MATLAB Production Server

Quick Start Guide

Overview

MATLAB Production Server™ is an application server that lets you publish MATLAB® functions as APIs that can be called from enterprise applications. MATLAB Production Sever is scalable, secure, and easily managed. It acts as an integration point between MATLAB code, data sources, and third-party applications.

Preparing for Installation

You can install MATLAB Production Server on Windows, Linux, and Macintosh. *Review the specific supported versions and platforms*. When sizing the server, MathWorks recommends using 1 core and 2GB RAM per worker. For example, you should provision an 8-core, 16GB RAM machine with **--num-workers** set to 8.

MATLAB Production Server requires a separate FLEXlm license server. The license server needs minimal resources to run; a single-core machine with 2GB of RAM will suffice. Take note of the MAC address of the license server, as you will need it to generate your license file (you can use the command **ipconfig /all** on Windows or **ifconfig** on Linux to determine the MAC address).

Obtain your File Installation Key (FIK) and License File from *MathWorks License Center* and specify the MAC address of the license server in the Host ID field.

On Linux, install both MATLAB Production Server and the license server as a standard non-privileged user (this is required for successful MATLAB Production Server dashboard installation).

Installing MATLAB Production Server

Install MATLAB Production Server using the installation media. On Windows, run **setup.exe**. On Linux, run **./install**. Select **File Installation Key Based Installation** and enter the FIK you obtained from the License Center. When asked which products to install, select **MATLAB Production Server.**

If you are installing on Linux, specify an installation location that you have write access to (since you will be using a non-privileged user account). Replace the **/usr/local/MATLAB/MATLAB Production Server/R20xx** default path with a path you have write access to such as **/home/<myuser _ account>/matlab/mps**.

Installing the License Server

If your organization already has a FLEXlm license server, you can skip this step and simply add the MATLAB Production Server license file to your existing license server. The license server is typically installed on a separate physical or virtual machine (unless you are running a single server or pilot installation). To install the license server, run **setup.exe** or the **./install** script again, input your FIK, and this time when asked what products to install, select **License Server**. On the next screen, provide the location to the license (.lic) file you obtained from the license center. For Windows systems, select the option: **Configure the license manager as a service.**

On Windows systems, the license server starts automatically. For Linux systems, start the license server using the **./lmstart** script in the **etc** directory underneath the installation directory you specified during the install process. By default, the license server will listen for license checkout requests on port 27000.

Installing MATLAB Runtimes

You must individually install the MATLAB Runtimes for each version you wish to support on your MATLAB Production Server instances. *Download the appropriate runtime installers*, and install them on every physical or virtual server machine using the **setup.exe** or **./install** script in the unzipped contents of the downloaded file. The **mps-setup** command in the **script** directory should be run to add the MATLAB Runtime paths to MATLAB Production Server.

Installing the MATLAB Production Server Dashboard

The dashboard makes it easy to manage and monitor MATLAB Production Server. We do not recommend managing server instances created using the dashboard from the command line and vice versa. Install the dashboard by navigating to the dashboard folder in the MATLAB Production Server installation directory. Run the **mps-dashboard.bat setup** command for Windows (with administrator privleges) or the **./mps-dashboard.sh setup** command for Linux (run this command as the same non-privileged user you used to install MATLAB Production Server). Once installed, start the dashboard by executing either **mps-dashboard.bat start** or **./mps-dashboard.sh start**, depending on your operating system. You can now access the dashboard from a browser at *http://<mps_host_name>:9090* using the default username admin and password admin. Change the default password to a strong password to prevent unauthorized access.

Configuration

Specify the following configuration options in the **main _ config** file.
(Note: this is a list of the most important options to modify, and does not represent a comprehensive list of every configuration option).

- **--http** should specify the port that you want MATLAB Production Server to use

- **--license** should point to the host and port of the license server, typically 27000@license-server-host

- **--num-workers** should be set to number of processor cores on the physical or virtual machine

- **--num-threads** should be set to half the num-workers value

- **--cors-allowed-origins** should list the hosts running web applications that will be allowed to access MATLAB Production Server

Creating a Server Instance

- If you are using the command line interface, run **mps-new <server _ instance _ path>** to create new server instances. You can create multiple server instances on each physical or virtual host.

- If you are using the dashboard, create a new server instance using the web interface.

Starting a Server Instance

- If you are using the command line interface, run **mps-start -C <server _ instance _ path>.**

- If you are using the dashboard, click the green start arrow of the instance you wish to start.

Deploying a MATLAB Application

Launch the Production Server Compiler app from the app gallery (or by calling **deploytool** from the command prompt) in MATLAB. Select the functions you want to include, enter the required metadata, and then click **Package** to generate a deployable archive.

- If you are using the command line for administration, copy the generated deployable archive (.ctf) from the **for _ redistribution** folder on your workstation to the **auto _ deploy** folder underneath your <server_instance_path>. You can access applications immediately after copying them to the **auto _ deploy** folder.

- Alternatively, if you installed the dashboard, navigate to the dashboard using *http://<mps_host_name>:9090*, and upload and deploy the archive from the **Applications** tab.

Setting Up the Reverse Proxy

MathWorks recommends using a reverse proxy (often also functioning as a load balancer) in front of the MATLAB Production Server instances. This allows you to mask the actual physical addresses of your server instances. This configuration also allows you to create secure transport / SSL connections from the client applications to the reverse proxy. It also allows you to keep the connections from the reverse proxy to the server instances inside the firewall as unencrypted http traffic (for improved performance).

Setting Up Load Balancing / Failover

You can place a load balancer (often doing double duty as a reverse proxy) in front of multiple MATLAB Production Server instances/hosts to spread the load and provide failover. The load balancer should be configured for stateless round robin policy.

Additional Resources

- *MATLAB Production Server system requirements*
- *MATLAB Production Server documentation*
- *MATLAB Runtime download file downloads*
- *MathWorks installation support*