



MAK License Management Users Guide

MAK products use the FLEXlm license manager. Before you can use a MAK product, you must obtain a valid license file and configure the license server and client machines. Contact the MAK sales department for information about special licensing agreements.

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The License Management Architecture

FLEXlm uses a client-server architecture. The FLEXlm server daemon, *lmgrd*, runs on one computer, known as the license server. This machine services every machine (including possibly itself) on which you run a MAK product. The machines on which MAK products are running are called clients. On each client you must specify the server to use.

The license server executes vendor daemons (for MAK, *maklmgrd*) and uses one or more license files, provided by individual vendors. The license file identifies the products for which you have licenses.

Licenses “float”, so you can install product software on as many computers as you want, but at any given time, you can run only as many instances of a product as you have licensed.

MAK supports two types of floating license files – server-based and dongle-based. A server-based license is keyed to the Host ID (ethernet address or MAC address) of the license server computer. A dongle-based license is keyed to the ID of a USB dongle.

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Under some circumstances, MAK provides node-locked licenses, which do not require installation of a license server. These licenses are used primarily for demonstration purposes. Node-locked licenses also require the Host ID.

While you can transfer dongle licenses from one machine to another, you cannot use two dongle licenses simultaneously on one machine.

You cannot use a server-based license on any computer except the one for which it was created. If you need to change your license server to a different computer, you must transfer the license. You can use a dongle-based license on any computer on which the dongle is installed. This makes it easy to switch license servers (you must install additional drivers on the license server, so it is not an entirely seamless process).

In either case, if you change the license server, you must reconfigure all client computers to point to the new server. So changing servers may not be a trivial process and you should think carefully about which computer to use as a server before you configure your system.

[Figure 1-1](#) illustrates the client-server architecture for FLEXlm and MAK products.

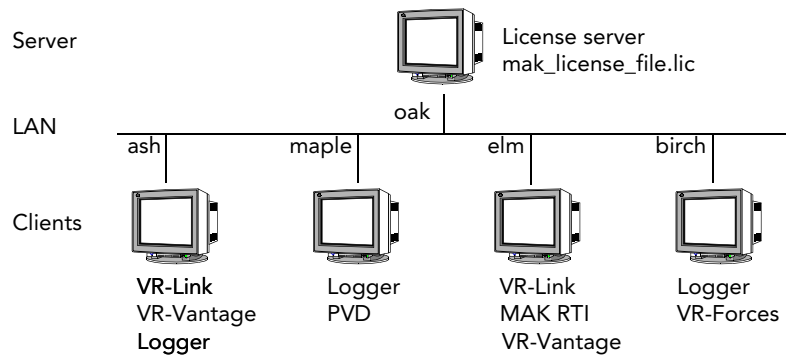


Figure 1-1. License management example architecture

Installing and Configuring the License Manager

You can manage your license installation with the MAK License Manager utility. The general procedure for installing and configuring license management is as follows (each step is explained in the rest of this section):

1. Install the MAK License Manager software. If you are using a dongle, install dongle drivers. For details, please see [“Install the MAK License Manager Software,”](#) on page 5.
2. Request a license file. For details, please see [“Request a License File,”](#) on page 8.
3. Put the license file in the *MAKLicenseManager* directory on the license server. For details, please see [“Put the License File in the License Manager Directory,”](#) on page 9.
4. Run the MAK License Manager. For details, please see [“Run the License Server,”](#) on page 10.
5. Specify the license server on all client machines. For details, please see [“Specify the License Server or Node-Locked License,”](#) on page 11. If you are using a dongle, you must set the `MAKLMGRD_LICENSE_FILE` environment variable. For details, please see [“Setting the MAKLMGRD_LICENSE_FILE Environment Variable,”](#) on page 12.

If you have MAK products installed and you purchase additional licenses or products, you must get a license file for the new products or licenses. For this procedure, please see [“Adding Additional License Files,”](#) on page 14.

Install the MAK License Manager Software

The License Manager software is included on product DVDs and is also available as a download. For the latest installers, please go to <http://www.mak.com/support/licenses>.

