

# MATLAB® & SIMULINK®

- Computation
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## Installation Guide for UNIX

*Release 14 with Service Pack 3  
(MATLAB® 7.1 Product Family)*



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### *Installation Guide for UNIX*

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# Standard UNIX Installation Procedure

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This chapter describes how to install the MathWorks Release 14, Service Pack 3 family of products and FLEXlm, the licensing software used by MathWorks products. (FLEXlm 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
Installing MATLAB on a Client System (p. 1-23)	Describes the installation procedure on client systems
After You Install (p. 1-14)	Describes post-installation tasks
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. 1-32)	Details the system requirements to run MATLAB
Mounting a CD-ROM Drive Remotely (p. 1-35)	Provides the commands required to mount a CD-ROM drive on supported platforms

## Installing MATLAB

This section describes the step-by-step procedure you use to install the MathWorks Release 14 Service Pack 3 family of 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 set of CDs or are available for download over the Internet. Depending on your license option, you may also receive additional CDs 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.”

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**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.

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### Installation Procedure

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“Step 13: Exit the Installer” on page 1-12

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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 1-32.

## 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, you will need to update the FLEXlm options file after the installation is complete. See “Setting Up Network Named User Licensing” on page 1-14 for information about updating the installation options file.

---

### **Step 3: Insert Product CD or Download Product Files**

Insert CD 1 into the CD-ROM drive connected to your system or download product files from the MathWorks Web site. If your system requires that you mount the CD-ROM drive you intend to use to install MATLAB, see “Mounting a CD-ROM Drive”. If you are downloading product files over the Internet, save the files to a temporary location, called \$TEMP in this documentation. See the downloads page for detailed instructions.

#### **Mounting a CD-ROM Drive**

To mount a CD-ROM drive, perform this procedure:

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

```
mkdir /cdrom
```

- 2** Put CD 1 in the CD-ROM drive with the label face up. If your CD-ROM drive requires placing the CD in a caddy before inserting it into the drive, make sure the arrow on the caddy is pointing towards the CD-ROM drive.
- 3** Execute the command to mount the CD-ROM drive on your system. You can install the software from either a locally mounted CD-ROM drive or from a remotely mounted CD-ROM drive. For more information about these options, see “Mounting a CD-ROM Drive Remotely” on page 1-35.

---

**Note** Do not move to the newly mounted CD-ROM directory. Depending on which products you are installing, the installer might require you to insert another product CD during installation.

---

## Step 4: Create the Installation Directory

Create the installation directory and move to it, using the `cd` command. For example, to install into the location `/usr/local/matlab71`, use these commands.

```
cd /usr/local
mkdir matlab71 %Needed for first time installation only
cd matlab71
```

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. Subsequent instructions in this book refer to this directory as `$MATLAB`.

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**Note** Do not install MATLAB 7.1 over any previous released version of MATLAB.

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## Step 5: Put the License File in the Installation Directory

Move your License File, named `license.dat`, into the `$MATLAB` directory. The installer looks for the License File in the `$MATLAB` directory and, after processing it, moves the License File to `$MATLAB/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 `$MATLAB/etc`. The installer will not process the new License File if it finds an existing License File in `$MATLAB/etc`.

---

## Step 6: Start the Installer

If you are installing from a CD, execute the appropriate command to run the MathWorks Installer on your platform.

```
/cdrom/install* & (Sun and Linux platforms)
/cdrom/INSTALL* & (HP platform)
```

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.

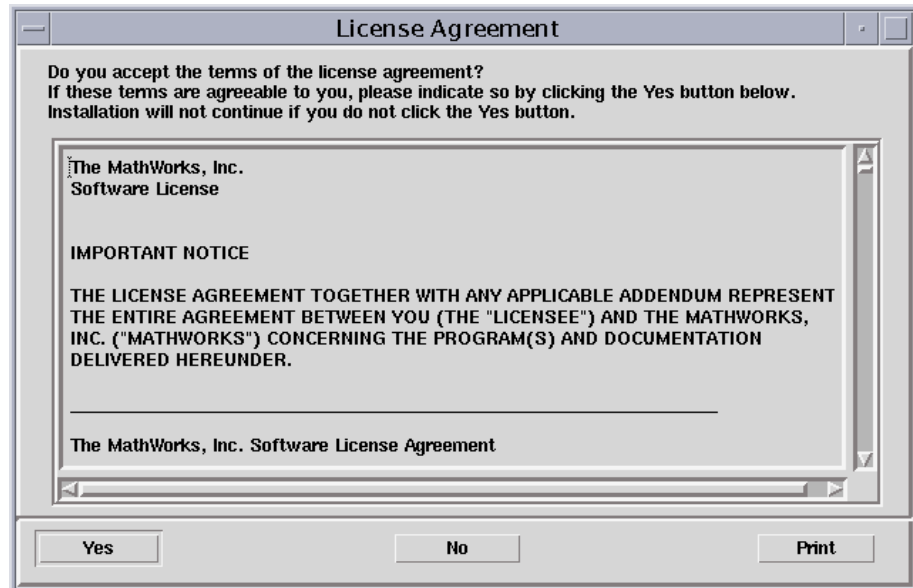
```
./install
```

The installer displays the following welcome screen.



