Licensing Guide

LG_LMS2-9b

EMB Development

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Preface

Welcome to the *Licensing Guide*. This guide contains information about how to install an IAR product that uses a network license, and how to manage network, mobile and PC-locked licenses. This guide also contains reference information on the IAR License Manager.

For information about how to install and license an IAR product online that uses a mobile or PC-locked single-user license, see the *Installation and Licensing Quick Reference Guide*.

Who should read this guide

You should read this guide if you:

- Are about to install a network license and need more information than is available in the *Installation and Licensing Quick Reference Guide*
- Are about to renew your existing license
- Need to transfer your license to another computer offline
- Are about to use the IAR License Manager.

What this guide contains

This guide contains these chapters:

- *Introduction* gives a general introduction to the installation and licensing procedure, and describes the differences between the three license types with the main focus on network licenses.
- *Installation* gives a step-by-step description of how to install an IAR product that uses a network license.
- *License management* gives step-by-step descriptions of how to perform some typical tasks when managing your licenses.
- *Reference information* gives reference information on the IAR License Manager—a tool for managing your licenses.
- *Licensing concepts* lists and describes terms related to licensing in general.

FURTHER INFORMATION

If this guide does not answer your questions or solve your problems concerning installation or licensing, you can:

- Read the *Release notes* for recent information that might not be included in this guide. The *Release notes* for IAR products are available in the Information Center and from the installation wizard. The *Release notes* for the IAR License Server Tools are available from the installation wizard.
- See the technical notes on the Technical Support pages on the IAR web site, **www.iar.com/support**.
- Go to **www.iar.com/customercare** and view **FAQ** for answers to questions about licenses, product updates, evaluation versions, and registrations, or contact IAR Customer Care, preferably with collected diagnostic information.

If you contact our Technical Support, be prepared to provide the following information: your license number, the type of license lock you use, when and where you purchased the product, and a detailed description of the problem.

Command line instructions

For instructions on how to install and update IAR Build Tools, or how to manage network licenses with IAR License Server Tools from the command line on Linux or Microsoft Windows systems, see the *Installation and Licensing Command Line User Guide* included in your product.

Document conventions

When referring to a directory in your product installation, for example `\doc`, the full path to the location is assumed, for example `c:\Program Files\IAR Systems\Embedded Workbench N.n\cpuname\doc`, where the initial digit of the version number reflects the initial digit of the version number of the IAR Embedded Workbench shared components.

TYPOGRAPHIC CONVENTIONS

The IAR documentation set uses the following typographic conventions:

Style	Used for
`computer`	• Source code examples and file paths. • Text on the command line. • Binary, hexadecimal, and octal numbers.

Table 1: Typographic conventions used in this guide

Style	Used for
parameter	A placeholder for an actual value used as a parameter, for example *filename*.h where *filename* represents the name of the file.
bold	Names of menus, menu commands, buttons, and dialog boxes that appear on the screen.
italic	• A cross-reference within this guide or to another guide. • Emphasis.
…	An ellipsis indicates that the previous item can be repeated an arbitrary number of times.
	Identifies helpful tips and programming hints.
	Identifies warnings.

Table 1: Typographic conventions used in this guide (Continued)

Introduction

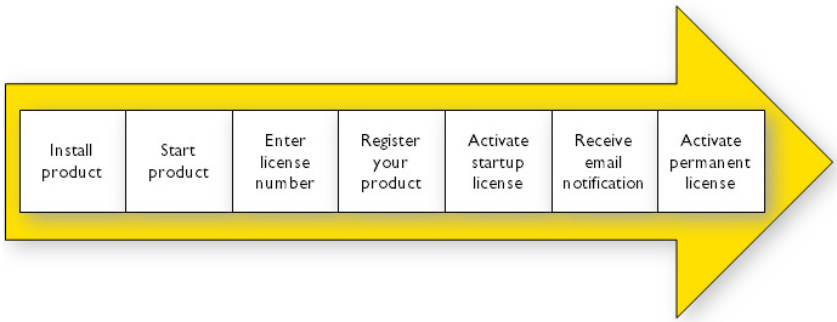
This chapter introduces the IAR licensing system, giving an overview of the installation and license activation procedure, and of the different license types.

How IAR licensing works

Each product from IAR comes with a software license and a license number, which is found in the welcome letter of your product package.

When you start your IAR product for the first time after it has been installed, you can use your license number to activate your *temporary startup license*. This license allows you to start using the product immediately after installation and 30 days onward.

The License Wizard will guide you through the process:



When you have finished the purchase of your product, you will receive email notification from IAR that your *permanent license* is now available. You can then activate your license for permanent use. With a permanent license, you are also entitled to up to one year of free updates and prioritized technical support, depending on your purchased product.

The IAR License Manager is automatically installed when you install your IAR product or the IAR License Server Tools, and is used to manage your licenses on both license servers and client computers. For more information about how to use the IAR License Manager, see *License management*, page 25.

LICENSE TYPES

There are three types of permanent licenses:

- *Mobile license*—a single-user license locked to a dongle (hardware lock). A dongle is a device you attach to the computer's USB port, which allows you to easily move the license to another computer by just moving the dongle.
- *PC-locked license*—a single-user license locked to the computer where the product is installed.
- *Network license*—a multi-user license located on a license server and used by multiple users on a network. The network license is locked to either to the computer where the license server runs, or to a dongle (hardware lock).

BRIEFLY ABOUT THE IAR LICENSE MANAGER

The IAR License Manager is a program—automatically installed when you install your IAR product or the IAR License Server Tools—that you use to manage your licenses.

The IAR License Manager is local to a specific installation directory and automatically detects all IAR products that use this version of the licensing system and are installed in the same directory.

You can start the IAR License Manager either from the Windows **Start** menu or from the **Help** menu in your IAR product.

BRIEFLY ABOUT THE LICENSE WIZARD

The License Wizard leads you step by step through the license process. The wizard starts automatically when you start your IAR product, if there are installed products without valid licenses. You can also start the License Wizard through various options in the **License** menu in the IAR License Manager.

Network licenses

A network license is a multi-user license that is located on a license server computer and used by multiple users on a network. A license server computer is a PC with the IAR License Server Tools installed. Individual installations of IAR products are installed on other client computers in the same network.

The network license makes it possible to use your IAR product from any of the client computers on the network. The network license allows for a maximum number of concurrent users, and the license server keeps track of the current number of users.

The network license is locked to the computer where the license server is installed, either to the computer itself or to an attached dongle (hardware lock). With the dongle, you can easily transfer the license server to a different license server computer.

The license server is generic and you can use it for all IAR products you install.

THE IAR LICENSE SERVER TOOLS PACKAGE

When you order a network license, you receive:

- Your IAR product
- The IAR License Server Tools
- A welcome letter.

If explicitly ordered, you also get one dongle.

IAR License Server Tools

The IAR License Server Tools are:

- The *IAR License Manager for License Server*—used for managing licenses on either the license server or client computer. The IAR License Manager is automatically installed when you install the IAR License Server Tools.
- The *Sentinel RMS License Manager*—the actual license server.

You install the IAR License Server Tools on a computer that you want to use for the license server.

YOUR IAR PRODUCT

Your IAR product can be installed on as many client computers as you want.

Using a network license, the IAR product requests permission from the license server when you perform an activity that requires a license to run, for example compiling and linking.

When the activity is finished, the permission to use the network license remains locked to that client for another 30 minutes before it is released to another client. You can view the status of the license in the IAR License Manager.

The requested license is cached on the client. The cache is valid for 20 minutes, during which no contact between the client and the license server is needed. When the cache expires, the license is still reserved to the client for another ten minutes. If the client makes a new license request within those ten minutes, the license becomes locked to the client for another 30 minutes, and cached for another 20 minutes.

USING DIFFERENT VERSIONS OF THE IAR LICENSE SERVERS TOOLS

Your IAR product requires version 2.*x* of the IAR License Server Tools.

Note: Some IAR Embedded Workbench products require version 1.4x or older of the IAR License Server Tools. A version 2.x and version 1.x installation of the IAR License Server Tools cannot coexist on the same computer.

CLIENTS WITH COMMUTER AUTHORIZATION

A network license includes a commuter feature, which makes it possible to use your IAR product for a limited number of days without being connected to the license server. For more information, see:

- *Checking out a product for commuter authorization*, page 34
- *Setting the maximum number of commuter authorizations*, page 34.

SYSTEM REQUIREMENTS

For information about systems requirements:

- For the license server computer (network licenses only), see the *Release notes* for the IAR License Server Tools available from the installation wizard.
- For client computers, see the *Installation and license activation* section in the *Release notes* available in the Information Center and from the installation wizard.

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.

Note: To install and activate an IAR product, you must have administrator privileges on the computer, and an internet connection. If the license server computer does not have access to the internet, see *Activating a license when offline*, page 35.

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.

- Open UPD 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 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 *Choosing a network license server manually*, page 30.
- 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/.

Installation

This chapter gives information to a system or network administrator about how to install IAR products that use a network license, which includes installing the IAR License Server Tools on a designated server computer and an IAR product on client computers.

For information about network licenses, see *Network licenses*, page 10.

Installing network licenses

To install an IAR product with a network license, follow this procedure:

A Install the IAR License Server Tools on a server computer. (Omit this step if the latest version of the IAR License Server Tools is already installed.)

B Activate your temporary startup network license using the IAR License Manager on the server computer.

C Activate your network license for permanent use. Perform this step when you receive notification from IAR that your permanent license is available.

D Install your IAR product on the client computers. Repeat this step for each client computer.

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

A. INSTALL 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.

Note: Your product version requires version 2.x of the IAR License Server Tools. Some IAR Embedded Workbench products require version 1.4x or older of the IAR License Server Tools. A version 1.x and version 2.x installation of the IAR License Server Tools cannot coexist on the same computer.

Note: If the latest 2.x version of the IAR License Server Tools is already installed, you can proceed to *B. Activate your temporary startup license*, page 16.

To install the IAR License Server Tools:

1. Remove any USB dongles.
2. Run the IAR License Server Tools installation program (`autorun.exe`).
3. Click **Install the IAR License Server Tools**. This will first install the IAR License Manager and then immediately continue with the Sentinel RMS License Manager.
4. Follow the instructions provided in the installation wizards and accept the license agreements when prompted.
5. Configure your firewall to allow inbound traffic on UDP port 5093 (if this was not done by the server installer).