Some customers are unable to connect to a central license server or require the ability to quickly move licenses from one computer to another without going through the standard license transfer process. These customers may purchase licenses that are keyed to a dongle ID instead of a computer's Host ID. To use a dongle license, you install dongle drivers and a dongle on the license server. All other aspects of license management are the same. You still must run the license server and you must configure all clients to point to the license server.

Installing the License Manager on Windows

The License Manager installer for Windows is a typical installation wizard.



You must have administrator privileges to install MAK products on Windows Vista.

To install the License Manager:

1. If you are installing a dongle on a computer that has previously used a license keyed to the license server's ethernet address, clear the cache, as described in “[Clear the License Cache](#),” on page 17
2. Run the installer.
3. Follow the instructions of the installation program. On the Select Components page, the default is to install the License Manager, but not dongle drivers. If you plan to use a dongle, select License Manager and Dongle Drivers ([Figure 1-6](#)). Otherwise, accept the default.

By default, the installer installs files to *C:\MAK\MAKLicenseManager*.

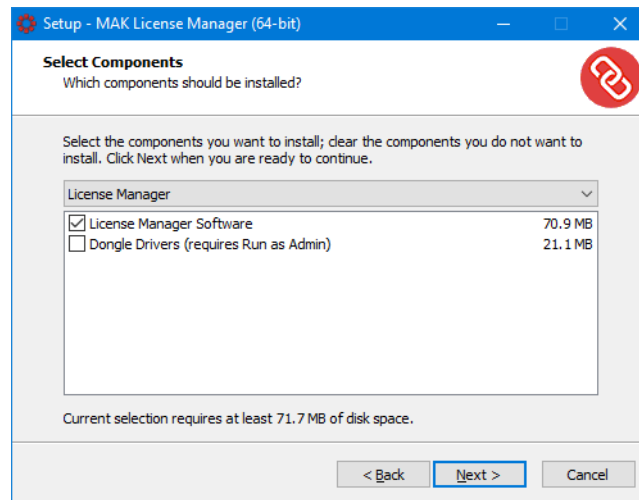


Figure 1-2. Select Components page

4. If you are using a dongle license, insert the dongle into a USB port.

Installing the License Manager on a Linux System

For Linux, the License Manager is provided as a compressed tar file.

To install the License Manager:

1. Create a directory called *MAKLicenseManager* in which to install the License Manager.
2. Copy the tar file to the *MAKLicenseManager* directory.
3. Uncompress and untar the tar file:

```
tar -xvzf MAKLicenseManager-linux-setup.tar.gz
```

Installing Dongle Drivers on Linux

1. Install the License Manager software.
2. Change directory to the directory in which you installed the License Manager.
3. Change directory to *dongle_drivers*:

```
cd dongle_drivers
```

4. If you are using a 64 bit system, continue configuring the dongle as follows:

- a. Change directory back to *dongle_drivers*.

- b. Extract *install_32bit_compatibility_package_for_x64.tar.gz*:

```
tar -xzf install_32bit_compatibility_package_for_x64.tar.gz
```

- c. Run *install_32bit_compatibility_package_for_x64.sh*:

```
sudo ./install_32bit_compatibility_package_for_x64.sh
```

5. Extract *aksusbd-redhat-suse-2.5.1.tar.gz*:

```
tar -xzf aksusbd-redhat-suse-2.5.1.tar.gz
```

This creates a directory called *Sentinel_LDK_RedHat_and_SuSE_RPM_Run-time_Installer*.
6. Change directory to *Sentinel_LDK_RedHat_and_SuSE_RPM_Run-time_Installer*.
7. Install *aksusbd-2.5-1.i386.rpm*:

```
sudo rpm -i aksusbd-2.5-1.i386.rpm
```
8. Set the `FLEXID_LIBRARY_PATH` environment variable:

```
export FLEXID_LIBRARY_PATH=$FLEXID_LIBRARY_PATH:.
```
9. Insert the license dongle into a USB port. (If you have already inserted the dongle, remove it and reinsert it.)

