

# Installation and Licensing

## Command Line User Guide

UG\_LMS2\_CLI-2



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# Installation and Licensing

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- Collecting diagnostic information

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## Introduction

This guide describes how to install and update IAR Build Tools from the command line on Linux and Microsoft Windows systems, and how to manage licenses for IAR Systems products from the command line.

This guide describes how to:

- Install your IAR Systems product with a **network** multi-user license
- **Update** your existing IAR Systems product
- **Transfer** your network license
- **Check out/in** your network license
- Collect diagnostic information.

It also includes reference information on the IAR License Server Tools and the IAR Light License Manager.



For installation and licensing instructions for the IAR Embedded Workbench IDE, see the *Installation and Licensing Quick Reference Guide* available from your product installation.

## SYSTEM REQUIREMENTS

For requirements for the license server computer (network licenses only), see the *Release notes* for the IAR License Server Tools. For requirements for the computer where your IAR Systems product is installed, see the *Release notes* for the product.

**Note:** If you use the same computer as both a license server and a client computer, some types of files that are created by both the server and client, for example diagnostics reports, logs, and so on, will be overwritten by the other application.

## NETWORK REQUIREMENTS

To use a network license, you need a stable connection between your license server computer and your client computer with appropriate network configurations.

These network settings are required:

- Allow HTTPS traffic on port 443 and set the internet proxy **ON** on your license server for online license management, for example license activation, renewal, or de-activation.

The IAR License Manager uses the HTTPS communication protocol to fetch license keys from IAR Systems.

- Open UDP Port 5093 for inbound and outbound traffic on both your license server and client computer.

The client/server communication is handled via the UDP port 5093 on an IP network. If a firewall or network bridge is installed on the license server computer, for example Windows Firewall, UDP packets must be allowed to be routed through server port 5093.

UDP broadcast packets at port 5093 are also used every time your IAR Systems product is started, and periodically for as long as the IAR License Manager is running. The broadcasts are made to find available license servers on the network. No broadcasts are made during the time that a licensed product is being used.

- The server computer must have a static TCP/IP address.
- Only IPV4 is supported.
- If the broadcast function is not available in your network configurations or your license server is on a different subnet, manually point out the server from the client. For more information, see *C. Install your IAR Systems product and set up the client computers*, page 8.
- If your license server computer has multiple-IP systems, it is recommended to either use a single-IP system for your server computer, or to configure your firewall to allow your client computer to communicate on multiple IP addresses from your server.

For more information, see

**<https://www.iar.com/knowledge/support/technical-notes/licensing/>**.

## DIFFERENCES BETWEEN LINUX AND WINDOWS

Most of the information and instructions in this guide apply to all supported operating systems. When they differ, there is often an icon to identify the OS.



This icon identifies information and instructions specific to the supported distributions of Linux.



This icon identifies information and instructions specific to using Microsoft Windows from the command line.

In the case where command lines are the same for Linux and Windows, directory separators are written with forward slashes. To use these command lines on Windows, replace the forward slashes with backslashes.

## DPKG|RPM AND .DEB|RPM



The package manager executable file for Red Hat is `rpm` and the filename extension for its associated archive files is `.rpm`. For Ubuntu, the package manager executable file is `dpkg` and the filename extension for its associated archive files is `.deb`. When an example is given in this guide of an invocation of the package manager, both options will be given, separated by a pipe character, like this:

```
$ sudo dpkg|rpm -i lic_server_package.deb|rpm
```

Use the appropriate alternatives for the Linux distribution that you are using.

## USING THE SUDO COMMAND



When you use the `sudo` command, be aware of this:



Using `lightlicensemanager` commands with `sudo` privileges will mean that you must also use `sudo` when you are compiling. For this reason, it is best avoided.

## INSTALLING THE IAR SYSTEMS PRODUCT ON WINDOWS



Running the installer autonomously from the command line, it is possible to install the IAR Systems product without human interaction. However, autonomous installation is not supported for the license server tools.

