

Single System

Stage 1 of 3: Installing the MATLAB Distributed Computing Engine on a Macintosh Computer

Follow these instructions to install the Distributed Computing Toolbox and MATLAB® Distributed Computing Engine (MDCE).

Step 1: Create a License File

In this step, you create a License File from the licensing information you received in your license e-mail messages from The MathWorks. Follow these instructions:

- 1 Open a plain text file, using any text editor, such as emacs or vi.
- 2 Open both e-mail messages you received from your sales representative with the subjects “Your MATLAB Distributed Computing Engine Software Purchase (or Trial)” and “Your MathWorks Software Trial,” or follow the instructions given to you by your MathWorks sales representative on how to obtain your licensing information.

Note Make sure to open the messages, not just view it in the preview pane of your e-mail reader. Copying and pasting from the preview pane can result in licensing errors.

- 3 In the e-mail messages, select all the information from the BEGIN line to the END line, inclusive. Make sure to copy all the information in this section, including the comment lines.
- 4 Copy all license information from both e-mail messages 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 MATLAB_Distrib_Comp_Engine MLM 14 01-oct-2005 8 \  
BD5301E0E84ECED9D04A SN=DEMO
```

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- 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.
- 5 Save the text file, naming it `license.dat`.

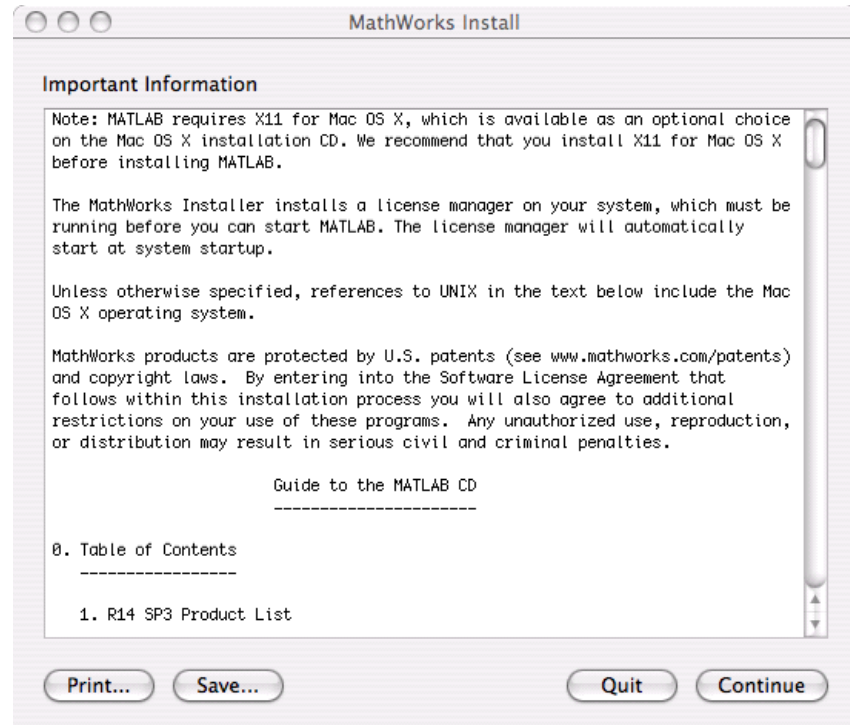
Step 2: Install Distributed Computing Products and MATLAB from R14SP3 CDs

Note In this section, \$MATLAB refers to your MDCE installation directory.

- 1 Place the License File (`license.dat`) that you created in Step 1 on the desktop.
- 2 Insert CD 1.
- 3 Double-click `Install for MacOSX`.

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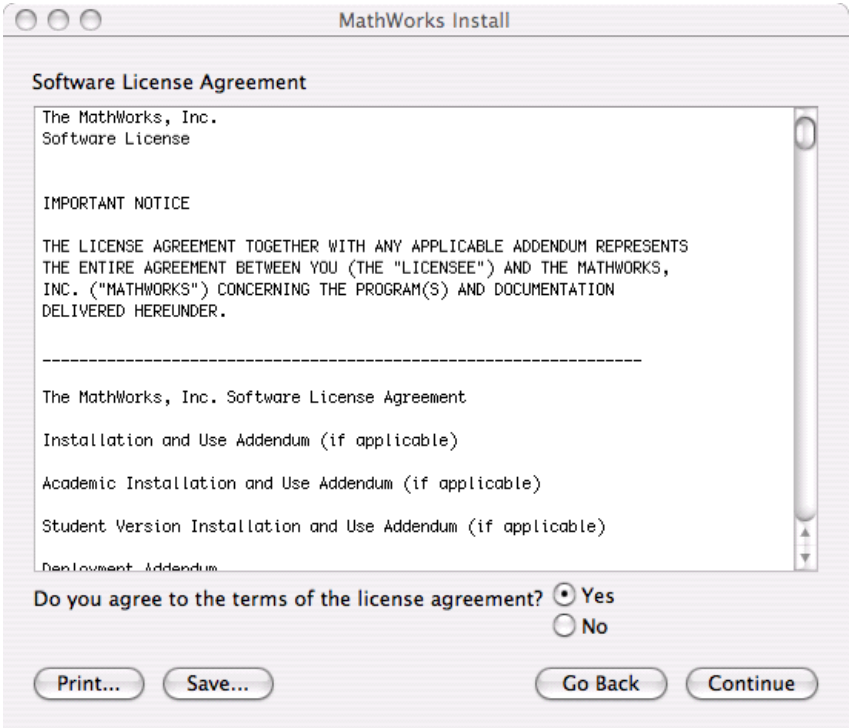
- 4 Read the information in the **Important Information** dialog box and click **Continue**.



For help, contact the MathWorks install support team at 1-508-647-7000 or http://www.mathworks.com/support/contact_us/.