Uninstalling the Dongle Drivers on Linux

To uninstall the dongle drivers on Linux, run the following command:

```
sudo rpm -e aksusbd
```

Request a License File

When you request a license file, you need to know the:

- ♦ Host ID of the license server (or the dongle ID)
- ♦ Name of the license server
- ♦ MAK invoice number of your purchase
- ♦ Basic contact information for you and your company
- ♦ Platforms for which you have purchased MAK products
- ♦ Number of licenses for each platform and product.

Identifying the Host ID and License Server Name in Windows

To find out the host ID and license server name in Windows:

1. On the Start menu, choose **Programs** → **MAK Technologies** → **MAK License Manager** → **MAK License Manager**. The MAK License Manager utility opens (Figure 1-3).

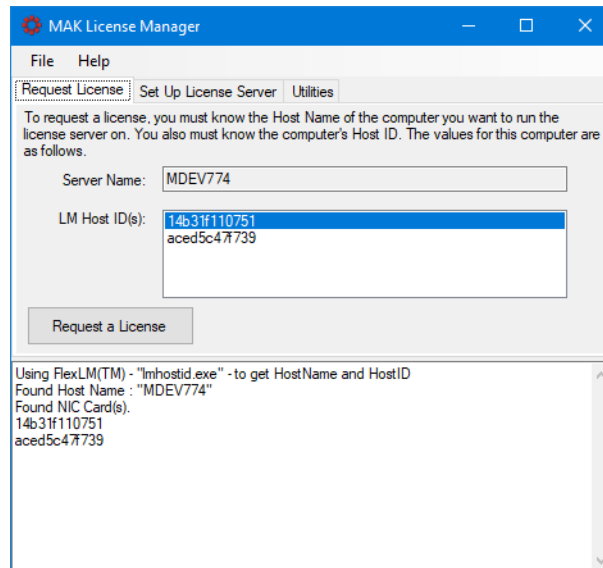


Figure 1-3. License Manager

2. Select the Request License tab. It displays the server name and the IDs for your network cards.
3. If you have more than one network card, select the one that you want to use as Host ID.
4. Click Request a License. The License Manager opens up the Get Licenses page at www.mak.com and inserts the server name and host ID.
5. Complete the license request page and submit it. MAK will e-mail you a license file.



If you do not want to request a license at this time, or you do not have internet access from the server, write down the server name and host ID. Go to <http://www.mak.com/support/get-licenses.html> and complete the license key request form. MAK will e-mail you a license file.

Identifying the Host ID and License Server Name on Linux

To find out your host ID and server name:

1. On the license server, in a command window, change to the *MAKLicenseManager* directory.
2. Execute *lmhostid*. This program reports a unique number that MAK uses to generate your license activation codes. Write down the number.



The host ID is keyed to the MAC address of your ethernet card, so if you change your network card, you must request a new license file.

3. To find out the name of the server machine, at a command prompt, type `hostname`.
4. Go to <http://www.mak.com/support/get-licenses.html> and complete the license key request form. MAK will e-mail you a license file.

Put the License File in the License Manager Directory

When you receive your license file, put it in the *MAKLicenseManager* directory on the license server. The file should have the extension *.lic*. If it does not, please contact keys@mak.com to clarify why it did not follow this convention.



-
- ♦ We recommend that you not rename the license file. If you do, the renamed file must end in *.lic* and it is your responsibility to make sure that you do not overwrite another license file.
 - ♦ Do not combine a new license file with an old one.
 - ♦ If you already have a license file in the *MAKLicenseManager* directory, do not overwrite the file. For details, please see the instructions in “[Adding Additional License Files](#),” on page 14.
-

Run the License Server

The License Manager daemon must be running on the server machine before you can run your MAK applications.

When you restart the server, the license server turns off. You must start the license server again after booting up the server.



