

Installation, Licensing, and Activation

License Administration Guide



MATLAB® & SIMULINK®

R2018b



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The MathWorks, Inc.
3 Apple Hill Drive
Natick, MA 01760-2098

License Administration Guide

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Revision History

January 2002	First publication	Online only
August 2002	Revised	Online only
August 2003	Revised	Online only
February 2007	Revised	Online only
August 2007	Revised	Online only
March 2008	Revised	Online only
October 2008	Revised	Online only
September 2011	Online only	Revised for MATLAB 7.13 (Release 2011b)
March 2012	Online only	Revised for MATLAB 7.14 (Release 2012a)
September 2012	Online only	Revised for MATLAB 8.0 (Release 2012b)
March 2013	Online only	Revised for MATLAB 8.1 (Release 2013a)
September 2013	Online only	Revised for MATLAB 8.2 (Release 2013b)
March 2014	Online only	Revised for MATLAB 8.3 (Release 2014a)
October 2014	Online only	Revised for MATLAB 8.4 (Release 2014b)
March 2015	Online only	Revised for MATLAB 8.5 (Release 2015a)
September 2015	Online only	Revised for MATLAB 8.6 (Release 2015b)
March 2016	Online only	Revised for MATLAB 9.0 (Release 2016a)
September 2016	Online only	Revised for MATLAB 9.1 (Release 2016b)
March 2017	Online only	Revised for MATLAB 9.2 (Release 2017a)
September 2017	Online only	Revised for MATLAB 9.3 (Release 2017b)
March 2018	Online only	Revised for MATLAB 9.4 (Release 2018a)
September 2018	Online only	Revised for MATLAB 9.5 (Release 2018b)

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Licensing Overview

- “Audience” on page 1-2
- “Master Licenses” on page 1-3

Audience

This guide is intended to help the person charged with installing and activating MathWorks® products. MathWorks calls this person the Administrator on the Master License. When you purchase products, MathWorks automatically creates a MathWorks Account for the Administrator and associates the Master License to the Account. You can have multiple Administrators on a Master License.

The Administrator does not necessarily have to be a system administrator. The Administrator can be an engineer or scientist who purchased the software for personal use. At larger sites, the Administrator can be an actual system administrator who sets up MathWorks products in network configurations.

See Also

More About

- “Master Licenses” on page 1-3

Master Licenses

What Is a Master License?

In MathWorks software licensing, all licenses belong to a Master License. A Master License enables you to organize MathWorks licenses for easy administration and renewal. A Master License has these characteristics:

- Can have one or multiple licenses, each of which can have different license options.
- Can have one administrator or multiple administrators, each of whom can centrally manage all licenses within a Master License.

Benefits of a Master License

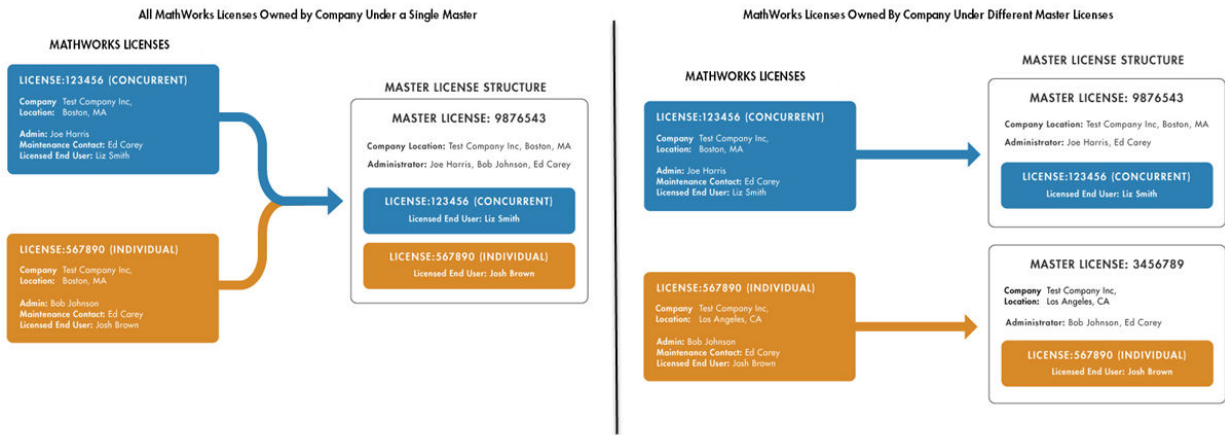
A Master License:

- Presents a summarized view of all products across multiple licenses.
- Provides a single Software Maintenance Service renewal for all licenses within the Master License.
- Offers flexibility for how you prefer to organize your licenses.

Master License Organization

You can choose to organize all your licenses under a single Master License or have multiple separate Master Licenses (some restrictions may apply). The choice depends on your preference for centralized administration, purchasing, and renewal cycle.

- A Master License provides a single Software Maintenance Service renewal for all licenses within the Master License. If you want to receive a single renewal quote, put all your licenses in one Master License.
- Multiple Master Licenses can accommodate multiple budgetary or purchasing cycles, confine administrators access to only their licenses, and distinguish between groups of licenses such as those for different departments.



To access your Master License, visit the License Center.

See Also

More About

- "Individual License Administration" on page 2-2
- "Designated Computer License Administration" on page 3-2
- "Network Named User License Administration" on page 5-2
- "Concurrent License Administration" on page 6-2

Administering Individual Licenses

- “Individual License Administration” on page 2-2
- “Install the Software” on page 2-3
- “Activate the Installation” on page 2-4

Individual License Administration

You can install and run the software on multiple computers, such as your desktop, lab, and laptop systems. Each installation is restricted for use by a particular computer and a particular user name.

The fundamental tasks required to administer an Individual License are:

- Installing the software — To use the software, you must install the product files on your computer — see “Install the Software” on page 3-3.
- Activating the installation — After you install the software on your computer, you must activate the software—see “Activate the Installation” on page 3-4.

See Also

Related Examples

- “Install the Software” on page 3-3
- “Activate the Installation” on page 3-4

Install the Software

To install MathWorks products on an Individual License, run the MathWorks installer. During installation, you log in to your MathWorks Account, select the license that you want to install, and provide the information requested by the other installer dialog boxes. The installer determines which products to install based on the license you specify. For step-by-step instructions, see the installation documentation.

- **If you do not have a MathWorks Account** — You can create MathWorks Account during the installation process. You need an Activation Key, which identifies a particular license in MathWorks systems. The installer determines which products to install based on the license specified by the Activation Key. The Administrator on the license can retrieve the Activation Key from the License Center at the MathWorks website. If you create an account during installation, you must verify your account via email before you can complete the installation.
- **If you do not have an Internet connection during installation**—You must have a File Installation Key to install MathWorks products. The File Installation Key identifies the products you can install. The Administrator on the license can retrieve the File Installation Key from the License Center at the MathWorks website.

When the installation completes, the installer gives you the option of activating the software. You will not be able to use the software until you activate it. If you activate the software immediately after installation and you are already logged in to your MathWorks Account, the activation process can skip the login and license selection steps. To exit the installer without activating, clear the **Activate MATLAB** check box and click **Finish**. You can always activate later — see “Activate the Installation” on page 2-4 for more information.

See Also

Related Examples

- “Determine Which Installation Procedure to Use”
- “Install Products with an Internet Connection”
- “Install Products Without Internet Access”

Activate the Installation

In this section...
“Overview” on page 2-4
“Validate a License” on page 2-5
“Deactivate a License” on page 2-5

Overview

After you install MathWorks products on your computer, you must activate the installation. If you do not activate the software, you will not be able to run it. Activation is a process that verifies licensed use of MathWorks products. This process validates the license and ensures that it is not used on more computers than allowed by the license option you purchased.