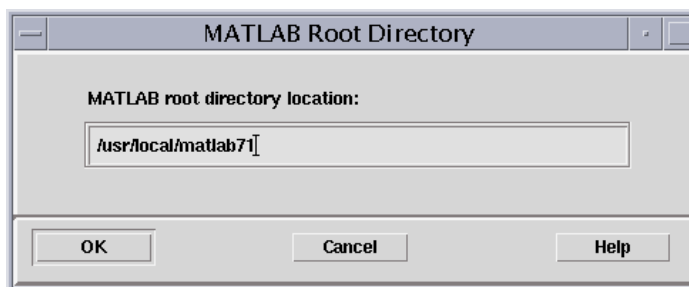
## Step 7: Review the License Agreement

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



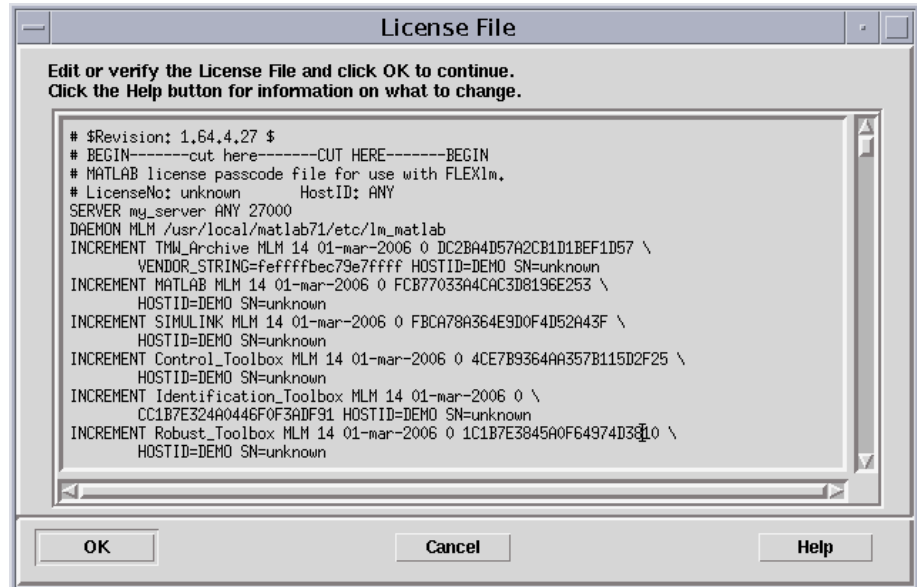
## Step 8: Verify the Installation Directory Name

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 \$MATLAB 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 get 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, `$MATLAB/etc/license.dat`, not the version of the License File you placed in the top-level installation directory in Step 5.

## **Step 10: Specify the Products to Install**

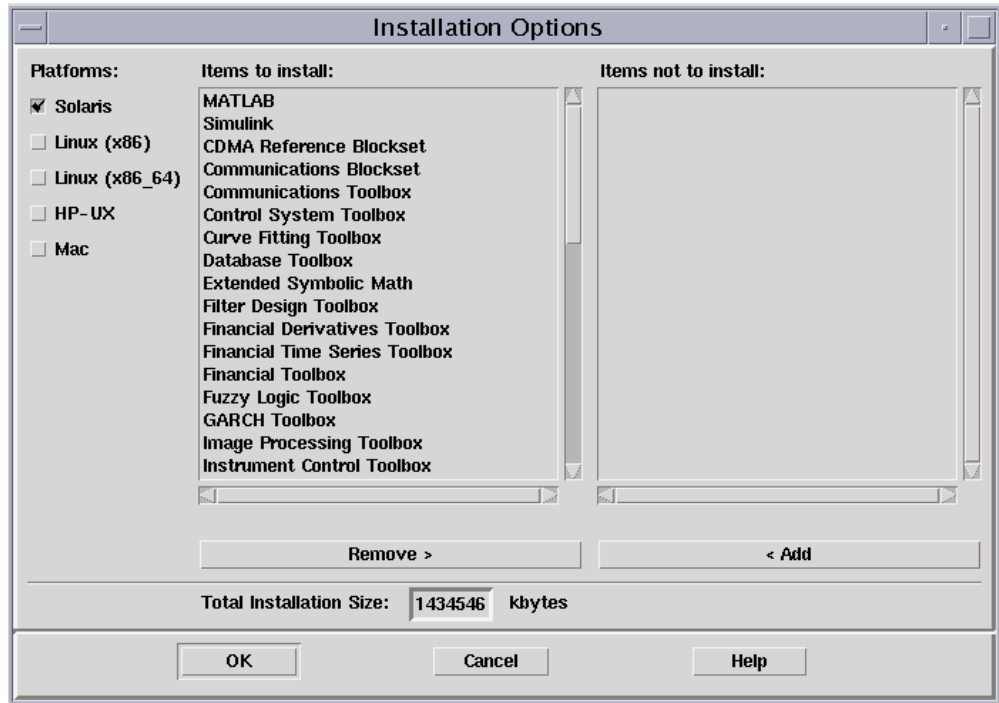
Specify the products you want to install in the **Installation Options** dialog box and then click **OK** to continue.

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.

---

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

---

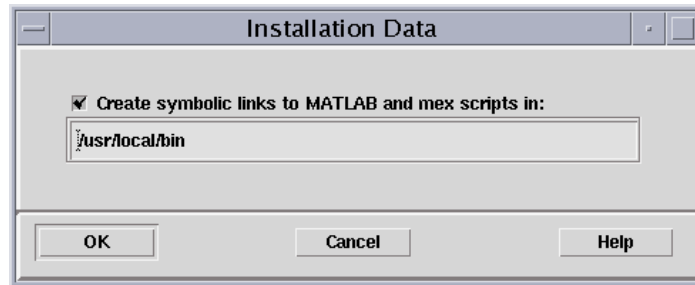


By default, the installer lists all the products that you are licensed to install in the **Items to install** pane of this dialog box. If you do not want to install an item, select it and click the **Remove** button. This moves the product name into the **Items not to install** pane. The FLEXlm license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

