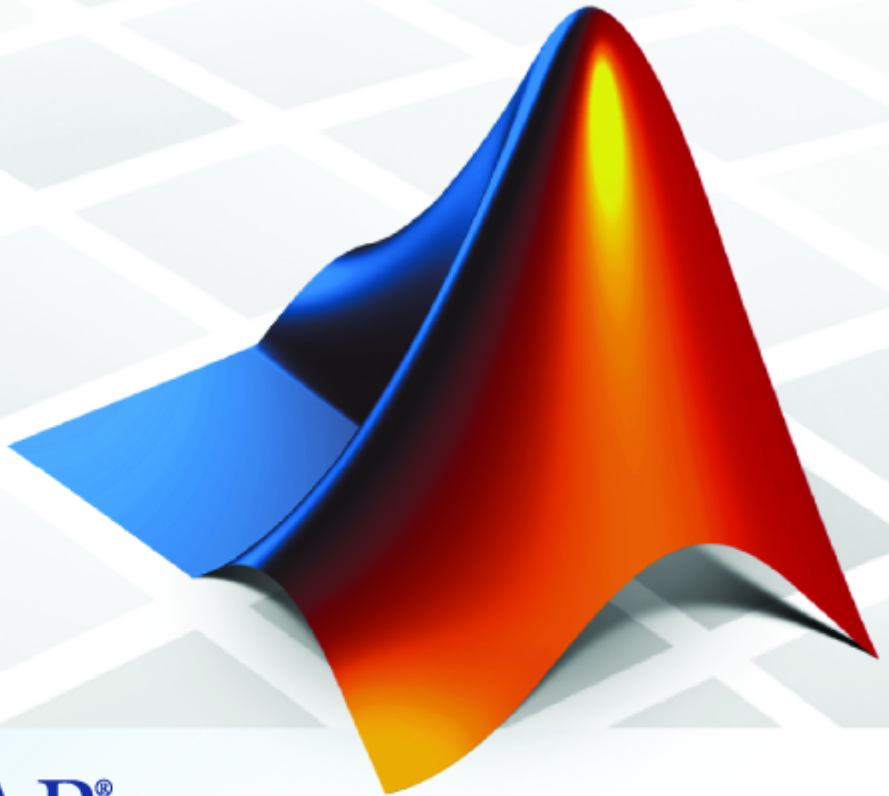


MATLAB® & Simulink® Release 2007a

Installation Guide for UNIX



MATLAB®

How to Contact The MathWorks



www.mathworks.com
comp.soft-sys.matlab
www.mathworks.com/contact_TS.html

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Product enhancement suggestions
Bug reports
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Order status, license renewals, passcodes
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Installation Guide for UNIX

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Revision History

December 1996	First printing	New for MATLAB 5.0
May 1997	Second printing	Revised for MATLAB 5.1
March 1998	Third printing	Revised for MATLAB 5.2 (Release 10)
January 1999	fourth printing	Revised for MATLAB 5.3 (Release 11)
November 1999	Fifth printing	Revised for MATLAB 5.3.1 (Release 11.1)
November 2000	Sixth printing	Revised for MATLAB 6.0 (Release 12)
June 2001	Seventh printing	Revised for MATLAB 6.1 (Release 12.1)
July 2002	Eighth printing	Revised for MATLAB 6.5 (Release 13)
June 2004	Ninth printing	Revised for MATLAB 7.0 (Release 14)
October 2004	Tenth printing	Revised for MATLAB 7.0.1 (Release 14SP1)
March 2005	Eleventh printing	Revised for MATLAB 7.0.4 (Release 14SP2)
September 2005	Twelfth printing	Revised for MATLAB 7.1 (Release 14SP3)
March 2006	Thirteenth printing	Revised for MATLAB 7.2 (Release 2006a)
September 2006	Fourteenth printing	Revised for MATLAB 7.3 (Release 2006b)
March 2007	Online only	Revised for MATLAB 7.4 (Release 2007a)

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Standard UNIX Installation Procedure

This chapter describes how to install the MathWorks Release 2007a family of products and FLEXnet Licensing, the licensing software used by MathWorks products. (The FLEXnet Publisher Licensing Module is a product of Macrovision Corporation.) Topics covered include

Installing MATLAB (p. 1-2)	Describes how to install MATLAB® and the license manager on a server
After You Install (p. 1-15)	Describes post-installation tasks
Installing MATLAB on a Client System (p. 1-23)	Describes the installation procedure on client systems
Installing Additional Products (p. 1-25)	Describes how to run the installation procedure to install additional products
Removing a MATLAB Installation (p. 1-27)	Describes how to remove a MATLAB installation
Product Licensing (p. 1-28)	Describes the licensing information you need to install MathWorks products
System Requirements (p. 1-33)	Details the system requirements to run MATLAB
Mounting Your DVD Drive (p. 1-35)	Provides the commands required to mount a DVD drive on supported platforms

Installing MATLAB

This section describes the step-by-step procedure you use to install MathWorks products on a single system in either a stand-alone workstation or file server environment. You can use this procedure to install MathWorks products for any license option.

The MathWorks products and documentation are distributed on a DVD and are also available for download over the Internet. Depending on your license option, you may also receive additional DVDs containing the Windows version of the software.

The following list summarizes the steps you must perform to install MathWorks products. Subsequent sections provide more detail about each step. If you encounter any problems during the installation process, refer to Chapter 3, “Troubleshooting”.

Note These instructions assume that you have a basic working knowledge of UNIX. If you are not familiar with the UNIX environment, please seek the assistance of your local system administrator.

Installation Procedure

- “Step 1: Before You Install” on page 1-3
- “Step 2: Log in to the System” on page 1-3
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Step 1: Before You Install

Before you run the MathWorks Installer:

- Make sure you have created a License File using the licensing information that you received from The MathWorks via e-mail when you purchased your software. See “Product Licensing” on page 1-28 for more information.
- Make sure your system satisfies the requirements of the software you intend to install. For more information, see “System Requirements” on page 1-33.

Step 2: Log in to the System

Log in to the system on which you want to install MATLAB. Superuser status is required to install the symbolic links that add MATLAB to your users' paths and to edit the system boot script to start the MATLAB license manager automatically at system boot time. If you do not have superuser status, you

can still install MATLAB, but MATLAB programs must be invoked using absolute pathnames. You can also set up these links after the installation is complete.

Note If you have superuser status and you are performing an installation for another user, make sure to enter the user's login name when prompted in step 11. The installer uses this login name when creating the FLEXnet options file. See “Setting Up Network Named User Licensing” on page 1-16 for information about FLEXnet options files.

Step 3: Insert Product DVD or Download Product Files

Insert the DVD into the DVD drive connected to your system or download product files from the MathWorks Web site. If your system requires that you mount the DVD drive you intend to use to install MATLAB, use the following instructions. If you are downloading product files over the Internet, save the files to a temporary location (referred to as \$TEMP in this documentation). See the downloads page for detailed instructions.

Note On Linux systems, DVD drives typically mount automatically; however, the drives mount with read-only permission. You might have to change the DVD drive configuration from read-only to execute—see “Solving DVD Drive Problems” on page 3-3

Mounting a DVD Drive

To mount a DVD drive, perform this procedure:

- 1 Create a directory to be the mount point for the DVD drive. For example:

```
mkdir /dvd
```

- 2 Put the DVD in the DVD drive with the label face up.

- 3 Execute the command to mount the DVD drive on your system. You can install the software from either a locally mounted DVD drive or from a

remotely mounted DVD drive. For more information about these options, see “Mounting a DVD Drive Remotely” on page 1-35.

Note Do not move to the newly mounted DVD directory.

Step 4: Create the Installation Directory

Create the installation directory and move to it, using the `cd` command. Subsequent instructions in this book refer to this directory as *matlabroot*. For example, to install into the location `/usr/local/matlab74`, use these commands.

```
cd /usr/local
mkdir matlab74 % Needed for first time installation only
cd matlab74
```

You can specify any name for the installation directory. However, do not specify a directory name that contains an at (@) sign or a dollar (\$) sign. Also, do not include a directory named `private` as part of the installation path.

Note Do not install MATLAB 7.4 over any previous released version of MATLAB.

Step 5: Put the License File in the Installation Directory

Move your License File, named `license.dat`, into the *matlabroot* directory. The installer looks for the License File in the *matlabroot* directory and, after processing it, moves the License File to *matlabroot/etc* during installation. For more information about License Files, see “Creating a License File” on page 1-29.

Note If you are upgrading an existing MATLAB installation, rename the License File in *matlabroot/etc*. The installer will not process the new License File if it finds an existing License File in *matlabroot/etc*.

Step 6: Start the Installer

If you are installing from a DVD, execute the following command to run the MathWorks Installer.

```
/dvd/install &
```

If you are installing from downloaded files, extract the installer in the \$TEMP directory. For example, on Linux systems run the following command.

```
tar -xf boot.ftp
```

Once you have expanded all the installer files in the \$TEMP directory, execute the appropriate command to run the MathWorks installer on your platform.

```
./install
```

The installer displays the following welcome dialog box.



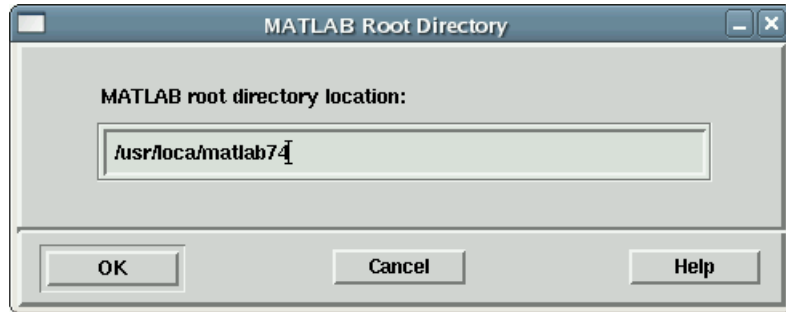
Step 7: Review the License Agreement

Accept or reject the software licensing agreement displayed. If you accept the terms of the agreement, click **Yes** to proceed with the installation.