Normally, when the IAR License Manager for License Server is installed, you do not need to start the license server manually. It will automatically start after the installation, and restart every time you restart the computer. If for some reason you need to start the license server manually, see *Starting and stopping a license server manually*, page 32.

B. ACTIVATE YOUR TEMPORARY STARTUP LICENSE

When you activate your network license, you are given a temporary startup license that allows you to use the product immediately after installation and for 30 days onward. When you finalize your IAR product purchase, you will be notified that your permanent license is available.

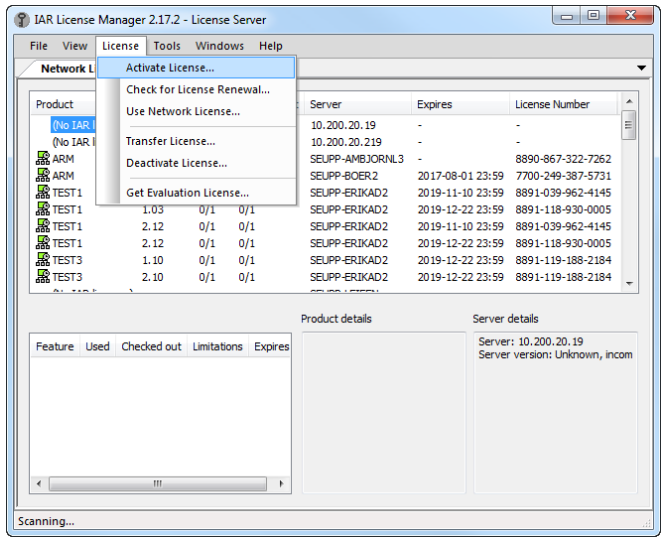
If the license server computer does not have an internet connection, you can activate your license offline, see *Activating a license when offline*, page 35.

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. The previous license can be reactivated on the same computer with the same locking criteria. If you want to add more users to a network license, contact your IAR Sales office.

To activate a temporary startup network license:

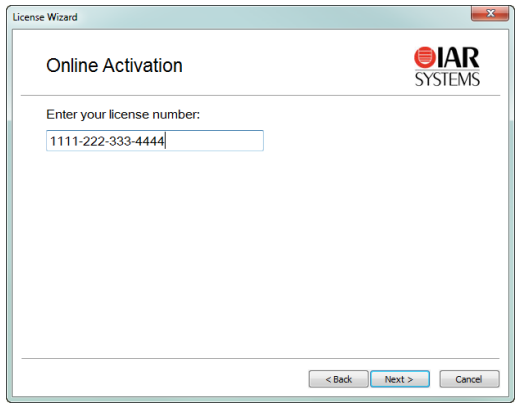
1. On the license server computer, start the IAR License Manager for License Server from the Windows **Start** menu.

2 Choose **License>Activate License** to start the License Wizard.



3 Select **Online activation** and click **Next**.

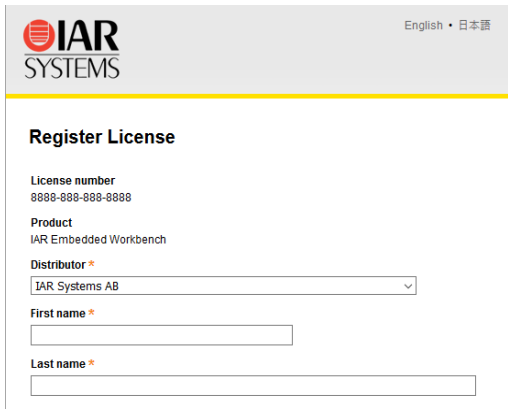
4 Type your license number and click **Next**. You can find your license number in the welcome letter in your product package.



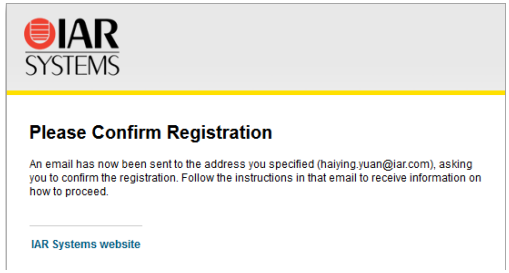
5 If you have not registered your license you will be asked to do that before proceeding. If your license is already registered, go to step 10.

To register your license, click **Register** to register your license.

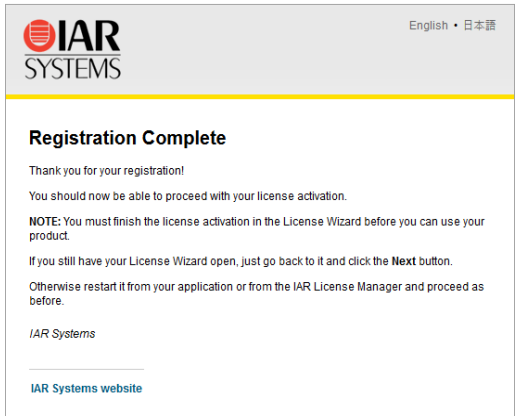
6 The License Wizard opens the IAR registration web page where you can register your license.



7 When you have completed the registration form, click **Submit Registration**. A verification email will be sent to the address you specified.

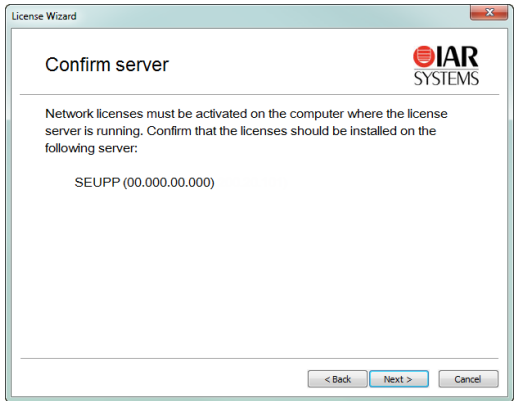


8 Open the email when you receive it, and click on the link in the email to verify the registration. The registration is now complete.

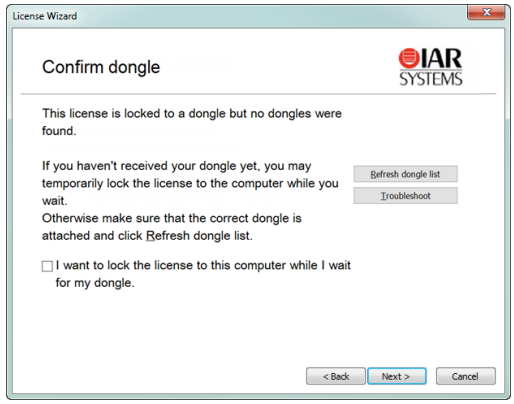


9 In the License Wizard, click **Next** to continue with the license activation.

10 Click **Next** to confirm that the license should be installed on the server shown.



11 If your network license is using a dongle, you must now lock the license to the dongle. (If your license will not use a dongle, skip this step.) Connect the dongle to your computer, and make sure that no other dongle is connected. Click **Next** to continue.



Alternatively, if your dongle has not arrived, you can temporarily lock your license to your computer. Select the corresponding checkbox.

You can lock the license to a dongle other than the one provided with the product package, for example, if you want to lock several products to the same dongle. However, you need to consider this carefully, because once the dongle is confirmed, the lock cannot be undone.

12 The License Wizard now confirms your license details. Click **Next** to finish the activation.

Note: Your temporary startup license might include a time-limited evaluation of features that are not part of the license you have bought.

13 Your network license is now installed. In the IAR License Manager, click **Done** to close the License Wizard. The license server will be running in the background, and you can use the IAR License Manager at any time to view or manage the licenses.

14 When you have finalized your IAR product purchase, you will receive email notification from IAR that your permanent license is available.

C. ACTIVATE YOUR LICENSE FOR PERMANENT USE

When you receive email notification from IAR that your permanent license is available, you can activate your license for permanent use.

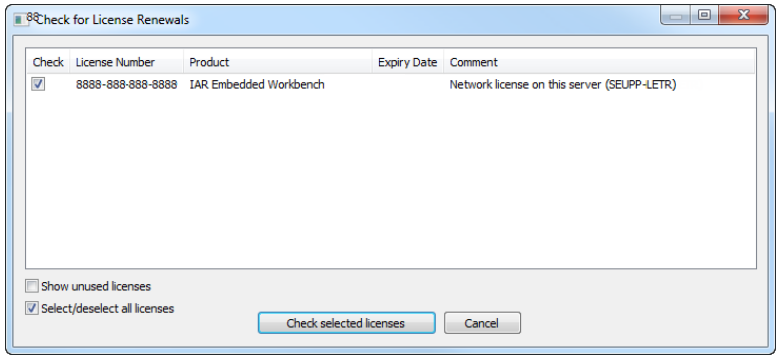
If the license server computer does not have an internet connection, you can activate your license offline, see *Activating a license when offline*, page 35.

To activate your network license for permanent use:

1 On the license server computer, start the IAR License Manager for License Server from the Windows **Start** menu.

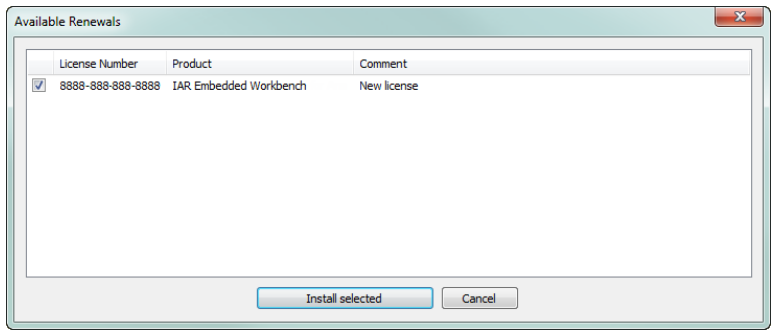
2 Choose **License>Check for License Renewal**.

3 Select the license for which you want to check for renewals.



4 Click **Check selected licenses**. The IAR License Manager contacts IAR to check whether there are any renewals available for the selected license.

5 The **Available Renewals** dialog box is displayed and lists the licenses for which there are new licenses available. Select the license you want to activate, and click **Install selected** to install the license.