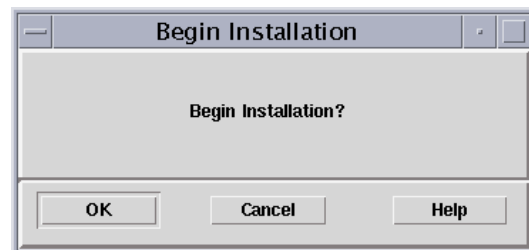
## Step 11: Specify Location of Symbolic Links

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



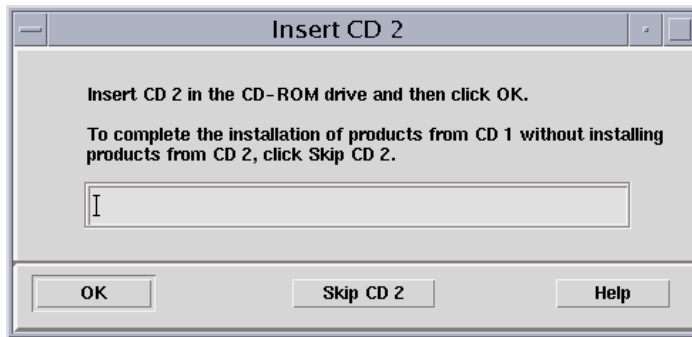
## Step 12: Begin the Installation

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.

Depending on the products you have selected, the installer might prompt you to insert another CD in your CD-ROM drive. The figure below shows this dialog box for CD 2. After switching the CDs, click **OK** to continue with the installation. If you do not want to install these products, click the skip button (**Skip CD 2** in the figure). You can always install the products later.



### 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. See “After You Install” on page 1-14 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.)

<b>Directory</b>	<b>Description</b>
/bin	Scripts for executing the MATLAB system and computer-specific subdirectories for the binary images
/demos	Files associated with product demos
/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
/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.

<b>License Option or Installation Type</b>	<b>Post-Installation Tasks</b>
Individual or Group License options	<ul style="list-style-type: none"><li>• “Setting Up Network Named User Licensing” on page 1-14</li><li>• “Starting the License Manager” on page 1-16</li><li>• “Starting MATLAB” on page 1-21</li></ul>
Concurrent installation type	<ul style="list-style-type: none"><li>• “Starting the License Manager” on page 1-16</li><li>• “Starting MATLAB” on page 1-21</li></ul>
Any type of installation	<p>Note: These are optional tasks.</p> <ul style="list-style-type: none"><li>• “Specifying Print Options” on page 1-21</li><li>• “Specify Documentation Viewing Options” on page 1-21</li><li>• “Specifying MATLAB Startup Options” on page 1-21</li><li>• “Configuring MATLAB Products” on page 1-22</li></ul>

### Setting Up Network Named User Licensing

If you have a network Named User license, you might need to

- Check the FLEXlm license options file to make sure all licensed users are included.
- Check that the DAEMON line in your License File includes the options file specification, options=\$MATLAB/etc/MLM.opt, where \$MATLAB is your MATLAB installation directory.

---

**Note** Do not confuse your License File with your options file. The License File contains the encrypted passcodes for each product you are licensed to install and run. The options file is a text file that contains license manager options statements, such as INCLUDE, EXCLUDE and GROUP lines.

---

### Checking the FLEXlm Options File

The installer creates a FLEXlm options file, \$MATLAB/etc/MLM.opt, as part of the installation process. The installer puts in the options file an INCLUDE line for each product you are licensed to run. By default, the installer puts the username of the person who performed the install in these INCLUDE lines. If you performed your own installation, the options file might not need editing. However, if you performed the installation for another user, or if you had root privileges when you performed the installation, you will need to edit this options file.

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

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

You must replace sysadmin in these INCLUDE statements with the usernames of the licensed users. If multiple users are licensed for the same product, you must create a separate INCLUDE line for each user or use the FLEXlm GROUP syntax. The number of users must not exceed the number of license keys available for that product. This example shows both methods.

---

**Note** Usernames are case sensitive. In addition, make certain that there are no extra space characters at the end of a line.

---

```
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
```

## 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 `$MATLAB/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.

---

### 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 `$MATLAB/etc` directory. Each file has the name `rc.lm.system`, where *system* identifies the system type.

For example, the following is the contents of the file `rc.lm.sol2`, which contains the boot script commands required to start the license manager on Solaris systems. When you add these commands to a boot script, you must replace the word `username` in the script with an actual username. The example highlights the `username` argument to the `/etc/lmboot_TMW` script. Do not specify the name associated with superuser. For security reasons the license manager daemons cannot be owned by superuser.



```

# MATLAB FLEXlm Network License Manager Daemon
#
# Start and stop for Solaris 2.X
#
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}"
    ;;
esac

```

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

- “Editing the Boot Script on HP-UX Systems”
- “Editing the Boot Script on Linux Systems” on page 1-18
- “Editing the Boot Script on Solaris Systems” on page 1-20

### Editing the Boot Script on HP-UX Systems

To create the boot script on HP-UX systems, make a copy of the `rc.lm.hp` file and edit the copy as described in this procedure:

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

```

ln -s $MATLAB/etc/lmboot /etc/lmboot_TMW
ln -s $MATLAB/etc/lmdown /etc/lmdown_TMW

```

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

```
cd $MATLAB/etc
cp rc.lm.hp /sbin/init.d/flexlm
chmod 555 /sbin/init.d/flexlm
```

- 4** Edit the copy of the boot script file, `/sbin/init.d/flexlm`, replacing the username argument to the `lmboot_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** Create the file `/etc/rc.config.d/flexlm` containing the following line.

```
FLEXlm_MATLAB=1
```

- 6** Create the following links.

```
cd /sbin/rc3.d
ln -s /sbin/init.d/flexlm S900flexlm
cd /sbin/rc2.d
ln -s /sbin/init.d/flexlm K100flexlm
```

### **Editing the Boot Script on Linux Systems**

To create the boot script on Linux systems, make a copy of the `rc.lm.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 $MATLAB/etc/lmboot /etc/lmboot_TMW
ln -s $MATLAB/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.