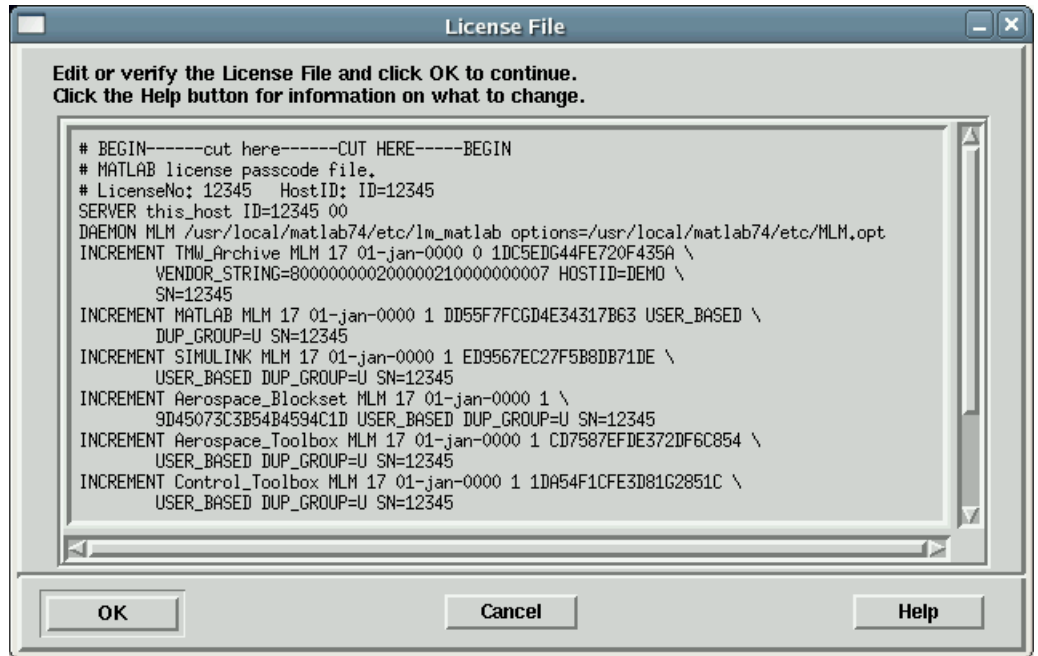
Step 8: Verify the Installation Directory Name

Verify the name of the installation directory in the MATLAB Root Directory dialog box, and then click **OK** to continue.



Step 9: Verify the License File

Verify your License File in the License File dialog box and click **OK**. If you didn't put a copy of your License File in your *matlabroot* directory, the installer displays a License File template. You can modify this template to create a valid License File.



When verifying your License File:

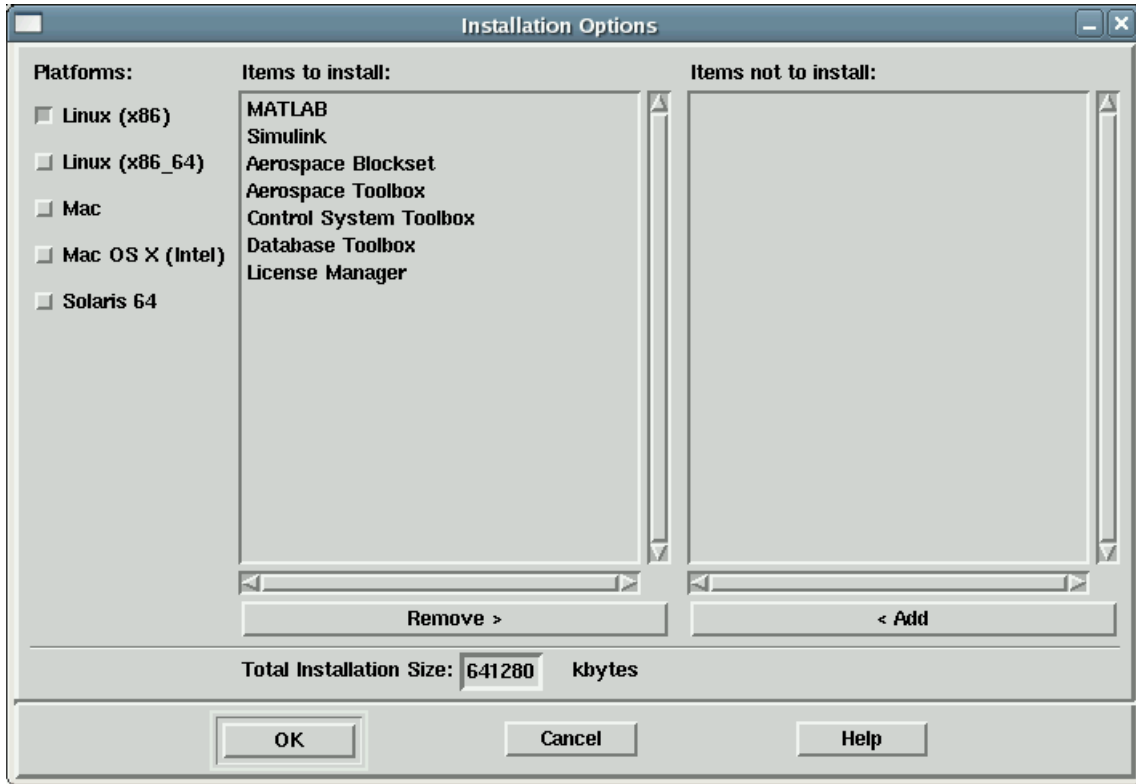
- Make sure that the expiration date, number of keys, and passcode fields in each INCREMENT line match the license information you received from The MathWorks.
- Delete INCREMENT lines for products with expired licenses. (This avoids the warning messages that appear in your log file when you start MATLAB.)
- Make sure that your e-mail program did not cause INCREMENT lines to wrap. You must use the continuation character (\) if INCREMENT lines are too long to fit on one line.
- Do not use tabs to separate the fields in an INCREMENT line.

You can edit the License File in the text window displayed. If you want to use another text editor, click **Cancel**. Note, however, that you must edit the version of the License File that was processed by the installer, *matlabroot/etc/license.dat*, not the version of the License File you placed in the top-level installation directory in Step 5.

Note If the host ID in the comment line of your License File does not match the host ID of the system on which you are performing the installation, the installer displays an error message. You can continue with the installation, but you will not be able to start MATLAB on this system. For more information, see “Host ID in License File Doesn’t Match Host ID of System” on page 3-3.

Step 10: Specify the Products to Install

Specify the products you want to install in the Installation Options dialog box, and then click **OK** to continue. The installer includes the documentation, in compressed form, with each product it installs. The installer does not install product documentation in PDF format; this is available at the MathWorks Web site.



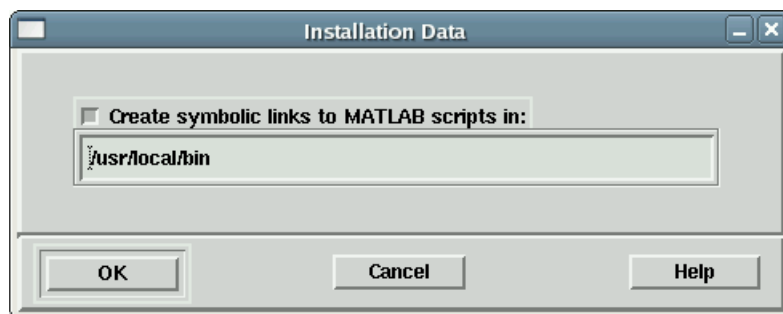
By default, the installer lists all the products that you are licensed to install in the **Items to install** pane of this dialog box. If you do not want to install an item, select it and click the **Remove** button. This moves the product name into the **Items not to install** pane. The FLEXnet license manager selection appears at the end of the list.

The **Platforms** column identifies which product binary files are installed. By default, the check box identifying the platform on which you are running the installer is preselected. If you want to install product binary files for additional platforms, select them in the **Platforms** column.

Note The installer might display a message box stating that one or more of your licensed products are not available on the DVD. To obtain products that have been released since the DVD was produced, visit the MathWorks Web site, www.mathworks.com, and download them. Click **Close** to continue with the installation.

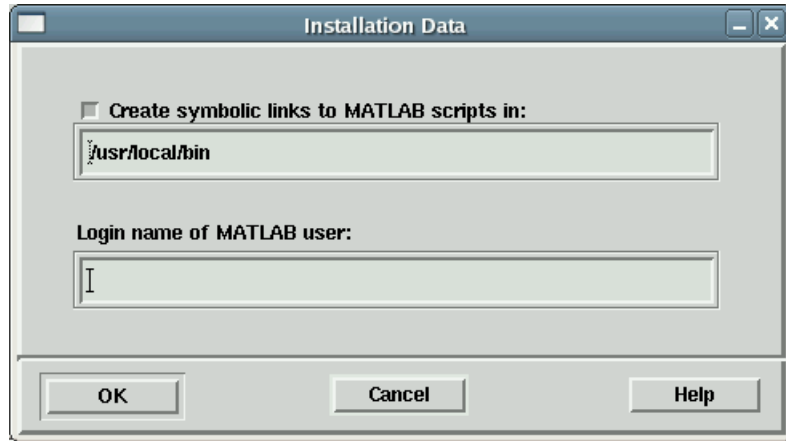
Step 11: Specify Location of Symbolic Links

In the Installation Data dialog box, you specify where you want to put symbolic links to the `matlab` and `mex` scripts. Specify a directory such as `/usr/local/bin` that is common to all your users' paths and click **OK** to continue with the installation.



Specifying Login Name for Individual Licenses

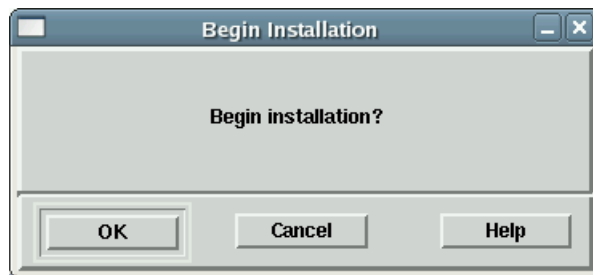
If you have an Individual license, the Installation Data dialog box asks you to enter a login name (also referred to as *username*). Specify the login name of the user that will be using this installation of MATLAB. The installer uses this information when creating the FLEXnet options file. See “Setting Up Network Named User Licensing” on page 1-16 for more information.



Note If you are updating an existing MATLAB installation and it already contains a FLEXnet options file (MLM.opt), the installer does not prompt for a login name.

Step 12: Begin the Installation

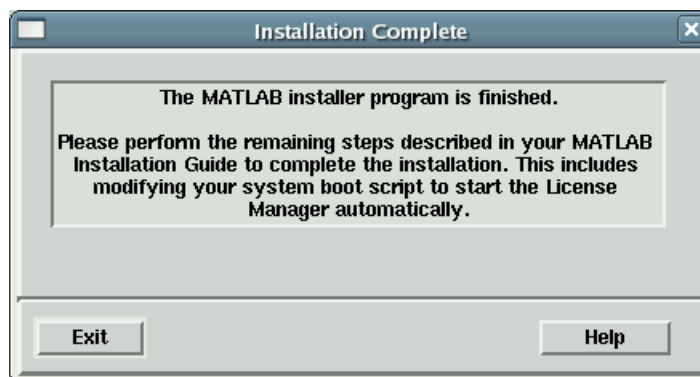
The installer displays the Begin Installation dialog box. Click **OK** to begin the installation.



After you click **OK**, the installer displays a dialog box indicating the progress of the installation.

Step 13: Exit the Installer

After the installation is complete, the installer displays the Installation Complete dialog box. This dialog box informs you of some optional, post-installation setup and configuration steps you might want to perform, including starting the license manager. The license manager must be running to start MATLAB. See “After You Install” on page 1-15 for more information. Click **Exit** to dismiss the installer.



