

# MATLAB<sup>®</sup>

The Language of Technical Computing

Computation

Visualization

Programming

## Installation Guide for PC and Macintosh

*Version 5.1*

## How to Contact The MathWorks:



508-647-7000 Phone



508-647-7001 Fax



The MathWorks, Inc. Mail  
24 Prime Park Way  
Natick, MA 01760-1500



<http://www.mathworks.com> Web  
<ftp.mathworks.com> Anonymous FTP server  
<comp.soft-sys.matlab> Newsgroup



[support@mathworks.com](mailto:support@mathworks.com) Technical support  
[suggest@mathworks.com](mailto:suggest@mathworks.com) Product enhancement suggestions  
[bugs@mathworks.com](mailto:bugs@mathworks.com) Bug reports  
[doc@mathworks.com](mailto:doc@mathworks.com) Documentation error reports  
[subscribe@mathworks.com](mailto:subscribe@mathworks.com) Subscribing user registration  
[service@mathworks.com](mailto:service@mathworks.com) Order status, license renewals, passcodes  
[info@mathworks.com](mailto:info@mathworks.com) Sales, pricing, and general information

### *Installation Guide for PC and Macintosh*

© COPYRIGHT 1984 - 1997 by The MathWorks, Inc. All Rights Reserved.

The software described in this document is furnished under a license agreement. The software may be used or copied only under the terms of the license agreement. No part of this manual may be photocopied or reproduced in any form without prior written consent from The MathWorks, Inc.

U.S. GOVERNMENT: If Licensee is acquiring the software on behalf of any unit or agency of the U. S. Government, the following shall apply:

(a) for units of the Department of Defense:

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software Clause at DFARS 252.227-7013.

(b) for any other unit or agency:

NOTICE - Notwithstanding any other lease or license agreement that may pertain to, or accompany the delivery of, the computer software and accompanying documentation, the rights of the Government regarding its use, reproduction and disclosure are as set forth in Clause 52.227-19(c)(2) of the FAR.

Contractor/manufacture is The MathWorks Inc., 24 Prime Park Way, Natick, MA 01760-1500.

MATLAB, Simulink, Handle Graphics, and Real-Time Workshop are registered trademarks and Stateflow and Target Language Compiler are trademarks of The MathWorks, Inc.

Other product or brand names are trademarks or registered trademarks of their respective holders.

Printing History: January 1996 First printing New for MATLAB 5  
May 1997 Second printing Revised for MATLAB 5.1

## Installing MATLAB

1

<b>System Requirements</b> .....	<b>1-2</b>
PC .....	<b>1-2</b>
Macintosh .....	<b>1-3</b>
Optional Software for Document Viewing .....	<b>1-3</b>
<b>PC Stand-Alone Installation</b> .....	<b>1-5</b>
Before You Begin .....	<b>1-5</b>
Installation Procedure .....	<b>1-5</b>
<b>PC Network Installation</b> .....	<b>1-12</b>
Before You Begin .....	<b>1-12</b>
Installation Procedure .....	<b>1-13</b>
Running MATLAB on a Client Machine .....	<b>1-19</b>
License Manager .....	<b>1-20</b>
Running MATLAB with other FLEXlm Applications .....	<b>1-22</b>
Running FLEXlm in a Minimized Window .....	<b>1-23</b>
<b>Macintosh Installation</b> .....	<b>1-24</b>
Before You Begin .....	<b>1-24</b>
Installation Procedure .....	<b>1-24</b>
<b>After Installation</b> .....	<b>1-30</b>
<b>Transferring a Toolbox</b> .....	<b>1-32</b>

<b>Windows Directory Structure</b> .....	<b>2-2</b>
MATLAB\BIN .....	<b>2-2</b>
MATLAB\TOOLBOX\LOCAL .....	<b>2-2</b>
MATLAB\TOOLBOX\MATLAB .....	<b>2-3</b>
MATLAB\EXTERN .....	<b>2-4</b>
MATLAB\GHOSTSCRIPT .....	<b>2-4</b>
<b>Macintosh Directory Structure</b> .....	<b>2-5</b>
MATLAB:Toolbox:matlab .....	<b>2-6</b>
MATLAB:Toolbox:local .....	<b>2-7</b>
MATLAB:Extern .....	<b>2-7</b>

# Installing MATLAB

---

<b>System Requirements</b> . . . . .	1-2
PC . . . . .	1-2
Macintosh . . . . .	1-3
Optional Software for Document Viewing . . . . .	1-3
<b>PC Stand-Alone Installation</b> . . . . .	1-5
Before You Begin . . . . .	1-5
Installation Procedure . . . . .	1-5
<b>PC Network Installation</b> . . . . .	1-12
Before You Begin . . . . .	1-12
Installation Procedure . . . . .	1-13
Running MATLAB on a Client Machine . . . . .	1-19
License Manager . . . . .	1-20
Running MATLAB with other FLEXlm Applications . . . . .	1-22
Running FLEXlm in a Minimized Window . . . . .	1-23
<b>Macintosh Installation</b> . . . . .	1-24
Before You Begin . . . . .	1-24
Installation Procedure . . . . .	1-24
<b>After Installation</b> . . . . .	1-30
<b>Transferring a Toolbox</b> . . . . .	1-32

## System Requirements

### PC

- IBM or 100% compatible system with an Intel 486 processor plus 487 math coprocessor (except 486DX, which includes an internal coprocessor), Pentium, or Pentium Pro system
- Microsoft Windows 95 or Windows NT
- CD-ROM drive
- 8 bit graphics adaptor and display (for 256 simultaneous colors)
- Sufficient hard disk space to install and run the selected products. The hard disk requirement varies according to the size of your partition and whether the optional online Help files are installed. The installer will inform you of the hard disk requirement for your particular partition. For example:
  - Partition with a cluster size of 0 requires 25 MB for MATLAB<sup>®</sup> only and 50 MB total for MATLAB and the Help files.
  - Partition with a cluster size of 64K requires 115 MB for MATLAB only and 250 MB total for MATLAB and the Help files.
- Memory:
  - **Microsoft Windows 95:** 8 MB minimum; 16 MB recommended.
  - **Microsoft Windows NT 3.51 or 4.0:** 12 MB minimum; 16 MB recommended.
- Networks
  - Microsoft Windows

Only statically allocated IP addresses are supported. Multiple Ethernet cards are not supported.

The following items are recommended:

- Additional memory
- Graphics accelerator card
- Printer
- Sound card

Optional software not supplied by The MathWorks:

- Microsoft Word 6.0, 7.0 or Office 97, if you intend to use the MATLAB Notebook. The MATLAB Notebook is not available for the PC network version of MATLAB.
- Microsoft, Borland, or Watcom C compiler (for building MEX-files)
- Microsoft PowerStation Fortran compiler

## Macintosh

MATLAB for the Macintosh runs on:

- Any Power Macintosh
- Any Macintosh equipped with a 68020 or 68030 microprocessor and a 68881 or 68882 math coprocessor
- Any Macintosh equipped with a 68040 microprocessor (math coprocessor is built in).

MATLAB will not run on a Macintosh with a 68LC040 microprocessor.

MATLAB requires the following minimum configuration:

- 26 MB of free space on your hard drive. An additional 60 MB is required for the optional online Help system.
- 16 MB memory partition
- CD-ROM drive
- Color QuickDraw
- System 7.1 or later; System 7.5 is preferred.

---

**Note** Suggested total system memory assumes a reasonably large System Folder. Your memory requirements may vary depending upon the exact size of your System Folder.