## TROUBLESHOOTING

If you have problems with installation or licensing:

- Read this guide.
- Read the *Release notes* for the IAR Light License Manager, and the *Release notes* for the IAR License Server Tools available from your product installation.

- See the technical notes on the Technical Support pages on the IAR Systems web site, [www.iar.com/support](http://www.iar.com/support).
- Go to [www.iar.com/customercare](http://www.iar.com/customercare) and view **FAQ** for answers to questions about licenses, product updates, evaluation versions and registrations, or contact IAR Systems Customer Care, preferably with collected diagnostic information.

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## Installing products with network licenses

To install an IAR Systems product that uses a network license, follow this procedure:

- A** Install and set up the IAR License Server Tools on a server computer. (Skip this step if the latest version of the IAR License Server Tools is already installed.)
- B** Activate your network license using the IAR Light License Manager on the server computer.
- C** Install your IAR Systems product and set up the client computers.

**Note:** To install products from IAR Systems, you must have administrator privileges to the system.

### A. INSTALL AND SET UP THE IAR LICENSE SERVER TOOLS

**Important:** Before installing the IAR License Server Tools, you must choose a suitable computer to use for the license server. See the system requirements described in the *Release notes* for the IAR License Server Tools. UDP Port 5093 on both your license server and client machine must be open for inbound and outbound traffic.

**Note:** If the latest 2.x version of the IAR License Server Tools is already installed, proceed to *B. Activate your network license*, page 7.

- I** Install the IAR License Server Tools. The name of the installation package differs between the distributions.



```
$ sudo dpkg|rpm -i lic_server_package.deb|rpm
```

The tools are installed in the directory `/opt/iarsystems/`.

**Note:** The environment variable `IAR_LMS_SETTINGS_DIR` can be used to control where the log files and settings are placed. The default placement is in `/usr/local/etc/IARSystems`.



The installer for Windows is `lms2-server-installer-2.xy.z.exe`. The tools are installed in `c:\Program Files (x86)\IAR Systems\IAR License Server Tools`.

`2.xy.z` is the version number of your product installation.

## 2 Start the license server in root user mode:



```
$ cd /opt/iarsystems/license_server_tools/common/bin
$ sudo ./lserv64
```

**Note:** By default, the server license file and log file will be created in the directory `license_server_tools/common/bin`. If you want to create the server license file and the log file in another directory, use the options `-s` and `-l`. If you want the license server to start automatically, you can, for example, use `update-rc.d` or `systemd`.

Use the command `lserv64 --help` for information about the available `lserv64` commands.



```
c:\Program Files (x86)\IAR Systems\IAR License Server Tools\
common\bin\lservnt.exe -X start
```

For more information, see the IAR Systems *Licensing Guide* (`LicensingGuide_LMS2.ENU.pdf`), available in the IAR License Server Tools `common\doc` directory.

**Note:** By default, the server license file and log file will be created in the directory `c:\Program Files (x86)\IAR Systems\IAR License Server Tools\common\bin`.

## B. ACTIVATE YOUR NETWORK LICENSE

The default path to the IAR License Server Tools is:



```
/opt/iarsystems/license_server_tools/common/bin
```



```
c:\Program Files (x86)\IAR Systems\IAR License Server Tools\
common\bin
```

**Important:** Two network licenses for the same IAR product and package cannot coexist on the same license server, with the later activated license overwriting the previous one. If you want to add more users to an existing network license, contact your IAR Sales office.

### I Activate your network license:

```
lightlicensmanager activate xxxx-xxx-xxx-xxxx
```

where `xxxx-xxx-xxx-xxxx` is your license number.

Follow the instructions to register your product. During the registration process, you will receive an email from IAR Systems. After confirming your web registration, re-run the activate command in step 1 to activate a temporary license. You can start using your product directly after performing the steps in *C. Install your IAR Systems product and set up the client computers*, page 8.