<b>Distribution</b>	<b>Command</b>
Debian	<code>cp \$MATLAB/etc/rc.lm.linux /etc/init.d/flexlm</code>
Red Hat or Fedora Core	<code>cp \$MATLAB/etc/rc.lm.linux /etc/rc.d/init.d/flexlm</code>
SUSE	<code>cp \$MATLAB/etc/rc.lm.linux /etc/init.d/flexlm</code>

**4** Edit the copy of the boot script file, `flexlm`, replacing the username argument to the `lmboot_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. For example if the run level is 5, then execute the commands in the following table.

Choose the appropriate command from the following table for supported Linux distributions for 32-bit systems.

<b>Distribution</b>	<b>Command</b>
Debian	<code>cd /etc/rc5.d;</code> <code>ln -s ../init.d/flexlm S90flexlm</code>
Red Hat	<code>cd /etc/rc.d/rc5.d;</code> <code>ln -s ../init.d/flexlm S90flexlm</code>

Choose the appropriate command from the following table for supported Linux distributions for 64-bit systems.

<b>Distribution</b>	<b>Command</b>
Red Hat or Fedora Core	<code>cd /etc/rc.d/rc5.d; ln -s ../flexlm S90flexlm</code>
SUSE	<code>cd /etc/init.d/rc5.d; ln -s ../flexlm S90flexlm</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 $MATLAB/etc/lmboot /etc/lmboot_TMW  
ln -s $MATLAB/etc/lmdown /etc/lmdown_TMW
```
- 3 Copy the boot script code from `$MATLAB/etc/rc.lm.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 $MATLAB/etc  
cp rc.lm.sol2 /etc/init.d/lmgrd  
chmod 555 /etc/init.d/lmgrd
```

- 4 Edit the copy 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/S171lmgrd`, if it does not exist, using this code.

```
cd /etc/rc3.d  
ln -s ../init.d/lmgrd S171lmgrd
```

## Starting MATLAB

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

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

If you have trouble starting MATLAB, see “Problems Starting MATLAB” on page 3-4 for some helpful 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 `$MATLAB/toolbox/local`. This file contains the options that MATLAB uses for the `print` command.

## Specify Documentation Viewing Options

You can specify the Web browser to use with MATLAB by editing the `docopt.m` M-file, located in the `$MATLAB/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 `$MATLAB/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 a more detailed information about any of the steps, go to the corresponding section in "Installing MATLAB" on page 1-2.

<b>Installation Procedure</b>	<b>Client Installation Notes</b>
"Step 1: Before You Install" on page 1-3	Same, except you do not have to stop the license manager
"Step 2: Log in to the System" on page 1-3	Same
"Step 3: Insert Product CD or Download Product Files" on page 1-4	Same
"Step 4: Create the Installation Directory" on page 1-5	Same
"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 <code>\$MATLAB/etc/license.dat</code> .
"Step 6: Start the Installer" on page 1-6	Same
"Step 7: Review the License Agreement" on page 1-7	Same
"Step 8: Verify the Installation Directory Name" on page 1-7	Same

<b>Installation Procedure</b>	<b>Client Installation Notes</b>
“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, it is listed last in the <b>Items to install</b> list. Select the license manager item (FLEX1m) and click <b>Remove</b> to move it to the <b>Items not to install</b> list.
“Step 11: Specify Location of Symbolic Links” on page 1-11	Same
“Step 12: Begin the Installation” on page 1-11	Same
“Step 13: Exit the Installer” on page 1-12.	Same



## 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 information about the `lmdown` command and other license manager commands.
- 3 Edit your existing License File or create a new License File.

To edit your existing License File, open the `$MATLAB/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 (`$MATLAB`). For more information, see “Creating a License File” on page 1-29.

---

**Note** If you create a new License File, you must rename the license file in `$MATLAB/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** screen, 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 `$MATLAB/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.23Oct2006.1`.

