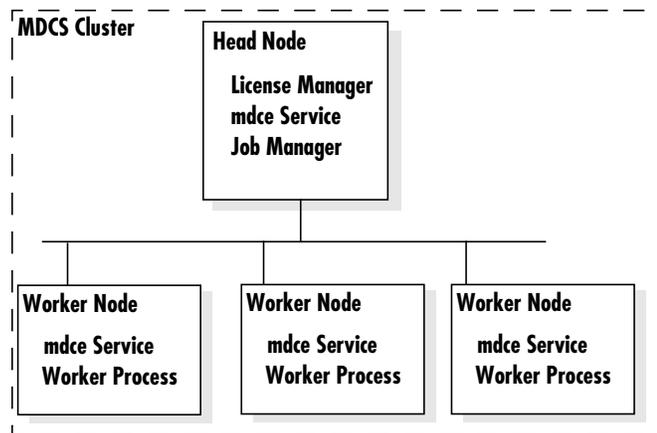


Stage 2 of 4

Stage 2 of 4: Configuring MATLAB® Distributed Computing Server™ 4.2 for Use with Job Manager on Linux®, Solaris®, or Macintosh® Clusters

The mdce service must be running on all machines being used for job managers or workers. This service manages the other MATLAB® Distributed Computing Server 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, *matlabroot* refers to the location of your newly installed MATLAB Distributed Computing Server software. 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: Stop mdce Services of the Old Installation

If you have an old version of the distributed computing products running on your cluster nodes, you should stop the mdce services before starting those services with the new installation. If this is your first installation of the distributed computing products, proceed to Step 2.

- 1 Log in as root. (If you cannot log in as root, you must alter the following parameters in the *matlabroot*/toolbox/distcomp/bin/mdce_def.sh file to point to a directory for which you have write privileges: CHECKPOINTBASE, LOGBASE, PIDBASE, and LOCKBASE if applicable.)
- 2 On each cluster node, stop the mdce service by typing the commands

```
cd oldmatlabroot/toolbox/distcomp/bin
./mdce stop
```

3 On each cluster node, delete the existing log and checkpoint directories or their contents. By default, these directories are

```
/var/log/mdce
/var/lib/mdce
```

Note Deleting these directories will remove all existing job data. Be sure this data is no longer needed before removing it.

Step 2: Start the mdce Service on All Cluster Nodes

1 On each cluster node, start the mdce service by typing the commands

```
cd matlabroot/toolbox/distcomp/bin
./mdce start
```

Step 3: Start the Job Manager and Workers

You can start the job manager and workers two different ways. Choose one:

- “Using the Admin Center Graphical User Interface” on page 3
- “Using the Command-Line Interface” on page 11

Using the Admin Center Graphical User Interface

Note To use Admin Center, you must run it on a computer that has direct network connectivity to all the nodes of your cluster. If you cannot run Admin Center on such a computer, then follow the instructions in “Using the Command-Line Interface” on page 11.