6 The Renewal Results are displayed. Click **OK** to close the License Wizard.

7 On the client computers, you might need to restart your IAR product or start the IAR License Manager to detect the renewed licenses.

The permanent license of your IAR product can now be used.

D. INSTALL YOUR PRODUCT ON CLIENT COMPUTERS

When you have installed the IAR License Server Tools, and activated your network license (temporary startup or permanent license), you can install your IAR product on each client computer that the product will run on.

Note: Repeat these steps for each client computer that the product will run on.

Note: If you already have the new version of the product installed (an evaluation version), go directly to step 5.

To install an IAR System product on a client computer:

1 Ensure the license server is up and running.

2 Run the installation program (`autorun.exe`) for the IAR System product.

3 Click **Install** to start the installation of your product.

4 Follow the instructions provided in the installation wizards and accept the license agreements when prompted.

5 When you first start your IAR product on a client computer, it will find the license server and ask you to confirm it. Click **Yes**. If the license server is not found automatically, see *Choosing a network license server manually*, page 30.

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

Note: If you are upgrading from a size-limited IAR Embedded Workbench version, make sure to perform a **Rebuild All** command when you build your project for the first time using the new version.

License management

This chapter describes how to perform some typical tasks for managing your network, mobile and PC-locked licenses.

Managing your licenses

This section gives information about tasks that you might need to perform for your network, mobile and PC-locked licenses. For some of the tasks there are also step-by-step descriptions.

These tasks are covered:

- Activating a license
- Deactivating a license
- Choosing a network license server manually
- Starting and stopping a license server manually
- Switching between different licenses for a product
- Adding more users to a network license
- Checking out a product for commuter authorization
- Setting the maximum number of commuter authorizations

Some tasks can be performed offline:

- Activating a license when offline
- Transferring a license when offline

ACTIVATING A LICENSE

Before you can use your IAR product, you need to activate your license.

Follow these steps to activate your permanent network license, which has been previously registered, when the license server computer is connected to the internet.

To activate (and register) your network license for the first time, see *B. Activate your temporary startup license*, page 16.

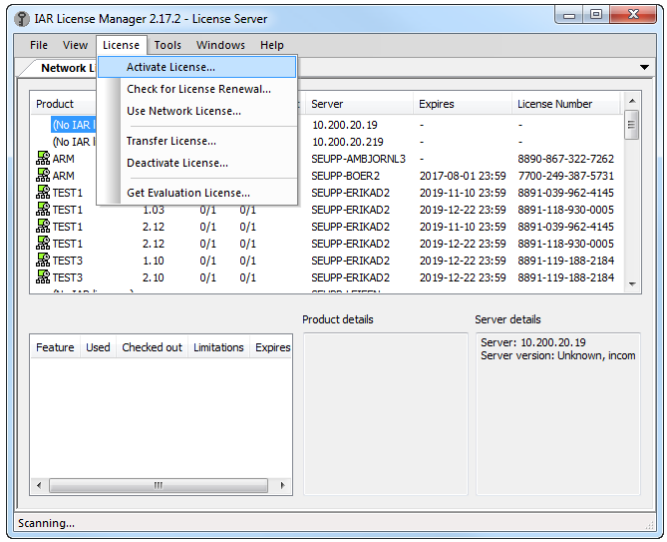
To activate your license when the license server computer is offline, see *Activating a license when offline*, page 35.

To activate a mobile or PC-locked license, see the *Installation and Licensing Quick Reference Guide*.

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. The previous license can be reactivated on the same computer with the same locking criteria. If you want to add more users to a network license, contact your IAR Sales office.

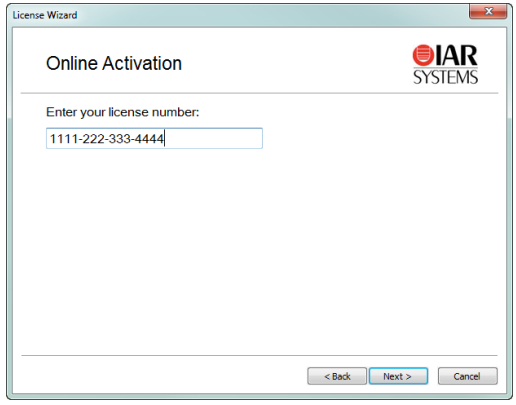
To activate your network license:

1. On the license server computer, start the IAR License Manager for License Server from the Windows **Start** menu.
2. Choose **License>Activate License** to start the License Wizard.

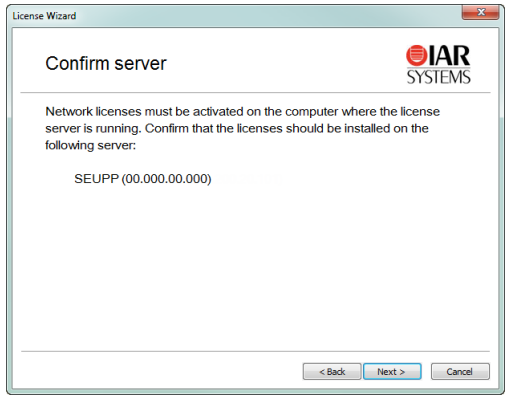


3. Select **Online activation** and click **Next**.

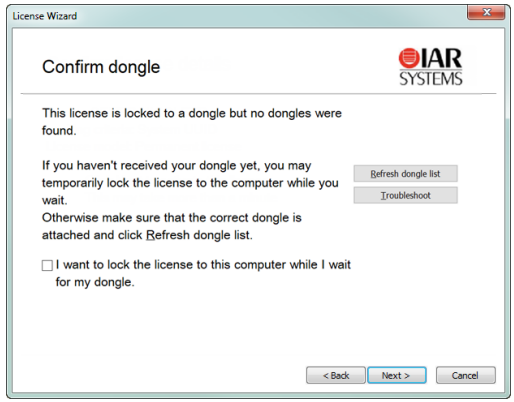
4 Type your license number and click **Next**. You can find your license number in the welcome letter in your product package.



5 Click **Next** to confirm that the license should be installed on the server shown.



6 If your network license is using a dongle, you must now lock the license to the dongle. (If your license will not use a dongle, skip this step.) Connect the dongle to your computer, and make sure that no other dongle is connected. Click **Next** to continue.



7 The License Wizard now confirms your license details. Click **Next** to finish the activation.

8 Your license is now installed. In the IAR License Manager, click **Done** to close the License Wizard. The license server will be running in the background, and you can use the IAR License Manager at any time to view or manage the licenses.

DEACTIVATING A LICENSE

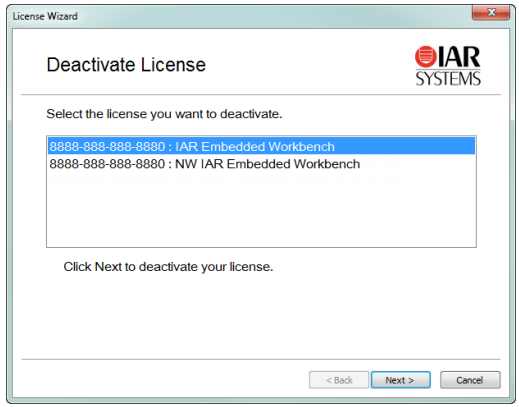
If required, you can use the IAR License Manger to deactivate a license, for example, if you are transferring a license or merging several licenses, where you need to first deactivate the license.

Note: To deactivate a network license locked to a license server computer, you must first contact your local IAR Sales office or IAR Customer Care team to request permission for the transfer.

To deactivate a license:

1 In the IAR License Manager, choose **License>Deactivate** to start the License Wizard.

2 In the list, select the product that you want to deactivate, and click **Next**.



3 Click **Yes** to confirm you want to deactivate the selected license.

4 Click **Done** to close the License Wizard.

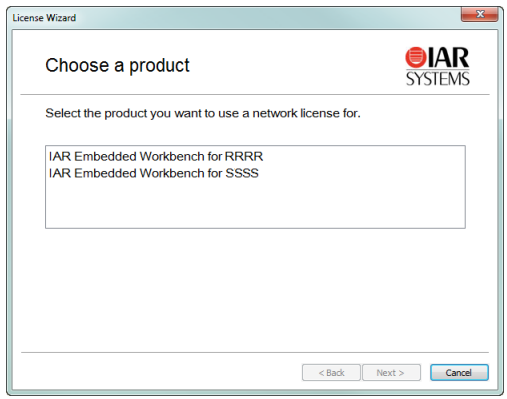
CHOOSING A NETWORK LICENSE SERVER MANUALLY

From the IAR License Manger, you can manually choose the license server you want to use for your IAR Embedded Workbench.

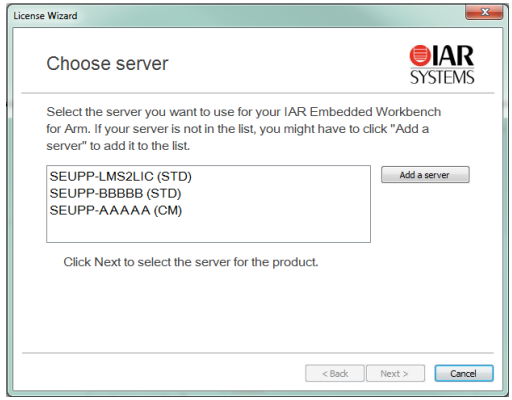
To manually choose a network license server:

1 From the IAR License Manager for your product, choose **Licence>Use Network License** to start the License Wizard.

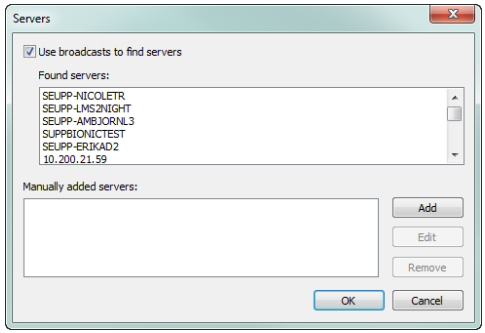
2 If you have installed more than one product on the computer, you are prompted to select the product that you want to use. Select the product and click **Next**.



3 In the list, select the server that you want to use and click **Next**.



4 Alternatively, if the server is not in the list, click **Add a server**. In the dialog box that appears, click **Add** and type the name or IP number of your server.



Note: Entering an incorrect server name might slow down the IAR License Manager.