After a successful installation, your MATLAB installation directory contains the subdirectories and files listed in the following table. (Your installation might include additional subdirectories, depending on the products you installed.)

Directory	Description
/bin	Scripts for executing the MATLAB system and computer-specific subdirectories for the binary images
/etc	Files associated with the license manager, including <code>license.dat</code> and platform-specific subdirectories
/extern	Subdirectory containing source, include files, and libraries for the external interfaces
/help	MATLAB online documentation files
/java	MATLAB Java jar files
/sys	Tools and operating system libraries that MATLAB depends on and that may not be generally available on a user's system

Directory	Description
/toolbox	Toolbox subdirectories
/X11	Files containing keyboard mapping and default window parameters for MATLAB, Simulink®, and icon bitmaps

After You Install

This section describes tasks you can perform after a successful installation. Depending on your type of installation, some of these tasks are required and some are optional. The following table lists the various license options and installation types and tasks associated with each one.

License Option or Installation Type	Post-Installation Tasks
Individual or Group License options	<ul style="list-style-type: none"> • “Setting Up Network Named User Licensing” on page 1-16 • “Starting the License Manager” on page 1-17 • “Starting MATLAB” on page 1-21
Concurrent installation type	<ul style="list-style-type: none"> • “Starting the License Manager” on page 1-17 • “Starting MATLAB” on page 1-21
Any type of installation	<p>Note: These are optional tasks.</p> <ul style="list-style-type: none"> • “Specifying Print Options” on page 1-22 • “Specifying Documentation Viewing Options” on page 1-22 • “Specifying MATLAB Startup Options” on page 1-22 • “Configuring MATLAB Products” on page 1-22

Setting Up Network Named User Licensing

If you have a network Named User license, you might need to perform the following tasks:

- “Make Sure All Licensed Users Are Listed in the the FLEXnet Options File” on page 1-16
- “Make Sure That Your License File Includes the Location of Your Options File” on page 1-17

Make Sure All Licensed Users Are Listed in the the FLEXnet Options File

The installer creates a FLEXnet options file, *matlabroot/etc/MLM.opt*, as part of the installation process. In Named User installations, this options file specifies which users have permission to use specific products.

When it creates the options file, the installer puts in an INCLUDE line for each product. The INCLUDE line specifies which user can use the product. By default, the installer puts the login name you specified in “Step 11: Specify Location of Symbolic Links” on page 1-11 in these INCLUDE lines. You might need to edit this options file to specify other users.

For example, if the login name specified during installation was *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 login name of the licensed user.

```
INCLUDE MATLAB USER judy
INCLUDE Signal_Toolbox USER judy
INCLUDE Optimization_Toolbox USER judy
```

If multiple users are licensed for the same product, you must create a separate INCLUDE line for each user or you can group together the users in a FLEXnet GROUP statement and then specify the group in the INCLUDE statement. The following example shows how to use GROUP statements in an options file.

Because the installer includes the `GROUPCASEINSENSITIVE` option in the options file and sets it to `ON`, login names are not case sensitive in the `GROUP` statements.

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
```

Make Sure That Your License File Includes the Location of Your Options File

Check that the `DAEMON` line in your License File includes the options file location, `options=matlabroot/etc/MLM.opt`, where *matlabroot* is your MATLAB installation directory.

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 options statements, such as `INCLUDE`, `EXCLUDE` and `GROUP` lines.

Starting the License Manager

The license manager must be running to start MATLAB. This section describes how to start the license manager at the command line and automatically at boot time.

At the Command Line

If the license manager daemons are not running, you can start them by executing the `lmstart` script (located in the `matlabroot/etc` directory). The `lmstart` script stops any currently running daemons and starts new ones.

Note The `lmstart` script should be run by a user other than root, because it is a security risk to run any program as root that does not require root permissions. The license manager (`lmgrd`) does not require root permissions. If you must start the license manager as root, use the UNIX `su` command to start `lmgrd` as a nonprivileged user:

```
su username -c lmgrd -c license_file -l /var/tmp/LM_TMW.log
```

where `username` is a nonprivileged user.

At Boot-Time

You can start the license manager automatically at boot-time by editing the system boot script. MATLAB provides the set of Bourne shell commands required to start the license manager on each UNIX system. These boot script files are in the `matlabroot/etc` directory. Each file has the name `flexnet.boot.system`, where `system` identifies the system type.

For example, the following is the contents of the file `flexnet.boot.linux`, which contains the boot script commands required to start the license manager on Linux systems. When you add these commands to a boot script, you must replace the word `username` that is used as an argument to the `/etc/lmboot_TMW` command in the script (highlighted below) with an actual username (login name). Do not specify the name associated with superuser. For security reasons the license manager daemons cannot be owned by superuser.

```
#!/bin/sh
#
case "$1" in
  start)
    if [ -f /etc/lmboot_TMW ]; then
      /etc/lmboot_TMW -u [username] && echo 'MATLAB_lmgrd'
    fi
    ;;
  stop)
    if [ -f /etc/lmdown_TMW ]; then
      /etc/lmdown_TMW > /dev/null 2>&1
    fi
    ;;
  *)
    echo "Usage: $0 {start|stop}"
    exit 1
    ;;
esac
exit 0
```

The following sections describe how to insert these Bourne shell code fragments for all supported platforms:

- “Editing the Boot Script on Linux Systems” on page 1-19
- “Editing the Boot Script on Solaris Systems” on page 1-21

Editing the Boot Script on Linux Systems. To create the boot script on Linux systems, make a copy of the `flexnet.boot.linux` file and edit the copy as described in the following procedure. You can use the same procedure to create the boot script on both 32-bit and 64-bit Linux systems.

- 1 Log in as root.
- 2 Create the following links, if they do not already exist.

```
ln -s matlabroot/etc/lmboot /etc/lmboot_TMW
ln -s matlabroot/etc/lmdown /etc/lmdown_TMW
```

- 3 Make a copy of the appropriate boot script file.

The following table lists the appropriate commands for supported Linux distributions for both 32-bit and 64-bit systems.

Distribution	Command
Debian or SUSE	<code>cp matlabroot/etc/flexnet.boot.linux /etc/init.d/flexnet</code>
Red Hat or Fedora Core	<code>cp matlabroot/etc/flexnet.boot.linux /etc/rc.d/init.d/flexnet</code>

- 4** Edit the copy you made of the boot script file, `flexnet`, replacing the `username` argument to the `lmbboot_TMW` script in the code with a valid username, other than `root`. For security reasons the license manager daemons cannot be owned by superuser.
- 5** Look in `/etc/inittab` for the default run level.
- 6** Create a link in the `rc` directory associated with the default run level. The following table lists the appropriate commands for supported Linux distributions for both 32-bit and 64-bit systems, using run level 5 to illustrate.

Distribution	Command
Debian	<code>cd /etc/rc5.d; ln -s ../init.d/flexnet S90flexnet</code>
Red Hat or Fedora Core	<code>cd /etc/rc.d/rc5.d; ln -s ../init.d/flexnet S90flexnet</code>
SUSE	<code>cd /etc/init.d/rc5.d; ln -s ../flexnet S90flexnet</code>

Editing the Boot Script on Solaris Systems.

- 1 Log in as root.
- 2 Create the following links, if they do not already exist.

```
ln -s matlabroot/etc/lmboot /etc/lmboot_TMW
ln -s matlabroot/etc/lmdown /etc/lmdown_TMW
```

- 3 Copy the boot script code from *matlabroot*/etc/flexnet.boot.sol2 and paste it at the beginning of the file */etc/init.d/lmgrd*.

If */etc/init.d/lmgrd* does not exist, create it, using these commands.

```
cd matlabroot/etc
cp flexnet.boot.sol2 /etc/init.d/lmgrd
chmod 555 /etc/init.d/lmgrd
```

- 4 Edit the copy you made of the boot script file, */etc/init.d/lmgrd*, replacing the username argument to the *lmboot_TMW* script in the code with a valid user name, other than root.
- 5 Create the file (link) */etc/rc3.d/S17lmgrd*, if it does not exist, using this code.

```
cd /etc/rc3.d
ln -s ../init.d/lmgrd S17lmgrd
```

Starting MATLAB

Start MATLAB by entering the `matlab` command at the system prompt.

If you did not set up symbolic links during the installation procedure (“Step 11: Specify Location of Symbolic Links” on page 1-11), you must enter the full pathname, *matlabroot*/bin/matlab, where *matlabroot* is the name of your MATLAB installation directory.

If you have trouble starting MATLAB, see “Problems Starting MATLAB” on page 3-4 for some troubleshooting tips.

Specifying Print Options

MATLAB includes default settings for the various options to the print command. If you want to change the site-wide default settings for printing device type and location, you can edit the M-file `printopt.m`, located in the directory `matlabroot/toolbox/local`. This file contains the options that MATLAB uses for the print command.

Specifying Documentation Viewing Options

You can specify the Web browser to use with MATLAB by editing the `docopt.m` M-file, located in the `matlabroot/toolbox/local` directory. The `docopt.m` file is used by the MATLAB web function when the `-Browser` option is specified. It also specifies the browser to use for links to external Web sites from the MATLAB Help browser and from Web menu items.

Specifying MATLAB Startup Options

To specify startup welcome messages, default definitions, or any MATLAB expressions that you want executed each time a user starts MATLAB, edit the `matlabrc.m` M-file in `matlabroot/toolbox/local`. MATLAB executes this file automatically each time it starts.

If you do not have write access to `matlabrc.m`, you can include startup messages, definitions, and MATLAB expressions in a file called `startup.m` and store this file in the top-level MATLAB directory. Use this file to specify the startup behavior of your own MATLAB installation.

Configuring MATLAB Products

Certain products in the MATLAB family of products may require configuration after installing. The documentation for each product describes additional configuration, if it is required.

Installing MATLAB on a Client System

You can set up a MATLAB network installation in several ways. Typically, you install MATLAB and the license manager on a server and users, called *clients*, access MATLAB over the network. You can, however, also install MATLAB locally on users' systems. In this configuration, the local client installations access the server only to check out a license key when MATLAB starts.

The procedure to install MATLAB on a client system is almost identical to the procedure you use to install MATLAB and the license manager on a server. The following table lists all the steps in the installation procedure and notes where they are different on client systems. For more detailed information about any of the steps, go to the corresponding section in "Installing MATLAB" on page 1-2.

Installation Procedure	Client Installation Notes
"Step 1: Before You Install" on page 1-3	Same as on a server, except you do not have to stop the license manager
"Step 2: Log in to the System" on page 1-3	Same as on a server.
"Step 3: Insert Product DVD or Download Product Files" on page 1-4	Same as on a server.
"Step 4: Create the Installation Directory" on page 1-5	Same as on a server.
"Step 5: Put the License File in the Installation Directory" on page 1-5	You must use the License File processed by the installer during the installation of the license manager on the license server. This License File is located in <i>matlabroot/etc/license.dat</i> .
"Step 6: Start the Installer" on page 1-6	Same as on a server.
"Step 7: Review the License Agreement" on page 1-7	Same as on a server.
"Step 8: Verify the Installation Directory Name" on page 1-7	Same as on a server.

Installation Procedure	Client Installation Notes
“Step 9: Verify the License File” on page 1-8	On a client, make sure the License File contains the SERVER and DAEMON lines, added by the installer during the license manager installation.
“Step 10: Specify the Products to Install” on page 1-9	Do not install the license manager. By default, the license manager appears at the end of the Items to install list. Select the license manager item and click Remove to move it to the Items not to install list.
“Step 11: Specify Location of Symbolic Links” on page 1-11	Same as on a server.
“Step 12: Begin the Installation” on page 1-12	Same as on a server.
“Step 13: Exit the Installer” on page 1-13.	Same as on a server.
“After You Install” on page 1-15	You do not start the license manager on client systems.

Installing Additional Products

After initial installation, you can purchase additional products that extend MATLAB and provide application-specific capabilities. To install these additional products,

- 1 Exit MATLAB.
- 2 Stop the license manager. You can use the `lmdown` command to stop the license manager. (See “License Manager Tools” on page 2-8 for a list of license management utilities.
- 3 Edit your existing License File or create a new License File with the license e-mail you received from The MathWorks.

To edit your existing License File, open the `matlabroot/etc/license.dat` file in a text editor. Remove the old INCREMENT lines from the License File and copy *all* the new INCREMENT lines from the license e-mail you received from The MathWorks into the License File. The new License File information includes both the new products you purchased, as well as all the existing products for which you have licenses.

Note Avoid editing the individual INCREMENT lines; any changes you make might invalidate your License File. Also, do not delete the SERVER and DAEMON lines in your License File.

If you decide to create a new License File from the license e-mail you received from The MathWorks, place it in your MATLAB installation directory (`matlabroot`). For more information, see “Creating a License File” on page 1-29.

Note If you create a new License File, you must rename the existing license file in `matlabroot/etc`, created by the installer during the original installation. If the installer finds a file named `license.dat` already exists in this directory, it will not process your new License File.

- 4 Perform the installation procedure, following the instructions given on each screen. When the installer presents the Installation Options dialog box, remove all the products listed in the **Items to Install** list box except the new products you want to install.
- 5 After the installation is finished, restart the license manager with the `lmstart` command.

Consult the documentation that comes with your new products for any additional configuration that may be required.

Saving Your MATLAB Environment

When you install a new product, the installer regenerates your path file, `pathdef.m`, and your printing and documentation preference files, `printopt.m` and `docopt.m`, respectively. If you've modified these files, the installer does not delete them. Instead it puts them in the `matlabroot/toolbox/local/old` directory and renames them. The installer appends the date and a version number to the filename. For example, the saved version of `pathdef.m` could be `pathdef.m.23Mar2007.1`.

To reuse your previous path file or preferences file, swap the newly created files with these saved versions, restoring the saved version of the file to its original name.

Note When reusing an old `pathdef.m` file, you might need to add new products that you just installed.

Removing a MATLAB Installation

To remove a MATLAB installation, enter this command

