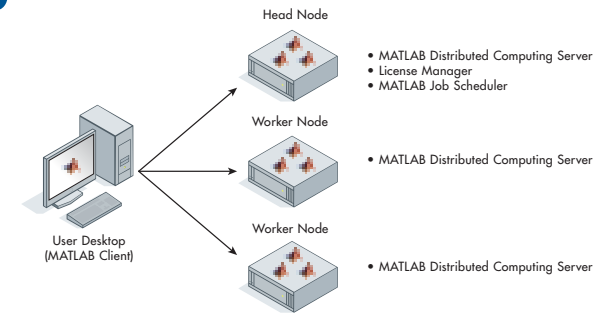


# MATLAB Distributed Computing Server and MATLAB Job Scheduler: Quick Start Guide

This guide covers the most common configuration options for using a MATLAB job scheduler (MJS). Page one provides an overview and context, and page two provides detailed instructions. A digital copy of this guide is available at [mathworks.com/mdcs-mjs-quickstart-guide](https://mathworks.com/mdcs-mjs-quickstart-guide). For additional support, contact the MathWorks installation support team at [mathworks.com/support](https://mathworks.com/support). The complete installation guide is available at [mathworks.com/distconfig](https://mathworks.com/distconfig).



## Overview

MATLAB Distributed Computing Server™ provides a pre-built cluster solution for MATLAB®. It enables you to run computationally intensive MATLAB programs and Simulink® models on computer clusters. From a desktop MATLAB client session with a Parallel Computing Toolbox™ license, you can take advantage of MATLAB Distributed Computing Server to access workers (MATLAB computational engines) that run in your cluster.

## Preparing for Installation

A MATLAB Distributed Computing Server license provides access to a specific number of MATLAB workers that can run simultaneously on a cluster. You do not need to purchase additional MATLAB and toolbox licenses for computers in your cluster. Also, these workers do not utilize any licenses from the client-side license pool. The MATLAB Distributed Computing Server License allows you to download and install all MATLAB and Simulink products on your cluster, and each user will have access to all of their licensed products.

Multiple users can share one installation of MATLAB Distributed Computing Server. Users will open interactive pools and run jobs that will occupy workers, and the workers will become available as pools are closed and jobs finish.

See Page 2: ① **Activate your MATLAB Distributed Computing Server license** and ② **Get the installation files.**

## Performing the Installation

There are three server-side components of MATLAB Distributed Computing Server: 1) the License Manager, which hosts the MATLAB Distributed Computing Server license used by each worker; 2) MATLAB Distributed Computing Server, which runs on the cluster nodes; and 3) a MATLAB job scheduler, which runs on the head node and manages jobs on your cluster.

See Page 2: ③ **Install the License Manager and software for the head node** and ④ **Install software on worker nodes**

## Configuring a MATLAB Job Scheduler

The MATLAB job scheduler is a simple scheduler that ships with MATLAB Distributed Computing Server. The

MATLAB job scheduler is intended primarily for groups working with small-to-medium-sized clusters and running only MATLAB-based jobs. The scheduler interface is a high-level abstraction that lets you submit jobs to your computation resources so you do not have to deal with differences in operating systems, environments, and schedulers.

See Page 2: ⑤ **Configure a MATLAB job scheduler with Admin Center.**

## Testing with a MATLAB Client

Access to MATLAB Distributed Computing Server is only available through a client computer running MATLAB and Parallel Computing Toolbox. To test your installation, you will need to use a separate MATLAB session. The following example and linked example code can be used as a test case: [Parallel and GPU Computing Tutorials, Part 6: Scaling to Clusters and Cloud \(6:21\)](#).

See Page 2: ⑥ **Connect MATLAB to the MATLAB Distributed Computing Server cluster.**

## ① Activate your MATLAB Distributed Computing Server license

- Navigate to <https://www.mathworks.com/licensecenter>.
- Log into the Administrator or Asset Manager's MathWorks account.
- Select your license and click the **Activation and Installation** tab.
- Click **Activate** and provide the necessary information.
- Download or email the License File and the File Installation Key for use with the installation.