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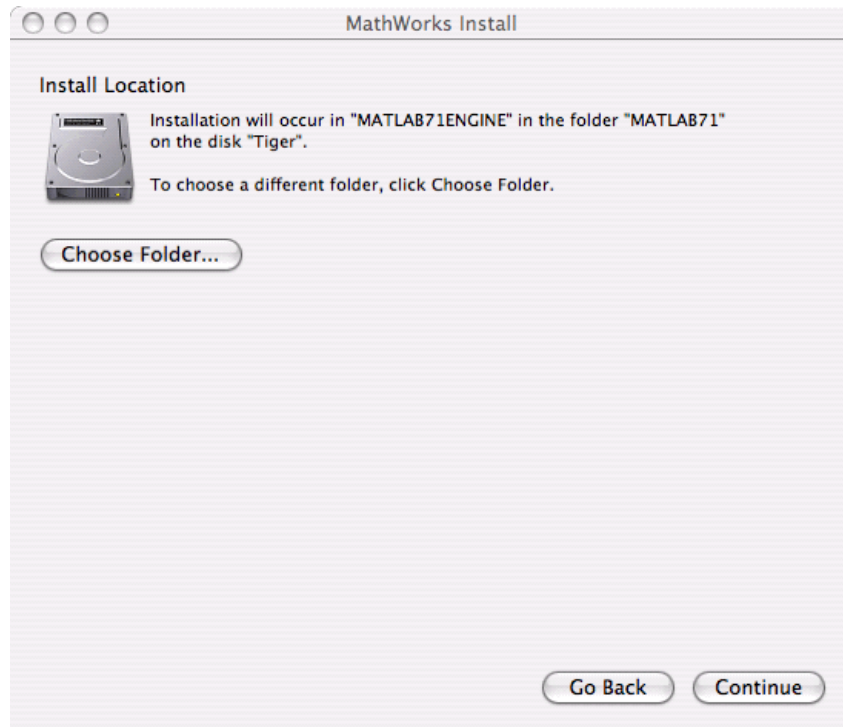
5 Review the license agreement, and click **Continue**.



For help, contact the MathWorks install support team at 1-508-647-7000 or http://www.mathworks.com/support/contact_us/.

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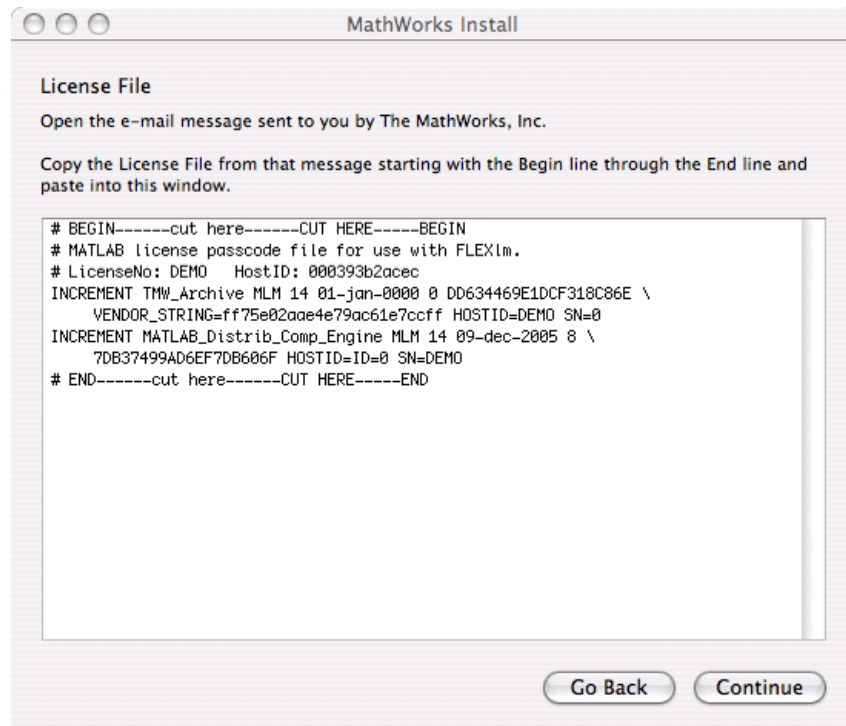
6 Verify the installation directory name and click **Continue**.



For help, contact the MathWorks install support team at 1-508-647-7000 or http://www.mathworks.com/support/contact_us/.

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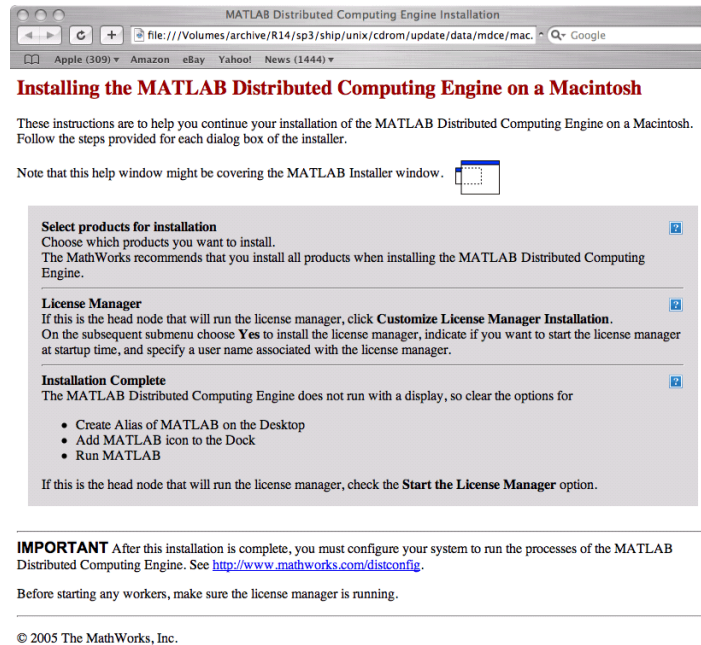
- 7 Drag the License File from the desktop into the **License File** dialog box. The installer displays the License File text in the window, as in the following figure. Click **Continue**.



For help, contact the MathWorks install support team at 1-508-647-7000 or http://www.mathworks.com/support/contact_us/.

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- The installer opens an Internet browser with instructions. These instructions are out of date and can be ignored. Close the browser.