---

## Optional Software for Document Viewing

The MATLAB Help Desk provides access to the MATLAB 5 user documentation in HTML and PDF formats. The Help Desk is available after

MATLAB installation. The Help Desk cannot be used to view documents residing on the CD-ROM.

Viewing the HTML files on the Help Desk requires the use of a Web browser. We suggest either Netscape Navigator 2.0, 3.0, 3.01 Gold or Microsoft Internet Explorer 3.0. The MathWorks does not redistribute these products. You can obtain them directly from the companies that developed them. If you have Web access, you can find additional information at [www.netscape.com](http://www.netscape.com) or [www.microsoft.com](http://www.microsoft.com).

Viewing the PDF files requires the use of Adobe Acrobat Reader, which we have included on the MATLAB distribution CD-ROM. You can find additional information about Acrobat Reader at [www.adobe.com](http://www.adobe.com).

On the PC, you will find Acrobat Reader in the `acroread` directory. On the Macintosh, Acrobat Reader is located in the `ACROREAD` folder. To install the product for your platform, double-click on the installer icon and follow the instructions provided.

## PC Stand-Alone Installation

### Before You Begin

Before you begin installing MATLAB, you must have a valid Personal License Password provided by The MathWorks. This password is a 25-digit number tied to your License Number. It determines which products you are permitted to install and use. If you do not have your Personal License Password, contact The MathWorks immediately to request one:

- Via e-mail at [service@mathworks.com](mailto:service@mathworks.com)
- Via telephone at 508-647-7000; ask for Customer Service.
- Via fax at 508-647-7001

MATLAB Access members may obtain their Personal License Password via the Web (<http://www.mathworks.com>). Click on the MATLAB Access item and log in to the Access home page. MATLAB Access membership is free of charge.

Please have ready, or include in your e-mail or fax, these items:

- 1 Your License Number (Site ID).

If you have not previously installed MATLAB at your site, you can find your License Number (Site ID) on the upper right-hand corner of the packing slip. Customers outside North America may obtain Site ID information from their local distributor.

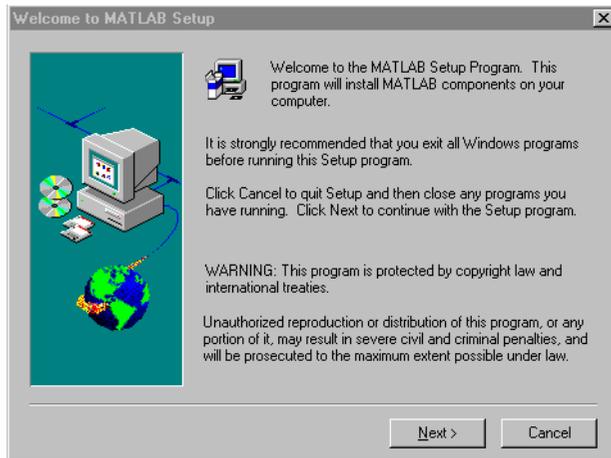
If you have a previous version of MATLAB running at your site, you can obtain your License Number by entering the `license` command at the MATLAB command prompt.

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

### Installation Procedure

- 1 Place the CD-ROM distribution disk into the CD-ROM drive. On Windows 95, the Setup program begins to run automatically. Otherwise, double-click the `setup.exe` icon to begin the installation procedure.

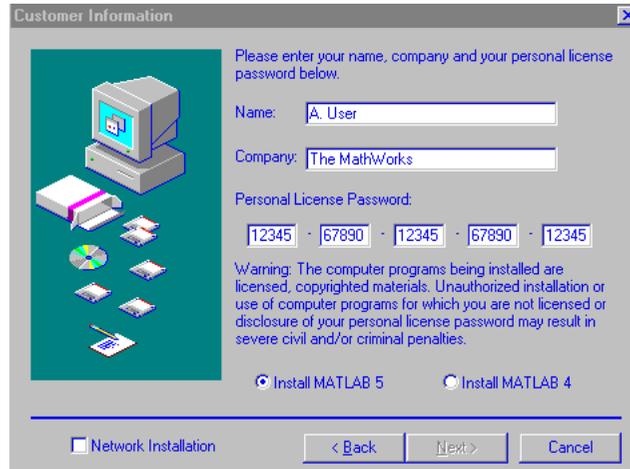
## 2 The installation script displays a welcome screen.



Select **Next** to proceed with the installation.

## 3 Accept or reject the software licensing agreement displayed. If you accept the terms of the agreement, you may proceed with the installation.

- 4 On the **Customer Information** screen, enter your name, your company name, your 25-digit Personal License Password, and select the version of MATLAB you want to install.



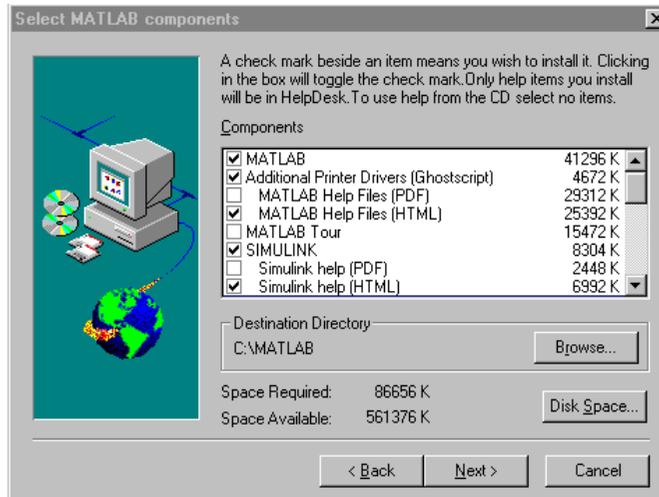
The screenshot shows a dialog box titled "Customer Information" with a close button (X) in the top right corner. On the left side, there is a green background with icons representing a computer monitor, a printer, a CD-ROM, and several floppy disks. The main text area contains the following fields and options:

- Text: "Please enter your name, company and your personal license password below."
- Text field: "Name: A. User"
- Text field: "Company: The MathWorks"
- Text field: "Personal License Password: 12345 · 67890 · 12345 · 67890 · 12345"
- Text: "Warning: The computer programs being installed are licensed, copyrighted materials. Unauthorized installation or use of computer programs for which you are not licensed or disclosure of your personal license password may result in severe civil and/or criminal penalties."
- Radio buttons: "Install MATLAB 5" (selected) and "Install MATLAB 4"
- Check box: "Network Installation" (unchecked)
- Buttons: "< Back", "Next >", and "Cancel"

The **Next** button becomes enabled when you enter the correct Personal License Password.

- 5 Click in the box beside a component name to indicate which products you want to install. Click on a check mark to deselect any component you do not

want to install at this time. You can add any deselected component to your installation at a later time.



This screen assumes C:\MATLAB is the destination directory for installation of MATLAB and any selected toolboxes. Press **Browse** if you want to install into a different directory.