```
rm -rf matlabroot
```

where *matlabroot* represents the name of your top-level MATLAB installation directory. Make sure to exit MATLAB and stop the license manager before removing a MATLAB installation. You can use the `lmdown` command to stop the license manager. See “License Manager Tools” on page 2-8 for a list of license management utilities.

Product Licensing

When you purchase products, The MathWorks sends you licensing information by e-mail or fax. This section

- Describes this licensing information—“License File Overview” on page 1-28
- Explains how to create a License File from this information—“Creating a License File” on page 1-29
- Describes how to contact The MathWorks to obtain your licensing information or to make changes to existing licenses—“Obtaining or Changing Your License File” on page 1-30

This section provides the information you need about licensing to perform a typical installation. For more detailed information about License Files and licensing, see Chapter 2, “License Management”.

License File Overview

The license information you received from The MathWorks contains a set of license passcodes. These license passcodes

- Identify the products you are licensed to install and use.
- Specify the number of users that may use each product (also known as the *keys* associated with a license).
- Specify the expiration date of each license.
- Specify whether it's a Named User license.

The following is a sample set of license passcodes sent by The MathWorks. Lines that begin with a pound sign (#) are comments. (Do not delete these comment lines. They are used by the installer during installation.) The INCREMENT lines identify products you are licensed to run. The INCREMENT line containing `TMW_Archive` specifies all the products you are licensed to install.

```
# BEGIN-----cut here-----CUT HERE-----BEGIN
# MATLAB license passcode file.
# LicenseNo: 12345 HostID: ID=12345
INCREMENT TMW_Archive MLM 17 01-jan-0000 0 2C642GB67123270C021AB \
  VENDOR_STRING=400000000000003 HOSTID=DEMO SN=220668
INCREMENT MATLAB MLM 17 01-jan-0000 1 7CC4DBA7HE9G728326742 USER_BASED \
  DUP_GROUP=U SN=12345
INCREMENT SIMULINK MLM 17 01-jan-0000 1 FD64DB754GCC8H03B2D8 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Signal_Toolbox MLM 17 01-jan-0000 1 \
  2D249BBH9FGFFCB9C3CCF USER_BASED DUP_GROUP=U SN=12345
# END-----cut here-----CUT HERE-----END
```

Creating a License File

You must create a License File from the licensing information you received in your license e-mail message from The MathWorks. Follow these instructions:

- 1** Open a text file, using any text editor.
- 2** In the license e-mail message, select all the information from the `BEGIN` line to the `END` line, inclusive. Make sure to select all the information contained in this section, including the comment lines.
- 3** Copy all the selected license information from the e-mail message and paste it into the open text file.

In general, do not edit the licensing information; you may invalidate a license. However, note the following:

- Make sure you remove any line breaks that your e-mail program may have inserted between the start and end of an `INCREMENT` line. If an `INCREMENT` line must continue onto more than one line, use the `\` (backslash) character, as in the following:

```
INCREMENT Signal_Toolbox MLM 17 01-jan-0000 1 \
  2D249BB79FGFFCB9C3CCF USER_BASED DUP_GROUP=U SN=12345
```

- Make sure that there is a space between each field in the `INCREMENT` line. Do not use tabs to separate these fields.
- License Files are case sensitive.

- 4 Save the text file, naming it `license.dat`, and store it temporarily in any convenient directory. Before you run the installer, you must move the License File into your MATLAB installation directory.

If you received your license passcodes in a fax, create the License File in the same way, typing in the license passcode information exactly as it appears in the fax.

Obtaining or Changing Your License File

If you need to

- Obtain a License File
- Transfer a license to another CPU
- Combine licenses
- Move toolboxes from one license to another
- Change a license registration
- Update your contact information

go to the MathWorks Web site at www.mathworks.com and click **Support**. On the support page click **Installation Troubleshooting** and look at the links under **Change License Information**. To get other kinds of licensing help, click **Customer Service Options**.

You can also obtain your PLP by contacting The MathWorks via telephone at 508-647-7000. Customers outside North America should contact their local office. To find the phone number of one of our international offices, go to the MathWorks Web site at www.mathworks.com and click **Contact Us** at the top of the page.

Depending on what you want to do, please have ready, or include in your e-mail or fax, the following items:

- Your e-mail address (if you have one).

- Your License Number:
 - If you have not previously installed MATLAB at your site, you can find your License Number on the upper right corner of the packing slip. Customers outside North America may obtain this information from their local MathWorks representative.
 - If you are updating an existing MATLAB installation and MATLAB is running, type `license` or `ver` at the MATLAB prompt, or look in your existing `license.dat` file.
- The host ID for the server on which you plan to run FLEXnet, the licensing software used by the MathWorks products. On Sun workstations, you can obtain the host ID by logging in to the server and executing the UNIX command `hostid`. For other UNIX systems, log in to your server and follow the instructions in the section “Determining Your Host ID” on page 1-31 .

Note Be sure to provide the host ID of the system on which you plan to run FLEXnet, not the host ID of a client workstation.

Determining Your Host ID

If MATLAB is already installed, you can find your host ID by running the `lmhostid` script. You must run this command on the computer where you run the license manager. The `lmhostid` script is in the `matlabroot/etc` directory.

If MATLAB is *not* installed, use a native operating system command to find the host ID. The following table lists the operating system commands you can use to determine your host ID for each supported system. Some platforms, such as Sun, have a unique host ID. Other platforms use the Ethernet address as the host ID.

Operating System	Host ID Description	How to Obtain the Host ID	Sample Host ID
Linux	Ethernet address	<p><code>/sbin/ifconfig eth0</code> Use the colon-separated, hexadecimal number to the right of <code>HWaddr</code>, such as <code>8:0:2b:e6:87:59</code>.</p> <p>Note: To use this address as a host ID you must remove all colons (<code>:</code>) and prefix any single-digit parts of the address with a zero (<code>0</code>). For example, the host ID for the address above would be <code>08002be68759</code>.</p>	08002be68759
Mac OS X	Ethernet address	<p>Open the Apple System Profiler application in <code>/Applications/Utilities</code>. Look in the Network overview of the System Profile.</p> <p>You can also use the command</p> <pre>netstat -I en0</pre> <p>assuming <code>en0</code> is the Ethernet interface. The Ethernet address is a period-separated, hexadecimal number, such as <code>8.0.2b.e6.87.59</code>.</p> <p>Note: To use this address as a host ID, you must remove the periods (<code>.</code>) and prefix any single-digit parts of the address with a zero (<code>0</code>). For example, the host ID for the address above would be <code>08002be68759</code>.</p>	08002be68759
Sun SPARC	32-bit host ID	Enter the <code>hostid</code> command.	170a3472

System Requirements

Note For the most up-to-date information, view the system requirements page at the MathWorks Web site, www.mathworks.com.

This section describes hardware and software requirements for running the MATLAB and the FLEXnet license manager.

- DVD drive (for installation)
- Some license types require a license server running FLEXnet 10.8.2.1, which is provided by the MathWorks Installer
- TCP/IP, on all platforms when using a license server

The following system configurations are supported.

Solaris

	Operating Environment	Processor	Disk Space	RAM
64-bit MathWorks Products	Sun Solaris 10 Sun Solaris 9 Sun Solaris 8 Requires all recommended patches.	SPARC, UltraSPARC	500 MB (MATLAB only)	512 MB (1024 MB recommended)

Linux

	Operating Environment	Processor	Disk Space	RAM
32-bit MathWorks Products	Linux, built using Kernel 2.4.x or 2.6.x glibc 2.3.2 and above	Pentium III Pentium IV Pentium Xeon Pentium M AMD Athlon AMD Athlon MP AMD Athlon XP AMD Athlon 64 AMD Opteron Intel Core Duo Intel Core 2 Duo	500 MB (MATLAB only)	512 MB (1024 MB recommended)
64-bit MathWorks Products	Linux, built using Kernel 2.4.x or 2.6.x glibc 2.3.4 and above	Intel EM64T processors AMD64 processors Intel Core 2 Duo	500 MB (MATLAB only)	512 MB (1024 MB recommended)

Additional System Requirements

- 16-bit graphics or higher adaptor and display (24-bit recommended)
- 24-bit graphics display for Sun Solaris
- Postscript printer
- Graphics accelerator card

To view an up-to-date list of supported compiler versions for creating MEX files, visit the support page on the MathWorks Web site.

Mounting Your DVD Drive

On many UNIX systems, you must mount the DVD drive on your system before you can install MATLAB. This section describes

- “Mounting a DVD Drive Locally” on page 1-35
- “Mounting a DVD Drive Remotely” on page 1-35

Mounting a DVD Drive Locally

If the DVD drive is located on your system, use the appropriate mount commands listed in the following table to mount the DVD drive. In the example commands, the word <extension> represents a part of the actual device name that is site specific. For example, the full device name can include the SCSI port to which your DVD drive is attached. You must supply the full device name when you use these commands.

Platform	Mount Command
Linux	<pre>mount -t iso9660 /dev/dvd /dvd</pre> <p>On Linux systems, DVD drives typically mount automatically; however, the drives mount with read-only permission. You might have to change the DVD drive configuration from read-only to execute—see “Solving DVD Drive Problems” on page 3-3</p>
Sun (Solaris)	<pre>mount -F hsfs -o ro /dev/dsk/c0t<extension> /dvd</pre> <p>On Sun Solaris systems, the DVD drive mounts automatically if the volume manager is running.</p>

Mounting a DVD Drive Remotely

If the DVD drive is located on a remote system, follow these instructions to mount the drive on your system:

Note You must be logged in as superuser to perform these steps. The examples assume /dvd is the default mount point; replace this with the name of your local mount point.

- 1 On the remote system, where the DVD drive is connected, mount it locally using the appropriate mount command from the table in the section “Mounting a DVD Drive Locally” on page 1-35.
- 2 On the remote system, configure the DVD drive so that it is available for mounting on your local system (i.e., exporting). Choose the appropriate export instructions for your platform from the following table.

Platform	Export Instructions
Linux	<p>Add the following line to the exports file, /etc/exports</p> <pre>/dvd -ro</pre> <p>Export this information by executing</p> <pre>kill -s SIGHUP pid_of_rpc.mountd pid_of_rpc.nfsd</pre> <p>The process IDs, pid_of_rpc.mountd, and pid_of_rpc.nfsd are returned by the command</p> <pre>ps -agx</pre>
Sun (Solaris)	<p>Execute</p> <pre>share -F nfs -o ro -d <dvd device> /dvd</pre> <p>Note that the -d <dvd device> is for information purposes only. You can ignore it.</p>

- 3 On your local system, mount the remote DVD drive using the appropriate mounting instructions listed in the following table. Replace dvd_host with the actual hostname of the remote system to which the DVD drive is connected. Your site may require additional options that are not listed here. Contact your system administrator for information about site-specific options.

Platform	Mount Instructions
Linux	<pre>mkdir /dvd mount -r dvd_host:/dvd /dvd</pre>
Sun (Solaris)	<pre>mkdir /dvd mount -F nfs -r dvd_host:/dvd /dvd</pre>

License Management

Using the MathWorks Installer, you can set up a network installation by following the instructions in Chapter 1, “Standard UNIX Installation Procedure”. If you want to integrate your MATLAB installation into an existing license management scheme, you might need a more thorough understanding of using the FLEXnet license manager. This chapter provides an overview of the MathWorks product licensing. Topics covered include

Licensing Components (p. 2-2)	The primary components of license management and how they work together
License Manager Tools (p. 2-8)	A set of tools that you can use to perform basic license management tasks
Using Time-Outs to Free Idle License Keys (p. 2-9)	Using the FLEXnet time-out option to free idle license keys in concurrent configurations
Creating Advanced Configurations (p. 2-12)	Describes how to set up some advanced configurations, such as redundant license servers

Licensing Components

The MathWorks uses a license manager program, called FLEXnet Publisher Licensing Module (a product of Macrovision Software, Inc.), to control access to the software.

The following sections describe the main components of FLEXnet Licensing.

- “License Management Daemons” on page 2-2
- “Applications” on page 2-3
- “License Files” on page 2-4

Throughout this section, references to the *matlabroot* directory refer to the directory in which the contents of the MATLAB distribution are installed.

Note For more detailed information about FLEXnet and license management, see the *FLEXnet Licensing End User Manual*, available in PDF form in *matlabroot/etc/enduser.pdf*, where *matlabroot* represents the name of your installation directory.

License Management Daemons

FLEXnet uses a group of processes, called *daemons*, to control access to software applications. These daemons run on a server in your network. In this section, this server is referred to as your *license server*.

License Manager Daemon

The FLEXnet license manager daemon (*lmgrd*) runs as a background process on a network node. This daemon is responsible for managing the initial communication between client applications, such as MATLAB, and vendor daemons associated with each licensed application.

Client applications contact the license manager daemon to request permission to run licensed software. The license manager daemon forwards the request to the vendor daemon, which grants or denies access to the software, depending

on the availability of license keys. The license manager daemon is also responsible for starting and stopping the vendor daemons.

By default, The MathWorks installs the license manager daemon in a subdirectory of the MATLAB installation directory,