1 To open Admin Center, navigate to the folder:

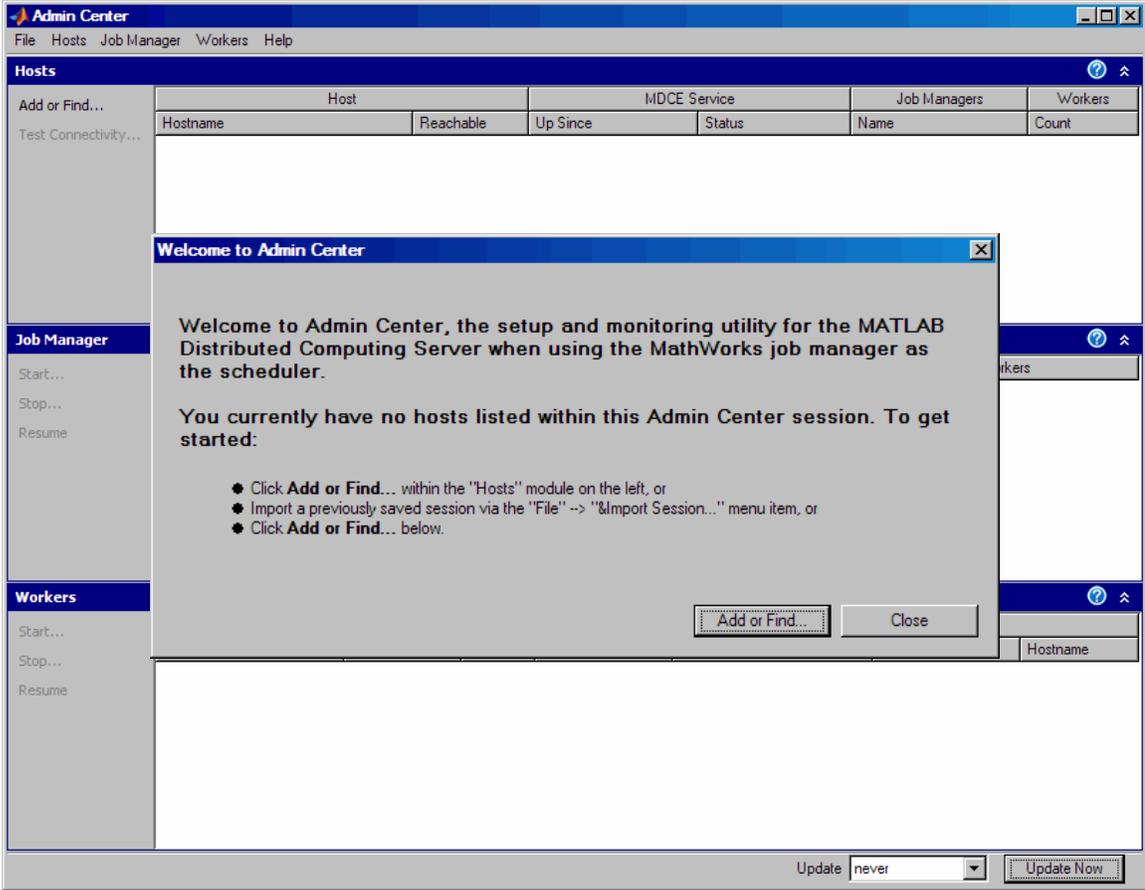
```
matlabroot/toolbox/distcomp/bin
```

Then execute the file:

```
admincenter
```

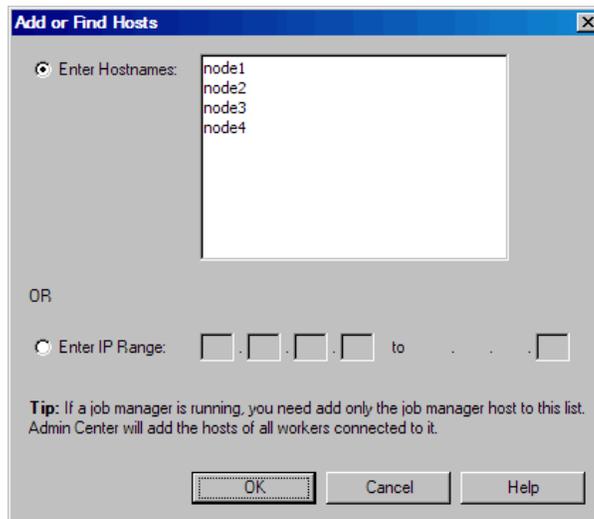
If there are no past sessions of Admin Center saved for you, the GUI opens with a blank listing, superimposed by a welcome dialog box, which provides information on how to get started.

2 Click Add or Find.



The Add or Find Hosts dialog box opens.

- 3 Select **Enter Hostnames**, then list your hosts in the text box. You can use short host names, fully qualified domain names, or individual IP addresses. The following figure shows an example using hosts node1, node2, node3, and node4. In your case, use your own host names.