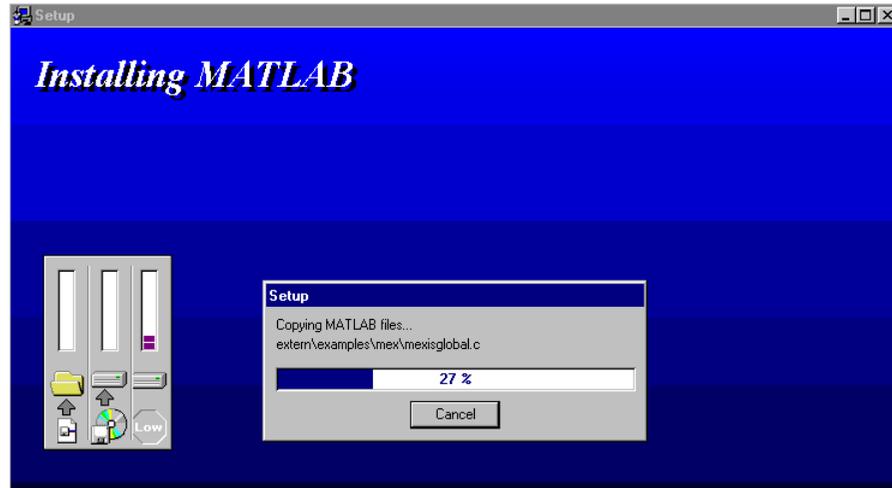
Any Help files you select will be installed in the MATLAB Help Desk. Alternatively, you may choose to install no Help files at all and view the Help on the CD-ROM itself. You cannot run a mixture of Help files, some on the CD-ROM and some on your hard disk.

---

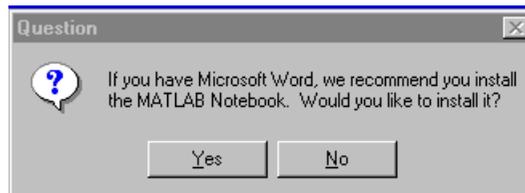
**Previous MATLAB Users:** Do not install MATLAB 5 over a previously installed version of MATLAB 4. Choose a new destination directory. You may install a later version of MATLAB 5 over an existing MATLAB 5 version, but choosing a new destination directory avoids any unforeseen installation problems. If you want to install over an existing copy of MATLAB, back up any M-files that you have developed before starting the installation process.

---

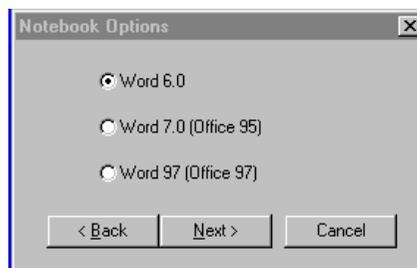
- 6 Press **Next**. You will be informed of the progress of the installation.



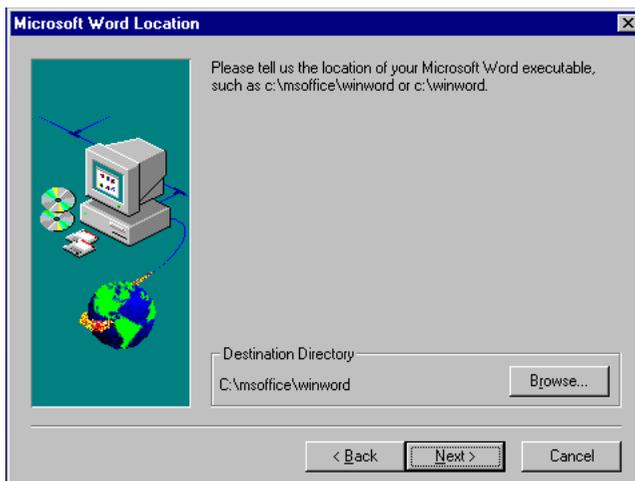
- 7 You have the option to install the MATLAB Notebook if Microsoft Word is available on your system. Skip this step if you do not want to install the MATLAB Notebook.



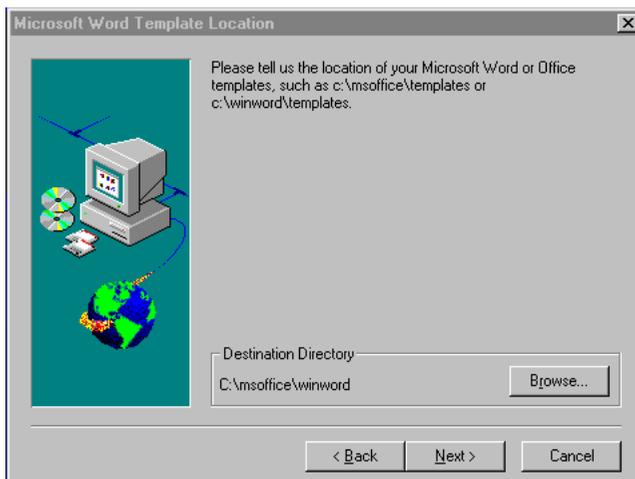
- a Indicate the version of Microsoft Word running on your system:



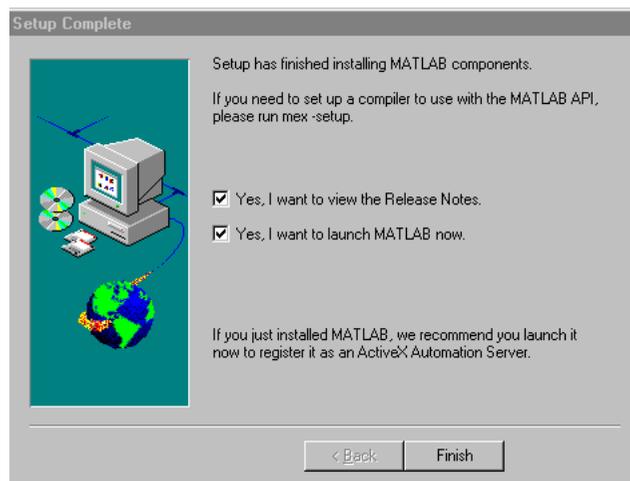
b and the location where Microsoft Word resides.



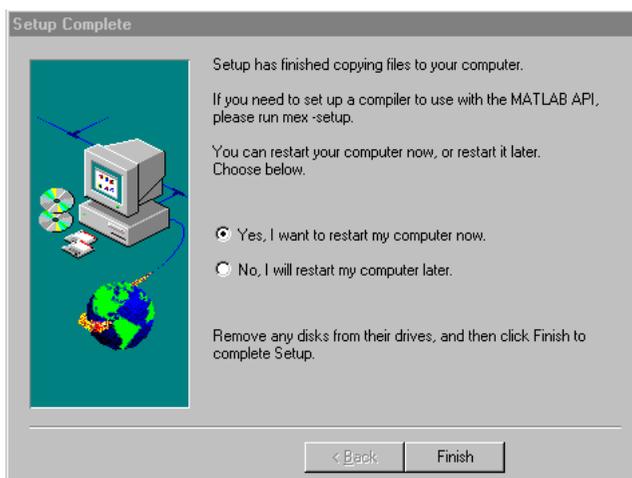
c Finally, indicate where the Microsoft Word template files reside on your system.



- 8 You have now successfully installed MATLAB! Complete your installation by following the directions on the final screen.**



If you choose to install Excel Link during the installation process, you will need to restart your computer before using MATLAB. Your final screen lets you decide when to perform the restart:



## PC Network Installation

### Before You Begin

For network installations, MATLAB uses a license manager called FLEXlm (a product of GLOBETrotter Software, Inc.) to manage software access. (Additional information is available online at <http://www.globetrotter.com>).

Before you begin installing MATLAB, you must obtain a valid License File from The MathWorks. The License File is a file named `license.dat` on your disk. During installation you will be asked to indicate the location of your License File.

### Obtaining a License File

The License File is usually supplied by fax or e-mail. The MathWorks prefers to send a License File by e-mail because that saves you from entering the file by hand.