Note If you are performing multiple installations on an Individual License, you must activate each installation separately.

To activate your license for an installation, follow the prompts displayed by the installer following product installation.

If you decide to activate later, you must launch the activation application manually. Launch MATLAB® and then go to **Help > Licensing** to launch activation, or you can manually launch the app from the `matlab/bin` folder.

During activation, you log in to your MathWorks Account, select the license that you want to activate, and provide required information. As with the installation process, you can create a MathWorks Account during the activation process if you need one. You can also use an Activation Key to identify the license you want to activate.

When you click **Activate**, the activation application validates the activation in MathWorks systems and creates a License File that is restricted for use by the particular computer and to a particular user. The activation application copies this License File onto your computer.

If you do not have an Internet connection during activation, you must have a License File to activate your license. The Administrator on the license can retrieve the License File

from the License Center at the MathWorks website. In the MathWorks Software Activation dialog box, choose the **Activate manually without the Internet** option. In the Offline Activation dialog box, specify the location of your License File.

Validate a License

After activation completes, you can run MathWorks products. Throughout the term of your license, your MATLAB installation periodically contacts MathWorks to verify that your license is up-to-date. If your license is up-to-date, the validation process is transparent. If it determines that your license is not up-to-date, the validation process displays a dialog box that gives you the option of updating the license in your installation with the updated version available at the MathWorks website. A license can get out-of-date, for example, if you purchase additional products. The Administrator on the license can change this validation behavior by modifying the validation settings on a license.

Deactivate a License

In some scenarios, you might need to deactivate a license on a particular computer. For example, if you have performed the maximum number of activations allowed by your license and you want to install the software on a new computer. You must deactivate an installation of your license on one of your computers before you can activate your license for the installation on your new computer.

The best way to deactivate a license is to run the deactivation application on your computer with an Internet connection. This way the deactivation application can disable the License File on your computer and contact MathWorks to deactivate the license in MathWorks systems. If you do not have an Internet connection, the deactivation application disables the License File on your computer and returns a deactivation string. To complete the deactivation process, you must visit the License Center at the MathWorks website and enter the deactivation string to disable the activation in MathWorks systems.

For step-by-step instructions about deactivation, see the installation documentation.

Administering Designated Computer Licenses

- “Designated Computer License Administration” on page 3-2
- “Install the Software” on page 3-3
- “Activate the Installation” on page 3-4
- “Post-Installation Tasks” on page 3-6

Designated Computer License Administration

A Designated Computer License authorizes you to install and run MathWorks software on only one computer. The installation is restricted for use to a Host ID that identifies a particular computer, but not a particular user. Any number of people can log in and use the software, but not simultaneously.

The fundamental tasks required to administer an Designated Computer License are:

- Installing the software — To use the software, you must install the product files on your computer — see “Install the Software” on page 3-3.
- Activating the installation — After you install the software on your computer, you must activate the software—see “Activate the Installation” on page 2-4.

See Also

Related Examples

- “Install the Software” on page 3-3
- “Activate the Installation” on page 3-4
- “Post-Installation Tasks” on page 3-6

Install the Software

To install MathWorks products on an Designated Computer License, run the MathWorks installer. During installation, you log in to your MathWorks Account, select the license that you want to install, and provide the information requested by the other installer dialog boxes. The installer determines which products to install based on the license you specify. For step-by-step instructions, see the installation documentation.

- **If you do not have a MathWorks Account** — You can create MathWorks Account during the installation process. You need an Activation Key, which identifies a particular license in MathWorks systems. The installer determines which products to install based on the license specified by the Activation Key. The Administrator on the license can retrieve the Activation Key from the License Center at the MathWorks website. If you create an account during installation, you must verify your account via email before you can complete the installation.
- **If you do not have an Internet connection during installation**—You must have a File Installation Key to install MathWorks products. The File Installation Key identifies the products you can install. The Administrator on the license can retrieve the File Installation Key from the License Center at the MathWorks website.

When the installation completes, the installer gives you the option of activating the software. You will not be able to use the software until you activate it. If you activate the software immediately after installation and you are already logged in to your MathWorks Account, the activation process can skip the login and license selection steps. To exit the installer without activating, clear the **Activate MATLAB** check box and click **Finish**. You can always activate later — see “Activate the Installation” on page 2-4 for more information.

Activate the Installation

In this section...
“Overview” on page 3-4
“Validate a License” on page 3-4
“Deactivate a License” on page 3-5

Overview

After you install MathWorks products on your computer, you must activate the installation. If you do not activate the software, you will not be able to run it. Activation is a process that verifies licensed use of MathWorks products. This process validates the license and ensures that it is not used on more computers than allowed by the license option you purchased.

To activate your license for an installation, run the MathWorks activation application on your computer. During activation, you log in to your MathWorks Account, select the license that you want to activate, and provide required information. As with the installation process, you can create a MathWorks Account during the activation process if you need one. You can also use an Activation Key to identify the license you want to activate.

If you choose to activate immediately after installation, you skip the login and license selection steps—the activation application continues the same login session you opened during installation.

When you click **Activate**, the activation application validates the activation in MathWorks systems and creates a License File that is restricted for use to the particular computer. The activation application copies this License File onto your computer.

If you do not have an Internet connection during activation, you must have a License File to activate your license. The Administrator on the license can retrieve the License File from the License Center at the MathWorks website. In the MathWorks Software Activation dialog box, choose the **Activate manually without the Internet** option. In the Offline Activation dialog box, specify the location of your License File.

Validate a License

After activation completes, you can run MathWorks products. Throughout the term of your license, your MATLAB installation periodically contacts MathWorks to verify that

your license is up-to-date. If your license is up-to-date, the validation process is transparent. If it determines that your license is not up-to-date, the validation process displays a dialog box that gives you the option of updating the license in your installation with the updated version available at the MathWorks website. A license can get out-of-date, for example, if you purchase additional products. The Administrator on the license can change this validation behavior by modifying the validation settings on a license in the License Center.

Deactivate a License

In some scenarios, you might need to deactivate a license on a particular computer. For example, you want to install the software on a new computer. You must deactivate the installation of your license on your computer before you can activate your license for the installation on your new computer.

The best way to deactivate a license is to run the deactivation application on your computer with an Internet connection. This way the deactivation application can disable the License File on your computer and contact MathWorks to deactivate the license in MathWorks systems. If you do not have an Internet connection, the deactivation application disables the License File on your computer and returns a deactivation string. To complete the deactivation process, you must visit the License Center and enter the deactivation string to disable the activation in MathWorks systems.

For step-by-step instructions about deactivation, see the installation documentation.

Post-Installation Tasks

See “Configure the MATLAB Startup Accelerator” on page 4-2.

Post-Installation Tasks

Configure the MATLAB Startup Accelerator

When you install MathWorks products on your computer, the installation includes a utility program that can speed up MATLAB startup, called the MATLAB Startup Accelerator. By default, the installer configures this utility as a scheduled task on your computer that runs several times each day. (For information about changing this default behavior, see “Install Without Configuring the MATLAB Startup Accelerator” on page 6-6.)

While you are not required to modify this configuration, the startup accelerator works best if you coordinate when it runs with your particular MATLAB usage patterns. For example, by default, the startup accelerator runs at 8:00 a.m. and again at 1:00 p.m. every day, or whenever you log on to your computer. To take full advantage of the startup accelerator, schedule it to run at a time just before you typically start MATLAB.