- 2 When you have completed your order and received notification from IAR Systems, update your license for authorized use:

```
lightlicensemanager renew xxxx-xxx-xxx-xxxx
```

where `xxxx-xxx-xxx-xxxx` is your license number.

Your license activation is now completed.

## C. INSTALL YOUR IAR SYSTEMS PRODUCT AND SET UP THE CLIENT COMPUTERS

Before you proceed, the license server must be up and running.

The default location of the `lightlicensemanager` file is described in *Reference information on the IAR License Server Tools*, page 15.

### Repeat these steps on each client computer:

- 1 Install your IAR Systems product:



The default installation directory is `/opt/iarsystems/`.

```
$ sudo dpkg|rpm -i ./product.deb|rpm
```

where `product` is the name of your IAR Systems product installer.



Invoke the installer with Administrator privileges using the options `/hide_usd` and `/autoinstall`:

```
product.exe /hide_usd /autoinstall
```

where `product` is the name of your IAR Systems product installer.

You can optionally specify an installation directory, using the full absolute path prefixed with a forward slash (`/`). There cannot be any space character between `/autoinstall` and the directory path:

```
product.exe /hide_usd /autoinstall/D:\My Folder\IAR_Systems
```

- 2 After the installation of your IAR Systems product on your client computer, the IAR Light License Manager is automatically installed by default in the `common/bin` directory.



The environment variable `IAR_LMS_SETTINGS_DIR` can be used to control where the log files and settings are placed. The default placement is in `/usr/local/etc/IARSystems`.

- 3 Look for available network licenses:

```
lightlicensemanager nwlics
```

This will list all accessible network licenses of your IAR Systems products.

**4** Connect to the license server of your choice:

```
lightlicensemanager setup xxxx-xxx-xxx-xxxx --host
host_server_name
```

Where:

- `xxxx-xxx-xxx-xxxx` is the network license number selected from those listed in step 2.
- `host_server_name` is the name or IP address of the license server.

**Note:** The `--host host_server_name` option is not required if your license server and client computer are in the same subnet. For more information on the `setup` command options, use the `--help` option.

**5** Check if your product has been connected to the correct network license:

```
lightlicensemanager products
```

Your product name and corresponding network license number will be listed. You are now finished with the installation and the licensed product can be used.

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## Updating products with network licenses

To update an IAR Systems product that uses a network license, follow this procedure:

- Update the IAR License Server Tools.
- Renew your network license.
- Install your IAR Systems product update on each client computer.

**A. UPDATE THE IAR LICENSE SERVER TOOLS**

**Note:** Skip this step if the latest version of the IAR License Server Tools is already installed.

Product updates for network licenses might come with an updated license server. If that is the case, perform these steps:

- Shut down the current license server.

**Note:** All network licenses will be temporarily unavailable.



```
$ cd /opt/iarsystems/license_server_tools/common/bin
$ sudo ./lsrvdown64 localhost
```



```
c:\Program Files (x86)\IAR Systems\IAR License Server Tools\
common\bin\lservnt.exe -X stop
```

- 2 Install the newer version of IAR License Server Tools. The name of the installation package differs between the distributions.



```
$ sudo dpkg|rpm -i lic_server_package.deb|rpm
```

By default, the tools are installed in the directory `/opt/iarsystems/`.



The installer for Windows is `lms2-server-installer-2.xy.z.exe`. The tools are installed in `c:\Program Files (x86)\IAR Systems\IAR License Server Tools`.

`2.xy.z` is the version number of your product installation.

- 3 If the installation directory is different from your previous installation directory, copy the `lservrc` file from your previous installation directory to your new installation directory.



For example from `.../iar_license_server_tools/common/bin` to `/opt/iarsystems/license_server_tools/common/bin`.

- 4 Start the license server in root user mode.