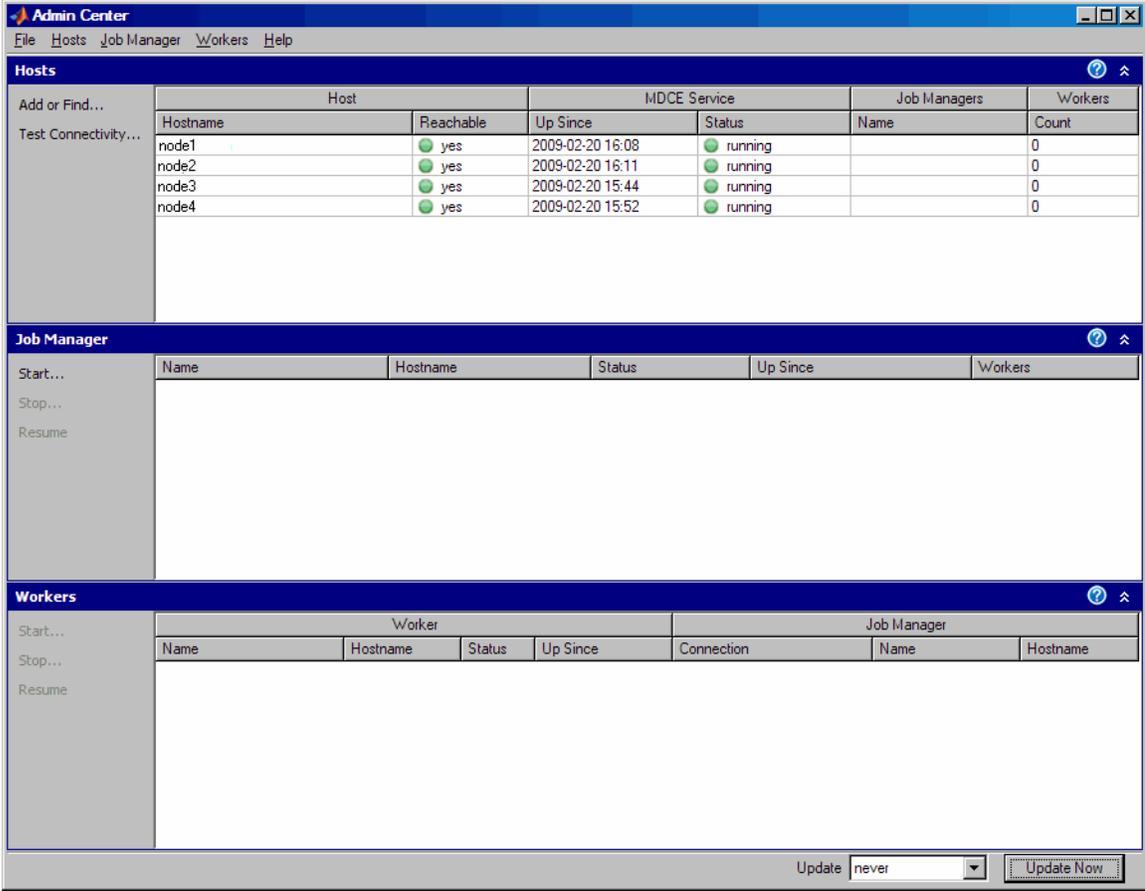


- 4 Click **OK** to add these hosts to the Admin Center listing. It might take a moment for Admin Center to communicate with all the nodes and acquire the status of all of them.

Configuring MDCS 4.2

Stage 2 of 4

When Admin Center completes the update, the listing should look something like the following figure.