- ♦ If you have a node-locked license, you do not have to run a license server. You just need to specify the location of the license file. For details, please see [“Specify the License Server or Node-Locked License,”](#) on page 11.
 - ♦ On Windows, we recommend that you run the license server as a service. The procedure for setting this up is in [“Running FLEXlm as a Service on Windows,”](#) on page 16.
-

- To start the license server, in a console window, change to the *MAKLicense-Manager* directory and then run *runLm*. (On Windows, you can double-click *runLM.bat* in the Windows Explorer.)
-



Do not execute more than one instance of *runLm* at a time. If you are not sure whether or not the license server is running, execute *lmstat*.

- To obtain the current status of the server, run *lmstat*.

Shutting Down the License Server

- To stop the license server, in a console window, change to the *MAKLicense-Manager* directory and then run *lmdown*.
-



Do not shut down the license server by killing its process. Always use *lmdown*. If you kill the license server directly, licenses might not be released properly. If licenses are not released, reboot the computer.

Specify the License Server or Node-Locked License

You can specify the license server or location of a node-locked license interactively or by setting an environment variable.

If you are using a dongle license, you must set the MAKLMGRD_LICENSE_FILE environment variable. Skip the following procedure and follow the appropriate procedure in [“Setting the MAKLMGRD_LICENSE_FILE Environment Variable,”](#) on page 12.

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- ♦ If you are running MAK products on the license server machine, it is also a client, so you must specify the license server on that machine too.
- ♦ If you change the license server, the saved configuration will no longer be valid and the License Setup dialog box will open the next time you start a MAK application.
- ♦ If you have changed the license server, you may want to clear the license cache. For details, please see [“Clear the License Cache,”](#) on page 17.

To specify the license server or license interactively:

1. On a computer on which you have not configured license management, start a MAK application. The License Setup dialog box opens ([Figure 1-4](#)).

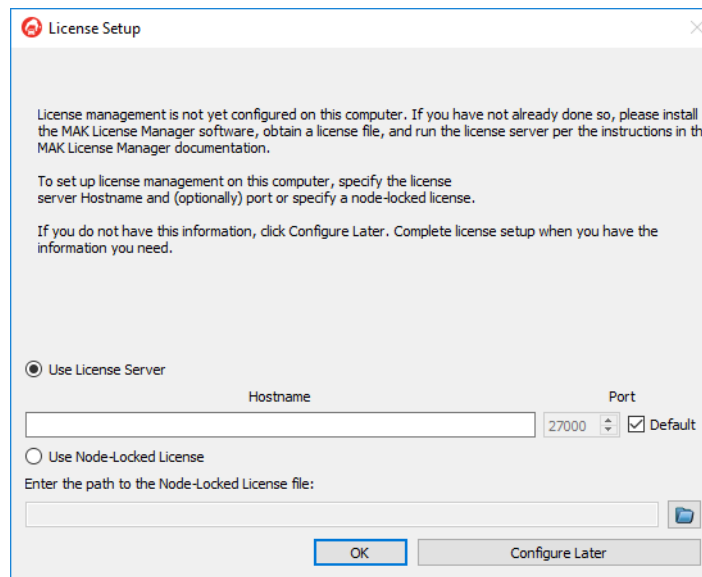


Figure 1-4. License Setup dialog box



The License Setup dialog box varies somewhat depending on when an application was released. Older versions do not have an option for specifying a node-locked license. Some versions may have layout differences. To specify a node-locked license if your License Setup dialog box does not have this option, use the MAKLMGRD_LICENSE_FILE environment variable as described in “Setting the MAKLMGRD_LICENSE_FILE Environment Variable,” on page 12.

2. If you are running a license server:
 - a. Type the host name in the Hostname box.
 - b. Optionally, specify a port. (For information about why you might want to specify a port, please see “Specifying a Port for the License Server and Daemon,” on page 15.)
-



If you do not know the hostname of the license server, click Configure Later. When you have the hostname, repeat this procedure. You will not be able to run any MAK applications until you set up license management.