To modify this configuration, use the Windows® Task Scheduler. In the Windows Task Scheduler, these start times are called triggers. You can modify these triggers to customize when the startup accelerator runs. You can also add triggers, delete triggers, or delete the startup accelerator task completely. The following section shows how to change when the startup accelerator runs using the Windows Task Scheduler. For more information about the Task Scheduler, see Windows documentation.

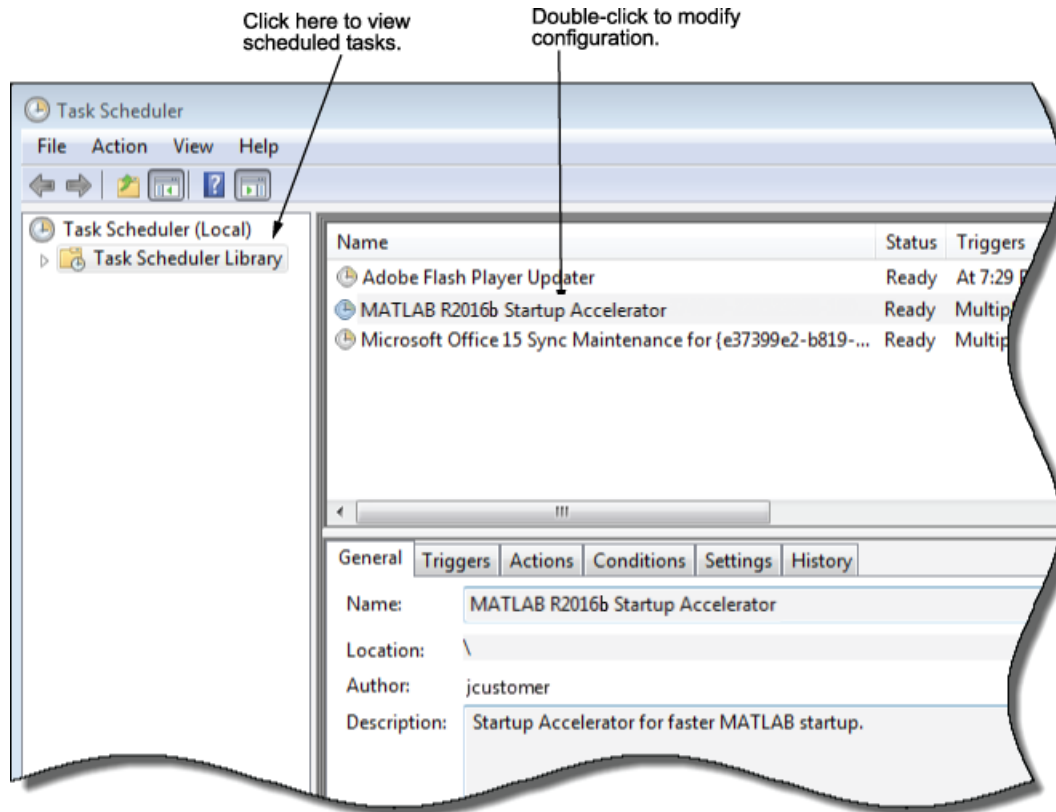
Change When the MATLAB Startup Accelerator Runs

To change when the MATLAB Startup Accelerator runs on your computer, use the Windows Task Scheduler.

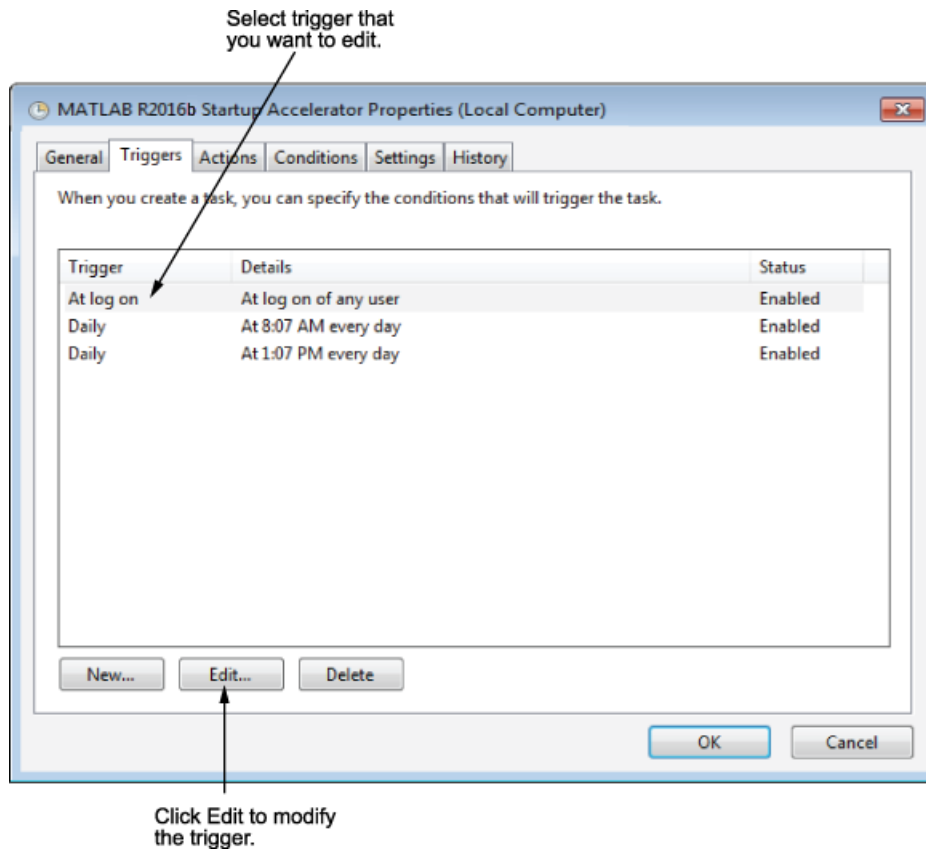
- 1 Start the Windows Task Scheduler.

On the Windows Start menu, search for the phrase “task scheduler” and press **Enter**.

- 2 Click **Task Scheduler Library** in the Console tree to view scheduled tasks and double-click the name of the startup accelerator to change the configuration.

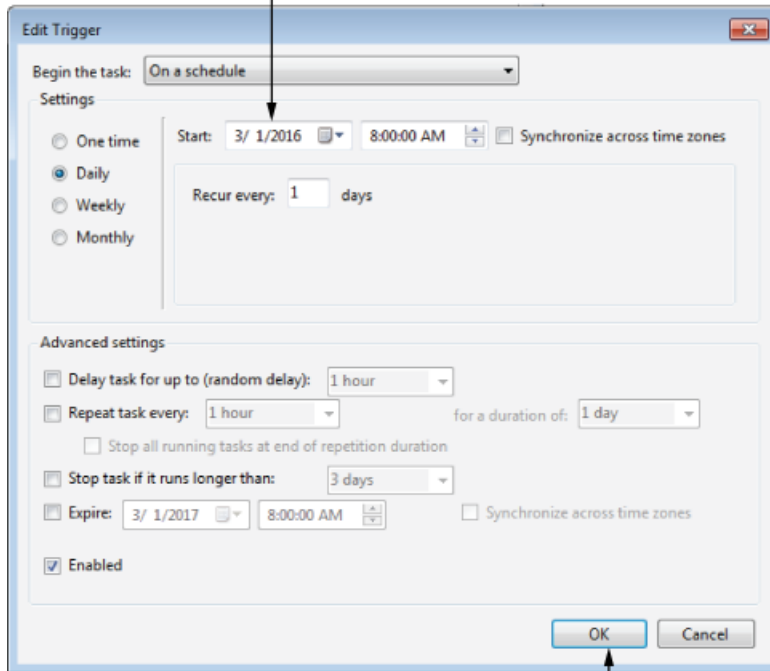


- 3 To change when the task is scheduled to start, click the Trigger tab in the task properties dialog box. In the list of triggers displayed, select the trigger you want to change, and click **Edit**.