**Note:** The version number of the IAR License Server Tools (`2.xx`) must be equal to or higher than the version number of the Light License Manager or License Manager (`2.yy`) included in your product.



```
$ cd /opt/iarsystems/license_server_tools/common/bin
$ sudo ./lserv64
```

**Note:** By default, the server license file and log file will remain in the directory `license_server_tools/common/bin`. If you want to create the server license file and the log file in another directory, use the options `-s` and `-l`. If you want the license server to start automatically after rebooting the host computer, you can, for example, use `update-rc.d` or `systemd`.

Use the command `lserv64 --help` for information about the available `lserv64` commands.



```
c:\Program Files (x86)\IAR Systems\IAR License Server Tools\
common\bin\lservnt.exe -X start
```

For more information, see the IAR Systems *Licensing Guide* (`LicensingGuide_LMS2.ENU.pdf`), available in the `IAR License Server Tools\common\doc` directory.

**Note:** By default, the server license file and log file (`LicenseManagementLog.txt`) will remain in the directory `c:\Program Files (x86)\IAR Systems\IAR License Server Tools\common\bin`.

## B. RENEW YOUR NETWORK LICENSE

The default location of the `lightlicensemanager` file is described in *Reference information on the IAR License Server Tools*, page 15.

**Note:** The network license *cannot* have any commuter authorization checked out when the license is renewed.

The product update uses the same license number as your existing product, but it requires a license renewal.

- I Renew your network license on the license server computer:

```
lightlicensemanager renew xxxx-xxx-xxx-xxxx
```

where `xxxx-xxx-xxx-xxxx` is your original license number.

The network license is now renewed for the updated product.

## C. INSTALL A PRODUCT UPDATE ON CLIENT COMPUTERS

Before you proceed, the license server must be up and running.

The default location of the `lightlicensemanager` file is described in *Reference information on the IAR License Server Tools*, page 15.

### Repeat these steps on each client computer:

- I Install your IAR Systems product update:



The default installation directory is `/opt/iarsystems/`.

```
$ sudo dpkg|rpm -i ./product.deb|rpm
```

where `product` is the name of your IAR Systems product update file.



Invoke the installer with Administrator privileges using the options `/hide_usd` and `/autoinstall`:

```
product.exe /hide_usd /autoinstall
```

where `product` is the name of your IAR Systems product update file.

- 2 Connect to the license server:

```
lightlicensemanager setup xxxx-xxx-xxx-xxxx --host  
host_server_name
```

Where:

- `xxxx-xxx-xxx-xxxx` is the number of the network license renewed in *B. Renew your network license*, page 11.

- `host_server_name` is the name or IP address of the license server updated in *B. Renew your network license*, page 11.

You are now finished with the installation and the licensed product can be used.

---

## Transferring a network license

**Note:** Before you can transfer a network license locked to a license server computer, you must contact your local IAR sales office or IAR Customer Care team to request permission for the transfer.

**Note:** Two network licenses for the same IAR product and package cannot coexist on the same license server, with the later activated license overwriting the previous one. If you want to add more users to a network license, contact your IAR Sales office.

### TRANSFER A NETWORK LICENSE TO A NEW LICENSE SERVER COMPUTER

The default location of the `lightlicensemanager` file is described in *Reference information on the IAR License Server Tools*, page 15.

**Note:** Before transferring your network license, you must make sure that all commuter licenses are checked in.

- 1 On the original server computer, deactivate the network license:

```
lightlicensemanager deactivate xxxx-xxx-xxx-xxxx
```

where `xxxx-xxx-xxx-xxxx` is your license number.

- 2 On the new server computer, follow the steps in *A. Install and set up the IAR License Server Tools*, page 6, to install the IAR License Server Tools, then reactivate the same network license:

```
lightlicensemanager activate xxxx-xxx-xxx-xxxx
```

where `xxxx-xxx-xxx-xxxx` is your license number.

- 3 For each client computer you want to connect to the new license server, repeat these steps:

```
lightlicensemanager setup xxxx-xxx-xxx-xxxx --host
host_server_name
```

Where:

- `xxxx-xxx-xxx-xxxx` is your network license number.
- `host_server_name` is the name or IP address of your new server computer.