3. If you have a node-locked license, enter the location and filename.
4. Click OK. The application will start.

Setting the MAKLMGRD_LICENSE_FILE Environment Variable

As an alternative to using the license setup procedure described in the previous section, you can configure the license server or node-locked license in an environment variable. The MAKLMGRD_LICENSE_FILE environment variable identifies the server machine or license file. If you set this environment variable, it overrides the settings stored by the license setup procedure.

For license servers, the syntax for the environment variable is: @server_name (or optionally, port@server_name. For example, if the server machine is oak, set the environment variable to @oak. For information about specifying a port, please see “Specifying a Port for the License Server and Daemon,” on page 15. For node-locked licenses, specify the full path of the license file.

The following sections explain how to set environment variables on the different platforms that MAK products run on.

Windows

To set **MAKLMGRD_LICENSE_FILE** in Windows:

1. Open the Control Panel.
2. In the Search box, type environment. The Control Panel displays the System option.
3. Click Edit the System Environment Variables. The System Properties dialog box opens to the Advanced tab.
4. Click the Environment Variables button. The Environment Variables dialog box opens.
5. Below the System Variables list, click New. The New System Variable dialog box opens.
6. In the Variable Name field, enter **MAKLMGRD_LICENSE_FILE**.
7. To specify a license server, in the Variable Value field, enter `@server_name`, where `server_name` is the name of the license server.
To specify multiple license servers, use a semicolon-delimited string, for example:
`@server1;@server2;@server3`
To specify a node-locked license, enter the full path of the license, for example:
`C:\MAK\MAKLicenseManager\DEMO-DISK-MAY-2021_27-apr-2021.lic`
To specify multiple node-locked license files, use a semicolon-delimited string.
8. Click OK to back out of each dialog box and set the variable.

Linux

On Linux, you set environment variables in your `.cshrc` (or equivalent startup file). To specify a license server, set the variable similarly to the following example:

```
setenv MAKLMGRD_LICENSE_FILE @oak
```

To specify multiple license servers, use a colon-delimited string, for example:

```
@server1:@server2:@server3
```

To specify a node-locked license, set the variable similar to:

```
setenv MAKLMGRD_LICENSE_FILE /opt/MAK/LicenseManager/DEMO-DISK-MAY-2021_27-apr-2021.lic
```

To specify multiple node-locked license files, use a colon-delimited string.

If you are using the sh or bash shells, you set environment variables in your *.profile* file (or *.bashrc*). Set the variable similarly to the following example:

```
MAKLMGRD_LICENSE_FILE=@oak
export MAKLMGRD_LICENSE_FILE
```

Do not put spaces around the equal (=) sign.

You are ready to run the license server and use your new licenses or MAK products. For details, please see [“Run the License Server,”](#) on page 10.

Adding Additional License Files

If you buy additional MAK products, or additional licenses for products you already have, you must get an additional license file.

- To request an additional license file, follow the license request procedure in [“Request a License File,”](#) on page 8.

To add a new license file to your license server:

1. Put the new file in the *MAKLicenseManager* directory on the license server, with the other license files. If you already have a license file of the same name, please contact keys@mak.com to find out if you should overwrite the old file or rename the new file.
2. On Windows, if you are running FLEXlm as a service make sure that the Path To The License File value specifies the *MAKLicenseManager* directory, not a specific file. (For details, please see [“Running FLEXlm as a Service on Windows,”](#) on page 16.)
3. Stop the license server daemon (as explained in [“Shutting Down the License Server,”](#) on page 10) and restart it.

You can now use the new products or additional product licenses.

Specifying a Port for the License Server and Daemon

On some systems, specifying a port for the license server, the *maklmgrd* daemon, or both, can resolve connection problems. If you want to run MAK software through a firewall, you must specify both ports. When used through a firewall, users typically open specific ports for simulation traffic and license verification messages. By specifying both ports, FLEXlm knows which ports have been opened up for use.

You specify a port for the license server by editing the license file and specifying the port during license setup or adding the license server port to the MAKLMGRD_LICENSE_FILE environment variable. To specify a port for the *maklmgrd* daemon, edit the license file as instructed below. Do not make any other changes to the file.

