  For Windows\*, the license server log file is `C:\Program Files\Common Files\Intel\LicenseServer\IFLEXlmLog.txt`.

f.  If you see any issues in the log file that you are unable to resolve on your own, submit a support request.
1.  Attach the log file.
2.  Attach the license file used to start the Intel® License Manager for FLEXlm\*.

**Step 6. Start the license server with the license file (if you installed the license server without the license file).**

**Note:** If you successfully started the license server in **Step 5**, you should skip this step.

**For Linux\* or Mac OS\* X:**

a.  Copy the license file from either **Step 4** if you combined licenses or the file your received from the Intel® Software Development Products Registration Center in **Step 2** into the license server install location.

b.  Change directory to the location where the license server is installed. (e.g. `cd <install-directory>`).

c.  Run the command `` `pwd`/lmgrd -c `pwd`/server.lic -l `pwd`/lmgrd.log ``.

d.  Open and read the license server log file (`lmgrd.log`).

**For Windows\*:**

a.  Copy the license file from either **Step 4** if you combined licenses or the file your received from the Intel® Software Development Products Registration Center in **Step 2** into `C:\Program Files\Common Files\Intel\Licenses`.

b.  Click on **Start > Programs > Intel(R) Software Development Products > Intel(R) License Manager for FLEXlm > Configure Intel(R) License Manager for FLEXlm**.

c.  Browse to the server license that was copied into `C:\Program Files\Common Files\Intel\Licenses` in **Step 6a**.

d.  Open and read the license server log file (`C:\Program Files\Common Files\Intel\LicenseServer\IFLEXlmLog.txt`).

**For all supported operating systems:**

e.  If you see any issues in the log file that you are unable to resolve on your own, submit a support request.
1.  Attach the log file.
2.  Attach the license file used to start the Intel® License Manager for FLEXlm\*.

**Step 7. Configure the client systems before installing client applications.**
    a.   Ensure the client system has access to the license server or a copy of the floating license used to install the Intel® License Manager for FLEXlm\*.
    b.   If you wish to use a license file rather than the port@host mechanism, copy the floating license file from **Step 2** or **Step 4**, as applicable, to the client system in the one of the following locations:

        For Linux\*: `/opt/intel/licenses`

        For Mac OS\* X: `/Users/Shared/Library/Application Support/Intel/Licenses`

        For Windows\*: `C:\Program Files\Common Files\Intel\Licenses`

    c.   Set the `INTEL_LICENSE_FILE` environment variable to point to the server using the `port@host` format or to the license file copied in **Step 7b** above.
    d.   Verify that any firewall allows communication between the client and server systems. See the Troubleshooting chapter of the user guide for more details.

**Step 8. Install the client application and make sure license checkout is successful.**
    a.   Install the client software.
    b.   If installation fails, set the environment variable `INTEL_LMD_DEBUG` to `<temp-directory-location>/LicenseCheckout.log` and run the install again.
    c.   Search for the string "`checkout: environment`" in the LicenseCheckout.log created in the previous step.
    d.   Review the list of licenses and the order used.
    e.   Verify the valid floating license is in the list.
    f.   Look for error messages and correct if possible.
    g.   If you are unable to solve any issues on your own, submit a support request according to the instructions in the Support Requests section of the user guide.

**Step 9. Make sure the product works.**