---

## Checking out/in your network license

To use your IAR Systems product on a client computer for a number of days, without being connected to the license server, you can check out a network license with commuter authorization. You can also check in or terminate the commuter authorization for your network license before it expires. **If not checked in, the license will automatically be returned after the specified number of days.**

### CHECK OUT/IN YOUR NETWORK LICENSE

The default location of the `lightlicensemanager` file is described in *Reference information on the IAR License Server Tools*, page 15.

To check out your network license on a client computer:

```
lightlicensemanager checkout product_tag -y days
```

To check in your network license on a client computer:

```
lightlicensemanager checkin product_tag
```

Where:

- `product_tag` is the tag for your IAR Systems product. You can use the `lightlicensemanager products` command to list the product tags (in the **Product** column).
- `days` is the number of days (up to 15 days) you want to check out a product with commuter authorization for.

---

## Collecting diagnostic information

If you need assistance in managing IAR licenses, it is recommended you collect diagnostic information before you contact your local IAR Customer Care team.

**Note:** Make sure you run the correct IAR Light License Manager (`lightlicensemanager`) from the corresponding directory, that is, a client computer or a license server.

For collecting diagnostic information for both client computers and license servers, the default location for the diagnostic results of the `get_diagnostic` command is:



```
/usr/local/etc/IARSystems/LicenseManagement/Diagnostics.
```



```
c:\ProgramData\IARSystems\LicenseManagement\Diagnostics\.
```

## **COLLECT DIAGNOSTIC INFORMATION FOR LICENSE SERVERS**

To collect diagnostic information for a license server:

```
lightlicensemanager get_diagnostics
```

## **COLLECT DIAGNOSTIC INFORMATION FOR CLIENT COMPUTERS**

To collect diagnostic information for a client computer:

```
lightlicensemanager get_diagnostics
```

# Reference information

This chapter provides reference information on the IAR License Server Tools and the IAR Light License Manager.

---

## Reference information on the IAR License Server Tools

The IAR License Server Tools are used for managing your network license.

A network license is a multi-user license that is located on a license server computer and used by multiple users on a network. The network license allows for an authorized number of concurrent users, and the license server keeps track of the current number of users.

The network license is locked either to the computer where the license server runs, or to a dongle (hardware lock).

### IAR LICENSE SERVER TOOLS PROGRAMS

The IAR License Server Tools contain the following programs:

<b>Program</b>	<b>Description</b>
<code>lightlicensemanager</code>	A command line tool to manage licenses on either the license server or client computer. It is automatically installed when you install the IAR License Server Tools. With this tool, you can, for example, activate or renew your licenses, and set up clients to use the network licenses. Clients can also use this tool to check out/in network licenses. For more information about the command, see <i>Commands</i> , page 17.
<code>lserv64</code>	A Linux program to start up the license server. Make sure your server firewall allows inbound traffic on UDP port 5093. Use the command <code>lserv64 --help</code> for information about the available commands.
<code>lsrvdown64</code>	A Linux program to shut down the license server.
<code>lservnt.exe</code>	A Windows program to start up and shut down the license server. <code>lservnt.exe -X start</code> starts the server and <code>lservnt.exe -X stop</code> stops it. Use the command <code>--help</code> for information about the available commands.

---

*Table 1: IAR License Server Tools programs*

The default path to the IAR License Server Tools is:



```
/opt/iarsystems/license_server_tools/common/bin
```



```
c:\Program Files (x86)\IAR Systems\IAR License Server Tools\
common\bin
```

---

## Reference information on the IAR Light License Manager

The IAR Light License Manager is a command line tool that you use to manage your licenses.

The IAR Light License Manager is automatically installed when you install your IAR Systems product or the IAR License Server Tools.