- 4 To change the time the task is scheduled to run, enter a new time and click **OK**.

Change the trigger schedule time.



Click OK.

Administering Network Named User Licenses

- “Network Named User License Administration” on page 5-2
- “Set Up Named User Licensing” on page 5-3

Network Named User License Administration

A Network Named User license authorizes a specified number of Named Users to install and run MathWorks products over a network, administered under a single license. The list of authorized users must be specified by their user name. A Network Named User license can include multiple products, each with the same or different licensed user count.

As the Administrator of a Network Named User license, you have two primary goals:

- Setting up an installation that optimizes accessibility to the products.
- Ensuring that only authorized users have access to the products.

Set Up Named User Licensing

With Network Named User licenses, MathWorks uses FlexNet® options files to identify the specific Named Users to whom you have assigned right-to-use privileges. A FlexNet options file is a text file that contains option statements. An option statement begins with a keyword that identifies the option, such as RESERVE, INCLUDE, EXCLUDE, GROUP, or HOST_GROUP.

Note Do not confuse your License File with your FlexNet options file. The License File contains the encrypted passcodes for each product you are licensed to install and run. The FlexNet options file is a text file that contains license manager option statements.

If you have a Network Named User license, after you install your products, you might need to

- Check that the FlexNet options file includes all licensed users — see “Check the Options File” on page 5-3.
- Check that the DAEMON line in your License File includes the options file location — see “Control License Borrowing with Options Files” on page 6-9.

For more detailed information about creating FlexNet options files, see the FlexNet *License Administration Guide*, available in PDF form in *matlabroot/etc/LicenseAdministration.pdf*, where *matlabroot* represents your installation folder.

Check the Options File

As part of the installation process, the MathWorks installer creates a FlexNet options file, named `MLM.opt`, in the `etc` subfolder of your top-level MATLAB installation folder. In this options file, the installer puts an `INCLUDE` line for each product you are licensed to install and run. By default, the installer puts the username of the person who performed the installation in these `INCLUDE` lines. If you performed your own installation, the options file might not need editing. However, if you performed the installation for another user, or if your license server is installed on a UNIX® system and you had root privileges when you performed the installation, you will need to edit this options file.

For example, if your username is `sysadmin`, the options file would look like this.

```
INCLUDE MATLAB USER sysadmin
INCLUDE Signal_Toolbox USER sysadmin
INCLUDE Optimization_Toolbox USER sysadmin
```

You must replace `sysadmin` in these `INCLUDE` statements with the usernames of the licensed users. Because the installer includes the `GROUPCASEINSENSITIVE` option in the options file and sets it to `ON`, login names are not case sensitive. If multiple users are licensed for the same product, you must create a separate `INCLUDE` line for each user or collect the users into a group, using the `GROUP` syntax, and specify the name of the group in an `INCLUDE` line. The number of users must not exceed the number of license keys available for that product. This example shows both methods.

Note If you edit the options file, make certain that there are no extra space characters at the end of each `INCLUDE` line.

```
GROUPCASEINSENSITIVE ON
GROUP matlab_users tom judy mike jean brad
GROUP signal_users tom mike brad
INCLUDE MATLAB GROUP matlab_users
INCLUDE Signal_Toolbox GROUP signal_users
INCLUDE Optimization_Toolbox USER mike
INCLUDE Optimization_Toolbox USER jean
```

Note Do not use the `INCLUDEALL` option with products from MathWorks licensed under an Individual (Linux® or Mac OS X only) license option. You can use this option with Concurrent licenses.

Do not use `USER_GROUP` or `HOST_GROUP` as names of groups. These terms are reserved.

Make Sure Your DAEMON Line Includes Your Options File

When the installer creates an options file during installation, it also adds the `Options=` syntax to the `DAEMON` line in your License File. This syntax specifies the pathname of the options file.

For example, if your server is named `thunderball` and its IP address is `144.212.111.103`, the `SERVER` and `DAEMON` lines in your License File would look like this:

```
SERVER thunderball INTERNET=144.212.111.103 27000
DAEMON MLM "C:\Program Files\MATLAB\R2017b\etc\win64\MLM.exe" \
options="C:\Program Files\MATLAB\R2017b\etc\mlm.opt"
```

See Also

More About

- “Network Named User License Administration” on page 5-2

Administering Concurrent Licenses

This topic describes how to administer a Concurrent User license.

- “Concurrent License Administration” on page 6-2
- “Install the Software in a Concurrent License” on page 6-5
- “Borrow Licenses” on page 6-7
- “Use Timeouts for Idle License Keys” on page 6-20

Concurrent License Administration

In this section...
“Key Administrative Tasks” on page 6-2
“Design Your Network Configuration” on page 6-3

Key Administrative Tasks

A Concurrent license enables you to make MathWorks products available to anyone with access to your network. Access is not limited to specific named users, as it is with a Network Named User license. Rather, Concurrent licenses use license keys to control access. Users check out a license key when they start MATLAB or use functions in other products. When all the keys for a particular product are checked out, the license manager denies further requests.

As Administrator for a Concurrent license, your primary goal is to set up an installation that optimizes accessibility to the products. The fundamental tasks required to administer a Concurrent license are:

- 1 Determine how you want to configure the products for users** — There are several possible configurations. Decide whether users will install MATLAB on their computers or access MATLAB over a network. See “Design Your Network Configuration” on page 6-3.
- 2 Install the software on the computers required by the configuration** — You must install the license manager on a server and, depending on your configuration, either install MathWorks products on a server or install the products on client systems. You can use the MathWorks installer to perform all of these installations. See “Install the Software in a Concurrent License” on page 6-5.

Note You must activate the license for the installation before you run the installer. To retrieve the License File needed for your configuration, visit the License Center at the MathWorks website. You must provide the Host ID of the system on which you intend to run the license manager when requesting a License File. You specify the location of your License File during installation.

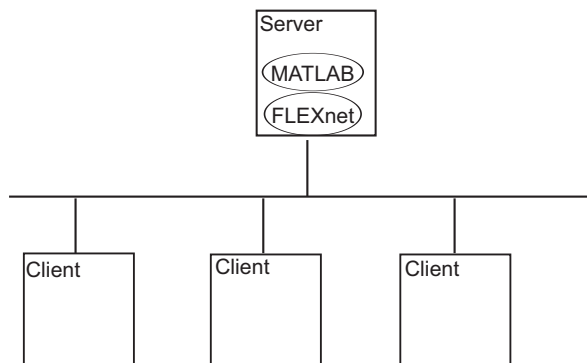
Design Your Network Configuration

For network installations, MathWorks uses a license manager program, FlexNet Publisher, a product of Flexera Software, Inc. To set up a network installation, you must install the license manager and install MathWorks products. You use the MathWorks installer to perform both installations. If you want to integrate MathWorks products into an already established license management scheme, you can copy the MathWorks license management daemons onto your system.

Before you install MATLAB in a network installation, decide what type of configuration you want to set up. This decision determines how many installations you need to perform. This section describes these options.

Set Up a Remote Client Access Configuration

In a *remote client access* configuration, you install MATLAB and the license manager on a central file server. (These instructions refer to this system as your *license server*.) Users on client systems access MATLAB over the network. This figure shows one possible configuration. The license manager and MATLAB can be installed on the same server or on separate servers.