Click **OK** to return to the License Wizard.

5 In the License Wizard, select the server you want to use, and click **Next**.

6 The server is selected for the product. Click **Done** to close the License Wizard.

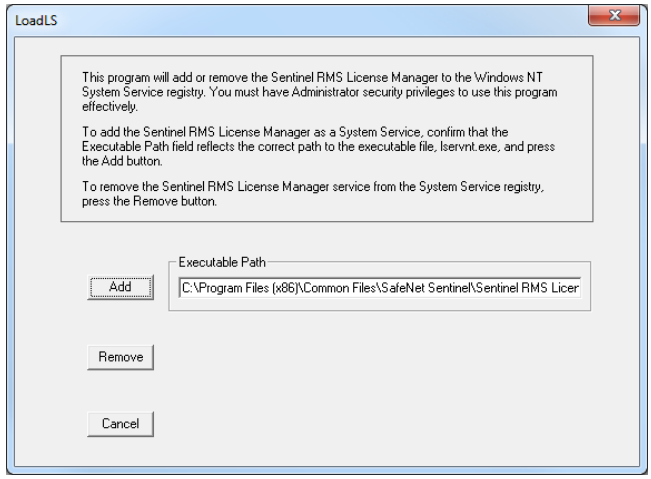
STARTING AND STOPPING A LICENSE SERVER MANUALLY

Normally, you do not need to start or stop the license server manually. It starts automatically when the computer is started. If for some reason, you need to start the license server, you can start the license server manually.

The license server runs as a Windows service. To find out if it is running, you can check the Windows list of services. How to display that list depends on which Windows version you are using. The service is called *Sentinel RMS License Manager*.

The executable file for the service is located where you installed the Sentinel RMS License Manager during the installation of the IAR License Server Tools. The default directory depends on Windows version and language, but would typically be something like this: `C:\Program Files\Common Files\SafeNet Sentinel\Sentinel RMS License Manager`

In that directory there is a subdirectory `WinNT` where the server files are located. The name of the server executable file is `Lservnt.exe`. To start and stop it, you run `loadls.exe` (which requires administrator privileges).



Click **Add** or **Remove** to start or stop the service. If you click **Add** when the service is already running, or **Remove** when the service is not running, you will get an error message.

SWITCHING BETWEEN DIFFERENT LICENSES FOR A PRODUCT

You can have several licenses for the same product installed on your computer. The license that was most recently activated, will be the default license used.

Follow these steps to switch to another product variant, or to a network license.

To switch between different licenses for a product:

1. Start the IAR License Manager for your product from the Windows **Start** menu.
2. Choose **View>Product List** to list all installed products.
3. In the **Product List** page, double-click the product to display the **License Details** dialog box showing detailed information about the licenses for the product.
4. In the **License Details** dialog box, select the license you want to use from the **Selected license** drop-down list.

ADDING MORE USERS TO A NETWORK LICENSE

If the number of concurrent users permitted by your network license is not sufficient, you can add more users to the license. To do this, you must contact your software distributor or IAR to purchase an extended network license.

You will get an email notification when your purchase is finished. To activate your license with the new capacity, do one of these:

- *Renewing a network license*—looking for renewals for all activated licenses on the computer. If you have many licenses installed this might take some time (approximately one minute per license number). In this case, it might be better to activate the license instead.
- *Activating the license*—renewing a specific license. You will need to specify the same license number as when the original license was activated. One advantage with this alternative is that only that specific license number is checked. This option can also be used if renewals fail due to, for example, a changed locking criterion.

CHECKING OUT A PRODUCT FOR COMMUTER AUTHORIZATION

You can check out a network license with commuter authorization to use your IAR product for a limited number of days without being connected to the license server.

You can set the maximum number of commuter authorizations, see *Setting the maximum number of commuter authorizations*, page 34.

To check out a product for commuter authorization.

1. Start the IAR License Manager for your product from the Windows **Start** menu.
2. Choose **View>Product List** to list all installed products.
3. Right-click on the product you want to check out, and choose **Check out**.
4. In the **Check Out** dialog box, specify how many days (maximum 15 days) you want to check out a product with commuter authorization for.

   You can now use the product without being connected to the license server.
5. To terminate the commuter authorization before it expires, right-click on the product and choose **Check in**. Otherwise, the license will automatically be returned after the specified number of days.

SETTING THE MAXIMUM NUMBER OF COMMUTER AUTHORIZATIONS

By default, the maximum number of commuter authorizations is 100%, with no restrictions. You can set the maximum number of commuter authorizations to a set percentage of the total number of licenses, for example, 25%, using the `LSERVOPTS` environment variable with the `-com` option on your license server computer:

```
LSERVOPTS=-com 25
```

For information on how to check out a product for commuter authorizations, see *Checking out a product for commuter authorization*, page 34.

ACTIVATING A LICENSE WHEN OFFLINE

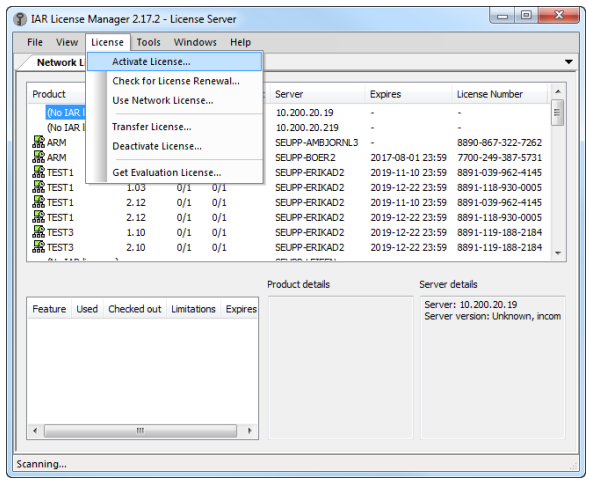
You can activate a license even when the computer where the product or the IAR License Server Tools are installed does not have an internet connection. However, you will still need to access the internet using other means to contact IAR to request the license activation.

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. The previous license can be reactivated on the same computer with the same locking criteria. If you want to add more users to a network license, contact your IAR Sales office.

To activate your license on a computer which is offline, follow this procedure:

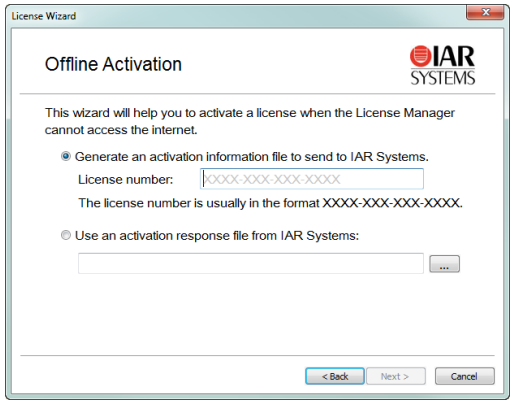
A. Request an offline activation

1. On the offline computer where the product or the IAR License Server Tools are installed, start the IAR License Manager from the Windows **Start** menu.
2. If you are using a license dongle, attach it to your computer.
3. Choose **License>Activate License** to start the License Wizard.



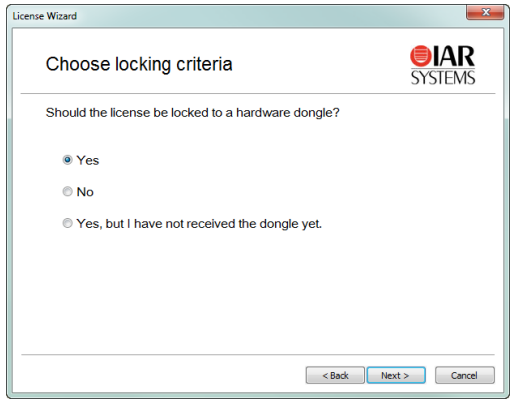
4 Select **Offline activation** and click **Next**.

5 Type your license number and click **Next**.



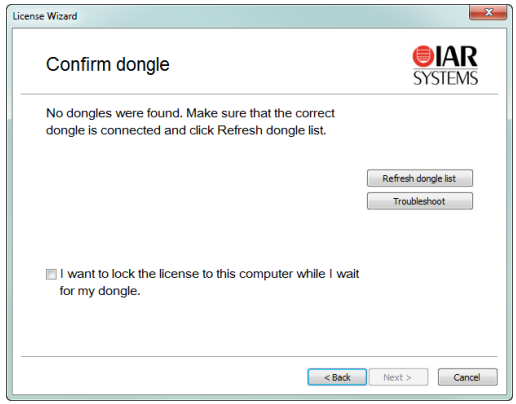
6 Specify whether the license should be locked to your computer or to a dongle.

If your license should be locked to a dongle, but you have not received it yet, select **Yes, but I have not received the dongle yet**. You will then be able to lock the license temporarily to your computer while you wait for the dongle.

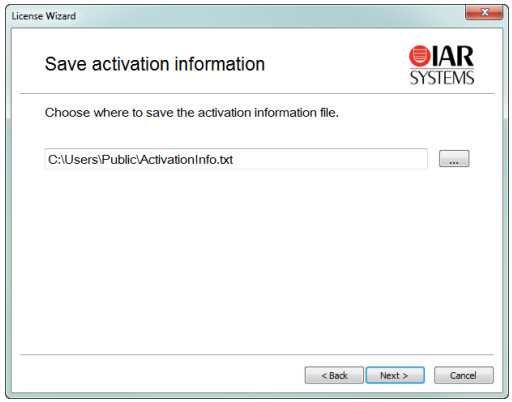


7 If you chose to lock the license to a dongle directly (by selecting **Yes** in the previous step) you will be asked to connect the dongle before proceeding.

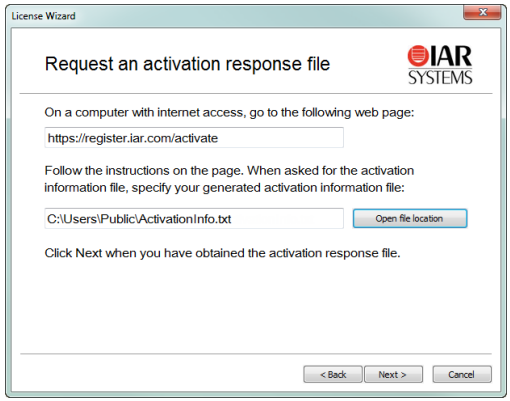
Connect the dongle and click **Refresh dongle list**.