Note that for trials, your sales representative will send you the necessary license file and file installation key. Activation is not necessary for trials.

## ② Get the installation files

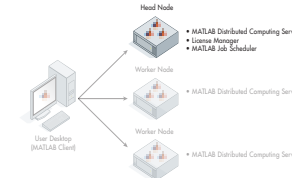
Any licensed user can download and install MATLAB Distributed Computing Server. The first step for installation is to download the installer as described in the primary steps in the [product download instructions](#).

If you have access to an Administrator or Asset Manager's account for your license, you can use the installer to download files without installing them. Downloading the installation files prior to installation can save time because it eliminates the need for the installer-based download process for each computer in your cluster.

- When downloading files, be sure to select the operating system for the cluster nodes.
- It is recommended that you select all products for download, because MATLAB Distributed Computing Server cannot run jobs requiring products that are not installed.
- [Download files with the installer](#).

## ③ Install the License Manager and software for the head node

- Choose a computer to host the License Manager and a MATLAB job scheduler—this computer is your head node.

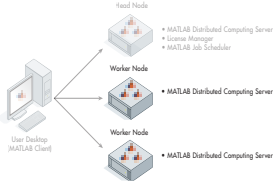


- Launch the MATLAB installer from the acquired installation files from ②.
- Select **Use a File Installation Key** and continue through the prompts.
- Select all products, and select option to install the License Manager.
- Browse to your `license.lic`, (obtained from ①).
- [Start the License Manager](#).

Note that the license does not allow you to run MATLAB from the worker nodes or head node; you will test your installation in ⑥.

## ④ Install software on worker nodes

- Similar to ③, for each worker node:



- Start the MATLAB installer from the acquired installation files from ②.
- Select **Use a File Installation Key** and continue through the prompts.
- Select all products.
- Differences from ③:
  - Do not install the License Manager on the worker nodes.
  - Use the `license.dat` from the head node: `$MATLAB/etc` directory (where `matlabroot` is the MATLAB installation directory).

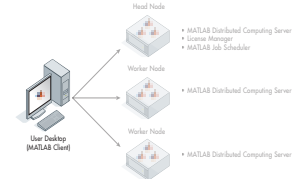
Note that for best performance, physical installation is recommended for each node.

## ⑤ Configure a MATLAB Job Scheduler with Admin Center

- On the head node, start Admin Center from `matlabroot / toolbox/distcomp/bin`.
- Click **Add or Find** and specify the computers that you are using as your head node and worker node(s).
  - Progress through the prompts and confirm to start the `mdce` service.
  - If necessary, manually start the `mdce` service using the command-line interface ([Windows](#), [UNIX](#)).
- Click **Start** within the MATLAB job scheduler section, specify a name for your MATLAB job scheduler, and select the head node from the dropdown menu.
- Click **Start** within the Workers section to add the MATLAB Distributed Computing Server workers:
  - Select the computer(s) to host the workers.
  - Select the number of workers per computer.
  - Verify successful start by reviewing worker status.
  - Click **Test Connectivity** to troubleshoot issues.
  - ([UNIX only](#)) Configure the `mdce` service to start automatically at boot.

## ⑥ Connect MATLAB to the MATLAB Distributed Computing Server cluster

- In MATLAB, select the **Parallel** menu in the **Home** tab, and select **Manage Cluster Profiles**.



- Click **Add > Custom > MATLAB Job Scheduler (MJS)**.
  - After the MJS profile has been created, click **Edit**.
  - Update the hostname of the head node.
  - Click **Done** and select **Set As Default**.
- Validate the cluster profile.
- If validation is successful, your MATLAB session can now submit to the MATLAB Distributed Computing Server cluster.

A DIGITAL COPY OF THIS GUIDE IS AVAILABLE AT [mathworks.com/mdcs-mjs-quickstart-guide](https://mathworks.com/mdcs-mjs-quickstart-guide)