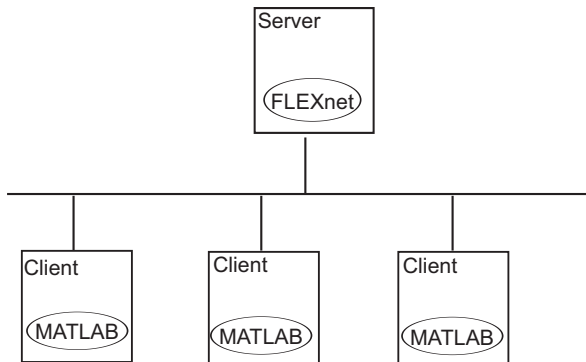


If your license server runs the Windows operating system, follow the instructions in the installation documentation. Your configuration can include a mixture of systems, for example, a Linux license server can serve clients running Windows.

In remote client access configurations, it can be helpful to give clients a script that sets up a shortcut to the network copy of MATLAB and specifies a default startup folder for MATLAB.

Set Up Local Client Access Configuration

In a *local client access* configuration, you install the license manager on a server and you install MATLAB on each client system. When users on client systems start MATLAB, it contacts the license manager over the network to check out a license key. This figure shows one possible configuration.



You use the same basic network installation procedure to install MathWorks products on a client system. The installation documentation notes any differences between the installations.

Install the Software in a Concurrent License

You, as Administrator, are responsible for installing MathWorks products along with the license manager on a central server on your network. This system is referred to as your *license server*. Users run MATLAB on their own computers, called *client systems*, that are connected to the license server over a network. A computer running Windows can act as a license server for Linux or Mac OS X clients, and conversely. For instructions about installing MATLAB products on a license server, see the license manager installation instructions in the installation documentation.

In Network Concurrent User installations, you can install MATLAB and other products on a server and have client systems access products over the network, or you can install products on each client system. In this scenario, called a local access configuration, clients communicate with the server only when they check out a license key.

While a local access configuration can improve performance, it makes system administration more complex. For example, deploying a new version of MATLAB is easier when you only have to install it on a central server, rather than on multiple client computers.

Note When requesting your license, you must provide MathWorks with the host ID of the system (or systems) on which you intend to run the license manager.

To install MATLAB on client systems in your network, follow the instructions in the installation documentation. The following sections highlight some additional information about these installations.

Configure the MATLAB Startup Accelerator on Client Systems

When you install MathWorks products, the installation includes a utility program that can speed up MATLAB startup, called the MATLAB Startup Accelerator. By default, the installer configures this utility as a scheduled task on your computer that runs several times each day. (For information about changing this default behavior, see “Install Without Configuring the MATLAB Startup Accelerator” on page 6-6.)

In network configurations, the computer on which you install MathWorks products may not be the computer on which you (and others) use MathWorks products. For example, in remote access configurations, you install MathWorks products on a server and clients run

MATLAB from the server over the network. In this scenario, clients could benefit from the startup accelerator, especially when starting MATLAB over the network, but the utility is not installed and configured on their computers.

To speed up MATLAB startup on client systems, MathWorks includes a second utility that can configure the MATLAB startup accelerator on computers where MathWorks products are not installed. The following section describes how to run this startup accelerator configuration utility on client systems.

Install the MATLAB Startup Accelerator on a Network Client System

To install the MATLAB Startup Accelerator on client systems in a network installation, follow this procedure.

- 1** Install MathWorks products on your server.
- 2** Distribute the network location of the startup accelerator configuration utility to network clients. The startup accelerator configuration utility is named `InstallMATLABStartupAccelerator.exe` and is located in the `matlabroot/etc/$ARCH` folder, where `matlabroot` represents the MATLAB installation folder on the server and `$ARCH` represents a platform-specific folder.
- 3** On each client system, run the startup accelerator configuration utility. This utility adds the MATLAB Startup Accelerator as a scheduled task on the client computer. By default, the task is scheduled to run at 8:00 a.m. and again at 1:00 p.m., but you can change this configuration using the Windows Task Scheduler. (For more information, see “Configure the MATLAB Startup Accelerator on Client Systems” on page 6-5.)

Install Without Configuring the MATLAB Startup Accelerator

When you install MathWorks products, the installer configures the MATLAB Startup Accelerator as a scheduled task on your computer. If you prefer to install MathWorks products without configuring the startup accelerator, use the `createAccelTask` option on the installer command line or in an installer input file. A sample installer input file, named `installer_input.txt`, is included in the top-level folder on the MathWorks product DVD 1. You can customize this file to suit your needs.

For example, to install MathWorks products without configuring the startup accelerator, run the installer and specify the `createAccelTask` option on the command line, setting the value to `false`.

```
setup.exe -createAccelTask false
```

Borrow Licenses

In this section...

“License Borrowing Overview” on page 6-7
“Enable License Borrowing” on page 6-8
“Manage License Borrowing” on page 6-9
“Turn on Borrow Products Menu Option” on page 6-13
“Borrow Product Licenses by Selecting Products” on page 6-14
“Borrow Product Licenses Automatically” on page 6-16
“Return Borrowed Licenses Early” on page 6-17

License Borrowing Overview

To provide license mobility, MathWorks supports FlexNet license borrowing. This capability lets you use MathWorks products on computers that do not have a continuous connection to the license server. After you borrow a license, you can disconnect your system from the network and continue to use the products you have checked out until the borrow period expires. You can also return a borrowed license early.

Limitations

The following limitations apply to license borrowing:

- Academic licenses, including Concurrent licenses, cannot use license borrowing.
Commercial Concurrent and Network Named User licenses can use license borrowing.
- The maximum borrow period is 30 days (720 hours).
- MathWorks products must be installed on client systems.

Interoperability with Previous MATLAB Releases

MathWorks tries to preserve licensing backward compatibility between releases. For example, you can run R2014b products with a R2016b License File.

Borrowed licenses are not compatible with Release 12 and earlier releases. You can run Release 13 products with a borrow-enabled license, however, using the borrowing capability is not supported.

The following table sums up the interoperability of different releases with borrow-enabled licenses.

Release Family	Run MATLAB	Borrow Licenses
R14 (and later)	Yes	Yes
R13	Yes	Not supported
R12 (and earlier)	No	No

Enable License Borrowing

You must be an Administrator of the license to enable license borrowing.

- 1 Request that borrowing be enabled on your license from MathWorks. To request this change, go to the MathWorks website at <https://www.mathworks.com> and click **Support**. On the support page, click **Contact support**.

Notes

- In these License Files, the INCREMENT lines for products include the keyword `BORROW=720`, where 720 is the maximum number of hours in the borrow period (you cannot change this value). For example:

```
INCREMENT MATLAB MLM 17 01-jan-0000 5 52FCH63184G5 BORROW=720 \
DUP_GROUP=UH SN=220668
```

- The maximum borrow period of 720 hours is equal to 30 days.

- 2 On your license server, stop the license manager.
- 3 On your license server, copy the SERVER and DAEMON lines from the existing License File, `matlabroot/etc/license.dat`, where *matlabroot* represents your MATLAB installation folder. For example, here are the SERVER and DAEMON lines from a License File:

```
SERVER mysystem 0012110gbc86 27000
DAEMON MLM C:\Program Files\MATLAB\R2017b\etc\win64\MLM.exe
```

- 4 Paste the SERVER and DAEMON lines that you copied from your existing License File at the top of the new License File that includes the license borrowing capability.
- 5 On your license server, replace the existing License File with the new License File.

- 6 Restart the license manager.

Manage License Borrowing

Use an options file to control license borrowing behavior. Use FlexNet tools to monitor which licenses are borrowed.