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 $MATLAB
```

where \$MATLAB 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 information about the `lmdown` command.

## Product Licensing

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

- Describes this licensing information
- Explains how to create a License File from this information
- Describes how to contact The MathWorks to obtain your licensing information or to make changes to existing licenses

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 for use with FLEXlm.
# LicenseNo: 12345 HostID: ID=12345
INCREMENT TMW_Archive MLM 14 01-jan-0000 0 2D50C8D0C399D8C75733 \
  VENDOR_STRING="3" HOSTID=DEMO SN=12345
INCREMENT MATLAB MLM 14 01-jan-0000 1 9DB03680FCB84994010C USER_BASED \
  DUP_GROUP=U SN=12345
INCREMENT SIMULINK MLM 14 01-jan-0000 1 CDE0B410CEF6B7220627 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Control_Toolbox MLM 14 01-jan-0000 1 3D203800D0B13F080E73 \
  USER_BASED DUP_GROUP=U SN=12345
```

```
INCREMENT Identification_Toolbox MLM 14 01-jan-0000 1 \  
6D50C6C0786D5A3901CD 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 copy all the information contained in this section, including the comment lines.
- 3 Copy the 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 Identification_Toolbox MLM 14 01-oct-2005 1 \  
EC5C175AGG025G2AD73A DUP_GROUP=UH 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](http://www.mathworks.com) and click **Support**. On the support page click **Installation & Licensing** and look at the links under **Change License Information**.

If you do not have Web access, you can contact The MathWorks via

- E-mail at [service@mathworks.com](mailto:service@mathworks.com).
- Telephone at 508-647-7000, ask for Customer Service. To find the phone number of one of our international offices, go to the MathWorks Web site at [www.mathworks.com](http://www.mathworks.com) and click **Contact Us** at the top of the page.
- Fax at 508-647-7001.

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 MATLAB Access number. MATLAB Access membership is free of charge and available to all customers. The primary contact on each license is automatically enrolled in MATLAB Access. The contacts receive their Access number via e-mail.
- 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 FLEXlm, 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 2-14.

---

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

---

## System Requirements

---

**Note** For the most up-to-date information about system requirements, see the support area at the MathWorks Web site, [www.mathworks.com](http://www.mathworks.com).

---

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

- CD-ROM drive or DVD drive (for installation)
- Netscape Navigator 4.0 and later, Microsoft Internet Explorer 4.0 and later, or Mozilla 1.x or later is required
- Adobe Acrobat Reader 3.0 or later, to view and print the MATLAB online documentation in PDF format (Internet access required)
- TCP/IP, on all platforms when using a license server
- FLEXlm 9.2, installed by the MathWorks Installer

The following system configurations are supported.

Operating Environment	Processor	Disk Space	RAM
Sun Solaris 2.8 Sun Solaris 2.9 Sun Solaris 2.10	SPARC, UltraSPARC	400 MB MATLAB only with Help	256 MB (512 MB recommended) 64 MB swap space
HP-UX 11.0 HP-UX 11i	PA-RISC 2.0	400 MB MATLAB only with Help	256 MB (512 MB recommended) 64 MB swap space



<b>Operating Environment</b>	<b>Processor</b>	<b>Disk Space</b>	<b>RAM</b>
Linux, built using Kernel 2.4.x and glibc (glibc6) 2.2.5	Pentium III, IV, AMD Athlon, Athlon XP, Athlon MP, AMD Opteron	350 MB MATLAB only with Help	256 MB (512 MB recommended) 64 MB swap space
Linux Kernel 2.4.x and glibc (glibc6) 2.3.2	32-bit: Pentium III, IV, AMD Athlon, Athlon XP, Athlon MP, AMD Opteron  64-bit: AMD Opteron, AMD Athlon 64, Intel EM64T	350 MB MATLAB only with Help	256 MB (512 MB recommended) 64 MB swap space
Linux Kernel 2.6.x and glibc (glibc6) 2.3.2	32-bit: Pentium III, IV, AMD Athlon, Athlon XP, Athlon MP, AMD Opteron  64-bit: AMD Opteron, AMD Athlon 64, Intel EM64T	350 MB MATLAB only with Help	256 MB (512 MB recommended) 64 MB swap space

### **Additional System Requirement Notes**

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

## Mounting Your CD-ROM Drive

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

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

### Mounting a CD-ROM Drive Locally

If the CD-ROM drive is located on your system, use the appropriate mount commands listed in the following table to mount the CD-ROM 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 CD-ROM drive is attached. You must supply the full device name when you use these commands.

<b>Platform</b>	<b>Mount Command</b>
HP-UX	<code>mount -F cdfs -r /dev/dsk/c0t&lt;extension&gt; /cdrom</code>
Linux	<code>mount -t iso9660 /dev/cdrom /cdrom</code>  On Linux systems, you may have to change the CD-ROM drive configuration from read-only to execute. By default, on Linux systems, CD-ROM drives have read-only permission.
Sun (Solaris 2.x)	<code>mount -F hsfs -o ro /dev/dsk/c0t&lt;extension&gt; /cdrom</code>  On Sun Solaris systems, the CD-ROM drive will mount automatically if the volume manager is running.

## Mounting a CD-ROM Drive Remotely

If the CD-ROM 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 `/cdrom` is the default mount point; replace this with the name of your local mount point.

---

- 1 On the remote system, where the CD-ROM drive is connected, mount it locally using the appropriate mount command from the table in “Mounting a CD-ROM Drive Locally” on page 1-34.
- 2 On the remote system, configure the CD-ROM 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
HP-UX	<p>Add the line to the exports file, <code>/etc/exports</code></p> <pre>/cdrom -ro</pre> <p>Export this information by executing</p> <pre>exportfs -av</pre>
Linux	<p>Add the line to the exports file, <code>/etc/exports</code></p> <pre>/cdrom -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) are taken from the output of the command</p> <pre>ps -agx</pre>
Sun (Solaris 2.x)	<p>Execute</p> <pre>share -F nfs -o ro -d &lt;cd-rom device&gt; /cdrom</pre> <p>Note that the <code>-d &lt;cd-rom device&gt;</code> is for information purposes only. You can ignore it.</p>

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

<b>Platform</b>	<b>Mount Instructions</b>
HP-UX	<code>mkdir /cdrom</code> <code>mount -r cdrom_host:/cdrom /cdrom</code>
Linux	<code>mkdir /cdrom</code> <code>mount -r cdrom_host:/cdrom /cdrom</code>
Sun (Solaris 2.x)	<code>mkdir /cdrom</code> <code>mount -F nfs -r cdrom_host:/cdrom /cdrom</code>

# 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 FLEXlm license manager. This chapter provides an overview of the MathWorks product licensing. Topics covered include

Licensing Components (p. 2-2)

Describes the primary components of license management and how they work together

Using Time-outs to Free Idle License Keys (p. 2-9)

Describes how to use the FLEXlm TIMEOUT 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 FLEXlm (a product of Macrovision Software, Inc.), to control access to the software.

FLEXlm consists of these main components:

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

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

---

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

---

## License Management Daemons

FLEXlm 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 FLEXlm 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,