To obtain your License File, contact The MathWorks by any of these methods:

- Via e-mail at [service@mathworks.com](mailto:service@mathworks.com)
- Via telephone at 508-647-7000; ask for Customer Service.
- Via fax at 508-647-7001

MATLAB Access members may obtain their License File via the Web (<http://www.mathworks.com>). Click on the MATLAB Access item and log in to the Access home page. MATLAB Access membership is free of charge.

Please have ready, or include in your e-mail or fax, the following three items:

- 1 Your License Number (Site ID).

If you have not previously installed MATLAB at your site, you can find your License Number (Site ID) on the upper right-hand corner of the packing slip.

Customers outside North America may obtain Site ID information from their local distributor.

If you have a previous version of MATLAB running at your site, you can obtain your License Number by entering the `license` command at the MATLAB command prompt.

- 2 The Internet address (IP Address) for the server on which you will run the MATLAB license manager. To obtain your internet address on systems running Windows NT, enter the command `ipconfig` at a DOS prompt. On systems running Windows 95, enter the command `wi n i p c f g` at a DOS prompt. Only statically allocated IP addresses are supported.
- 3 Your e-mail address (if you have one).

When you have obtained your License File, proceed to Step 1 of the installation procedure.

## Installation Procedure

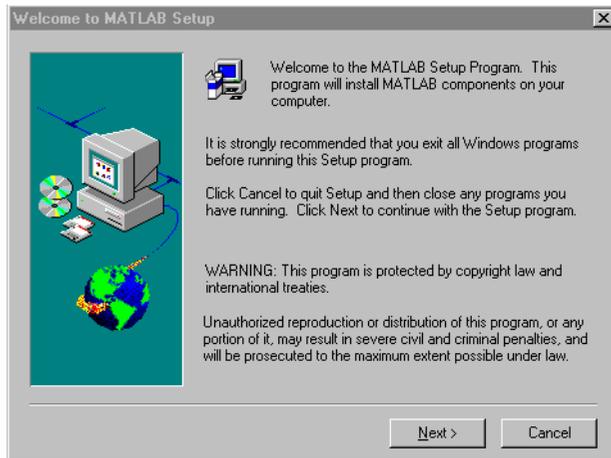
---

**Windows NT Users:** Step 8 of this procedure requires that you have administrator privileges to install the license manager as an NT service.

---

- 1 Place the CD-ROM distribution disk into the CD-ROM drive. On Windows 95, the Setup program begins to run automatically. Otherwise, double-click the `setup.exe` icon to begin the installation procedure.

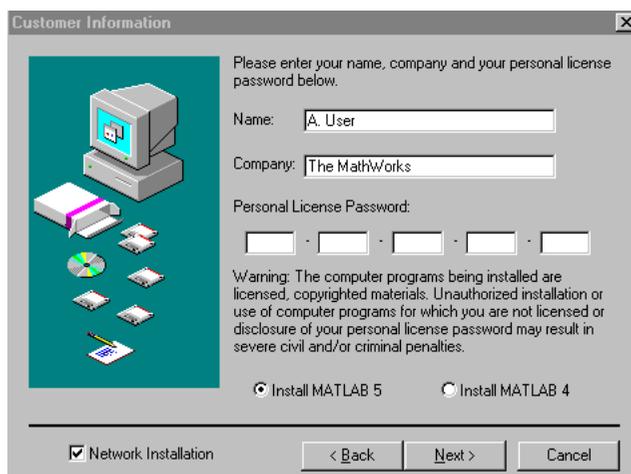
## 2 The installation script displays a welcome screen.



Select **Next** to proceed with the installation.

- 3 Accept or reject the software licensing agreement displayed. If you accept the terms of the agreement, you may proceed with the installation.
- 4 On the **Customer Information** screen, enter your name, your company name, and the MATLAB version you want to install. Then click the

**Network Installation** check box. A Personal License Password is not required for network installation.



The "Customer Information" dialog box is shown. It contains a green graphic on the left with a computer monitor, a CD-ROM, and some papers. The text on the right asks for name, company, and personal license password. The "Name" field contains "A. User" and the "Company" field contains "The MathWorks". The "Personal License Password" field has five empty boxes separated by dots. Below this is a warning message and two radio buttons for "Install MATLAB 5" (selected) and "Install MATLAB 4". At the bottom, there is a checked checkbox for "Network Installation" and three buttons: "< Back", "Next >", and "Cancel".

Please enter your name, company and your personal license password below.

Name:

Company:

Personal License Password:

-  -  -  -

Warning: The computer programs being installed are licensed, copyrighted materials. Unauthorized installation or use of computer programs for which you are not licensed or disclosure of your personal license password may result in severe civil and/or criminal penalties.

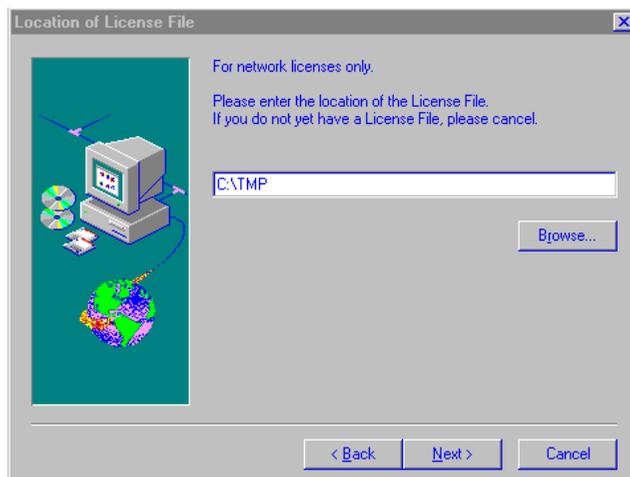
Install MATLAB 5     Install MATLAB 4

Network Installation

< Back    Next >    Cancel

Press **Next** to continue with the installation.

## 5 Provide the location of your License File.



The "Location of License File" dialog box is shown. It contains a green graphic on the left with a computer monitor, a CD-ROM, and a globe. The text on the right asks for the location of the license file. The text field contains "C:\TMP" and there is a "Browse..." button. At the bottom, there are three buttons: "< Back", "Next >", and "Cancel".

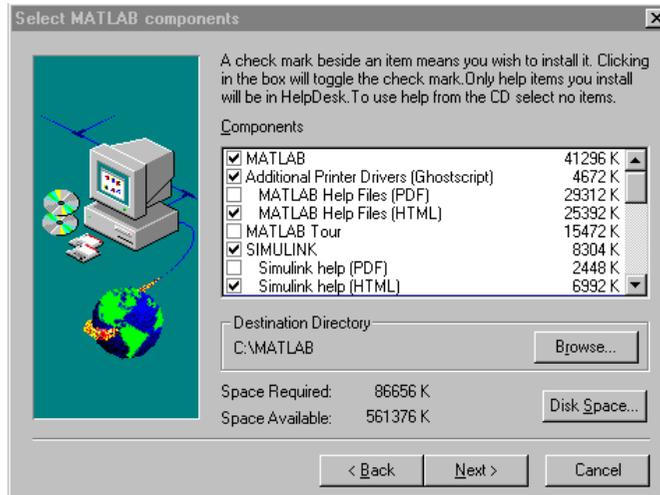
For network licenses only.

Please enter the location of the License File.  
If you do not yet have a License File, please cancel.

Browse...

< Back    Next >    Cancel

- 6 Click in the box beside a component name to indicate which products you want to install. Click on a check mark to deselect any component you do not want to install at this time. You can add any deselected component to your installation at a later time.