```
matlabroot/etc/$ARCH
```

where \$ARCH is a platform-specific name. For example, on a Sun system the directory name is *matlabroot/etc/sol64*.

This eases the installation task and prevents conflict with other applications that use FLEXnet license management. You can run several license manager daemons on the same system.

Vendor Daemon

Every vendor that uses FLEXnet to manage the licensing of its products must supply a vendor daemon. The vendor daemon is responsible for keeping track of how many license keys are checked out for each product it controls.

By default, The MathWorks installs its vendor daemon (*lm_matlab*) in

```
matlabroot/etc
```

Applications

When a user invokes MATLAB anywhere on the network, MATLAB communicates with the license manager daemon on the license server. The license manager forwards the request to the vendor daemon. The vendor daemon checks out a license key for the product. This license key checkout is transparent to MATLAB users.

The license manager program reads a License File to determine the numbers of keys you have purchased for each product.

License Files

A License File is an ASCII text file, named `license.dat`, that contains a set of valid license passcodes. When you purchase MATLAB or other products, The MathWorks sends you license information in an e-mail or fax. You must create a License File containing this license information. (For more information, see “Creating a License File” on page 1-29.)

The following is an example of a License File created from the licensing information provided by The MathWorks.

```
# BEGIN-----cut here-----CUT HERE-----BEGIN
# MATLAB license passcode file.
# LicenseNo: 12345 HostID: ID=12345
INCREMENT TMW_Archive MLM 17 01-jan-0000 0 2C642B67123270C021AB \
  VENDOR_STRING=400000000000003 HOSTID=DEMO SN=220668
INCREMENT MATLAB MLM 17 01-jan-0000 1 7CC4DBA78E9728326742 USER_BASED \
  DUP_GROUP=U SN=12345
INCREMENT SIMULINK MLM 17 01-jan-0000 1 FD64DB4754CC8F03B2D8 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Signal_Toolbox MLM 17 01-jan-0000 1 \
  2D249BB79FFFCB9C3CCF USER_BASED DUP_GROUP=U SN=12345
# END-----cut here-----CUT HERE-----END
```

INCREMENT Lines

Each INCREMENT line represents a license for a particular product. An INCREMENT line can include any of these elements.

```
INCREMENT product daemon release exp-date users
passcode options
```

The options may vary, depending on license type. For example, INCREMENT lines for Named User licenses include the `USER_BASED` option.

The INCREMENT line containing the `TMW_Archive` identifies the products you are licensed to install.

License File Processing

During installation, the installer processes the License File, adding two lines to the file: the SERVER line and the DAEMON line. These lines provide information about the name, location, and port number of the license manager daemon. The installer moves this processed version of the License File into the *matlabroot/etc* directory.

The following is a sample License File after being processed by the installer. Note the addition of the SERVER and DAEMON lines at the top of the file.

```
# BEGIN-----cut here-----CUT HERE-----BEGIN
# MATLAB license passcode file.
# LicenseNo: 12345 HostID: ID=12345
SERVER this_host ID=12345 27000
DAEMON MLM /usr/local/matlab74/etc/lm_matlab options=/usr/local/matlab74/etc/MLM.opt
INCREMENT TMW_Archive MLM 17 01-jan-0000 0 2C642B67123270C021AB \
  VENDOR_STRING=400000000000003 HOSTID=DEMO SN=220668
INCREMENT MATLAB MLM 17 01-jan-0000 1 7CC4DBA78E9728326742 USER_BASED \
  DUP_GROUP=U SN=12345
INCREMENT SIMULINK MLM 17 01-jan-0000 1 FD64DB4754CC8F03B2D8 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Signal_Toolbox MLM 17 01-jan-0000 1 \
  2D249BB79FFFCB9C3CCF USER_BASED DUP_GROUP=U SN=12345
# END-----cut here-----CUT HERE-----END
```

SERVER Line. The SERVER line identifies the system on which the license manager is running, using the format

```
SERVER hostname hostid TCP_PortNumber
```

where

- `hostname` is the name of your license server, i.e., the system on which the license manager is running.
- `hostid` can either be the host ID of the server or the string `ID=xxxx`, where `xxxx` identifies the license number. The host ID in the comment portion of the License File must match the host ID in the SERVER line.
- `TCP_PortNumber` specifies the TCP/IP port number used to connect to the license manager daemon. If the port number assigned to the server conflicts

with a port number used by other software, you can edit the SERVER line to change the number. You can use any port number; however, to run the daemons from a nonroot account, the port number must be greater than 1024. By default, if no port is specified, FLEXnet uses one of the default ports in the range 27000 to 27009.

DAEMON Line. The DAEMON line identifies the name and location of the vendor daemon, using the format

```
DAEMON vendor vendor_daemon_path options=options_file_path
```

where

- `vendor` is the name of the vendor daemon, MLM for The MathWorks.
- `vendor_daemon_path` is the fully specified path to the daemon executable, for example, `/usr/local/matlab/etc/lm_matlab`.
- `options_file_path` is the full path of the FLEXnet options file, for Named User licenses, for example, `options=/usr/local/matlab/etc/MLM.opt`.

The DAEMON line can optionally specify the port the vendor daemon (`lm_matlab`) uses. The FLEXnet daemon (`lmgrd`) and the vendor daemon use separate ports. To specify the vendor daemon port, use the syntax

```
DAEMON MLM /usr/local/matlab/etc/lm_matlab port=#####
```

where ##### is an open port.

Specifying the Location of the License File

By default, MATLAB expects to find the License File, `license.dat`, in the `matlabroot/etc` directory. This is the location where the installer puts the License File after processing it during installation. MATLAB reads this License File to determine the hostname and port address of the license server.

You can specify a different License File using either environment variables or the `-c` command line option.

Using Environment Variables to Specify the License File Location. You can specify the License File you want to use by assigning a value to either of two environment variables: `LM_LICENSE_FILE` or `MLM_LICENSE_FILE`. The `LM_LICENSE_FILE` environment variable, if set, specifies the location of the License File for all applications using FLEXnet on this server. The `MLM_LICENSE_FILE` environment variable also specifies the location of the License File, but only for products of The MathWorks.

To illustrate, this example specifies the location of the License File used by MathWorks products, using Bourne shell commands.