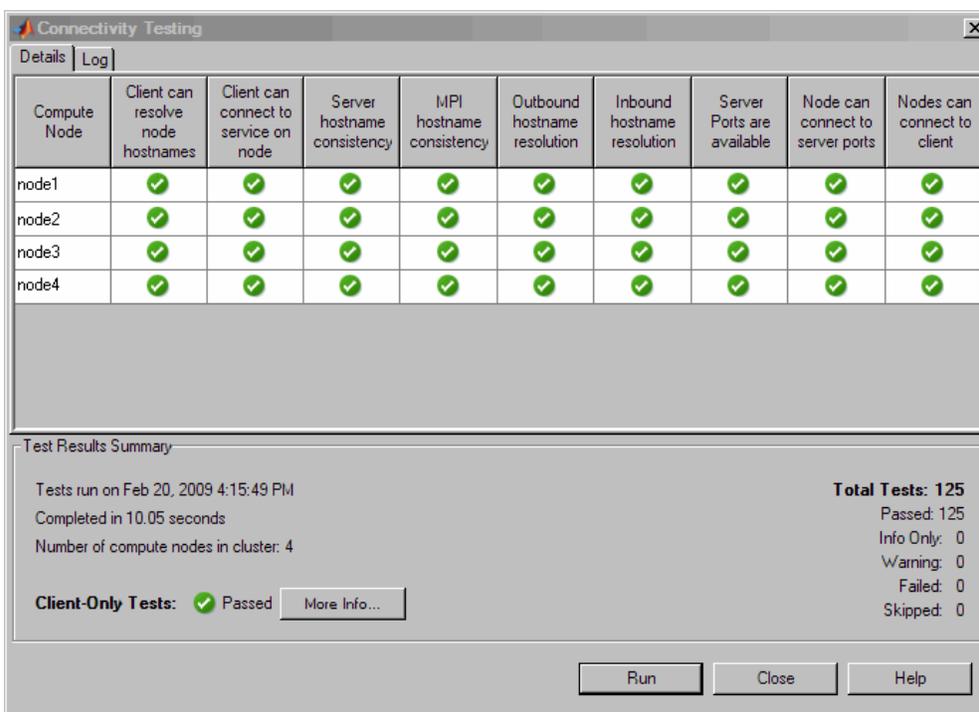


For help, contact the MathWorks install support team at 508-647-7000 or http://www.mathworks.com/support/contact_us/.

- At this point, you can test the connectivity between the nodes. This assures that your cluster can perform the necessary communications for running MCDS processes.

In the Hosts module, click **Test Connectivity**.

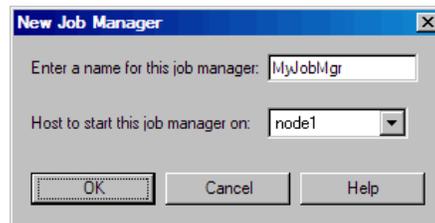
- When the Connectivity Testing dialog box opens, it shows the results of the last test, if there are any. Click **Run** to run the tests and generate new data.



If any of the connectivity tests fail, contact The MathWorks install support team listed at the bottom of this page.

- If your tests pass, click **Close** to return to the Admin Center dialog box.

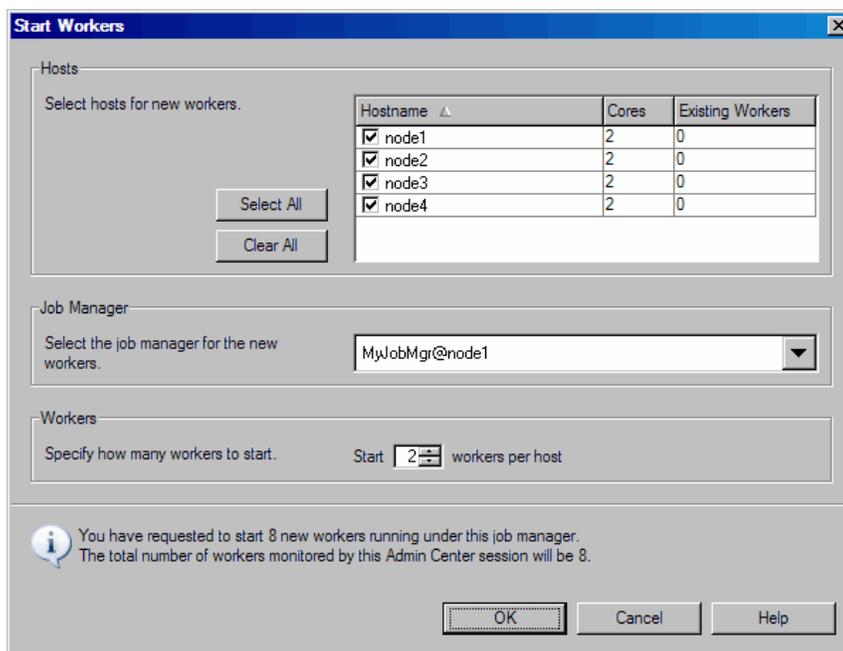
- 8 To start a job manager, click **Start** in the Job Manager module. (This is one of several ways to open the New Job Manager dialog box.) In the New Job Manager dialog box, specify a name and host for your job manager. This example shows a job manager called MyJobMgr to run on hose node1.



- 9 Click **OK** to start the job manager and return to the Admin Center dialog box.