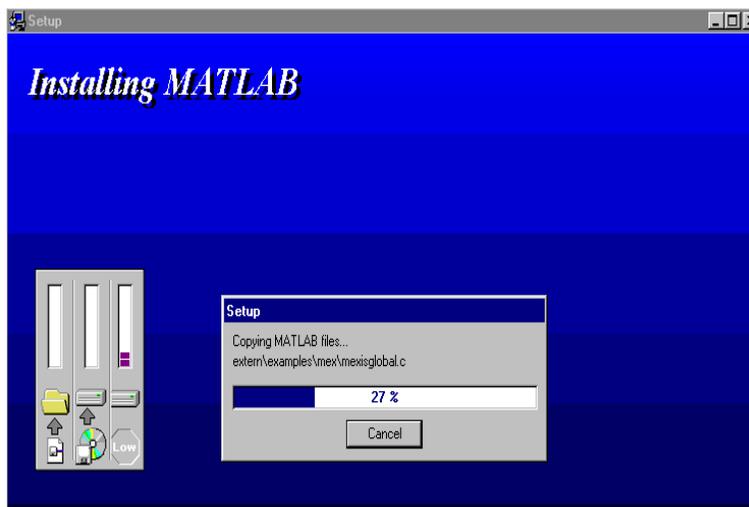
This screen assumes C: \MATLAB is the destination directory for installation of MATLAB and any selected toolboxes. Press **Browse** if you want to install into a different directory.

---

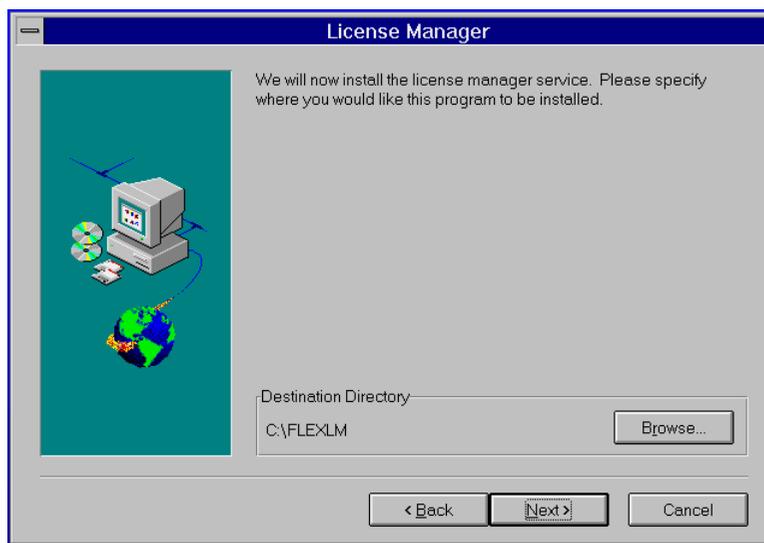
**Previous MATLAB Users:** Do not install MATLAB 5 over a previously installed version of MATLAB 4. Choose a new destination directory. You may install a later version of MATLAB 5 over an existing MATLAB 5 version, but choosing a new destination directory avoids any unforeseen installation problems. If you want to install over an existing copy of MATLAB, back up any M-files that you have developed before starting the installation process.

---

- 7 Press **Next**. You will be informed of the progress of the installation.



- 8 Install the license manager. Click on the **Next** button to accept the default destination directory (C: \FLEXLM).



**Windows NT:** If you have administrator privileges, you can install the license manager as an NT service so that FLEXlm starts automatically every time your system is booted. To start FLEXlm manually, use the Services icon from the Control Panel. The FLEXlm service log file is `lmgrd.log` in your NT system directory.

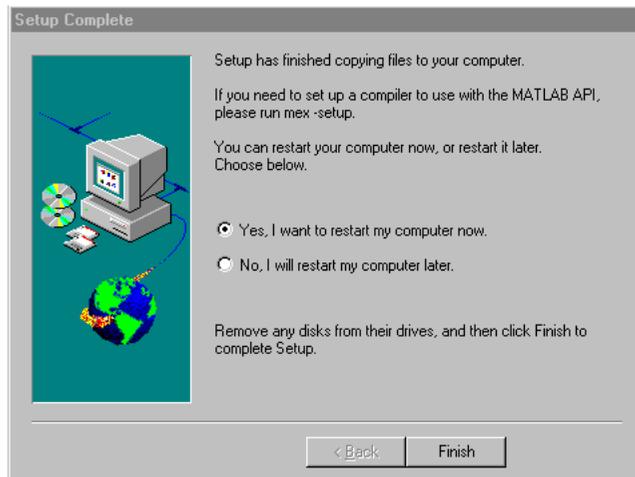
To remove the license manager service, open a DOS window in the FLEXLM directory and type `install remove`.

**Windows 95:** The license manager is installed as an application. The installation script moves the file `lmgrd.exe` file to your StartUp directory so that FLEXlm starts automatically when your system is booted.

To start the license manager manually, open a DOS window in the FLEXLM directory and enter the command:

```
lmgrd -app -c path_to_license_file -l path_to_log_file
```

- 9 You have now successfully installed MATLAB! Complete your installation by following the directions on the final screen. You need to restart your computer to use MATLAB. .



To set up a compiler to use with the MATLAB API, enter `mex -setup` at the MATLAB command prompt.

## Running MATLAB on a Client Machine

### Method 1

In this configuration MATLAB uses the CPU of the client, although network traffic will possibly cause some performance issues.

- 1 Install MATLAB on the server following the PC Network Installation instruction in this document.
- 2 Locate the `lmgrd325a.dll` file on the server and share the directory it resides in so that the client machines can see it. This file is usually located in the `C:\WINDOWS\SYSTEM` directory. Alternatively, place a local copy of the `lmgrd325a.dll` file in the `C:\WINDOWS\SYSTEM` directory on the client machines.

### Method 2

In this configuration MATLAB uses the CPU of the client machine and performance due to network traffic is not an issue.

- 1 Install MATLAB on the server following the PC Network Installation instruction in this document.
- 2 Install MATLAB on the client machine following the same directions for installing MATLAB on the server (use the same License File as in step 1).
- 3 Check the IP address in `license.dat` on the client machine to be sure it matches the server's IP address.

**4** This step is operating system dependent.

**a** If your client is a Windows NT machine:

Stop the FLEX license manager service by doing the following:

Under **Control Panel** --> **Services**

Select **FLEXlm License Manager**

Click on the **Stop** Button

Open a DOS window and change directories to the `c:\flexlm` directory. Execute the command `install remove` to delete the FLEXlm service from the client.

**b** If your client is a Windows 95 machine:

On Windows 95 FLEXlm is installed as an application. To uninstall it, delete the `FLEXlm` folder. The installer also places a copy of the license manager in your startup folder. You may want to remove this also.

To proceed, start the license manager on the server and run MATLAB on the client.

## License Manager

To manage software access on a PC network, MATLAB uses a license manager called FLEXlm, a product of GLOBEtrötter Software, Inc. Once you have obtained a License File from The MathWorks and installed it on your system, the license manager should function without additional effort on your part.

This section provides minimal information about FLEXlm and the License File. You may want to refer to this section if you are upgrading your license or run into any difficulties. More comprehensive information is available from GLOBEtrötter online at <http://www.globetrotter.com>.