```
$MATLAB/etc/$ARCH
```

where \$ARCH is a platform-specific name. For example, on a Sun system the directory name is \$MATLAB/etc/sol2.

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

## Vendor Daemon

Every vendor that uses FLEXlm 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

```
$MATLAB/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 for use with FLEXlm.
# LicenseNo: 12345   HostID: ID=12345
INCREMENT TMW_Archive MLM 14 01-jan-0000 0 2D50C8D0C399D8C75733 \
  VENDOR_STRING="3" HOSTID=DEMO SN=12345
INCREMENT MATLAB MLM 14 01-jan-0000 1 9DB03680FCB84994010C USER_BASED \
  DUP_GROUP=U SN=12345
INCREMENT SIMULINK MLM 14 01-jan-0000 1 CDE0B410CEF6B7220627 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Control_Toolbox MLM 14 01-jan-0000 1 3D203800D0B13F080E73 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Identification_Toolbox MLM 14 01-jan-0000 1 \
  6D50C6C0786D5A3901CD 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.

---

**Note** In previous releases, The MathWorks used FEATURE lines to encode license passcode information in License Files. INCREMENT lines perform the same function as FEATURE lines.

---

### 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 \$MATLAB/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 for use with FLEXlm.
# LicenseNo: 12345  HostID: ID=12345
SERVER yourserver ID=12345 27000
DAEMON MLM /usr/local/matlab/etc/lm_matlab \
  options=/usr/local/matlab/etc/MLM.opt
INCREMENT TMW_Archive MLM 14 01-jan-0000 0 2D50C8D0C399D8C75733 \
  VENDOR_STRING="3" HOSTID=DEMO SN=12345
INCREMENT MATLAB MLM 14 01-jan-0000 1 9DB03680FCB84994010C USER_BASED \
  DUP_GROUP=U SN=12345
INCREMENT SIMULINK MLM 14 01-jan-0000 1 CDE0B410CEF6B7220627 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Control_Toolbox MLM 14 01-jan-0000 1 3D203800D0B13F080E73 \
  USER_BASED DUP_GROUP=U SN=12345
INCREMENT Identification_Toolbox MLM 14 01-jan-0000 1 \
  6D50C6C0786D5A3901CD 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, FLEXlm 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 FLEXlm 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 FLEXlm daemon (`lmgrd`) and the vendor daemon use separate ports. To specify the vendor daemon port, use the following syntax

```
DAEMON MLM $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 `$MATLAB/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 FLEXlm 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 \$MATLAB/etc directory. This table lists these tools with a brief description of their purpose. For more details about any of these commands, see the *FLEXlm End User Manual*, available in PDF form in \$MATLAB/etc/enduser.pdf, where \$MATLAB represents the name of your installation directory.

<b>Tool</b>	<b>Description</b>
lmboot	Start license daemons at boot time.
lmdebug	Generate diagnostic report, and optionally e-mail it to The MathWorks, for troubleshooting license manager problems.
lmdiag	Diagnose problems when a license cannot be checked out.
lmdown	Shut down all license daemons.
lmhostid	Display the host ID of the computer on which you are running.
lmstart	Start license daemons.
lmstat	Show status of all network licensing activities. See the script for a complete set of options.
lmver	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 FLEXlm 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”
- “Experiencing a License Time-Out” on page 2-10
- “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 FLEXlm TIMEOUT option in a FLEXlm options file. A FLEXlm 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 FLEXlm options file. Using any text editor, create a text file named MLM.opt and put the file in the etc directory in your MATLAB installation directory. For example, you might create the file  

```
/usr/local/MATLAB71/etc/MLM.opt
```
- 2** Add the FLEXlm 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 four hours (14,400 seconds). If you specify a time-out value that is smaller, the minimum value is used. For example, to specify a five hour time-out, enter the following in your options file.

```
TIMEOUT MATLAB 18000
```

---

**Note** You can also use the FLEXlm TIMEOUTALL option to enable time-outs in your options file; however, this applies the time-out to all the products listed in the License File, which might include products from other vendors. The MathWorks recommends using the TIMEOUT option to set the time-out for MATLAB.

---

- 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/matlab71/etc/lm_matlab"  
           options=/usr/local/matlab71/etc/mlm.opt
```

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

## Experiencing a License Time-Out

When time-out is enabled, if you open a MATLAB session and then leave it inactive for more than four 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”
- “Running Multiple Versions of MATLAB”
- “Running MATLAB with Other FLEXlm Applications” on page 2-13
- “Determining Your Host ID” on page 2-14
- “Configuring Redundant License Servers” on page 2-15

### 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 the license manager included with the current version of MATLAB on your license server. 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 `$MATLAB/etc` directory.

## Running MATLAB with Other FLEXlm Applications

If you have other applications that use FLEXlm 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 *FLEXlm End User Manual*, available in PDF form in `$MATLAB/etc/enduser.pdf`, or go to the Macrovision Corporation Web page at [www.macrovision.com](http://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 FLEXlm 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 `$MATLAB/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 `$MATLAB/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.

## Determining Your Host ID

If MATLAB is already installed, there are two ways to determine your server host ID:

- Log in to the computer where you run the license manager and run the script `lmhostid` in the `$MATLAB/etc` directory.
- Start MATLAB and enter the `hostid` command at the MATLAB prompt.