- “Control License Borrowing with Options Files” on page 6-9
- “Example: Exclude a User from Borrowing a License” on page 6-10
- “Determine Which Licenses Are Currently Borrowed” on page 6-11

Control License Borrowing with Options Files

You can control various aspects of license borrowing behavior using a FlexNet options file. An options file is a text file that contains option statements. Each option statement begins with a keyword that identifies the option. The following table lists the options you use to control aspects of license borrowing. For more information about these options, see the *FlexNet End User's Guide*. To see an example of an options file, see “Example: Exclude a User from Borrowing a License” on page 6-10.

Task	FlexNet Option to Use
Reserve a specific number of licenses that cannot be borrowed.	Use the <code>BORROW_LOWWATER</code> option. For example, to make sure that three MATLAB licenses can never be borrowed, use this syntax: <code>BORROW_LOWWATER matlab 3</code>
Specify which users can borrow licenses for a particular product.	Use the <code>INCLUDE_BORROW</code> option. For example, to allow the user Fred to borrow a license for the Image Processing Toolbox™, use this syntax: <code>INCLUDE_BORROW image_toolbox USER fred</code> Note: When you specify that a particular user can borrow licenses, you exclude all other users.

Task	FlexNet Option to Use
Specify which users cannot borrow licenses for a particular product.	<p>Use the EXCLUDE_BORROW option.</p> <p>For example, to prevent the user Donna from borrowing a license for the Image Processing Toolbox, use this syntax:</p> <pre>EXCLUDE_BORROW image_toolbox USER donna</pre>
Specify the maximum amount of time a user can borrow a license.	<p>Use the MAX_BORROW_HOURS option.</p> <p>For example, to limit users of the Image Processing Toolbox to a three day borrow period, use this syntax:</p> <pre>MAX_BORROW_HOURS image_toolbox 72</pre> <p>The borrow period you specify must be less than 30 days, which is the borrow period specified in borrow-enabled licenses from MathWorks.</p>

Example: Exclude a User from Borrowing a License

To illustrate using an options file to control license borrowing behavior, this example uses an options file to exclude a user from borrowing a license for a specific product:

- 1 Create the options file.

An options file is a text file that contains options statements. Using any text editor, create a file that contains the following line. You can give the options file any name and store it in any convenient folder.

```
EXCLUDE_BORROW simulink USER fred
```

- 2 Specify the name of the options file on the DAEMON line in your License File.

On your license server, use any simple text editor to edit your License File, adding the `options=` keyword to the DAEMON line, as follows. Be sure to use the line continuation character (`\`) if the DAEMON line extends beyond a single line.

```
DAEMON MLM C:\Program Files\MATLAB\R2017b\etc\win64\MLM.exe \
options=C:\myborrowoptions.opt
```

- 3 Start (or restart) the license manager so that it processes the options file.

After setting up this options file, test it by logging in as the user Fred. Start MATLAB and try to borrow a license for Simulink®. You can do this using the license command at the MATLAB prompt, as follows.

```
license checkout simulink
```

Your attempt to borrow a license for Simulink as the user Fred should fail, displaying the following message.

```
License Manager Error -38.
User/host on EXCLUDE list for feature
Feature: simulink
License path: C:\Program Files\MATLAB\bin\win64\license.dat;
C:\Program Files\MATLAB\bin\win64\*.lic
```

Determine Which Licenses Are Currently Borrowed

Flexera Software, Inc, the makers of FlexNet, provides tools that you can use to monitor the status of borrowed licenses in your network configuration. You can use the LMTOOLS application or the `lmstat` command.

Use the LMTOOLS Application on Windows Systems

- 1 Log in to your license server.
- 2 Navigate to the `matlabroot\etc\%ARCH` folder, where `matlabroot` represents the name of your MATLAB installation and `%ARCH` represents a platform-specific folder.
- 3 Start the LMTOOLS application by double-clicking the `lmtools.exe` executable file.
- 4 Select the **Server Status** tab in the LMTOOLS dialog box.
- 5 Click the **Perform Status Enquiry** button. LMTOOLS displays the status information in the output window. In the status information, each entry in the list for a product shows the total number of licenses for the product and tells how many licenses are currently checked out. For borrowed licenses, the entry for the product includes the keyword (`linger:XXX`), where `XXX` specifies the borrow period in seconds.

```
-----
Status
-----
Flexible License Manager status on Wed 10/5/2016 10:04
[Detecting lmgrd processes...]
License server status: 27000@myserver
License file(s) on myserver: C:\Program Files\MATLAB\R2016b\etc\license.dat:

myserver: license server UP (MASTER) v11.9

Vendor daemon status (on myserver):
```

```
MLM: UP v11.9
Feature usage info:
Users of TMW_Archive: (Uncounted, node-locked)
Users of MATLAB: (Total of 5 licenses issued; Total of 1 license in use)
"MATLAB" v14, vendor: MLM
floating license
myserver myserver (v14) (myserver/27000 101), start Wed 10/5 14:37
(linger: 121500)
Users of SIMULINK: (Total of 5 licenses issued; Total of 0 licenses in use)
Users of Control_Toolbox: (Total of 5 licenses issued; Total of 1 license in use)
"Control_Toolbox" v14, vendor: MLM
floating license
anyuser myserver myserver (v14) (myserver/27000 201), start Wed 10/5 14:37
(linger: 121500)
```

Use the `lmstat` utility on Windows Systems

- 1 Log in to your license server and open a DOS command window. One way to open the DOS command window is to select the **Run** option from the **Start** menu, type `cmd` in the text entry field, and then click **OK**.
- 2 Navigate to the `matlabroot\etc\%ARCH` folder, where `matlabroot` represents the name of your MATLAB installation and `%ARCH` represents a platform-specific folder.
- 3 Run the `lmutil` command specifying `lmstat` as an argument. (On Windows systems, FlexNet packages all its license management utilities into one program, `lmutil`.)

The following example uses the `-a` option to display all the information returned by `lmstat`. Note that you must also use the `-c` option to specify the name of your License File. For more information about `lmstat`, see the *FlexNet End User's Guide*.

```
lmutil lmstat -a -c "C:\Program Files\MATLAB\R2017b\etc\license.dat"
```

In the status information returned by `lmstat`, each entry in the list for a product shows the total number of licenses for the product and tells how many licenses are currently checked out. For borrowed licenses, the entry for the product includes the keyword `(linger:XXX)`, where `XXX` specifies the borrow period in seconds.

```
lmutil - Copyright (c) 1989-2010 by Flexera Software, Inc.
All Rights Reserved.
```

```
Flexible License Manager status on Wed 10/5/2016 10:04
[Detecting lmgrd processes...]
License server status: 27000@myserver
License file(s) on myservers: C:\Program Files\MATLAB\R2016b\etc\license.dat:
myservers: license server UP (MASTER) v11.99
Vendor daemon status (on myservers):
MLM: UP v11.9
Feature usage info:
Users of TMW_Archive: (Uncounted, node-locked)
Users of MATLAB: (Total of 5 licenses issued; Total of 1 license in use)
```



```
"MATLAB" v14, vendor: MLM
floating license
myserver myserver (v14) (myserver/27000 101), start Wed 10/5 14:37
(linger: 121500)
Users of SIMULINK: (Total of 5 licenses issued; Total of 0 licenses in use)
Users of Control_Toolbox: (Total of 5 licenses issued; Total of 1 license in use)
"Control_Toolbox" v14, vendor: MLM
floating license
anyuser myserver myserver (v14) (myserver/27000 201), start Wed 10/5 14:37
(linger: 121500)
```

Note If the license status information contains entries for the MATLAB Runtime, this does not necessarily mean that an end user has borrowed a license for this product. MATLAB Runtime uses the license borrowing capability. To determine if a user has borrowed a license for the MATLAB Runtime, check the expiration date specified in the listing and compare it to the expiration for licenses that you know an end user borrowed.