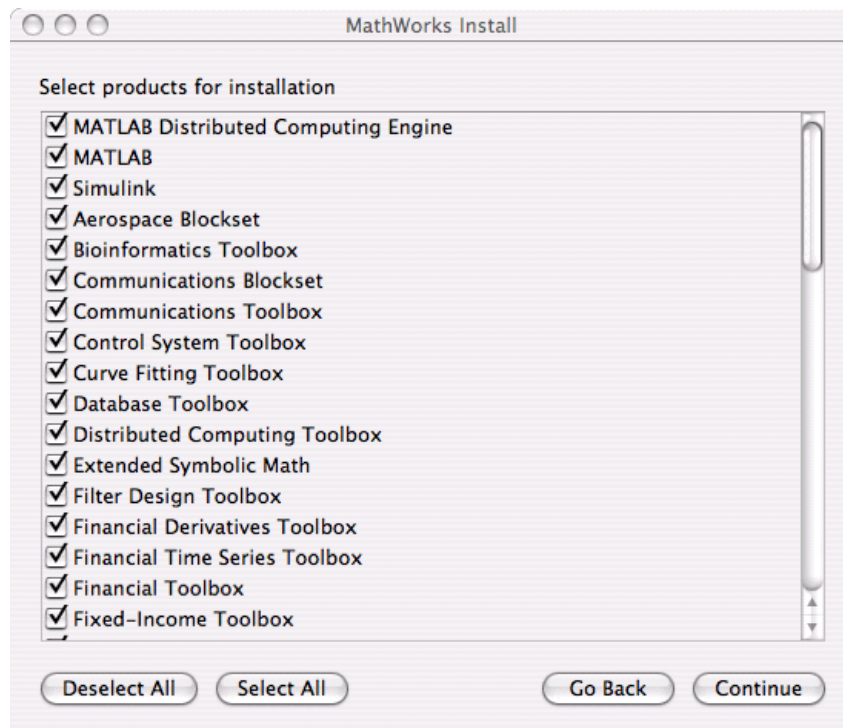


For help, contact the MathWorks install support team at 1-508-647-7000 or http://www.mathworks.com/support/contact_us/.

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9 Select all products for installation.

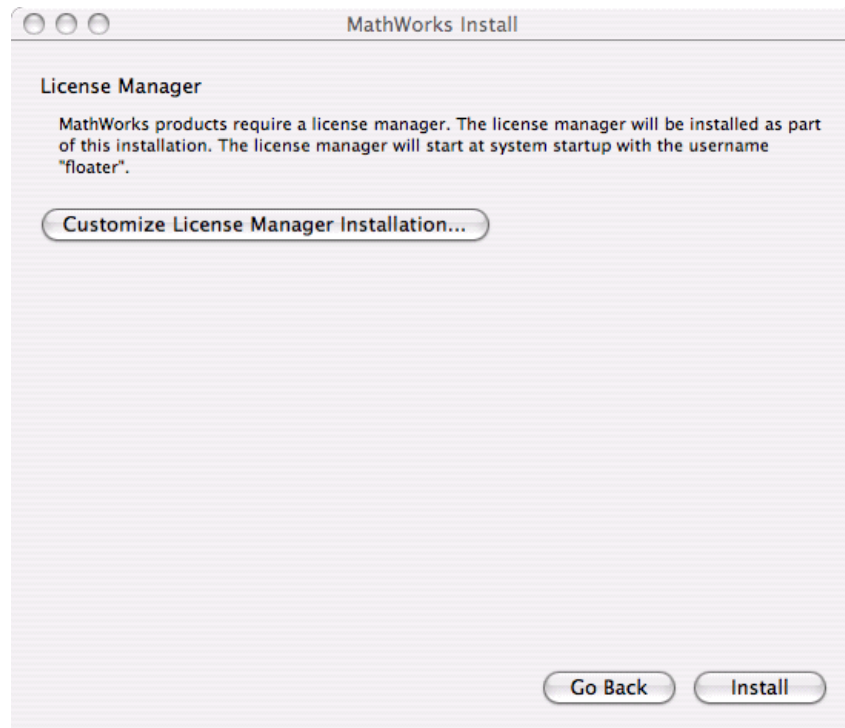
Note The MathWorks highly recommends installing all of the MathWorks products. This ensures that the MDCE will be able to run code for any toolboxes you may have.



For help, contact the MathWorks install support team at 1-508-647-7000 or http://www.mathworks.com/support/contact_us/.

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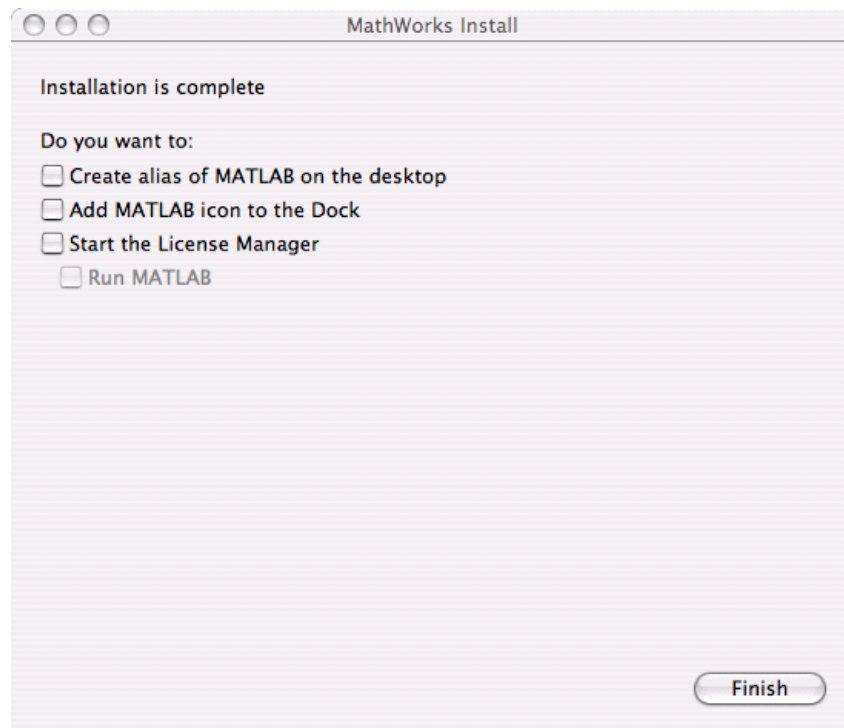
10 Click **Install** to begin installation.



After the installation completes CD 1, the installer will prompt for the rest of the MATLAB CDs. Insert the CD and continue with the installation until complete.

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11 Click **Finish** to complete the installation.



Step 3: Download and Install the Latest Version of MDCE

Because the latest version of MDCE (2.0) was released after R14SP3, it is not included on the R14SP3 product CDs. You must go to the MathWorks Web site and download this version of MDCE and install it on your computer.

- 1 Download the products.
 - If you are a trial user, you have received a link to a location where you can download the product.
 - If you are a licensed user, go to The MathWorks Web site, www.mathworks.com/web_downloads/, and download the product from your account.

For help, contact the MathWorks install support team at 1-508-647-7000 or http://www.mathworks.com/support/contact_us/.

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- 2 Follow the online instructions for extracting files from the tar file and preparing the installer.
- 3 Run the installer with the instructions given online and overwrite your current MDCE installation.

Repeat this procedure for each node.

Step 4: Test Worker Licensing

To verify that MATLAB workers can start correctly on the worker nodes and perform a license checkout, perform the following procedure.

- 1 Run the following command:

Note You must have write privileges in the current directory.