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 hardware platforms, such as Sun, have a unique host ID, while others do not. For this reason, the Ethernet address is used on some platforms as the unique host ID.

Hardware Platform	Host ID Description	How to Obtain the Host ID	Sample Host ID
HP	32-bit host ID	<code>echo `uname -i` 160 p   dc</code>	778DA4550
Linux	Ethernet address	<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> .  Note: To use this address as a host ID you must remove all colons (:) and prefix any single-digit parts of the address with a zero (0). For example, the host ID for the address above would be <code>08002be68759</code> .	08002be68759

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

## Configuring Redundant License Servers

If a large number of licenses are governed by a single license server, failure of the server become 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 IDs 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 for use with FLEXlm.
# LicenseNo: 12345           HostID: 00034660893e
#                           HostID: 00053327865e
#                           HostID: 00470635883e
INCREMENT TMW_Archive MLM 14 01-jan-0000 0 8D50540DG9BCDD33692C \
  VENDOR_STRING="b" HOSTID=DEMO SN=12345
INCREMENT MATLAB MLM 14 01-jan-0000 10 DE40F3ADB9CC7490132D \
  DUP_GROUP=UH SN=12345
INCREMENT SIMULINK MLM 14 01-jan-0000 10 7D20159D87373CBCA3E0 \
  DUP_GROUP=UH SN=12345
INCREMENT Identification_Toolbox MLM 14 01-jan-0000 10 \
  5DC0F5FD10FDEB2F830B DUP_GROUP=UH SN=12345
# 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 08002be68759 27000
DAEMON MLM /usr/local/matlab/etc/lm_matlab
```

- 4** Edit the License File on each server, `$MATLAB/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 for use with FLEXlm.
# LicenseNo: 12345           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 TMW_Archive MLM 14 01-jan-0000 0 8D50540DG9BCDD33692C \
  VENDOR_STRING="b" HOSTID=DEMO SN=12345
INCREMENT MATLAB MLM 14 01-jan-0000 10 DE40F3ADB9CC7490132D \
  DUP_GROUP=UH SN=12345
INCREMENT SIMULINK MLM 14 01-jan-0000 10 7D20159D87373CBCA3E0 \
  DUP_GROUP=UH SN=12345
INCREMENT Identification_Toolbox MLM 14 01-jan-0000 10 \
  5DC0F5FD10FDEB2F830B DUP_GROUP=UH SN=12345
# END-----cut here-----CUT HERE-----END
```

- 5** Put a copy of this edited License File in the `$MATLAB/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. `FLEXlm` 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 semicolon 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 1-16. 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 `$MATLAB/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 $MATLAB/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. 3-8)	Lists common license manager errors you may encounter with possible solutions

If you cannot find a description here that matches your problem, check the MATLAB Release Notes documentation that you received with your MATLAB products. This document contains the most up-to-date information available about products and installation procedures. Installation troubleshooting information is also available at the MathWorks Web site on the Support page, [www.mathworks.com](http://www.mathworks.com).

# Problems During the Installation

Problems that prevent successful installation typically involve

- “File Permission Problems”
- “Problems Opening the Display” on page 3-3
- “CD-ROM 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, [www.mathworks.com](http://www.mathworks.com) and click the **Installation & Licensing** section. 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 permission 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 for your platform.

```
install* (Sun and Linux platforms)  
INSTALL* (HP platform)
```

## CD-ROM Drive Problems

The MATLAB installation program expects that the CD-ROM drive is connected or properly mounted on the server. To diagnose a problem with a CD-ROM drive,

- Verify that the device is mounted correctly. See “Mounting Your CD-ROM Drive” on page 1-34 for more information.
- Verify that the CD-ROM device file has the correct read and execute permissions. For example, on Linux systems, CD-ROM drives have read-only permission by default. Use the following UNIX command

```
ls -l device
```

where `device` is the device name for your CD-ROM 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, FLEXlm.

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 resolve the problem. (See “Getting Help with License Manager Problems” on page 3-8 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 3-6.

If these troubleshooting steps do not resolve the problem you are experiencing, execute the script `lmdebug` in the `$MATLAB/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

You can reach the MathWorks Technical Support by e-mail, phone, or fax.

E-mail: support@mathworks.com

Phone: 508-647-7000

Fax: 508-647-7201

## 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 3-8.

Because this log file can grow to be quite large, occasionally delete information from the file to conserve disk space.

## 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
```

## 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 $MATLAB/etc
lmstat a
```

On computers running System V UNIX, enter

```
ps ef | grep lm
```

Check the output of these commands to determine if both the license manager daemon (`lmgrd` or `lm_TMW.ltd`) and the vendor daemon (MLM) are running. There can be multiple license manager daemons running if you are running multiple license managers but only one MLM daemon. Remove all duplicate daemons manually. To stop processes, you must be logged in as superuser; then execute the command

```
kill pid_of_daemon
```

where `pid_of_daemon` is the process ID of the daemon. If either the license manager or vendor daemon is not running, restart the daemons by running the `lmstart` script, located in the `$MATLAB/etc` directory.

### 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 $MATLAB/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 3-8. 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 `$MATLAB/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 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 \$MATLAB/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 FLEXlm 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 FLEXlm LM\_LICENSE\_FILE variable when this option is specified.