### License File Format

The ASCII License File `license.dat` contains configuration information, including the number of license keys and the hostid of the licensed CPU:

```
# MATLAB license passcode file for use with FLEXlm 5.0a
# LicenseNo: 12345          HostID: INTERNET=144.212.21.32
SERVER 144.212.21.32      INTERNET=144.212.21.32 1705
DAEMON MLM C:\matlab\bin\mlm.exe
FEATURE  MATLAB           MLM 5 01-apr-1997  6 3C819780CF72C7A
FEATURE  SIMULINK         MLM 5 01-apr-1997  6 2C7147104C56DE5
FEATURE  Control_Tool box MLM 5 01-apr-1997  6 CC816700619E5C1
FEATURE  Identifi cation_Tool box MLM 5 01-apr-1997  6 2CA1A7D0B6AFBD4
```

The file includes:

- Two comment lines (beginning with the character #) indicating license version, license number, and Host ID information:

```
# MATLAB license passcode file for use with FLEXlm 5.0a
# LicenseNo: 12345          HostID: INTERNET=144.212.21.32
```

- A SERVER line and a DAEMON line, providing information necessary for the license manager to function:

```
SERVER 144.212.21.32      INTERNET=144.212.21.32 1705
DAEMON MLM C:\matlab\bin\mlm.exe
```

These lines are generated by the installer.

- A series of FEATURE lines that itemize the products you are licensed to use, for example, MATLAB, Simulink®, and any toolboxes you have purchased:

```
FEATURE  MATLAB           MLM 5 01-apr-1997  6 3C819780CF72C7A09C
FEATURE  SIMULINK         MLM 5 01-apr-1997  6 2C7147104C56DE5608
FEATURE  Control_Tool box  MLM 5 01-apr-1997  6 CC816700619E5C16BI
```

FEATURE lines also indicate the maximum number of users allowed to use the product at any one time.

## Creating Your Own License File

If you create your License File by hand using a text editor, be careful that the FEATURE lines in your License File exactly match the information provided to you by The MathWorks. Verify that there are no Tab characters in the License File, that each line ends with a carriage return, and that there are no extraneous carriage return characters within the file. The FEATURE lines in a License File must not contain any line breaks.

## Adding Additional Features

If you want to add users, acquire additional toolboxes, or move the license server to a different computer, The MathWorks can give you new information by fax, e-mail, or telephone. If, for example, you purchase an additional toolbox, The MathWorks will send you a new FEATURE line to add to your License File. Open the file with your text editor and insert the line into the list of FEATURE lines, making certain once more that the line does not contain any line breaks.

If you want to increment a feature, for example, add additional users or run additional copies of the same feature, The MathWorks will send you one or more INCREMENT lines, which you should add to the License File with a text editor. Place the INCREMENT line immediately after the FEATURE line for the licensed product.

```
FEATURE  MATLAB      MLM 5 01-j an- 1997 4 0123456789ABCDEF1234
INCREMENT MATLAB      MLM 5 01-j an- 1997 1 0123456789ABCDEF1234
```

The INCREMENT line above adds one additional user to the existing MATLAB license.

## Running MATLAB with other FLEXlm Applications

If you have another application that uses the FLEXlm license manager, you can share a single license server, or run separate license servers either on the same or different hosts.

To share a license server, combine the DAEMON and FEATURE lines from both License Files into a single License File with the appropriate SERVER line and install a license server on a single host. If MATLAB and the other application are using different versions of the FLEXlm software, run the newer version of the license server.

For further information see the Globetrotter Web page ([www.globetrotter.com](http://www.globetrotter.com)).

## Running FLEXlm in a Minimized Window

When the license manager is started on Windows 95, a DOS window appears and remains visible on your screen. Running the license manager in a minimized DOS window eliminates this distraction:

- 1 Go to:  
C:\WIN95\Start Menu\Programs\Startup
- 2 Right click on the FLEXlm license manager icon.
- 3 Select **Properties** from the pop-up menu.
- 4 Click on the **Shortcut** tab.
- 5 Choose **Minimized** under the **Run** field.

## Macintosh Installation

### Before You Begin

Before you begin installing MATLAB, you must have a valid Personal License Password provided by The MathWorks. This password is a 25-digit number tied to your License Number. It determines which products you are permitted to install and use. If you do not have your Personal License Password, contact The MathWorks immediately to request one:

- Via e-mail at [service@mathworks.com](mailto:service@mathworks.com)
- Via telephone at 508-647-7000; ask for Customer Service.
- Via fax at 508-647-7001
- Via Web (<http://www.mathworks.com>. Choose **Express passcodes**.)

MATLAB Access members may obtain their Personal License Password via the Web (<http://www.mathworks.com>). Click on the MATLAB Access item and log in to the Access home page. MATLAB Access membership is free of charge.

Please have ready, or include in your e-mail or fax, these items:

#### 1 Your License Number (Site ID).

If you have not previously installed MATLAB at your site, you can find your License Number (Site ID) on the upper right-hand corner of the packing slip. Customers outside North America may obtain Site ID information from their local distributor.

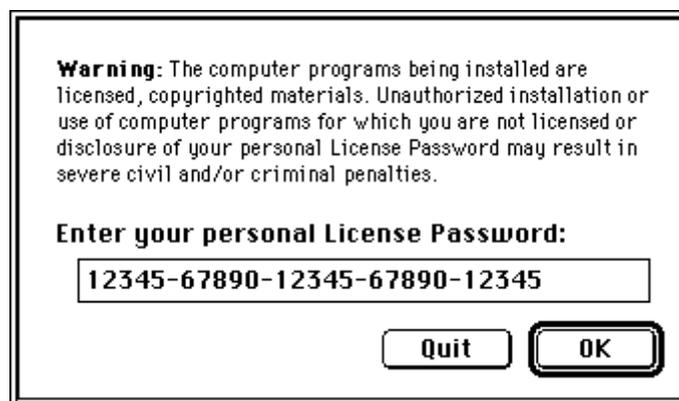
If you have a previous version of MATLAB running at your site, you can obtain your License Number by entering the `license` command at the MATLAB command prompt.

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

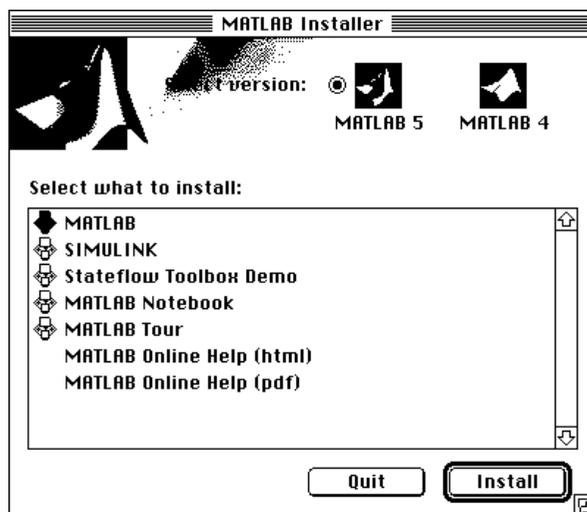
### Installation Procedure

- 1 Place the CD-ROM distribution disk into the CD-ROM drive. Double-click the Install MATLAB icon.

- 2 Accept or reject the software licensing agreement displayed. If you accept the terms of the agreement, you may proceed with the installation.
- 3 Enter the 25-digit Personal License Password previously obtained from The MathWorks.

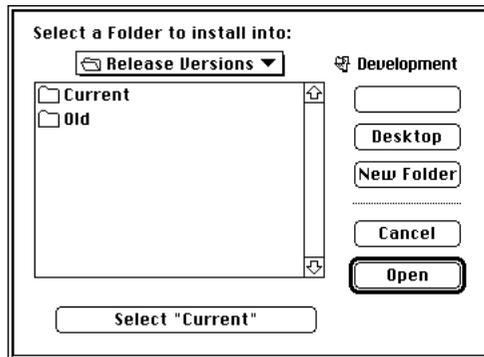


- 4 The products you are licensed to install appear highlighted on the **MATLAB Installer** screen. Deselect (command-click) any products you do not want to install at this time. You can add any deselected component to your installation at a later date.