8 Specify where to save the activation information file, then click **Next**. An *activation information file* is created.

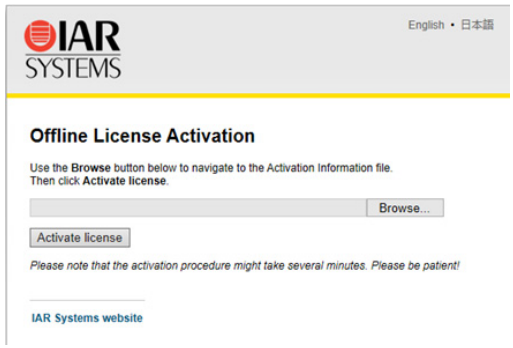


9 As instructed, move the activation information file to a computer with an internet connection.



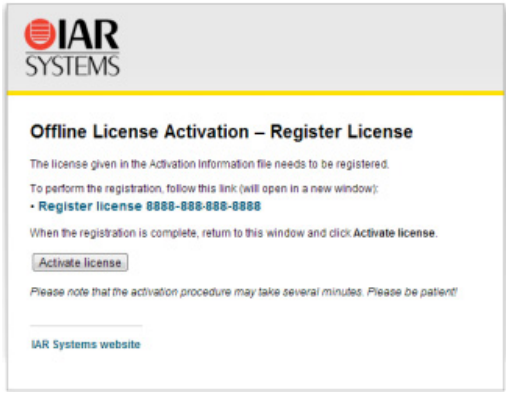
B. Notify IAR of the activation

1 On a computer with an internet connection, go to `https://register.iar.com/activate`

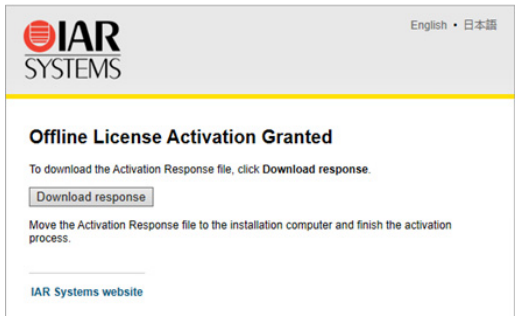


2. Browse to the activation information file you have moved to this computer, then click **Activate License** to notify IAR of the license activation. (This may take several minutes.)

3. If you have not registered your license you will be asked to do that before proceeding.



4. At the end of the activation process, an *activation response* file is created. Click **Download response** to download the activation response file.

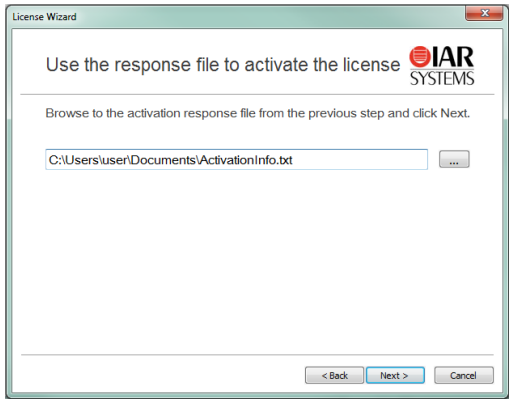


5 Move the activation response file to the offline computer where the product or the IAR License Server Tools are installed.

C. Activate the license

1 On the offline computer where the product or the IAR License Server Tools are installed, click **Next** in the License Wizard.

2 Browse to the activation response file you moved to this computer, and click **Next**.



The license has now been activated. Click **Done** to finish.

3 If you have temporarily locked your license to the computer and finally receive your dongle, repeat the offline activation, but choose to lock the license to the dongle.

4 If your license is a temporary startup license, when you have finalized your IAR product purchase, you will receive email notification from IAR that your permanent license is available. You can then repeat the offline activation to activate your permanent license.

TRANSFERRING A LICENSE WHEN OFFLINE

You can transfer a network or PC-locked license to another computer, even when the computer where the license is installed does not have an internet connection, however, you will still need to access the internet using other means to contact IAR to request the deactivation of the license before transferring.

A transfer involves *deactivating* the license on the computer the license is being transferred *from*, and then *activating* the license on the computer the license is being transferred *to*.

Note: To transfer or deactivate a network license locked to a license server computer, you must first 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. The previous license can be reactivated on the same computer with the same locking criteria. If you want to add more users to a network license, contact your IAR Sales office.

You can only transfer a PC-locked license up to three times during a 12-month period.

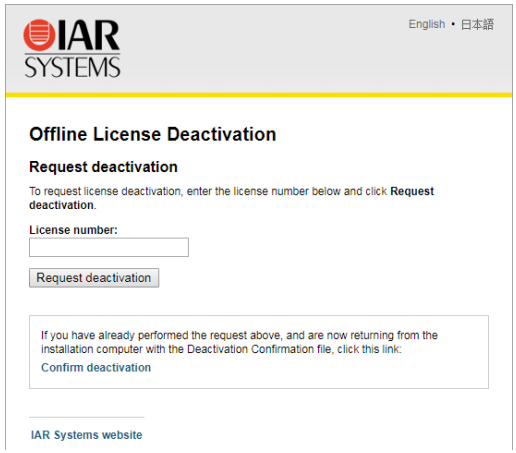
For information on transferring licenses when online, see the *Installation and Licensing Quick Reference Guide*.

To transfer a license from an offline computer (**X**) to another computer (**Y**), follow this procedure:

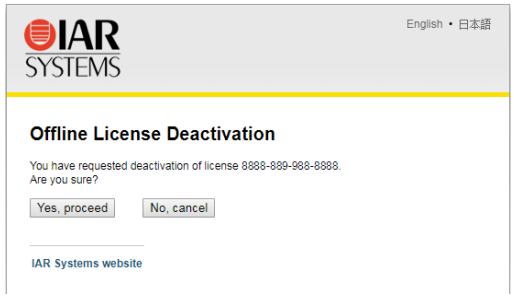
A. Request permission to deactivate

1 On a computer with an internet connection, go to `https://register.iar.com/deactivate`

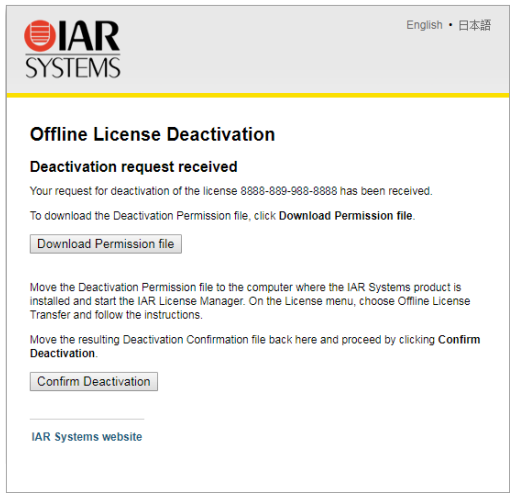
2 Type the license number you want to deactivate, and click **Request deactivation**.



3 When prompted, click **Yes, proceed** to proceed with the request deactivation.



4 Your request for deactivation of the license is received, and a *deactivation permission* file is created. Click **Download Permission file** to download the file.



5 Move the deactivation permission file to the computer where you want to transfer the license *from* (computer **X**).

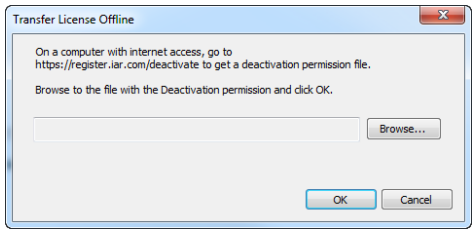
B. Perform the offline transfer

1 On the original computer where you want to transfer the license *from*, start the IAR License Manager from the Windows **Start** menu.

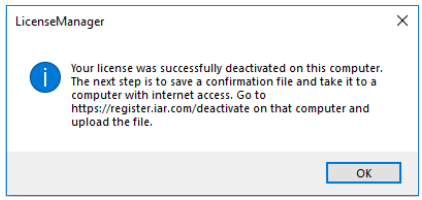
2 Choose **License>Transfer License** to start the License Wizard.

3 Select **Offline transfer** and click **Next**.

4 Browse to the deactivation permission file you have downloaded and moved to this computer, and click **OK**.



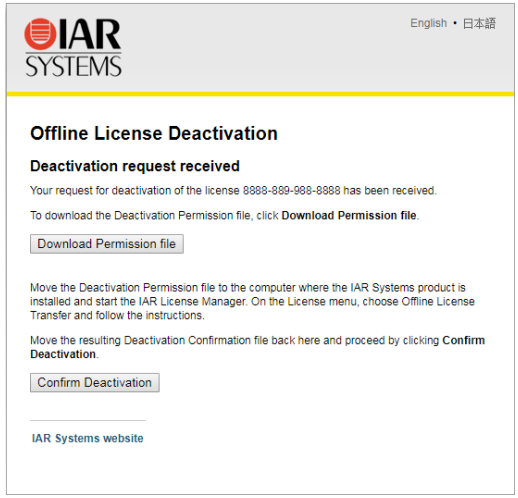
5 Your license was deactivated on this computer. Click **OK** to create a *deactivation confirmation* file.



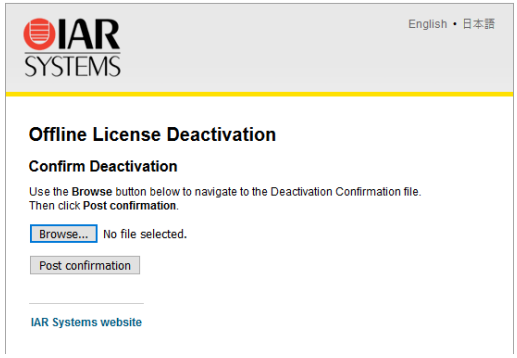
6 Move the deactivation confirmation file to a computer with an internet connection.

C. Notify IAR of the deactivation

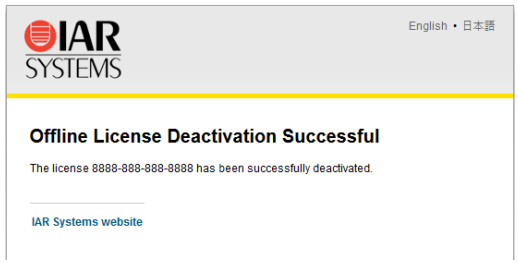
1 Return to the web page https://register.iar.com/deactivate, and click **Confirm Deactivation**.