Use lmstat on Linux Systems

- 1 Log in to your license server.
- 2 Navigate to the *matlabroot/etc* directory, where *matlabroot* is your MATLAB installation folder.
- 3 Run the `lmstat` utility.

```
lmstat -a -c /usr/local/MATLAB/R2017b/etc/license.dat
```

Turn on Borrow Products Menu Option

Note Ensure that the client system has a network connection to the license server.

To turn on the menu option for Borrow Products in the Licensing menu:

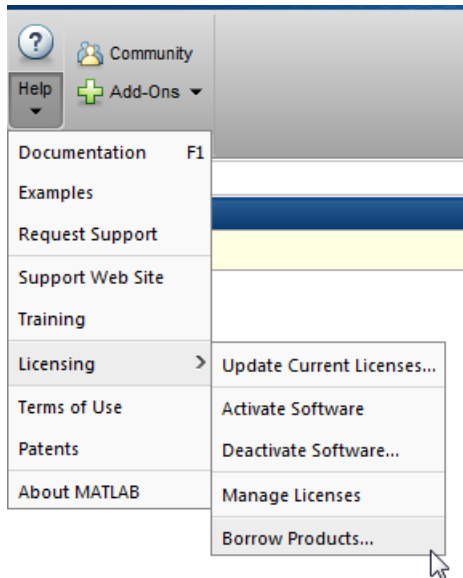
- 1 On the client system, start MATLAB and enter this command:

```
matlab.internal.licensing.enableBorrowUI(true)
```

After you turn on the menu option for License Borrowing the first time, it remains available any time you start MATLAB.

- 2 Restart MATLAB.

- 3 Locate the Borrow Products option in the Licensing menu.
 - a On the **Home** tab, in the **Resources** section, click **Help**.
 - b Under **Licensing**, look for **Borrow Products**.



Turn Off Borrow Products Menu Option

To turn off the menu option for Borrow Products in the Licensing menu:

- On the client system, start MATLAB and enter this command:

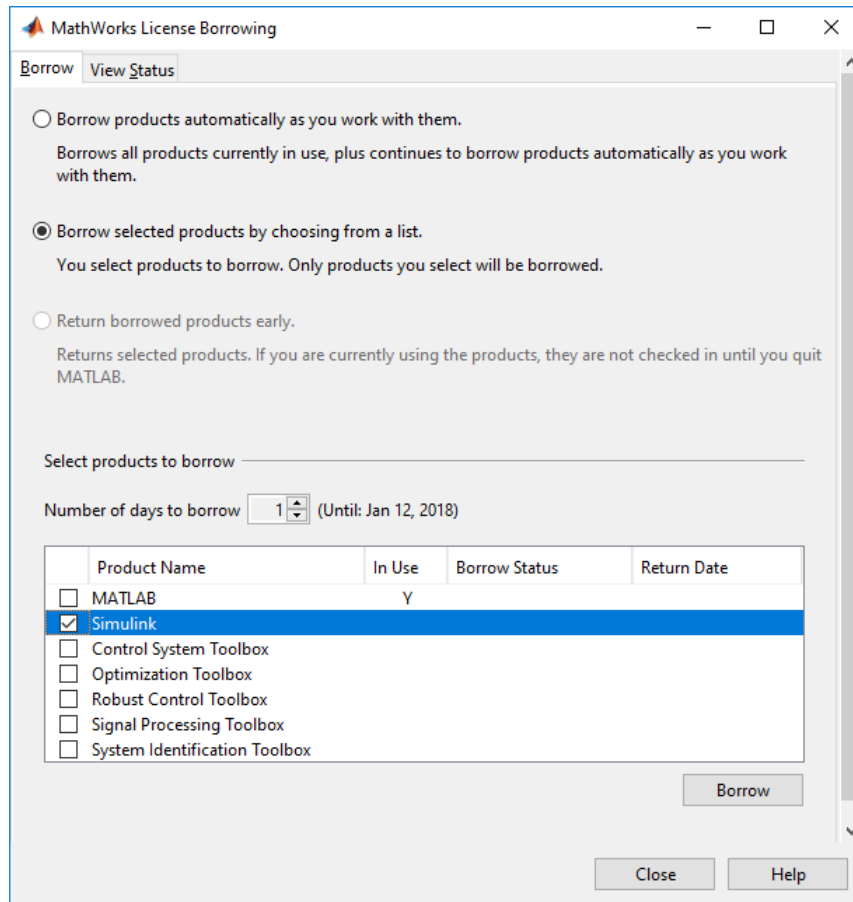
```
matlab.internal.licensing.enableBorrowUI(false)
```

Borrow Product Licenses by Selecting Products

To borrow licenses by product name:

- 1 Start MATLAB.
- 2 On the **Home** tab, in the **Resources** section, click **Help**.
- 3 Under **Licensing**, click **Borrow Products**.

- 4 Select **Borrow selected products by choosing from a list**. The dialog box displays the products that can be borrowed.

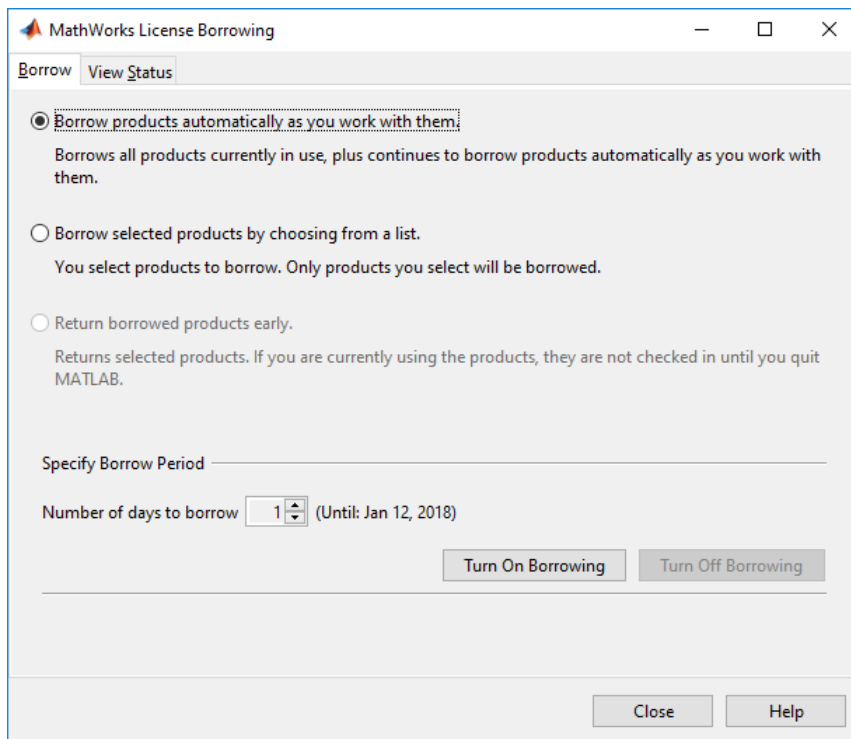


- 5 Specify the borrow period: from 1 day (default) to 30 days.
- 6 Click the check box next to each product that you want to borrow.
- 7 Click **Borrow**.
- 8 Disconnect your computer from the network, and continue using the borrowed products until the borrow period expires. You can return borrowed licenses early.

Borrow Product Licenses Automatically

To borrow product licenses automatically:

- 1 Start MATLAB.
- 2 On the **Home** tab, in the **Resources** section, click **Help**.
- 3 Under **Licensing**, click **Borrow Products**.
- 4 Select **Borrow products automatically as you work with them**.