If, in addition, you choose the **MATLAB Online Help** item, Help for all the products you have selected will be installed onto your hard disk. If you choose *only* the **MATLAB Online Help** entry in the installer, Help for all products for which you are licensed will be installed.

- 5 Indicate the folder where you want to install MATLAB.

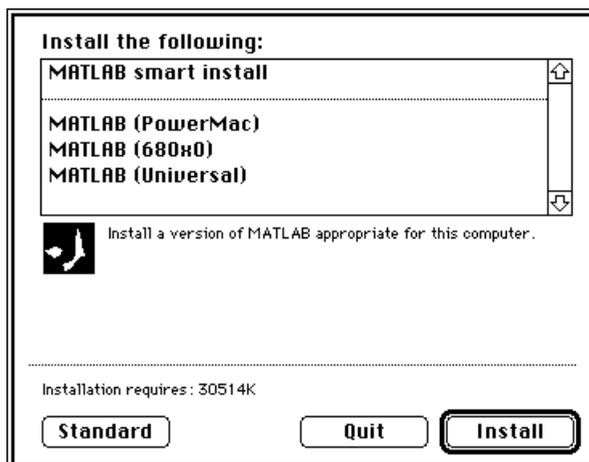


---

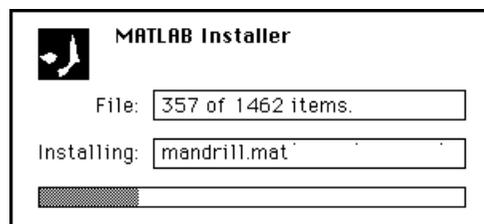
**Previous MATLAB Users:** Do not install MATLAB 5 over a previously installed version of MATLAB 4. Choose a new destination directory. You may install a later version of MATLAB 5 over an existing MATLAB 5 version, but choosing a new destination directory avoids any unforeseen installation problems. If you want to install over an existing copy of MATLAB, back up any M-files that you have developed before starting the installation process.

---

6 Indicate the version of MATLAB to install.



You will be informed of the progress of the installation.

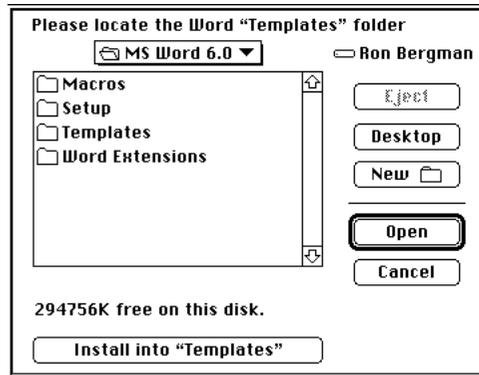


7 If, in Step 4, you selected the MATLAB Notebook as an installation option, click the **Install** button to proceed with the installation. You must have

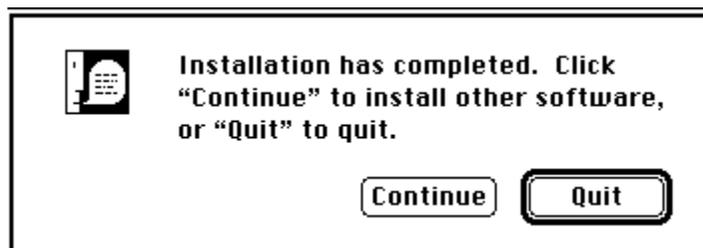
Microsoft Word for the Macintosh installed on your computer to use the MATLAB Notebook.



8 Indicate the location of the Microsoft Word Templates folder.



9 You have successfully installed MATLAB for the Macintosh!



## After Installation

If MATLAB starts successfully after installation, enter the command `helpdesk` to view the online user documentation. The Help Desk provides access to most of the MATLAB 5 documentation in pdf and html format. The *MATLAB Function Reference*, a compilation of all MATLAB 5 commands and functions, is available only through the Help Desk.

If you have problems installing MATLAB or MATLAB does not start after installation:

- 1 Check the *MATLAB Late Breaking News* manual to see if there is any last minute information concerning installation.
- 2 If you are installing the PC Network version, reread the “License Manager” section of this book. Make certain that there are no line breaks in the FEATURE lines of your License File.
- 3 Verify that the license manager is running. After installation is complete, the installer ask you if you would like to restart your computer. Do this at a convenient time. To verify that the service was started:
  - a Under Windows NT 4.0:
    - Go to the **Start** menu
    - Go to **Settings**.
    - Select **Control Panel**.
    - Double-click on **Services**.

Make sure that the FLEXlm license manager is running. Its status should be started, and the startup property should be automatic.

- b Under Windows NT 3.51:
      - In the Program Manager:
      - Double-click on **Main**.
      - Double-click on **Control Panel**.
      - Double-click on **Services**.

---

Make sure that the FLEXlm license manager is running. Its status should be started, and the startup property should be automatic.

c Under Windows 95:

FLEXlm is installed as an application. The installer places a copy of the `lmgrd.exe` file in your Startup folder. Reboot your machine to run the license manager.

- 4 Make sure that both LMGRD and MLM are running. You can check this via the Task Manager which can be accessed using CTRL-ALT-DELETE. This doesn't work under Windows NT 3.51. Check the `lmgrd.log` file located in the NT SYSTEM directory for any error messages.
- 5 If you have Web access, connect to The MathWorks home page (<http://www.mathworks.com>). Look under the Tech Support Info link to see if a solution to your problem has been documented.

## Transferring a Toolbox

If you want to transfer a toolbox from one license to run on a different license, you will require the assistance of The MathWorks before you can effect the transfer.

Because your 25-digit Personal License Password uniquely configures the system you are running on, you will require new License Passwords for both the current system and the system you are moving to. To obtain your new passwords, contact The MathWorks by any of these methods:

- Via e-mail at `service@mathworks.com`
- Via telephone at 508-647-7000; ask for Customer Service.
- Via fax at 508-647-7001

Please have ready, or include in your e-mail or fax, the following items:

- 1 The name of the toolbox you want to transfer.
- 2 The License Number of the system the toolbox is currently running on and the License Number of the system you are transferring the toolbox to.

You can find your License Number on the e-mail or fax containing your Personal License Password. You can also obtain your license number by entering the `license` command at the MATLAB command prompt.

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

When you have obtained your new Personal License Passwords, proceed to reinstall the toolbox following the instructions in this book appropriate for your machine type.

# Directory Structures

---

<b>Windows Directory Structure</b> . . . . .	2-2
MATLAB\BIN . . . . .	2-2
MATLAB\TOOLBOX\LOCAL . . . . .	2-2
MATLAB\TOOLBOX\MATLAB . . . . .	2-3
MATLAB\EXTERN . . . . .	2-4
MATLAB\GHOSTSCRIPT . . . . .	2-4
<b>Macintosh Directory Structure</b> . . . . .	2-5
MATLAB:Toolbox:matlab . . . . .	2-6
MATLAB:Toolbox:local . . . . .	2-7
MATLAB:Extern . . . . .	2-7

### Windows Directory Structure

MATLAB is distributed in compressed format on CD-ROM. The installation procedure moves the files to your hard disk, decompresses them, and installs them in the Windows environment. After installation, your MATLAB directory will possess the following files and subdirectories containing the various components of the MATLAB system (and other toolbox directories, if you have purchased and installed these options):

\BIN	The MATLAB binary and associated files
\TOOLBOX	The MATLAB toolboxes
\EXTERN	Tools for building external interfaces to MATLAB
\GHOSTSCRIPT	The GhostScript PostScript translation utility
\HELP	Help system
RELNOTES.TXT	Release Notes file

The subdirectories and their contents are listed below.