To specify a port for the license server:

1. Open the license file in a text editor.
2. Add the port number to the SERVER line as follows:

```
SERVER host_name host_ID port
```

For example:

```
SERVER oak 12345ABCD957 9237
```

3. Add the port number to the MAKLMGRD_LICENSE_FILE environment variable on all computers that use this license server as follows:

```
port@host_name
```

For example:

```
9237@oak
```

To specify a port for the maklmgrd daemon:

1. Open the license file in a text editor.
2. Add the port number to the VENDOR line as follows:

```
VENDOR maklmgrd ./maklmgrd PORT=port
```

For example:

```
VENDOR maklmgrd ./maklmgrd PORT=2568
```

Running FLEXlm as a Service on Windows

On Windows, you can configure the license server to run as a service. When an application runs as a service, you can configure it to start automatically when you start the computer. By running the license manager as a service, you do not have to remember to start it before you start a MAK application. It will always be there when you need it.

To configure FLEXlm as a service:

1. Install the license management software and obtain a license as described previously in this document.
2. On the Start menu, choose **MAK Technologies** → **LMTTOOLS**. The LMTTOOLS utility opens.
3. Select the Config Services tab.
4. The fields are automatically populated with the default locations for the License Manager daemon (*lmgrd.exe*) and the path for license files. (Figure 1-5).

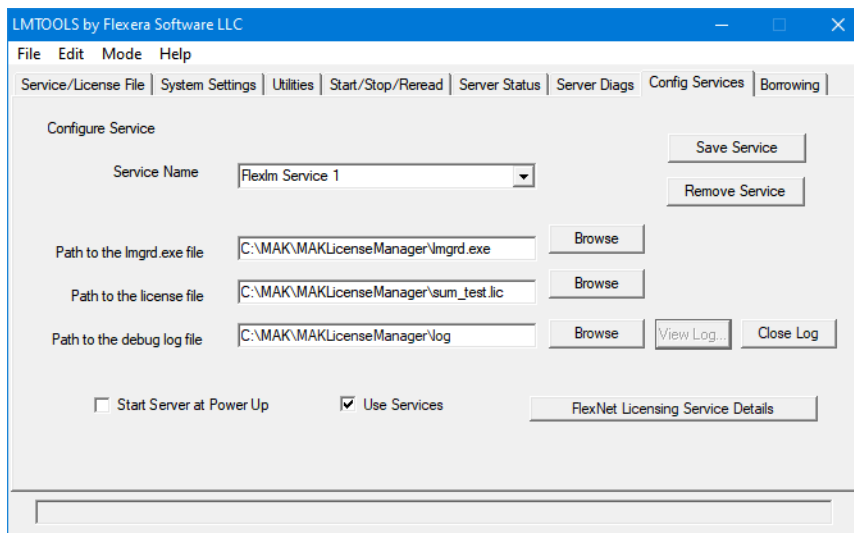


Figure 1-5. Config Services tab

5. If you did not install to the default location, change the path for *lmgrd.exe* to point to the *MAKLicenseManager* directory.
6. If you are not installing the license files in the *MAKLicenseManager* directory, change the Path to License Files value.
7. Enter a Service Name and then click Save Service.
8. Select the Start/Stop/Reread tab and then click Start Server.

Clear the License Cache

If you install a dongle on a computer that has previously functioned as a license server or client, you should clear the license cache to remove all license data that might conflict with the new settings. You can clear the license cache in the following ways:

- ♦ Delete the cache file.
- ♦ Use the License Manager.
- ♦ Use the RTI Assistant.

To clear the license cache using the License Manager:

1. On the Start menu, choose **Programs** → **MAK Technologies** → **MAK License Manager** → **MAK License Manager**. The License Manager utility opens (Figure 1-3).
2. Select the Utilities tab (Figure 1-6).