```
MLM_LICENSE_FILE=/usr/licenses/license.dat
export MLM_LICENSE_FILE
```

Note Do not specify a License File with a network path when your system is not on a network. This can cause MATLAB to hang at startup, until the network connection time-out expires.

Using the -c Command Line Option. You can also use the `-c` command line option of the `lmgrd` command to specify the License File that you want to use when you start the license manager daemon. When you use this option, you override any values that the environment variables might contain. When you use the `-c` option with the `matlab` command, you explicitly prohibit the searching of these environment variables.

License Manager Tools

MATLAB includes a set of license administration tools, available in the `matlabroot/etc` directory. This table lists these tools with a brief description of their purpose. For more details about any of these commands, see the *FLEXnet Licensing End User Manual*, available in PDF form in `matlabroot/etc/enduser.pdf`, where `matlabroot` represents the name of your installation directory.

Tool	Description
<code>lmboot</code>	Start license daemons at boot time.
<code>lmdebug</code>	Generate diagnostic report, and optionally e-mail it to The MathWorks, for troubleshooting license manager problems.
<code>lmdiag</code>	Diagnose problems when a license cannot be checked out.
<code>lmdown</code>	Shut down all license daemons.
<code>lmhostid</code>	Display the host ID of the computer on which you are running.
<code>lmstart</code>	Start license daemons.
<code>lmstat</code>	Show status of all network licensing activities. See the script for a complete set of options.
<code>lmver</code>	Display version number of license manager.

Using Time-Outs to Free Idle License Keys

Note You can only use time-outs with concurrent licenses.

If you have a concurrent license, you can use the FLEXnet time-out option to automatically return idle license keys at your site. With license time-outs, the license manager automatically frees license keys that sit idle for a specified period of time, returning them 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 time-out enabled, after your licenses sit idle for a specified period of time, the license manager releases the license keys for all the products you had been using and these keys become available to other users.

For more information about time-outs, see the following sections.

- “Enabling License Time-Outs” on page 2-9
- “Experiencing a License Time-Out” on page 2-11
- “Reacquiring License Keys After a Time-Out” on page 2-11

Enabling License Time-Outs

To take advantage of time-outs, you must specify the FLEXnet TIMEOUT option in a FLEXnet options file. A FLEXnet options file is a text file that contains license manager options statements, such as INCLUDE, EXCLUDE, and GROUP statements.

To enable time-outs, follow these instructions:

- 1 Create a FLEXnet options file, if one does not already exist, using any text editor. Name the file MLM.opt and put the file in the etc directory in your MATLAB installation directory. For example, you might create the file

```
/usr/local/matlab/etc/MLM.opt
```

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

```
TIMEOUT feature seconds
```

For *feature*, specify MATLAB. You cannot specify separate time-out 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 time-out value that is smaller, the minimum value is used. For example, to specify a 5-hour time-out, enter the following in your options file.

```
TIMEOUT MATLAB 18000
```

Note FLEXnet supports the TIMEOUTALL option that you can use to specify the time-out value used for all products. However, The MathWorks does not recommend using this option. The TIMEOUTALL option affects all the products listed in the License File that 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. Open your License File in a text editor and add the options= syntax to the DAEMON line. For example, your DAEMON line might look like the following:

```
DAEMON MLM /usr/local/matlab/etc/lm_matlab \  
options=/usr/local/matlab/etc/mlm.opt
```

- 4** Restart the license manager. Whenever you change the License File, or change the time-out value in the options file, your must restart the license manager.

Experiencing a License Time-Out

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

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

This information is also recorded in the license manager log file, as follows:

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

To learn how to view the license manager log file, see “Viewing the License Manager Log File” on page 3-5.

Reacquiring License Keys After a Time-Out

To resume a timed-out MATLAB session, just use MATLAB. 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 timed-out Simulink session, you cannot run or modify a currently open model. These menu options are disabled until a Simulink license key becomes available. You can only save a model in a timed-out Simulink session.

Creating Advanced Configurations

This section describes how to create advanced configurations:

- “Running MATLAB on a Heterogeneous Network” on page 2-12
- “Running Multiple Versions of MATLAB” on page 2-12
- “Running MATLAB with Other FLEXnet Applications” on page 2-13
- “Configuring Redundant License Servers” on page 2-14

Running MATLAB on a Heterogeneous Network

You can run MATLAB and other MathWorks products on a heterogeneous network, i.e., a network that contains a variety of UNIX and Windows systems. Any supported platform can act as a license server and serve clients that may run on different platforms. For example, UNIX servers can serve PC clients and vice versa.

Running Multiple Versions of MATLAB

To provide users with access to multiple versions of MATLAB over the network, you must perform some additional setup on your license server and possibly on client systems.

On License Server

To make multiple versions of MATLAB available in a network configuration, follow this procedure on your license server:

- 1** Check the version of your currently installed MATLAB. You must be running version 5.2.x or later to be able to run multiple versions.
- 2** Stop the license manager. (See “License Manager Tools” on page 2-8.)
- 3** Install on your license server the license manager included with the current version of MATLAB. Run the installer and select the license manager in the product list. (See “Step 10: Specify the Products to Install” on page 1-9.)

On Client Systems

You must make sure that existing client installations of MATLAB use the new license manager.

On UNIX systems, you must replace the License File in client installations with the License File created by the installer during the license manager installation on your license server. The License File resides in the *matlabroot/etc* directory.

Running MATLAB with Other FLEXnet Applications

If you have other applications that use FLEXnet for license management, you can integrate MATLAB into this licensing scheme, sharing a single license manager, or you can run MATLAB independently, running separate license managers on the same or different hosts.

The following sections describe these options. For more information, go to the Support page at the MathWorks Web site and see Technical Support solution 20746. You can also read the *FLEXnet Licensing End User Manual*, available in PDF form in *matlabroot/etc/enduser.pdf*, or go to the Macrovision Corporation Web page at www.macrovision.com for more information.

Sharing a Single License Manager

To share a license manager with another application, combine the DAEMON and INCREMENT lines from both License Files into a single License File. In the combined License File, keep only one SERVER line that identifies the license server host. If the other applications are using a different version of the FLEXnet software than the MathWorks products, run the newest version of the license manager.

If you share a license manager and you centralize the license information in a License File other than *matlabroot/etc/license.dat*, you must indicate to MATLAB where the file is located. You can define the file location to MATLAB by performing one of the following:

- Create *matlabroot/etc/license.dat* as a symbolic link to the central License File.

- Redefine the LM_LICENSE_FILE environment variable. You can also use the MLM_LICENSE_FILE environment variable, where MLM represents the MathWorks vendor daemon. See “Specifying the Location of the License File” on page 2-6 for more information.

Running Separate License Managers

To run separate license managers, use separate License Files. If you are running them on the same host, be sure to use a different TCP port number on the SERVER line in each License File.

Configuring Redundant License Servers

If a large number of licenses are governed by a single license server, failure of the server becomes a serious problem. To prevent problems, you may want to set up redundant servers so that, if one server goes down, the license manager can still function.

In the redundant server configuration, three systems are designated to be license servers. All three systems must be running at the time the license manager is started. However, once the license manager is running, only two systems need to be running at any time; this is called a *quorum*. Once the daemons are up and connected on all three machines, only two machines are needed for a quorum; the loss of any one machine will not cause any licenses to be revoked.

Setting up a Redundant Installation

Perform these steps to configure a redundant installation:

- 1 Choose the systems that you intend to use as servers. When choosing servers, keep in mind:
 - The servers should be able to handle the network traffic associated with license management. A primary server must be chosen. This is the system to which clients connect first and which receives the majority of the network traffic. The primary server is the first server listed in the License File. If this system fails, the next server listed in the License File becomes primary.

- The servers should be running supported versions of their operating systems.

2 Request a License File from The MathWorks.

Once you have chosen the servers, determine the host ID of each server and provide them to The MathWorks when you request your License File. The MathWorks will generate an appropriate License File. The following example shows a License File that supports redundant servers. Note that the License File lists three host IDs.

```
# BEGIN-----cut here-----CUT HERE-----BEGIN
# MATLAB license passcode file.
# LicenseNo: 123           HostID: 00034660893e
#                           HostID: 00053327865e
#                           HostID: 00470635883e
INCREMENT TMW_Archive MLM 17 01-jan-0000 0 \
  CD747104B19E9036 VENDOR_STRING=87 HOSTID=DEMO SN=123
INCREMENT MATLAB MLM 17 01-jan-0000 5 \
  8D14B1B4E284F1126 HOSTID=ID=123 DUP_GROUP=UH SN=123
INCREMENT SIMULINK MLM 17 01-jan-0000 5 \
  2D0391C402879B55B HOSTID=ID=123 DUP_GROUP=UH SN=123
INCREMENT Control_Toolbox MLM 17 01-jan-0000 5 \
  0144619409A6648FE HOSTID=ID=123 DUP_GROUP=UH SN=123
INCREMENT Signal_Toolbox MLM 17 01-jan-0000 5 \
  2D2451A439F4E3D36 HOSTID=ID=123 DUP_GROUP=UH SN=123
# END-----cut here-----CUT HERE-----END
```

- ## 3 Install the license manager on the three server systems in the redundant configuration, following the instructions in “Installing MATLAB” on page 1-2. During each installation, the installer processes the License File, adding one SERVER line and one DAEMON line. For example, on the system named pooh, the processed License File might contain these lines.

```
SERVER pooh 00034660893e 27000
DAEMON MLM /usr/local/matlab/etc/lm_matlab
```

- ## 4 Edit the License File on each server, *matlabroot/etc/license.dat*, so that each License File contains SERVER lines for all three license servers. Do not copy the DAEMON lines; each License File should contain only one

DAEMON line. Note in the following example that the License File contains three SERVER lines and one DAEMON line.