- 10** To start workers, click **Start** in the Workers module. (This is one of several ways to open the Start Workers dialog box.)
- a** In the Start Workers dialog box, specify the number of workers to start on each host. The number is up to you, but you cannot exceed the total number of licenses you have. A good starting value might be to start one worker per computational core on your hosts.
 - b** Select the hosts to start the workers on. Click **Select All** if you want to start workers on all listed hosts.
 - c** Select the job manager for your workers. If you have only one job manager running in this Admin Center session, that is the default.

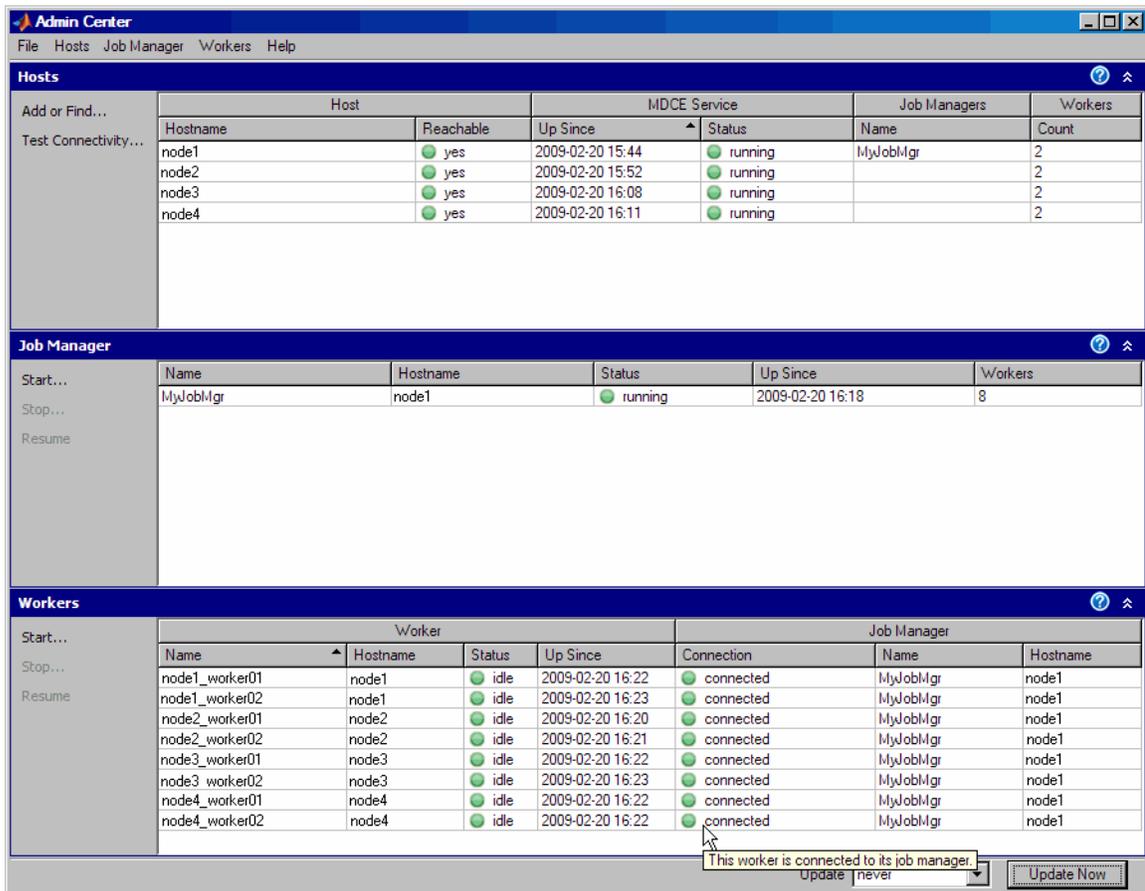
The following example shows a setup for starting eight workers on four hosts (two workers each). Your names and numbers will vary.



- d** Click **OK** to start the workers and return to the Admin Center dialog box. It might take a moment for Admin Center to initialize all the workers and acquire the status of all of them.

When all the workers are started, Admin Center looks something like the following figure. If your workers are all idle and connected, your cluster is ready for use.

If you encounter any problems or failures, contact The MathWorks install support team listed at the bottom of this page.



Using the Command-Line Interface

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 MDCS installation.