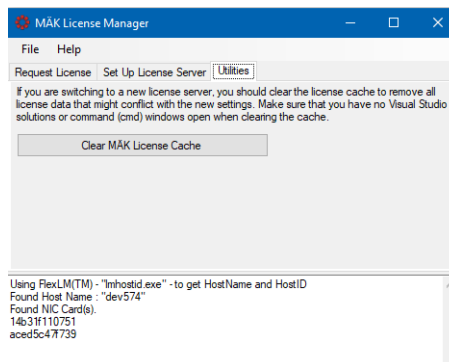


Figure 1-6. Utilities tab

3. Click Clear MAK License Cache.

To delete the cache file, delete the appropriate files on your computer, as follows:

- ♦ Windows — `C:\Users\user_name\AppData\Roaming\MAK\licensesn.txt`
- ♦ UNIX — `.mak/licensesn.txt`

where n (in licensesn) is an increment applied to different cache files.

To clear the cache using the RTI Assistant:

1. Right-click the RTI Assistant. A menu is displayed.
2. Choose **Preferences**. The RTI Preferences dialog box opens.
3. Select the Default License page.
4. Click Clear Now.

Transferring Licenses

If you need to change the computer that you are using as a license server, do the following:

1. Clear the license cache on the current server, as described in [“Clear the License Cache,”](#) on page 17.
2. Install the License Manager on the new server.
3. Get the server name and host ID for the new server.
4. Send this information and a copy of the license files to keys@mak.com.

Moving a Dongle to a Different Computer

If you want to move a dongle to a different computer, you must install the software and set up the computer as described in the previous sections.

Troubleshooting the License Manager

This section describes some common problems that FLEXlm users face.

License Checkout Fails

If a MAK application cannot check out a license, it displays the License Checkout Failed dialog box (Figure 1-7).

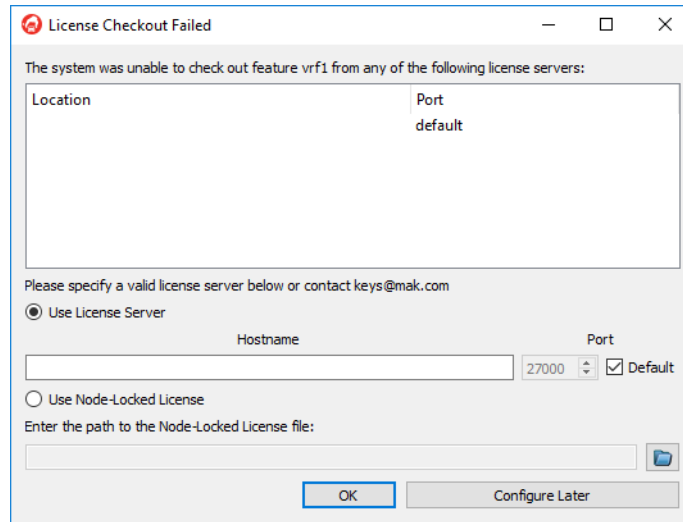


Figure 1-7. License Checkout Failed

This dialog box lists the configurations that it has checked. There are several reasons why license checkout could fail, including:

- ♦ The server is not running.
- ♦ You do not have a license for this product or this version of the product.
- ♦ Connectivity problems on the network.
- ♦ The license server has changed since the configuration was created.

If you know that you can solve the problem by specifying a different license server or a node-locked license, use this dialog box to do so. Otherwise, check the other troubleshooting possibilities described in this section.

If you want to remove the previously saved license server configurations, you can clear the license cache, as described in [“Clear the License Cache,”](#) on page 17, or right-click a license server you want to remove and choose **Delete** on the popup menu.

Unable to Get a License

If you are unable to get a license for a MAK application and the FLEXlm log file (*LOG*) indicates that the port is in use, it is possible that you have more than one lmgrd or maklmgrd processes running. It is also possible that an application that was using a license is thought to have terminated, but is still alive.

To verify and resolve these possibilities:

1. See if more than one lmgrd or maklmgrd process is running.
 - On Windows, check the Task Manager. (To open the Task Manager, press **Ctrl+Alt+Delete** and click Task Manager.)
 - On Linux, enter the following commands:

```
ps -aux | grep lmgrd
ps -aux | grep maklmgrd
```

If more than one instance of either process is running, write down the process ids (PID).