2 Browse to the deactivation confirmation file you have moved to this computer, then click **Post confirmation** to confirm the license deactivation with IAR.



3 Your license has been deactivated.



4 In the License Wizard, click **Done** to finish.

D. Activate the license

1 On the new computer which you want to transfer the license *to*, start the IAR License Manager from the Windows **Start** menu.

2 Choose **License>Activate License** to start the License Wizard:

- If the computer is online, follow *Activating a license*, page 25
- If the computer is offline, follow *Activating a license when offline*, page 35.

Reserving user groups for network licenses

You can create a reservation file that specifies groups of users that have exclusive right to use a feature, and groups that may not use a feature.

To create a reservation file that specifies user groups for network licenses:

1 Edit the user group file using a text editor. Use this file syntax:

```
feature_name,feature_version:group_name:reserved_tokens:user_1
... user_N
```

where:

feature_name	is for example, `XXX.EW.COMPILER_STD`.
feature_version	is for example, `1.01`.
group_name	is a name that identifies the group.
reserved_tokens	is the number of license users reserved for the group.

user_1...user_N is a list of user names or host IDs, separated by white space. Use these characters to restrict or allow user access:

`$`, identifies a computer name, which can be a computer name or an IP address (IPv4 only)

`!`, a logical `NOT`

`*`, a wildcard for any one or more characters

For example:

```
$computer1
$10.11.0.*
John.Smith
!David.Smith
```

For example, this file will make the server hold two tokens exclusively for users at workstations PC-ADAM and PC-ADA, for the compiler and debugger features, while the user of PC-GUEST will be unable to use the specified features at all:

```
XXX.EW.COMPILER_STD,1.01:include_grp:2:$PC-ADAM $PC-ADA
XXX.EW.COMPILER_STD,1.01:exclude_grp:0:$PC-GUEST
XXX.EW.DEBUGGER_STD,1.01:include_grp:2:$PC-ADAM $PC-ADA
XXX.EW.DEBUGGER_STD,1.01:exclude_grp:0:$PC-GUEST
```

Note that a license normally has a number of features. You can find the feature names and versions in the IAR License Manager. Double-click a product to open the **License Details** dialog box.

2. Save the file, for example, as `C:\IARSystems\LicenseManagement\lreserv.txt`.

3. Use the `LSRESERV` environment variable to set the destination of the user group file.

   For example: `LSRESERV=C:\IARSystems\LicenseManagement\lreserv.txt`

4. Restart the license server.

   Note: You must restart the server after making any changes to the file lreserv.txt.

5. Using the license is now restricted according to your specification:

   - If the number of reserved tokens for the group is the same as the number of users allowed for the license, no one outside the group can use the license.
   - If the number of reserved tokens for the group is zero, no one in the group can use the license.

Logging license server activities

You can log a license server's activities. Typically, this is useful for monitoring which users are using which licenses and how much.

These topics are described:

- *Activating logging for the IAR License Manager for License Server*, page 48
- *Activating logging using an environment variable*, page 49
- *Specifying the size of the log files*, page 49
- *Backing up the log files*, page 49
- *Disable backing up log files*, page 50

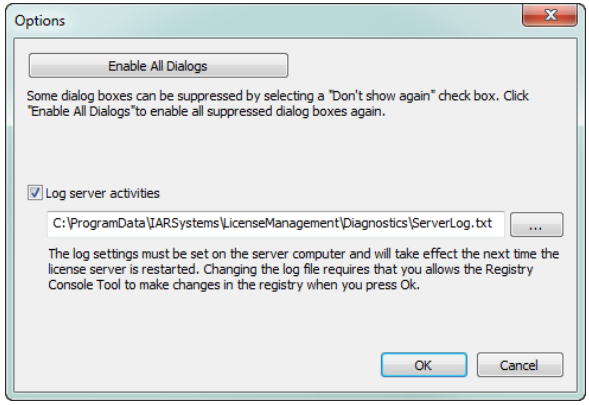
For information on the log file format, see *Log file format*, page 62.

ACTIVATING LOGGING FOR THE IAR LICENSE MANAGER FOR LICENSE SERVER

You can activate the logging of server activities using the IAR License Manager for License Server.

To activate logging of server activities:

1. Start the IAR License Manager for License Server from the Windows **Start** menu.
2. Choose **Tools>Options**.
3. Select **Log server activities**, specify the filename and the location of the log file, and click **OK**.



You must make these settings on the server computer and they will take effect the next time the license server Windows service is restarted. To modify these settings, you must start the IAR License Manager as an administrator.

ACTIVATING LOGGING USING AN ENVIRONMENT VARIABLE

You can activate the logging of server activities by setting an environment variable on the license server computer:

```
LSERVOPTS=-l path_to_log_file
```

For example:

```
LSERVOPTS=-l C:\ServerLog\logfile.txt
```

You must restart the license server Windows service for the changes to take effect.

Note: If the environment variable is set globally, for example in Windows system properties, it might affect other products.

SPECIFYING THE SIZE OF THE LOG FILES

Use the `-z` option to specify the maximum size of the log file. The size can be specified in bytes, for example `-z 2000` for 2000 bytes, in kilobytes, for example `-z 2k` for two kilobytes, or in megabytes, for example `-z 2m` for two megabytes.

For example:

```
LSERVOPTS=-z 2m -l C:\ServerLog\serverlog.txt
```

BACKING UP THE LOG FILES

If the maximum size of the file is reached, as specified by the `-z` option, the license server copies (renames) the original log file to a backup file, which has the same name but with two numeric digits appended to its name. The logging continues in the file with the original name.

Example

The administrator has specified the maximum size of the log files as 2 Mbytes. When the size reaches 2 Mbytes, the license server adds a suffix at the end of the log files. For example: `serverlog.txt.00`, `serverlog.txt.01`, `serverlog.txt.02` up until `serverlog.txt.99`. Once this limit is reached, the license server starts generating the backup files using the same log file name series starting from `00`, which means the old log files will be overwritten.

If you need more log files, you must write your own script which will back up the first 100 log files to another location (storing the content), which means it is no longer a problem when the first log files are overwritten.

DISABLE BACKING UP LOG FILES

To disable the automatic backing up of log files, add the `-x` option to the `LSERVOPTS` environment variable on the license server computer.

Reference information

This chapter gives reference information about the IAR License Manager—a tool for managing your IAR product licenses.

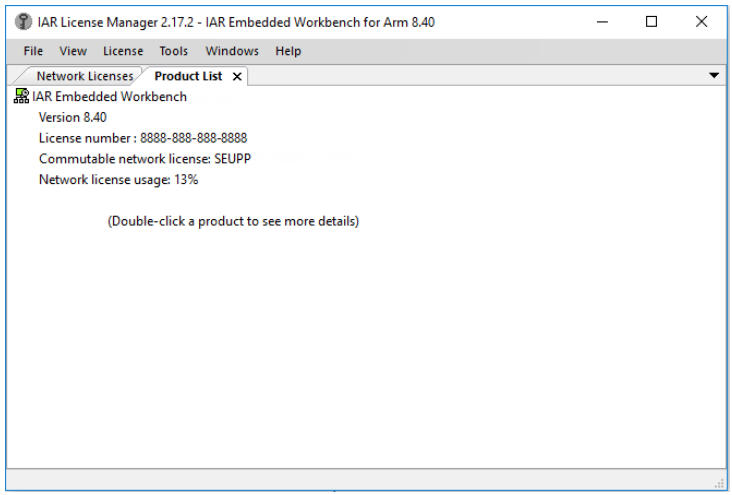
Reference information on the IAR License Manager

This section gives reference information about these windows and dialog boxes:

- *IAR License Manager main window*, page 51
- *Available Renewals dialog box*, page 55
- *Check for License Renewals dialog box*, page 56
- *License Details dialog box*, page 58
- *Options dialog box*, page 60
- *Servers dialog box*, page 61

IAR License Manager main window

The IAR License Manager is available from the **Help** menu in your IAR product, or from the Windows **Start** menu.



Use this window to manage your IAR product licenses.

File menu

These commands are available:

Exit	Exits the IAR License Manager.

View menu

These commands are available:

Refresh	Updates network license usage information, dongle status, etc. This is automatically done every 15 seconds.
Product List	Opens the **Product List** page in the display area, which lists all installed products. Double-click a product in the list to display the **License Details** dialog box which shows detailed information about the licenses for that product, see *License Details dialog box*, page 58.
Network Licenses	Opens the **Network Licenses** page in the display area, which lists all available network licenses.
Network License Users	Opens the **Network License Users** page in the display area, which lists all users on the local network using network licenses.
License Details	Displays the **License Details** dialog box which lists detailed information about selected licenses, see *License Details dialog box*, page 58.
Servers	Displays the **Servers** dialog box which lists all automatically identified servers and manually added servers. See *Servers dialog box*, page 61.
Dongle List	Displays the **Dongle List** dialog box which lists all connected dongles (Sentinel hardware keys).

License menu

These commands are available:

Activate License	Starts the License Wizard where you can activate a license using a license number, see *Activating a license*, page 25. You can activate a license even if your computer does not have an internet connection, see *Activating a license when offline*, page 35.

Check for License Renewal	Displays the **Check for License Renewals** dialog box where you can list any new versions available for selected licenses, see *Check for License Renewals dialog box*, page 56.
Use Network License	Starts the License Wizard where you can select the product and server you want to use for a network license, see *Choosing a network license server manually*, page 30.
Transfer License	Starts the License Wizard where you can select a license that you want to transfer to another computer. You can transfer a license even if your computer does not have an internet connection. See *Transferring a license when offline*, page 41 Note that to transfer a network license locked to a license server computer, you must first contact your local IAR Sales office or IAR Customer Care team to request permission for the transfer. Note that you can only transfer a PC-locked license up to three times during a 12-month period.
Deactivate License	Displays the **Deactivate License** dialog box where you can select a license that you want to deactivate, see *Deactivating a license*, page 29.
Get Evaluation License	Starts the License Wizard where you can select a product that you want to evaluate.