- 1 Go to the directory with the startup scripts.

```
cd matlabroot/toolbox/distcomp/bin
```
- 2 Start the job manager, using any unique text you want for the name <MyJobManager>. Enter this text on a single line.

```
./startjobmanager -name <MyJobManager>  
-remotehost <job manager hostname> -v
```
- 3 Verify that the manager is running on the intended host.

```
./nodestatus -remotehost <job manager hostname>
```

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

Start the Workers:

Note Before you can start a worker on a machine, the mdce service must already be running on that machine.

Also, the license manager for MATLAB Distributed Computing Server must be running on the network before you can start a worker.

For each computer used as a worker, enter the following commands. You do not have to be at the machines where the MATLAB workers will run, as long as you have access to the MDCS installation.

- 4 Go to the directory with the startup scripts.

```
cd matlabroot/toolbox/distcomp/bin
```

- 5 Start the workers on each node, 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 -jobmanagerhost <job manager hostname>  
-jobmanager <MyJobManager> -remotehost <worker hostname> -v
```

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

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

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

```
./nodestatus -remotehost <worker hostname>
```

Step 5: 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.

You must have root privileges to do this step.

Debian Platform

On each cluster node, register the mdce service as a known service and configure it to start automatically at system boot time by following these steps:

- 1 Create the following link, if it does not already exist:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/mdce
```

- 2 Create the following link to the boot script file:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/init.d/mdce
```

- 3 Set the boot script file permissions:

```
chmod 555 /etc/init.d/mdce
```

- 4 Look in `/etc/inittab` for the default run level. Create a link in the `rc` directory associated with that run level. For example, if the run level is 5, execute these commands:

```
cd /etc/rc5.d;  
ln -s ../init.d/mdce S99MDCE
```

SUSE Platform

On each cluster node, register the mdce service as a known service and configure it to start automatically at system boot time by following these steps:

- 1 Create the following link, if it does not already exist:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/mdce
```

- 2 Create the following link to the boot script file:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/init.d/mdce
```

- 3 Set the boot script file permissions:

```
chmod 555 /etc/init.d/mdce
```

- 4 Look in `/etc/inittab` for the default run level. Create a link in the `rc` directory associated with that run level. For example, if the run level is 5, execute these commands:

```
cd /etc/init.d/rc5.d;  
ln -s ../mdce S99MDCE
```

Red Hat, Fedora Platform

On each cluster node, register the `mdce` service as a known service and configure it to start automatically at system boot time by following these steps:

- 1 Create the following link, if it does not already exist:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/mdce
```

- 2 Create the following link to the boot script file:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/init.d/mdce
```

- 3 Set boot script file permissions:

```
chmod 555 /etc/init.d/mdce
```

- 4 Look in `/etc/inittab` for the default run level. Create a link in the `rc` directory associated with that run level. For example, if the run level is 5, execute these commands:

```
cd /etc/rc.d/rc5.d;  
ln -s ../../init.d/mdce S99MDCE
```

Solaris Platform

On each cluster node, register the `mdce` service as a known service and configure it to start automatically at system boot time by following these steps:

- 1 Create the following link, if it does not already exist:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/mdce
```

- 2 Create the following link to the boot script file:

```
ln -s matlabroot/toolbox/distcomp/bin/mdce /etc/init.d/mdce
```

- 3 Set boot script file permissions:

```
chmod 555 /etc/init.d/mdce
```

- 4 Look in /etc/inittab for the default run level. Create a link in the rc directory associated with that run level. For example, if the run level is 3, execute these commands:

```
cd /etc/rc3.d;  
ln -s ../init.d/mdce S99MDCE
```

Macintosh Platform

On each cluster node, register the mdce service as a known service with launchd, and configure it to start automatically at system boot time by following these steps:

- 1 Navigate to the toolbox directory and stop the running mdce service:

```
cd matlabroot/toolbox/distcomp/bin  
sudo ./mdce stop
```

- 2 Create the following link if it does not already exist:

```
sudo ln -s ./mdce /usr/sbin/mdce
```

- 3 Copy the launchd .plist file for mdce to /Library/LaunchDaemons:

```
sudo cp ./util/com.mathworks.mdce.plist /Library/LaunchDaemons
```

- 4 Start mdce and observe that it starts inside launchd:

```
sudo ./mdce start
```

The command output should read:

```
Starting the MATLAB Distributed Computing Server using launchctl.
```

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