```
$MATLAB/bin/matlab -logfile output.txt -dmlworker -nodisplay -r  
exit
```

- 2 Look at the file `output.txt`. If the MATLAB worker was able to check out a license, the file should look similar to this:

Warning:

```
MATLAB is starting without a display, using internal event queue.  
You will not be able to display graphics on the screen.
```

```
< M A T L A B >  
Copyright 1984-2005 The MathWorks, Inc.  
Version 7.1.0.183 (R14) Service Pack 3  
August 02, 2005
```

```
To get started, type one of these: helpwin, helpdesk, or demo.  
For product information, visit www.mathworks.com.
```

If the license checkout failed, the file `output.txt` should look similar to this:

```
License Manager Error ...  
Feature:          MATLAB_Distrib_Comp_Engine
```

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FLEXlm error:

For further information, refer to the FLEXlm End User Manual, available at "www.macrovision.com".

For more information, see The MathWorks Support page at <http://www.mathworks.com/support> and search for "license manager error -1"

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Stage 2 of 3: Configuring the MATLAB Distributed Computing Engine for Use with Job Manager on Macintosh

The mdce service must be running on a computer being used for job managers or workers. This service manages the other MATLAB[®] Distributed Computing Engine processes. One major task of the mdce service is to recover job manager and worker sessions after a system crash, so that jobs and tasks are not lost as a result of such accidents.

Throughout this section, \$MATLAB refers to the location of your installed MATLAB Distributed Computing Engine. Where you see this term used in the instructions that follow, substitute the path to your location or a link that points to it.

Step 1: Start the mdce Service

- 1 Log in as root.
- 2 Start the mdce service by typing the commands

```
cd $MATLAB/toolbox/distcomp/bin
./mdce start
```

Step 2: Start the Job Manager

To start the job manager, enter the following commands. You do not have to be at the machine on which the job manager will run, as long as you have access to the MDCE installation.

- 1 Go to the directory with the startup scripts.

```
cd $MATLAB/toolbox/distcomp/bin
```
- 2 Start the job manager, using any unique text you want for the name <MyJobManager>.

```
./startjobmanager.sh -name <MyJobManager> -v
```
- 3 Verify that the manager is running.

```
./nodestatus.sh
```

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Note If you have more than one job manager on your cluster, each must have a unique name.

Step 3: Start the Workers

- 1 Go to the directory with the startup scripts.

```
cd $MATLAB/toolbox/distcomp/bin
```

- 2 Start the workers, using the text for <MyJobManager> that identifies the name of the job manager you want this worker registered with. Enter this text on a single line.

```
./startworker.sh -jobmanagerhost <job manager hostname>  
-jobmanager <MyJobManager> -v
```

To run more than one worker session on the same machine, give each worker a unique name with the `-name` option.

```
./startworker.sh ... -name <worker1>  
./startworker.sh ... -name <worker2>
```

- 3 Verify that the worker is running. Repeat this command for each worker node.

```
./nodestatus.sh
```

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Step 4: Install the mdce Service to Start Automatically at Boot Time

Although this step is not required, it is helpful in case of a system crash. Once installed, the mdce service starts running each time the machine reboots. The mdce service continues to run until explicitly stopped or uninstalled, regardless of whether a job manager or worker session is running.

Note If you would like to start the mdce service at boot time on Macintosh, contact the MathWorks Install Support at 508-647-7000 or support@mathworks.com.

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Stage 3 of 3: Testing Your Installation of the MATLAB Distributed Computing Engine with a Job Manager

This procedure verifies that your distributed computing products are installed and configured correctly.

Step 1: Verify the Connection

To verify the connection from the client session to the job manager, follow these instructions.

Note In these instructions, \$MATLAB refers to the directory where MATLAB is installed on your computer.

- 1 Open a shell and go to the control script directory.

```
cd $MATLAB/toolbox/distcomp/bin
```

- 2 Run `nodestatus` to verify your configuration and connection.

```
./nodestatus.sh
```

If successful, you should see the status of your job manager. Otherwise, refer to the troubleshooting section of the MATLAB Distributed Computing Engine System Administrator's Guide.

Step 2: Run a Distributed Job

- 1 Start MATLAB on the computer where you installed the Distributed Computing Toolbox.
- 2 At the MATLAB prompt, enter the following command, replacing the text `MyJobManager` with the name you gave your job manager when you started it, and replacing `JobManagerHostname` with the hostname of your computer. You still need the quotes around the name and host of your job manager. Enter this text on a single line.

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```
results = dfeval(@sum, {[1 1] [2 2] [3 3]},  
'jobmanager', 'MyJobManager', 'LookupURL', 'JobManagerHostname')
```

If you get the following output, your installation is configured and operating correctly.

```
results =  
    [2]  
    [4]  
    [6]
```

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