```
# BEGIN-----cut here-----CUT HERE-----BEGIN
# MATLAB license passcode file.
# LicenseNo: 123           HostID: 00034660893e
#                           HostID: 00053327865e
#                           HostID: 00470635883e

SERVER pooh 00034660893e 27000
SERVER piglet 00053327865e 27000
SERVER rabbit 00470635883e 27000
DAEMON MLM /usr/local/matlab/etc/lm_matlab
INCREMENT TMM_Archive MLM 17 01-jan-0000 0 CD747104B91B88036 \
  VENDOR_STRING=87 HOSTID=DEMO SN=123
INCREMENT MATLAB MLM 17 01-jan-0000 5 8D14B1B4F13B8126 \
  HOSTID=ID=123 DUP_GROUP=UH SN=123
INCREMENT SIMULINK MLM 17 01-jan-0000 5 2D0391C40BE0B55B \
  HOSTID=ID=123 DUP_GROUP=UH SN=123
INCREMENT Control_Toolbox MLM 17 01-jan-0000 5 01446B1648FE \
  HOSTID=ID=123 DUP_GROUP=UH SN=123
INCREMENT Signal_Toolbox MLM 17 01-jan-0000 5 2D2451EA23D36 \
  HOSTID=ID=123 DUP_GROUP=UH SN=123
# END-----cut here-----CUT HERE-----END
```

- 5 Put a copy of this edited License File in the *matlabroot*/etc directory on all of the systems in the redundant configuration.
- 6 Start the license manager on each system in the redundant configuration and wait for the license manager daemons on the three systems to synchronize with each other. This may take a few minutes.

If, for some reason, the license manager daemons do not connect, take the daemons down on each machine, and rerun the procedure. Network traffic can affect synchronization, so it may require several attempts to establish a proper connection.

7 Set up the client systems that access the redundant servers.

To ensure that client systems can switch servers in the event of a failure, you must create an environment variable named `MLM_LICENSE_FILE` on each client system. FLEXnet reads this environment variable to determine which License Files to use. On client systems, specify the hostname and port for all the servers in the redundant configuration. Use a colon to separate the names. For example:

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

Alternatively, you can specify this License File location information when you start MATLAB on a client, using the `-c` option with the `matlab` command.

Starting the License Manager at Boot Time

If you want the license manager to start automatically when rebooting, place a Bourne shell code fragment into the appropriate boot script by following the directions in “Starting the License Manager” on page 1-17. You must supply a valid username (not superuser) when configuring the boot script.

Note that, on each server, a link must exist between `/etc/lmboot_TMW` and `matlabroot/etc/lmboot`. This link is normally created during the installation process. However, when running multiple license servers, some or all of the systems might not have MATLAB installed. To create this link on a given server, first log in to the server as `root`, and then enter the following UNIX commands.

```
cd /etc
ln -s matlabroot/etc/lmboot lmboot_TMW
```


Troubleshooting

This chapter provides information that can help you solve common problems that you might encounter installing MATLAB on a UNIX system.

Problems During the Installation (p. 3-2)	Describes how to resolve common problems that can occur during installation
Problems Starting MATLAB (p. 3-4)	Describes how to resolve common problems that can occur after the installation is complete
Getting Help with License Manager Problems (p. 3-9)	Lists common license manager errors you may encounter with possible solutions

If you cannot find a description here that matches your problem, check the Release Notes documentation that you received with your products. Release notes contain the most up-to-date information available about products and installation procedures. To get additional installation troubleshooting information, visit the Support page at the MathWorks Web site and click **Installation Troubleshooting**.

Problems During the Installation

Problems that prevent successful installation typically involve

- “File Permission Problems” on page 3-2
- “Problems Opening the Display” on page 3-3
- “Solving DVD Drive Problems” on page 3-3

Note If you can't find an answer to your problem here, go to the Support page at the MathWorks Web site and click **Installation & Licensing**. There you can search for solutions and technical notes that might help.

File Permission Problems

The installer must have write access to the installation directory. If the installer cannot write to the installation directory, it displays an error message.

To continue with the installation, dismiss the error message dialog and use the `chmod` command at the UNIX prompt to change the permission setting of the installation directory. Your file mode creation mask (also known as your user mask) controls the default permissions assigned to new files and directories. You can use the `umask` command to change this default.

The suggested file permissions are read, write, and execute permission for the user, and read and execute permission for the group and the world (other), represented in a UNIX directory listing as

```
drwxr-xr-x
```

The following example uses `chmod` to set these permissions on a directory.

```
chmod 755 matlab
```

To provide complete access to users, group, and the world, specify the value `777`.

Problems Opening the Display

If, after starting OpenWindows or Motif, the installation program outputs the Can't open display error message, enter the following command at the UNIX prompt.

```
xhost +x
```

Then run the installation procedure.

```
/dvd/install
```

Host ID in License File Doesn't Match Host ID of System

If the host ID in the comment line of your License File does not match the host ID of the system on which you are performing the installation, the installer displays an error message on your screen. This typically indicates that you are using the wrong License File for this system. You can continue with the installation, but you will not be able to start MATLAB.

Solving DVD Drive Problems

To diagnose a problem with a DVD drive:

- Verify that the device is mounted correctly. See “Mounting Your DVD Drive” on page 1-35 for more information.
- Verify that the DVD device file has the correct read and execute permissions. For example, on Linux systems, DVD drives have read-only permission by default. To check a device's permissions, use the UNIX command

```
ls -l device
```

where *device* is the device name for your DVD drive. To change permissions, log in as superuser and run the UNIX command

```
chmod 555 device
```

Problems Starting MATLAB

After a successful installation, you may encounter problems starting MATLAB. Many of these problems involve the license manager used by the MathWorks products, FLEXnet.

To resolve this type of problem, follow these suggestions, in the order specified:

- 1** Take note of the error message that is displayed. The error message text can often provide information that can help you resolve the problem. (See “Getting Help with License Manager Problems” on page 3-9 for a list of common license manager errors with suggested resolutions.)
- 2** Check the license manager log file for error messages and take appropriate corrective action. See “Viewing the License Manager Log File” on page 3-5 for more information. The MathWorks Installer also creates a log file each time it is run. The installer names the file `install_matlab.out` and puts the file in your top-level installation directory.
- 3** Make sure that the license manager daemons are running—see “Checking the License Manager Daemons” on page 3-5.
- 4** Verify that your client workstation can connect to the license manager over the network—see “Checking the Network Connection” on page 3-6.
- 5** Check the other common startup problems described in “Checking Other Startup Problems” on page 3-7.

If these troubleshooting steps do not resolve the problem you are experiencing, execute the script `lmdebug` in the `matlabroot/etc` directory and send its diagnostic results to the MathWorks Technical Support department. If you do not have e-mail access, fax the results to the MathWorks at the number listed below. For fax reports, it is also helpful to include

- The exact error message(s) received
- A copy of your License File

To contact The MathWorks Technical Support, use this form:
http://www.mathworks.com/contact_TS.html.

Viewing the License Manager Log File

The file `/var/tmp/lm_TMW.log` contains a log of all license activity. The license manager appends a new entry to the log each time a license transaction occurs. For help interpreting error messages and suggested remedies to common errors, refer to the section “Getting Help with License Manager Problems” on page 3-9. The following sections cover these additional log file topics:

- “Specifying the Name of the License Manager Log File” on page 3-5
- “Monitoring the Growth of the License Manager Log File” on page 3-5

Specifying the Name of the License Manager Log File

To change the default directory where the log file is stored, specify the `-l` option with the `lmstart` script, as follows.

```
lmstart -l /home/username/lmlogs/mylogfile.log
```

Monitoring the Growth of the License Manager Log File

The license manager log file can grow to be quite large. To conserve disk space, check the size of the log file periodically and delete information from the file to reduce its size. You can also schedule a job (using the UNIX `cron` command) that regularly deletes log files older than a specified date (a process called rotating log files).

Checking the License Manager Daemons

The license manager must be running before you can start MATLAB. To determine whether the license manager daemons are operating, run the `lmstat` command on the license server.

```
cd matlabroot/etc  
lmstat -a
```

You can also run the following UNIX command

```
ps -ef | grep lm
```

Check the output of these commands to determine if both the license manager daemon (`lmgrd` or `lm_TMW.ld`) and the vendor daemon (MLM) are running.

Starting the License Manager Daemons

If either the license manager or vendor daemon is not running, restart the daemons by running the `lmstart` script, located in the `matlabroot/etc` directory.

Removing Duplicate Daemons

You can only run one MLM daemon. To remove duplicate MLM daemons, log in as superuser and then execute the following command

```
kill pid_of_daemon
```

where `pid_of_daemon` is the process ID of the daemon.

Checking the Network Connection

Verify that your client workstation can connect to the license manager daemons by executing the following commands on your client workstation (not the server).

```
cd matlabroot/etc
lmstat -a
```

If either the license server daemon or vendor daemon is not running on your local computer, but is running correctly on the license server, the problem is usually caused by network software. The network software is either not running correctly or is not configured correctly. Look for the error message in “Getting Help with License Manager Problems” on page 3-9. A suggested action accompanies each message. In addition, you may need to contact your system administrator or system vendor to resolve the problem.

Checking Other Startup Problems

The following sections provide information about some other common startup problems.

Changes to License File Unread by License Manager

If you change the License File, you must restart the license manager using `matlabroot/etc/lmstart`.

The `lmstart` script calls the `lmdown` script to shut down the license manager daemon. Sometimes the `lmdown` script does not succeed at its task. An effective way to shut down the license manager daemons is to use the UNIX `ps` command to check for running processes, and then terminate them manually using the UNIX `kill` command. See “Checking the License Manager Daemons” on page 3-5 for more information.

MATLAB Can't Find License File

MATLAB will fail at startup if it cannot find the License File. The installer looks for the License File in the `matlabroot/etc` directory or at the location specified in the environment variable `LM_LICENSE_FILE` or `MLM_LICENSE_FILE`.

MATLAB Is Slow Starting

MATLAB can take several minutes to start up if one of the entries in the `LM_LICENSE_FILE` environment variable on your system is set to a nonexistent license server or a license server that does not have a license manager running on it.

To work around this issue, try any of the following:

- Remove the faulty entries from the value of the `LM_LICENSE_FILE` variable.
- Add the location of your License File at the beginning of the list of paths in the `LM_LICENSE_FILE` environment variable.
- Clear the `LM_LICENSE_FILE` variable. Note, however, that this option could impact other applications running on your system. MATLAB does not require this variable but other applications that use FLEXnet for license management often set it.

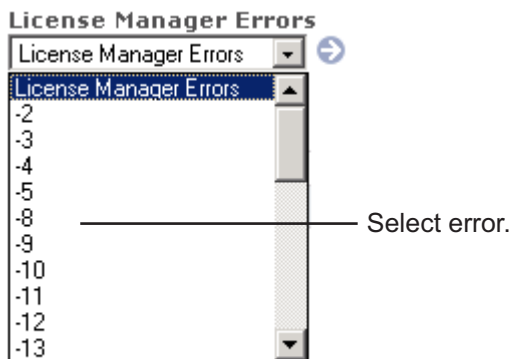
- Remove the `LM_LICENSE_FILE` variable and use the vendor-specific version environment variable for the MathWorks vendor daemon, `MLM_LICENSE_FILE`, and for other vendor daemons used at your site. The `MATLAB` vendor-specific environment variable only affects products from The MathWorks.
- Specify the name of the License File when starting `MATLAB` by using the `-c` option to the `matlab` command. `MATLAB` ignores the `FLEXnet` `LM_LICENSE_FILE` variable when this option is specified.

License Key Unusable on Crashed Node

When the node on which `MATLAB` is running crashes, the license manager should release the license key after about 2 hours. If the key is not released, use `matlabroot/etc/lmremove` to release it manually. The `lmremove` script allows you to remove a single user's license for a specified feature and return the license to the pool of available licenses without having to restart the license manager.

Getting Help with License Manager Problems

When a problem occurs, the license manager displays an error message in a window on your display and also writes the message to the FLEXnet log file, `/var/tmp/lm_TMW.log`. Read the error message carefully; it provides information that can help solve the problem. For more complete diagnostic information about an error message, visit the Support page at the MathWorks Web site (www.mathworks.com). On the Support page, you can search the support database for solutions by error number or you can select the error number from the **License Manager Errors** menu.



You can also get information about license manager error messages in the *FLEXnet Licensing End User Manual*, available in PDF format in `matlabroot/etc/enduser.pdf` or at the Macrovision Corporation Web site, www.macrovision.com.

License Manager Error Messages

This section provides information about some of the more common license manager errors, listed in this table by error number. For more complete diagnostic information about an error message, visit the Support page at the MathWorks Web site (www.mathworks.com).

- “License Manager Error -2: License Checkout Failed. Invalid License File Syntax” on page 3-11
- “License Manager Error -5: License Checkout Failed. No Such Feature Exists” on page 3-11
- “License Manager Error -8: License Checkout Failed. Encryption Code in License File Is Inconsistent” on page 3-12
- “License Manager Error -9: License Checkout Failed. Invalid Host” on page 3-12
- “License Manager Error -10: License Checkout Failed. Feature Has Expired” on page 3-13
- “License Manager Error -13: License Checkout Failed. No SERVER Line in License File” on page 3-13
- “License Manager Error -14: License Checkout Failed. Cannot find SERVER Hostname in Network Database” on page 3-13
- “License Manager Error -15: License Checkout Failed. Cannot Connect to License Server” on page 3-14
- “License Manager Error -18: License Checkout Failed. License Server Does Not Support This Feature” on page 3-14
- “License Manager Error -21: License Checkout Failed. License File Does Not Support This Version” on page 3-15
- “License Manager Error -25: License Checkout Failed. License Server Does Not Support This Version of This Feature” on page 3-15
- “License Manager Error -39: User/Host Not on INCLUDE List for Feature” on page 3-15
- “License Manager Error -83: License Checkout Failed. FLEXnet Version of Client Newer Than Server” on page 3-16

- “License Manager Error -84: USER_BASED License Has No Specified Users” on page 3-16
- “License Manager Error -96: License Checkout Failed. Server Node is Down or Not Responding” on page 3-16
- “License Manager Error -97: License Checkout Failed” on page 3-17

License Manager Error -2: License Checkout Failed. Invalid License File Syntax

This error typically indicates that there is a problem in your License File. On client systems, make sure your License File has the following format.