Tools menu

These commands are available:

Options	Displays the **Options** dialog box, where you can re-enable all previously suppressed dialog boxes, and activate logging server activities, see *Options dialog box*, page 60.
Extract Optional Packages	Extracts source code libraries that were delivered with your product.

Windows menu

These commands are available:

Close	Closes the currently selected page in the display area of the IAR License Manager main window.

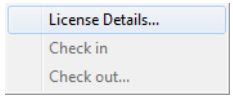
Help menu

These commands are available:

Collect Diagnostic Information	Displays the **Collect Diagnostic Information** dialog box and starts collecting diagnostic information. The progress is displayed in the dialog box. When finished, click **Explore Results** to view the collected diagnostic and license management information. Typically, this information can be useful if you contact IAR Support.
Installation and Licensing Quick Reference	Opens the *Installation and Licensing Quick Reference Guide* as a PDF.
Licensing Guide	Opens this *Licensing Guide* as a PDF.
About	Displays version information about the IAR License Manager.

Context menu (Product List)

This context menu is available on the **Product List** page:

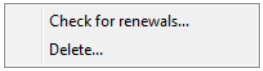


These commands are available:

License Details	Displays the **License Details** dialog box which lists detailed information about selected licenses, see *License Details dialog box*, page 58.
Check in	Checks in a network license which you previously have checked out with commuter authorization.
Check out	Checks out a network license with commuter authorization which means you can use it as a PC-locked license for a limited time.

Context menu (Network Licenses)

This context menu is available on the **Network Licenses** page:

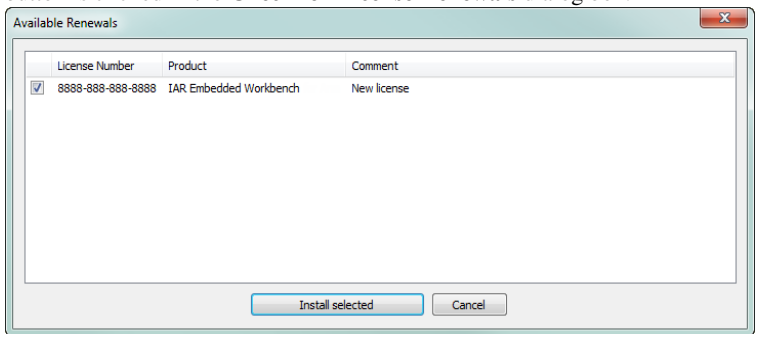


These commands are available:

Check for renewals	Displays the **Check for License Renewals** dialog box where you can list any new versions available for selected licenses, see *Check for License Renewals dialog box*, page 56.
Delete	Deletes the selected network license from the server. This can only be performed on the license server computer. A deleted network license can be activated anytime on the same license server computer with the same locking criteria. Note that the **Delete** command is not the same as the **Deactivate** command, which deactivate the license from the IAR database.

Available Renewals dialog box

The **Available Renewals** dialog box is displayed when the **Check selected licenses** button is clicked in the **Check for License Renewals** dialog box.



This dialog box lists any new versions available for the licenses selected in the **Check for License Renewals** dialog box.

The IAR License Manager contacts IAR to check whether the local licenses are up to date. If there are any new versions available, you will get the opportunity to renew them.

Display area

Lists licenses in these columns:

Checkbox	Select the license you want to renew.
License Number	The license number for the product.

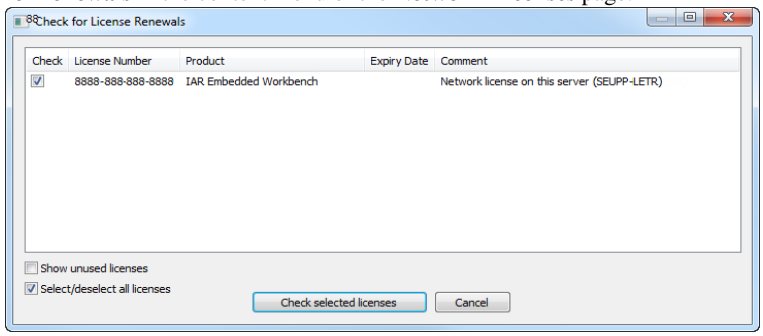
Product	The name of the product.
Comment	Information about the license.

Buttons

Install selected	Installs the selected license.

Check for License Renewals dialog box

The **Check for License Renewals** dialog box is displayed when you choose **License>Check** for renewals in the IAR License Manager, or when you choose **Check for renewals** in the context menu of the **Network Licenses** page.



This dialog box lists the currently used license for each installed IAR product on the local machine, and the installed licenses on the local license server (if any). You can also list unused licenses that have been installed and then deleted.

Display area

Lists licenses in these columns:

Check	Select the license for which you want to check for new licenses and click **Check selected licenses**. If there are any new licenses, the **Available Renewals** dialog box is displayed. See *Available Renewals dialog box*, page 55.
License Number	The license number for the product.
Product	The name of the product.
Expiry Date	The date for the license expiration.
Comment	Information about the license.

Show unused licenses

Lists also unused licenses, in other words, licenses that are not currently selected for use. Selecting **Show unused licenses** also lists network licenses that have been installed and then deleted.

Typically, this option can be useful if you are using a temporary license that you have received from IAR support. When you receive an update, you must select this option before you can select your ordinary license for renewal.

Select/deselect all licenses

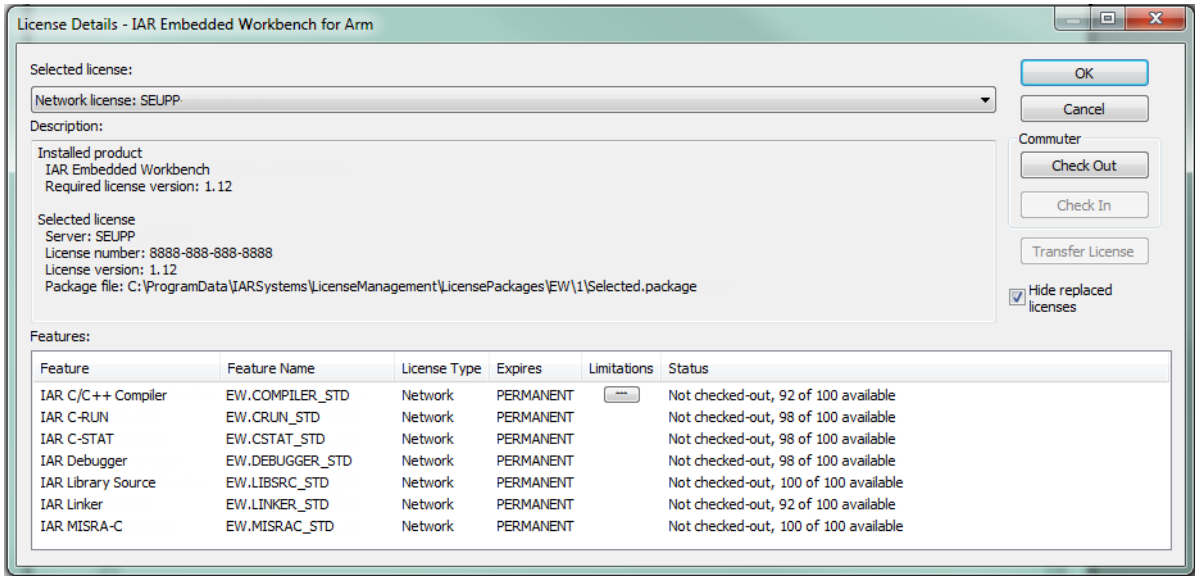
Selects or deselects all licenses listed in the display area.

Buttons

Check selected licenses Checks whether there are any new licenses available for the licenses selected in the **Check** column. If there are any new licenses, the **Available Renewals** dialog box is displayed, see *Available Renewals dialog box*, page 55.

License Details dialog box

The **License Details** dialog box is displayed when you choose **View>License Details** in the IAR License Manager, or when you double-click on a selected product or choose **License Details** in the context menu of the **Product List** page.



Use this dialog box to choose between available licenses and to get detailed information about the selected license.

Selected license

Lists all licenses that you have activated for this product and available network licenses. Select the license that you want to use.

Description

Lists detailed information for the selected license.

Features

Displays all licensable features in the product and their license status in these columns:

Feature The name of the feature

Feature name The internal feature name.

License Type	The license type.
Expires	Can be either: The expiration date, for time-limited licenses `Permanent`, for permanent licenses.
Limitations	Limitations in, for example, time or size.
Status	The status of the license; either `OK` or an error message.

Buttons

These buttons are available:

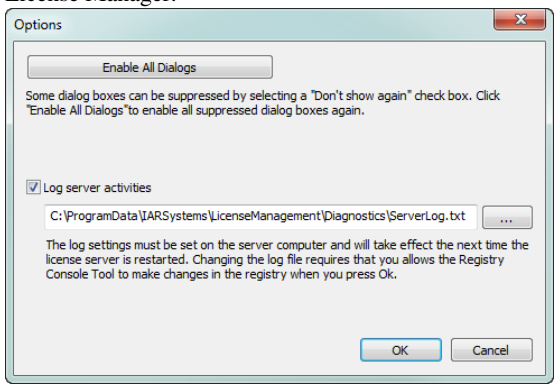
Check Out	Checks out a network license with commuter authorization which means you can use it as a PC-locked license for a limited time.
Check In	Checks in a network license which you previously have checked out with commuter authorization.
Transfer License	Deactivates the selected license, which can then be transferred and activated on another computer. Note that to transfer a network license locked to a license server computer, you must first contact your local IAR Sales office or IAR Customer Care team to request permission for the transfer. Note that you can only transfer a PC-locked license up to three times during a 12-month period.

Hide replaced licenses

Hides replaced licenses. A license is replaced when you renew your licenses, for example when you replace the startup license with the permanent license or when you activated a later version. Note that the replaced licenses are still available.

Options dialog box

The **Options** dialog box is displayed when you choose **Tools>Options** in the IAR License Manager.



Use this dialog box to enable all previously suppressed dialog boxes, and to activate logging server activities.