### IAR LIGHT LICENSE MANAGER PROGRAMS

The IAR Light License Manager contains the following program:

Program	Description
lightlicensemanager	<p>A command line tool to manage licenses on either the license server or client computer. It is automatically installed when you install your IAR Systems product or install the IAR License Server Tools. With this tool, you can, for example, activate or renew your licenses, and set up clients to use the network licenses. Clients can also use this tool to check out/in network licenses.</p> <p>For more information about the command, see <i>Commands</i>, page 17.</p>

*Table 2: IAR Light License Manager programs*

### SENTINEL USB DAEMON PACKAGE



The IAR Light License Manager contains a Sentinel USB Daemon package that has several Linux installers for dongle drivers, which you need if you want to lock your license to a dongle (optional).

Before using the Sentinel USB Daemon package, you must first plug in your USB dongle and run the following commands:

```
$ cd common/drivers/dongle
$ sudo sh sud_install.sh
```



On Windows, the dongle drivers are installed automatically.

## INVOCATION SYNTAX

The invocation syntax for IAR Light License Manager is:

```
lightlicensemanager [command] [args] [options]
```

### Parameters

The IAR Light License Manager parameters are:

Parameter	Description
<i>command</i>	Command that you want to perform. See <i>Commands</i> , page 17.
<i>args</i>	Arguments for the specific command.
<i>options</i>	Command specific options and global options valid for every command.

Table 3: IAR Light License Manager parameters

**Note:** You can use `lightlicensemanager` without parameters to view the program sign-on information. You can also use the `--help` option to display help for a specific command.

### Commands

The IAR Light License Manager commands are:

Command	Description
<code>activate</code>	Activates a PC-locked, mobile, or network license.
<code>checkout</code>	Checks out a network license to your local computer for a number of days. This is useful if, for example, you are absent from your office for a few days and therefore cannot reach the network that contains the license server. You can also use this command to increase the speed when you are working on a slow network connections.
<code>checkin</code>	Checks in a network license. When you have checked out a network license with the <code>checkout</code> command and you want to enable someone else on the network to use it before it has expired, use the <code>checkin</code> command to return the license to the license server.
<code>deactivate</code>	Deactivates a license from a computer or a dongle which the license is locked to.  Note that for a PC-locked license, you can deactivate the license for a limited number of times within 12 months. For a network license, you must first contact your local IAR Customer Care team to get permission to deactivate your license.

Table 4: IAR Light License Manager commands

<b>Command</b>	<b>Description</b>
<code>get_diagnostics</code>	Collects diagnostic information. By default, the <code>Diagnostic.txt</code> file is located in the directory <code>/usr/local/etc/IARSystems/LicenseManagement/Diagnostics (Linux)</code> <code>c:\ProgramData\IARSystems\LicenseManagement\Diagnostics (Windows)</code>
<code>init</code>	Initializes the license management system and creates the IAR settings directory with full access to all users.
<code>nwlics</code>	Lists all network licenses that are provided by the license server(s) on the network.
<code>nwusrs</code>	Lists all network licenses that are currently being used and the clients which are using them.
<code>products</code>	Lists the license information for all IAR Systems product(s) installed for this current instance of the IAR Light License Manager.
<code>renew</code>	Renews a license. When you receive a product update, your license must be renewed. You can choose to renew licenses for all products or a specific product.
<code>setup</code>	Sets up a license server as a provider for one or more network license(s). This command points out the address to a license server on the network that will provide you with licenses. If you do not specify a specific product, all licenses on the server can be used.

*Table 4: IAR Light License Manager commands (Continued)*

## Global options

The IAR Light License Manager has the following global options:

<b>Global options</b>	<b>Description</b>
<code>-h, --help</code>	Displays help information for the chosen command.
<code>-v, --verbose</code>	Prints out more details of actions taken. Note that actions are still logged in the License Manager log file. The is located in the directory <code>IARSystems/LicenseManagement/Diagnostics</code> .
<code>-d, --debug</code>	Prints out extensive debug information.
<code>-q, --quiet</code>	No output (except errors).

*Table 5: IAR Light License Manager global options*