```
SERVER host hostid port_num  
USE_SERVER
```

Note that there should be a carriage return immediately following the USE_SERVER line.

License Manager Error -5: License Checkout Failed. No Such Feature Exists

This error usually indicates that you are trying to use a product for which you are not licensed:

Note You must restart the license manager after making any changes to the License File on the license server.

- Check your License File to see if you are licensed to use this product. Your License File should contain an INCREMENT line for each licensed product.
- Make sure that your License File does not contain extra carriage returns or tabs. To avoid this, make sure that each line begins with either #, SERVER, DAEMON, or INCREMENT and replace any tab characters in INCREMENT lines with spaces.
- Make sure that your system date is correct. If your system date is set before the date that your license was made, you will get this error.

License Manager Error -8: License Checkout Failed. Encryption Code in License File Is Inconsistent

This error typically indicates that you are running the license manager on a host that has a different host ID than the one for which your License File was generated:

Note You must restart the license manager after making any changes to the License File on the license server.

- Verify that the host ID specified in the License File matches the system's host ID. See “Determining Your Host ID” on page 1-31.
- Make sure that your License File does not contain extra carriage returns or tabs. To avoid this, make sure that each line begins with either #, SERVER, DAEMON, or INCREMENT and replace any tab characters in INCREMENT lines with spaces. One way to check for extraneous tabs and carriage returns is to open your License File in a text editor and view all nonprinting characters. Remove these tabs and replace with them spaces.
- Make sure that the license information in your License File matches the license information The MathWorks sent you.

License Manager Error -9: License Checkout Failed. Invalid Host

The host ID specified in the License File does not match the node on which the software is running:

- Make sure the host ID in the license e-mail or fax you received from The MathWorks matches the host ID on the SERVER line in your License File.
- Make sure that the host ID that you gave to The MathWorks when you purchased your products is correct. Execute the `matlabroot/etc/lmhostid` command on the node. If the host ID returned is different from the host ID in the License File, contact The MathWorks for new passcodes. See “Obtaining or Changing Your License File” on page 1-30 for more information.

License Manager Error -10: License Checkout Failed. Feature Has Expired

This error indicates that one or more of your license keys has expired:

- Check the expiration date on each of the INCREMENT lines in your License File. If the dates in the License File have already passed, contact the Customer Service department at The MathWorks (through the Web or through e-mail at service@mathworks.com). When contacting The MathWorks, include your License Number and the host ID of your license server.
- If none of your product licenses has expired, check that your system date and time are correct.

License Manager Error -13: License Checkout Failed. No SERVER Line in License File

This error indicates that your License File is missing the SERVER line, DAEMON line, or both. These lines should be added to the License File by the MathWorks Installer during the installation process.

To remedy this problem, run the installer again or manually edit the License File, *matlabroot/etc/license.dat*, adding the SERVER line. See “License Files” on page 2-4 for information about the format and contents of the SERVER line.

License Manager Error -14: License Checkout Failed. Cannot find SERVER Hostname in Network Database

The `gethostbyname()` system call failed for the SERVER name given in the License File. The license server and the client running MATLAB are in different domains. The local hostname listed in the License File cannot be resolved on the remote domain.

To fix this problem, perform this procedure:

- 1 Place an alias in the license server’s local host table for the fully qualified name, since all domains (including the license server) must be able to resolve the fully qualified name for the license server through the host table, DNS, or Yellow Pages.

- 2** Verify that the server name can be resolved by using `telnet` to log in remotely to the server computer (using the fully qualified name) from itself and from a client. If the `telnet` connection succeeds, then the fully qualified name is resolvable.
- 3** Insert the fully qualified name for the server on the `SERVER` line of the License File.
- 4** Invoke `matlabroot/etc/lmstart` to force the license manager to reread the License File.

License Manager Error -15: License Checkout Failed. Cannot Connect to License Server

This error indicates that MATLAB cannot connect to the license server:

- Verify that both license manager daemons are running on the license server by running `matlabroot/etc/lmstat` on the license server. If the license daemons are not running, execute `matlabroot/etc/lmstart`. If the license manager does not start, check the license manager log file (`/var/tmp/lm_TMW.log`) for diagnostic messages.
- If the license manager is running on the license server, make sure that the TCP/IP network software is running on the computer. Even for stand-alone computers, the license manager requires TCP/IP. Enter the UNIX `telnet hostname` command where `hostname` is the name of the license server. If `telnet` does not return a successful session on `hostname`, there is a problem with your network configuration. You must resolve this problem before you can run MATLAB. Contact your local system administrator for help.

License Manager Error -18: License Checkout Failed. License Server Does Not Support This Feature

This error indicates that the feature has expired (on the server), has not yet started, or the version number is greater than the highest supported version:

- Make sure that the `INCREMENT` line in your License File exactly matches the `INCREMENT` line in the license information you received from The MathWorks.
- Make sure that you restarted the license manager after making changes to your License File.

For additional suggestions, go to the MathWorks Web site, www.mathworks.com, and click **Support**.

License Manager Error -21: License Checkout Failed. License File Does Not Support This Version

If you are getting this error on your license server, make sure you have installed the version of FLEXnet included with this release. License Files will not work with the older FLEXnet versions.

If you have updated an existing `license.dat` file with new passcodes, you must still install the version of FLEXnet included with the release.

If you are getting this error on one of your client systems and not on the license server, make sure the License File on the client is in the following format.

```
SERVER host hostname port_num  
USE_SERVER
```

The SERVER line in the client system License File should be the same as the SERVER line found in the License File on the license server.

Also, make sure you are not using a license from a previous release.

License Manager Error -25: License Checkout Failed. License Server Does Not Support This Version of This Feature

This error indicates that you are trying to run MATLAB with an old license. You must update your `license.dat` file with your new license passcodes.

If you do not have current license passcodes, contact Customer Service at The MathWorks.

License Manager Error -39: User/Host Not on INCLUDE List for Feature

This error can indicate that your FLEXnet options file contains an incorrect username on the INCLUDE line. For stand-alone Named User and Network Named User licenses, the FLEXnet options file requires an INCLUDE line for all licensed products. See “Setting Up Network Named User Licensing” on page 1-16 for more information.

In addition, make sure that each user named in the FLEXnet options file has read permissions for the options file.

License Manager Error -83: License Checkout Failed. FLEXnet Version of Client Newer Than Server

This error usually indicates that the version of the license manager on the client system is newer than the license manager on the server system. When MATLAB starts, the License File points to the wrong version of the license manager. To remedy this problem, update the license manager on the server to the latest version of FLEXnet that is included on the MathWorks DVD.

License Manager Error -84: USER_BASED License Has No Specified Users

The error indicates that the license manager cannot find your options file:

- Verify that the installer created an options file during the installation procedure. The full path of the options file is *matlabroot/etc/MLM.opt*, where *matlabroot* is your MATLAB installation directory. See “Setting Up Network Named User Licensing” on page 1-16 for more information.
- Verify that the DAEMON line in your License File includes the full pathname of your options file. If the DAEMON line wraps onto a second line, make sure there is a line continuation character (\) at the end of the first line.
- Verify that you are listed in the options file as a valid user of the product you are trying to use. Make sure your username appears in the correct INCLUDE lines in the options file.

License Manager Error -96: License Checkout Failed. Server Node is Down or Not Responding

This error can occur if you are running DHCP (to obtain a dynamically assigned IP address) on your license server. MATLAB cannot connect with the License Manager because it uses TCP/IP protocols for communication and the IP address is changing.

To fix this problem, follow this procedure:

- 1** Obtain the current IP address for your server. If you are on UNIX or Linux, use the `ifconfig` command. On a PC running Windows, you can use the `ipconfig` command at a DOS prompt.
- 2** Edit the hosts file on your system and change the IP address for your server's entry to be the correct IP address. On UNIX or Linux systems, edit the `/etc/hosts` file. On Windows systems, edit the `C:\Winnt\system32\drivers\etc\hosts` file.

License Manager Error -97: License Checkout Failed

This error can occur when trying to run the license manager while an existing vendor daemon is already running. To resolve this, terminate the license manager processes that are running and reboot your system.

This error can also indicate that the vendor daemon is trying to run on an occupied port. To resolve this, edit the DAEMON line in your License File, changing the port number specified to an open port. The following is an example DAEMON line with a port number specification.

```
DAEMON MLM matlabroot/usr/local/matlab/etc/lm_matlab port=27003
```

You can use any unused port number between 1024 and 64000. By default, the license manager uses a port in the range 27000 to 27009. After making this change, reboot your system.

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