Buttons

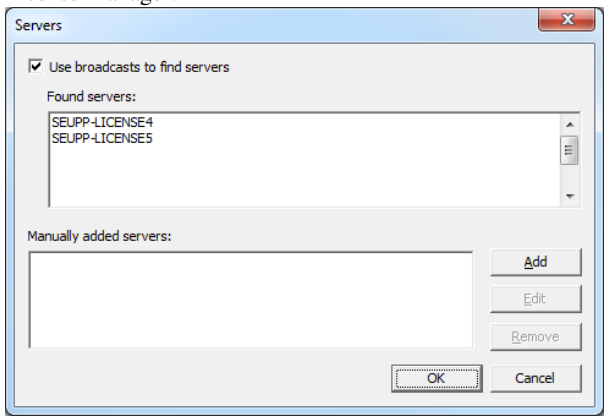
Enable All Dialogs Enables all previously suppressed dialog boxes.

Log server activities

Activates logging of a license server's activities. Typically, this is useful for monitoring which users are using which licenses and how much. See *Activating logging for the IAR License Manager for License Server*, page 48.

Servers dialog box

The **Servers** dialog box is displayed when you choose **View>Servers** in the IAR License Manager.



Use this dialog box to manually point out license servers that the IAR License Server for some reason does not automatically detect.

Note: Manually added non-existing servers will seriously increase response times in the IAR License Manager.

Use broadcasts to find servers

Enables broadcasts to find servers automatically on a subnet. If you disable this option, you must manually add the servers that you want to use. All references to automatically found servers will be removed.

Found servers

Lists automatically detected license servers.

Manually added servers

Lists manually added license servers.

Buttons

These buttons are available:

Add	Adds a license server to the list. Click **Add** and type the name or IP number of the license server that you want to add.
Edit	Edits the name of an already added license server. Select a license server and click **Edit** to edit the license server.

Remove	Removes an already added license server. Select a license server and click **Remove** to remove the license server.

Log file format

If logging of a license server's activities is activated, the information is recorded in a log file, one entry per line.

For information on how to log a license server's activities, see *Logging license server activities*, page 48.

The log file is in this format:

Element	Description
Server–LFE	Customer-defined log file encryption level as specified by the license server `-lfe` option.
License–LFE	Vendor-defined log file encryption level. If this is non-zero, this element overrides Server–LFE.
Checksum	A checksum for the entry.
Date	The date the entry was created, in the format: Day Month Date (hh:mm:ss) Year, for example Wed Jan 10 08:40:46 2018.
Time-stamp	The timestamp of the entry.
Feature	The name of the feature.
Ver	The version of the feature.
Trans	The transaction type. Explicit entries: `0` - A license is issued. `1` - A license is denied. `2` - The licensed application released the license token (when the release API is called) `8` - A commuter license is checked out. `9` - A commuter license is checked in. `17` - Explicit request entry of a shared license token `18` - Explicit release entry of a shared license token Implicit entries: `10` - Implicit license release entry when the License Manager performs cleanup of in use keys before shutdown. `11` - Implicit license release entry when the License Manager reclaims tokens after the key lifetime period has expired.

Table 2: The log file elements

Element	Description
Trans (*Continued*)	12 - Implicit license release entry when any of the following transactions takes place: * License A is released at midnight when license switches to License B. * The license is released after actual revocation takes place for a deferred revocation case. * License A is released when License B is dynamically added. 13 - Implicit license release entry when the usage log file is changed under any of the following scenarios: * When the backup usage log file is created (in case of overflow), a license release entry in the backup log file. * When the log file is changed by calling the usage log function VLSchangeUsageLogFileName, a license release entry in the previous log file 14 - Implicit license request entry under the scenarios when update calls are converted into request. For example: * When clients are running and the heartbeat message is sent after the License Manager restart * When heartbeat messages are sent after the key lifetime expiration 15 - Implicit license request entry under any of the following scenarios: * When the backup usage log file is created (in case of overflow), a license request entry in the new log file. * When the log file is changed by calling the usage log function VLSchangeUsageLogFileName, a license request entry in the new log file. 16 - Implicit release entries in the usage log file of the follower server, when the original leader comes back after going down (in the case of redundant License Manager setup).
Numkeys	The number of licenses in use after the current request/release. (Encrypted if encryption level is set to 3 or 4.)
Keylife	How long, in seconds, the license was used. Only applicable in a license release entry.

Table 2: The log file elements (Continued)

Element	Description
User	The user name of the application associated with the entry. This element can be logged anonymously if the anonymous logging option is set. If the License Manager is not started with the extended log option, `LM_SERVER` appears as the user name. If the License Manager is started with the extended log option, the actual user name appears in the user name field of each dummy record. If clients are connected to the License Manager when the backup file is created, dummy records are created only for in-use license tokens in the backup file (and not for the tokens whose key lifetime has expired). Correspondingly, their dummy records are created in the new file. the dummy entries are differentiated from the rest of the entries by specific transaction IDs (13 and 15).
Host	The host name of the application associated with the entry. This element can be logged anonymously if the anonymous logging option is set.
LSver	The version of the Sentinel RMS Development Kit license server.
Currency	The number of licenses handled during the transaction. (Encrypted if the encryption level is set to `3` or `4`.)
Comment	The text passed by the license application. This element can be logged anonymously if these conditions are met: * Anonymization of comments is allowed in the licensed application. * The system administrator has set the License Manager anonymous logging option. Further, the comment can be fully or partially anonymized depending on the vendor's implementation.
Queue key ID	If license queuing is enabled, this value denotes the queue ID—a unique identifier of the queued key. Otherwise, it contains a hyphen as in the example below.
Absolute position	If license queuing is enabled, this value denotes position of the queued client in the queue. Otherwise, it contains a hyphen as in the example below.
Group position	If the system administrator has created a group reservation file and license queuing is enabled, this value denotes the position of the queued client in its group. Otherwise, it contains a hyphen as in the example below.

Table 2: The log file elements (Continued)

Element	Description
Group name	If the system administrator has created a group reservation file and the queued key is granted from the reserved group, (as specified in the reservation file) the group name will appear. Otherwise, it contains a hyphen as in the example below.
Queue length	If license queuing is enabled, this value denotes the queue length—the total number of clients existing in the queue at that particular time. Otherwise, it contains a hyphen as in the example below.
Capacity flag	`0` - Capacity licensing is not used. `1` - Capacity licensing is used.
License capacity	If capacity licensing is used, this field contains the license capacity. Otherwise, it contains a hyphen as in the example below.
Team capacity	If capacity licensing is used, this field contains the team capacity. Otherwise, it contains a hyphen as in the example below.
User capacity	If capacity licensing is used, this field contains the user capacity. Otherwise, it contains a hyphen as in the example below.
Record number	Encrypted record number
Client ID	A 16-byte value that uniquely identifies each client request and is logged in the following transaction types: 0, 2, 10, 11, 12, 13, 14, 15, 16, 17, and 18. Using the client ID, each request log entry can be mapped with the corresponding release log entry. Also note the following behavior: * The client ID is shown in extended logs only. In plain logs, a hyphen will be logged instead of the client ID. * The client ID will not be maintained for commuter and queued clients. In such cases, a hyphen will be logged instead of the client ID. * For clients earlier than v8.5.5, the client ID in the case of transaction ID 14 will not be maintained, instead a fresh client ID will be assigned.
Readable checksum	Readable checksum of the record
Encrypted checksum	Encrypted cumulative checksum

Table 2: The log file elements (Continued)

A typical entry might appear as:

```
# Startup Sentinel RMS License Manager v8.6.0.0036 Mon Aug 25
15:36:27 2014  1408961183 Machine1 197 1708

2 1 ODA= Mon Aug 25 15:36:27 2014  1408961187 f1 v1 0 1 0 JSmith
Machine1 8.6.0.0036 1 request_comment - - - - - 0 - - - MA==
3724690 MTQxMjY4NTg3Nw==

# Shutdown Sentinel RMS License Manager v8.6.0.0036 Mon Aug
2515:36:43 2014  1408961203 Machine1 1708 Mg== 522318
```

If the License Manager is started with extended log option, an entry in the log file might appear as:

```
# # Startup Sentinel RMS License Manager v8.6.0.0036 Mon Aug 25
15:22:34 2014  140890354 Machine1 25 5976 v2.0 437875

2 1 ODA= Mon Aug 25 15:27:55 2014  1408960675 f1 v1 15 1 0 JSmith
Machine1 8.6.0.0036 1 request_comment - - - - - 0 - - -
3fd76b2d23b445e5a1e253068b3f1 MA== 295147 NzMzMDI0

Shutdown Sentinel RMS License Manager v8.6.0.0036 Mon Aug 25
15:28:48 2014  1408960728 Machine1 5976 Ng== 642326 OTc1MjUx
```

Licensing concepts

This chapter lists terms related to licensing.

Commuter authorization
A network license that you can check out from the server and use as a PC-locked license for a limited time.

Entitlement
The features your license entitles you to. In other words, the features that will be enabled and the period they can be used for.

Evaluation license
A free license that is limited in time or in function. For a time-limited evaluation license, the same product version can only be evaluated once on a specific computer.

Feature
A feature in the installed software that is enabled or disabled depending on the entitlement in your license. There is a license key for each feature.

License activation
The procedure to get the license keys from IAR.

License key
A string that contains information that allows the license to verify your entitlements.

License number
A unique identifier of a license, which is used in the license activation and in contact with IAR support.

License package
License keys and license information stored in a file. A license package is created on your computer when you activate a license.

License registration
All licenses must be registered with IAR. During registration, contact information about the license owner is collected, most notably the email address. At the end of the registration process an email is sent to the registered address to verify that it is correct.

License server
A PC with the IAR License Server installed.

Mobile license
A single-user license that is locked to a dongle, and thus can be used on any computer where the product is installed when the dongle is connected.

Network license
A multi-user license that is located on a license server computer. This license can be used by any computer on the local network.

Offline activation
License activation requires the IAR License Manager to connect to IAR over the internet. If that is not possible, there is a backup routine called *Offline activation*.

PC-locked license
A single-user license that is locked to the computer hardware and can be used on this computer only.

Permanent license
A license without a time limit.

Product
The product is what you have bought from IAR. In addition to the software you have installed, the documentation, and optionally a dongle, it is a license package that entitles you to use a number of the features in the software.

Startup license
A time-limited license that you get immediately when you activate your newly purchased product. Also known as a *temporary startup license*.

Transfer license
Deactivating a license and returning it to IAR, to be able to reactivate it on another computer.

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