## **License Key Unusable on Crashed Node**

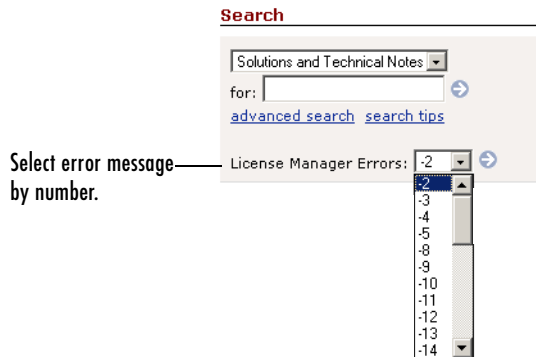
When the node on which MATLAB is running crashes, the license manager should release the license key after about 2 hours. If the key is not released, use \$MATLAB/etc/lmremove to release it manually. The lmremove script allows you to remove a single user's license for a specified feature and return the 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 FLEXlm log file, `/var/tmp/lm_TMW.log`. Read the error message carefully; it provides information that can help solve the problem.

The section “License Manager Error Messages” on page 3-9 contains brief descriptions of many common error messages with recommended solutions. For more complete diagnostic information about an error message, go to the MathWorks Web site, [www.mathworks.com](http://www.mathworks.com), and click **Support**.

The Support page includes a Search facility that lets you search the support database for solutions by error number. Select the error number from the **License Manager Errors** menu or enter the exact error message, including the error number, in the search text box. For example, you could search for “license manager error -15”. Make sure to enclose the text string in quotes.



You can also get information about license manager error messages in the *FLEXlm End User Manual*, available in PDF format in available in PDF format in `$MATLAB/etc/enduser.pdf` or at the Macrovision Corporation Web site, [www.macrovision.com](http://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, go to the MathWorks Web site, [www.mathworks.com](http://www.mathworks.com), and click Support. See “Getting Help with License Manager Problems” on page 3-8 for more information.

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### License Manager Error

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“License Manager Error -2: License Checkout Failed. Invalid License File Syntax” on page 3-10

“License Manager Error -3: License Checkout Failed. Cannot Connect to a License Server” 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 -12: License Checkout Failed. Invalid Returned Data from License Server” 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 3-14

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### License Manager Error

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“License Manager Error -96: License Checkout Failed. Server Node is Down or Not Responding” on page 3-17

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“License Manager Error -97: License Checkout Failed” on page 3-18

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### 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 -3: License Checkout Failed. Cannot Connect to a License Server**

This error can occur if the SERVER line in your License File is incorrect or missing. To remedy this error, try the following:

---

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

---

- Make sure that the SERVER line in your License File matches the SERVER line in the License File on your license server. If your license server is a UNIX system, the License File is located in the \$MATLAB/etc directory. If your license server is a PC running the Windows operating system, the License File is located in the \$MATLAB\flexlm directory. \$MATLAB represents your installation directory.
- Make sure that your License File includes a DAEMON line. See “DAEMON Line” on page 2-6 for more information.
- Make sure the TCP port number at the end of the SERVER line in your License File is not already being used by another application. Change the port number on the SERVER line to a port that is not being used. By default, FLEXlm uses port numbers in the range 27000 to 27009. Restart the license manager after making this change.
- Make sure that you do not have multiple MathWorks vendor daemons (mlm) running. Check your FLEXlm log file (/var/tmp/lm\_TMW.log) for the error Multiple MLM Servers Running.

**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 2-14.
- 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 `$MATLAB/etc/1mhostid`

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](mailto: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 -12: License Checkout Failed. Invalid Returned Data from License Server**

This error occurs when incompatible daemons are running. Most often this error is caused by doing an upgrade installation of MATLAB in the same directory as the previous version where the daemons were not shut down before the update was installed. If the daemons are not shut down, then an update of MATLAB will not replace the daemon files:

- Execute `$MATLAB/etc/lmstart` to start the license manager and vendor daemons corresponding to the current version of MATLAB.
- Shut down the currently running daemons and reinstall the license manager files.

### **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, `$MATLAB/etc/license.dat`, adding the SERVER line. See “License Files” on page 2-3 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 `$MATLAB/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 `$MATLAB/etc/lmstat` on the license server. If the license daemons are not running, execute `$MATLAB/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 -16: License Checkout Failed. Cannot Read Data from License Server**

This error indicates that the path to the MATLAB vendor daemon, `mlm.exe`, is incorrect in the DAEMON line in your License File. See “License Files” on page 2-3 for an example of a DAEMON line.

### **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](http://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 FLEXlm included with Release 14. Release 14 License Files will not work with the older FLEXlm versions.

If you have updated an existing `license.dat` file with new Release 14 passcodes, you still need to install FLEXlm from the Release 14 CD.

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 using your Release 14 license and not 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 your Release 14 license, contact Customer Service at The MathWorks.

### **License Manager Error -31: License Checkout Failed. Feature Not Yet Available**

This error indicates that the system date is set to a date that is earlier than the date MATLAB was installed. The system date must be later than the date that MATLAB was installed:

- Make sure that the date on your system is correct. To check the date, use the UNIX date command at the UNIX prompt.
- Make sure that the license passcode of the INCREMENT line in your License File exactly matches the passcode in the license information you received from The MathWorks. Check for typographical errors.

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

This error can indicate that your FLEXlm options file contains an incorrect username on the INCLUDE line. For stand-alone Named User and Network Named User licenses, the FLEXlm options file requires an INCLUDE line for all licensed products. See “Setting Up Network Named User Licensing” on page 1-14 for more information.

In addition, make sure that each user named in the FLEXlm options file must have read permissions for the options file.

### **License Manager Error -83: License Checkout Failed. FLEXlm 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 FLEXlm that is included on the MathWorks CD.

### **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 `$MATLAB/etc/MLM.opt`, where `$MATLAB` is your MATLAB installation directory. See “Setting Up Network Named User Licensing” on page 1-14 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 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 $MATLAB/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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