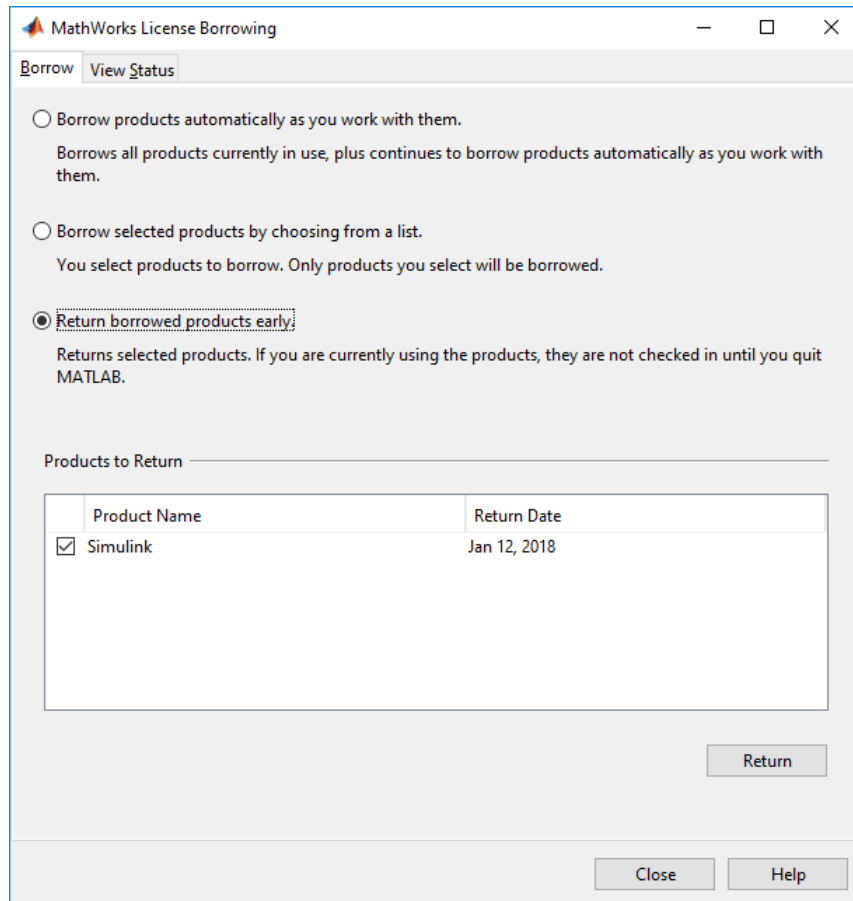
- 5 Specify the borrow period: from 1 day (default) to 30 days.
- 6 Click **Turn On Borrowing**.
- 7 Work in MATLAB as you would normally, performing the tasks you want to perform when you are disconnected from the network. As you use products, MATLAB borrows the licenses for them automatically. When you have borrowed licenses for all the products that you want to use, click **Turn Off Borrowing**.

- 8 Disconnect your computer from the network and continue using the borrowed products until the borrow period expires. If you want to return borrowed licenses early, see “Return Borrowed Licenses Early” on page 6-17.

Return Borrowed Licenses Early

To return a borrowed license early:

- 1 Connect your computer to your network.
- 2 On the **Home** tab, in the **Resources** section, click **Help**.
- 3 Under **Licensing**, click **Borrow Products**.



- 4 Select **Return borrowed products early**. The dialog box displays a list of currently borrowed products.
- 5 Specify the product licenses you want to return early. By default, all borrowed product licenses are selected. Deselect any products you do not want to return.
- 6 Click **Return**.

Note You cannot borrow licenses and then return them in the same MATLAB session. You must quit MATLAB and restart it before you can return the licenses.

See Also

Related Examples

- “Manage Licensing for Network Configurations”

Use Timeouts for Idle License Keys

In this section...
“Overview” on page 6-20
“Enable License Timeouts” on page 6-20
“Experiencing a License Timeout” on page 6-21

Note You can use timeouts only with concurrent licenses.

Overview

If you have a Concurrent license, you can use the FlexNet licensing timeout option to automatically return idle license keys at your site. With license timeouts, the license manager automatically frees license keys that sit idle for a specified period of time. It, returning the licenses to the pool of available license keys.

For example, when you start MATLAB and other products, such as toolboxes, you check out license keys for these products. If you go home without exiting your MATLAB session, these licenses remain checked out and are not available to other users. With timeouts enabled, after your licenses sit idle for a specified period, the license manager releases the license keys for all the products you had been using and these keys become available to other users.

Enable License Timeouts

To take advantage of timeouts, you must specify the `TIMEOUT` option in a FlexNet options file. This options file is a text file that contains license manager options statements, such as `INCLUDE`, `EXCLUDE`, and `GROUP` statements.

To enable timeouts:

- 1 Create a FlexNet options file, if one does not exist, using any text editor. Name the options file `MLM.opt` and put the file in the `matlabroot/etc/$ARCH` folder, where `matlabroot` represents your installation folder and `$ARCH` represents a platform-specific folder. For example, on a Windows system, you might create the file

```
C:\Program Files\MATLAB\R2017b\etc\win64\MLM.opt
```


- 2 Add the TIMEOUT option to the options file, using the following syntax:

```
TIMEOUT feature seconds
```

For **feature**, specify MATLAB. You cannot specify separate timeout values for individual MathWorks products, such as toolboxes.

For **seconds**, specify the amount of idle time you want to allow. The minimum value is 4 hours (14,400 seconds). If you specify a timeout value that is smaller, the minimum value is used. For example, to specify a five-hour time-

out, enter the following in your options file.

```
TIMEOUT MATLAB 18000
```

Note FlexNet licensing supports the TIMEOUTALL option that you can use to specify the timeout value used for all products. However, MathWorks does not recommend using this option. The TIMEOUTALL option affects all the products listed in the License File which could include products from other vendors, not just MathWorks products. In addition, when you use the TIMEOUTALL option, the license manager log file can become misleading. For example, log file entries include whatever value you specify in the TIMEOUTALL option even if the actual value used is another value, such as the MathWorks minimum time-out value.

- 3 Make sure the DAEMON line in your License File specifies the location of your options file. The License File DAEMON line must include the options= syntax. For example, your DAEMON line might look like the following:

```
DAEMON MLM "C:\Program Files\MATLAB\R2017b\etc\win64\MLM.exe" \  
options="C:\Program Files\MATLAB\R2017b\etc\win64\mlm.opt"
```

- 4 Stop the license manager and restart it. Whenever you change the License File, or change the time-out value in the options file, you must restart the license manager.

Experiencing a License Timeout

When timeout is enabled, if you open a MATLAB session, and then leave it inactive for more than 4 hours, when you return, you will find MATLAB still open on your desktop. However, you will see the following message displayed in the Command Window:

```
Your MATLAB session has timed out. All license keys have been  
returned.
```

The timeout is also recorded in the license manager log file, as follows:

Idle session. Returning keys for <user>@<machine>

To resume a MATLAB session that has timed out, start using MATLAB again. If a license key is available, MATLAB checks it out automatically. Likewise, as you use the toolboxes and other products that you had checked out, MATLAB obtains license keys for these products as well.

If a license key is not available, MATLAB periodically attempts to check out a license, issuing warning messages. After 10 warnings, if a license key is still not available, MATLAB saves the workspace and exits.

Note If you return to a Simulink session that has timed out, and no licenses are available, you cannot run or modify a currently open model. These menu options are disabled until a Simulink license key becomes available. You can, however, save a model in a Simulink session that has timed out.

See Also

More About

- “Manage Licensing for Network Configurations”