#### **MATLAB\BIN**

MATLAB.EXE	The MATLAB binary
*.DLL, *.EXE, *.BAT	Miscellaneous files

#### **MATLAB\TOOLBOX\LOCAL**

Local environment M-files

**MATLAB\TOOLBOX\MATLAB**

<b>\DATAFUN</b>	<b>Data analysis and Fourier transform functions</b>
<b>\DATATYPES</b>	<b>Data types and structures</b>
<b>\DDE</b>	<b>DDE toolbox</b>
<b>\DEMOS</b>	<b>Demonstrations and samples</b>
<b>\ELFUN</b>	<b>Elementary math functions</b>
<b>\ELMAT</b>	<b>Elementary matrices and matrix manipulation</b>
<b>\FUNFUN</b>	<b>Function functions – nonlinear numerical methods</b>
<b>\GENERAL</b>	<b>General purpose commands</b>
<b>\GRAPH2D</b>	<b>Two-dimensional graphs</b>
<b>\GRAPH3D</b>	<b>Three-dimensional graphs</b>
<b>\GRAPHICS</b>	<b>General purpose graphics commands</b>
<b>\GUIDE</b>	<b>Guide functions</b>
<b>\I OFUN</b>	<b>Low-level file I/O functions</b>
<b>\LANG</b>	<b>Language constructs and debugging</b>
<b>\MATFUN</b>	<b>Matrix functions – numerical linear algebra</b>
<b>\OPS</b>	<b>Operators and special characters</b>
<b>\POLYFUN</b>	<b>Polynomial and interpolation functions</b>
<b>\SPARFUN</b>	<b>Sparse matrix functions</b>
<b>\SPECFUN</b>	<b>Specialized math functions</b>
<b>\SPECGRAPH</b>	<b>Specialized graphs</b>
<b>\STRFUN</b>	<b>Character string functions</b>
<b>\TIMEFUN</b>	<b>Time, date, and calendar functions</b>
<b>\UITOOLS</b>	<b>User interface utilities</b>

### **MATLAB\EXTERN**

<code>\EXAMPLES</code>	C and Fortran examples of using the Application Program Interface
<code>\INCLUDE</code>	Header files for the External Interface Library
<code>\SRC</code>	C source files for inclusion in MEX building

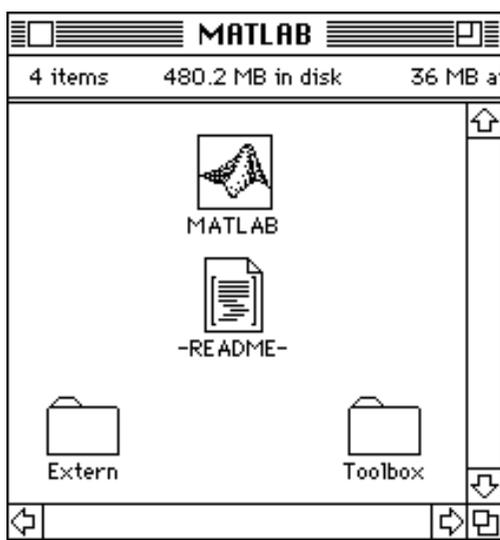
### **MATLAB\GHOSTSCRIPT**

<code>\BIN</code>	The GhostScript binary
<code>\FONTS</code>	GhostScript versions of PostScript fonts
<code>\PS_FILES</code>	PostScript initialization and configuration files

## Macintosh Directory Structure

MATLAB is distributed in compressed format on CD-ROM. The installation procedure moves the files to your hard disk, decompresses them, and installs them in the Macintosh environment.

In this manual, MATLAB folder refers to the folder that contains the MATLAB program and associated folders. The exact name of the folder may vary depending upon which version of MATLAB you have installed.



The main MATLAB system includes::

MATLAB	The MATLAB application.
Tool box	A folder containing the MATLAB Toolbox M-files and any additional toolboxes you install.
Extern	A folder containing the files needed to build and run C and Fortran functions from MATLAB and stand-alone applications using the Application Program Interface.
-README-	A file containing the latest release notes.

The subdirectories and their contents are listed below.

### **MATLAB:Toolbox:matlab**

DATAFUN	Data analysis and Fourier transform functions
DATATYPES	Data types and structures
DEMOS	Demonstrations and samples
ELFUN	Elementary math functions
ELMAT	Elementary matrices and matrix manipulation
FUNFUN	Function functions – nonlinear numerical methods
GENERAL	General purpose commands
GRAPH2D	Two-dimensional graphs
GRAPH3D	Three-dimensional graphs
GRAPHICS	General purpose graphics commands
GUIDE	Guide functions
I OFUN	Low-level file I/O functions
LANG	Language constructs and debugging
MacOs	Macintosh specific functions
MATFUN	Matrix functions – numerical linear algebra
OPS	Operators and special characters
POLYFUN	Polynomial and interpolation functions
SPARFUN	Sparse matrix functions
SPECFUN	Specialized math functions
SPECGRAPH	Specialized graphs
STRFUN	Character string functions
TIMEFUN	Time, date, and calendar functions
UI TOOLS	User interface utilities

## **MATLAB:Toolbox:local**

<code>docopt.m</code>	Hypertext documentation options
<code>hostid.m</code>	MATLAB server host identification number
<code>license.m</code>	License number
<code>matlabrc.m</code>	MATLAB's system-wide startup file
<code>printopt.m</code>	User-configurable print options
<code>siteid.m</code>	User site identification
<code>userpath.m</code>	User environment path

## **MATLAB:Extern**

<code>Includes</code>	Header files for the Application Program Interface
<code>Libraries</code>	Object libraries for the Application Program Interface
<code>Examples</code>	C and Fortran examples of using the Application Program Interface
<code>Scripts</code>	MPW scripts used with the Application Program Interface



## A

Acrobat reader 1-4

## C

client machine 1-19

comment lines 1-21

configuration, minimum 1-3

## D

DAEMON line 1-21, 1-22

directory structure 2-2

## F

FEATURE line 1-21, 1-22

FLEXlm 1-20

    automatic start 1-18

    in minimized window 1-22

    manual start 1-18

    overview 1-12

## G

GhostScript 2-2

## H

hardware 1-2

Help Desk 1-3

## I

INCREMENT line 1-22

ipconfi g 1-13

## L

license command 1-32

License File 1-12, 1-13, 1-15, 1-20

license manager 1-20

License Number 1-5, 1-12, 1-24, 1-32

License Password 1-5, 1-7, 1-24, 1-25, 1-32

license server, sharing 1-22

license.dat 1-12, 1-20

## M

MATLAB notebook 1-3

memory 1-2

## N

Notebook 1-9, 1-27

notebook 1-3

NT service 1-13, 1-18

number, license 1-5, 1-12, 1-24

## P

password, license 1-5, 1-7, 1-24, 1-25, 1-32

printer 1-2

## S

SERVER line 1-21, 1-22

service, NT 1-13, 1-18

Site ID 1-5, 1-12, 1-24

subdirectories 2-6

system recommendations 1-2

system requirements 1-2

## T

toolbox, transfer 1-32

## W

Web browser 1-4

wi ni pcf g 1-13