Some Linux systems use `ps -aux`, others `ps -ef` to check processes. Use the command appropriate for your operating system.

2. If there are old processes present that may be using a license, kill them.
 - On Linux, kill a process with the kill command, for example:

```
kill -9 1385 878
```

where 1385 and 878 are process IDs.
 - On Windows, select a process in the Task Manager, Processes tab and click End Process.

It is important that you kill all the processes to ensure a clean restart for the license server.
3. On Windows, see if more than one lmgrd or maklmgrd process is running. Check the Task Manager. (To open the Task Manager, press **Ctrl+Alt+Delete** and click Task Manager.)
4. If in step 2 you killed the license server, start it with the `runLm` command.

Preventing Multiple License Manager Processes

We recommend that you keep the license server running and that you not start and stop it as you run applications. If you prefer to stop the license server when you are not using it, always use `lmdown` to stop it.

Whenever you start the license manager, first run `lmstat` to be sure that there is not already a license server process running. Following this practice will ensure that you do not start multiple license servers.

License Manager Cannot Find MAK License Management Executable

If your license manager gives you an error message indicating that it cannot find the license management executable, try inserting the pathname in the license file as follows:

1. Open the license file in a text editor.
2. Edit the license file to specify the location of the *maklmgrd* executable on the server machine. The file supplied by MAK represents this location with a dot as shown below:

```
VENDOR maklmgrd .
```

Replace the dot with your absolute path to *maklmgrd*, for example:

```
VENDOR maklmgrd "C:\MAK\MAKLicenseManager\maklmgrd"
```



On Windows, you must enclose the path in quotes. The drive letter must be uppercase.

The License Manager Reports an Unsupported Product

If you receive an error message indicating an unsupported product, you are trying to use a MAK product for which you do not have a license or you are trying to run a version of a product that is more recent than the product maintenance expiration date in the license file. Please contact sales@mak.com to purchase a license or update maintenance.

If you are trying to run your application with an RTI other than the MAK RTI and you get the unsupported product message, it is possible that your application is finding the DLLs for an unlicensed version of the MAK RTI before it finds the other RTI. To fix this problem do the following:

- ♦ Make sure that the other RTI path precedes the MAK RTI path in your path environment variable.
- ♦ Check the directory in which the application is located to be sure that there are no DLLs from the MAK RTI in that directory.

Troubleshooting Dongle Installations

If your MAK application does not run and reports it cannot find a license or some other license-related error, try the following:

- ♦ Verify that you have only one dongle plugged into the machine.
- ♦ Verify that the dongle is fully plugged in.
- ♦ Verify that the system can see the dongle, as follows:
 - a. In a console window, change directory to the *MAKLicenseManager* directory.
 - b. Run the following command:

```
lmhostid.exe -flexid
```

If the dongle driver is not installed or no dongle is plugged in, the output is:

```
./lmhostid -flexid
lmhostid - Copyright (c) 1989-2017 Flexera Software LLC.
All Rights Reserved.
The FlexNet host ID of this machine is ""
```

On Linux, if LSB (Linux Standard Base) libraries are not installed, the output is as follows:

```
./lmhostid -flexid
bash: ./lmhostid: /lib64/ld-lsb-x86-64.so.3: bad ELF inter-
preter: No such file or directory
```

Submitting a Licensing Support Ticket

If you continue to have problems and require support, please include the value for the `MAKLMGRD_LICENSE_FILE` environment variable as well as your log.

The value for the `MAKLMGRD_LICENSE_FILE` environment variable was set according to the instructions in [“Setting the MAKLMGRD_LICENSE_FILE Environment Variable,”](#) on page 12.

The path for log files is defined in the Config Services tab of the LMTOOLS dialog box. See [“Running FLEXlm as a Service on Windows,”](#) on page 16.

To submit a support ticket, go to <https://jira.mak.com/servicedesk/customer/portal/1> or send an email to support@mak.com.