

MySQL and OS X

Abstract

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Chapter 1 Installing MySQL on OS X

For a list of OS X versions that the MySQL server supports, see <http://www.mysql.com/support/supportedplatforms/database.html>.

MySQL for OS X is available in a number of different forms:

- Native Package Installer, which uses the native OS X installer (DMG) to walk you through the installation of MySQL. For more information, see [Chapter 2, Installing MySQL on OS X Using Native Packages](#). You can use the package installer with OS X. The user you use to perform the installation must have administrator privileges.
- Compressed TAR archive, which uses a file packaged using the Unix `tar` and `gzip` commands. To use this method, you will need to open a `Terminal` window. You do not need administrator privileges using this method, as you can install the MySQL server anywhere using this method. For more information on using this method, you can use the generic instructions for using a tarball, [Installing MySQL on Unix/Linux Using Generic Binaries](#).

In addition to the core installation, the Package Installer also includes [Chapter 3, Installing a MySQL Launch Daemon](#) and [Chapter 4, Installing and Using the MySQL Preference Pane](#), both of which simplify the management of your installation.

For additional information on using MySQL on OS X, see [Chapter 5, General Notes on Installing MySQL on OS X](#).

Chapter 2 Installing MySQL on OS X Using Native Packages

The package is located inside a disk image ([.dmg](#)) file that you first need to mount by double-clicking its icon in the Finder. It should then mount the image and display its contents.

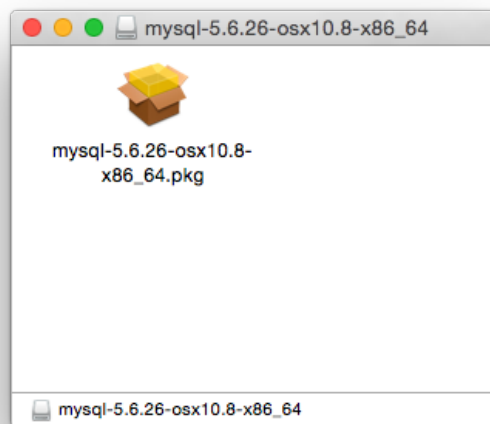
Note

Before proceeding with the installation, be sure to stop all running MySQL server instances by using either the MySQL Manager Application (on OS X Server), the preference pane, or `mysqladmin shutdown` on the command line.

To install MySQL using the package installer:

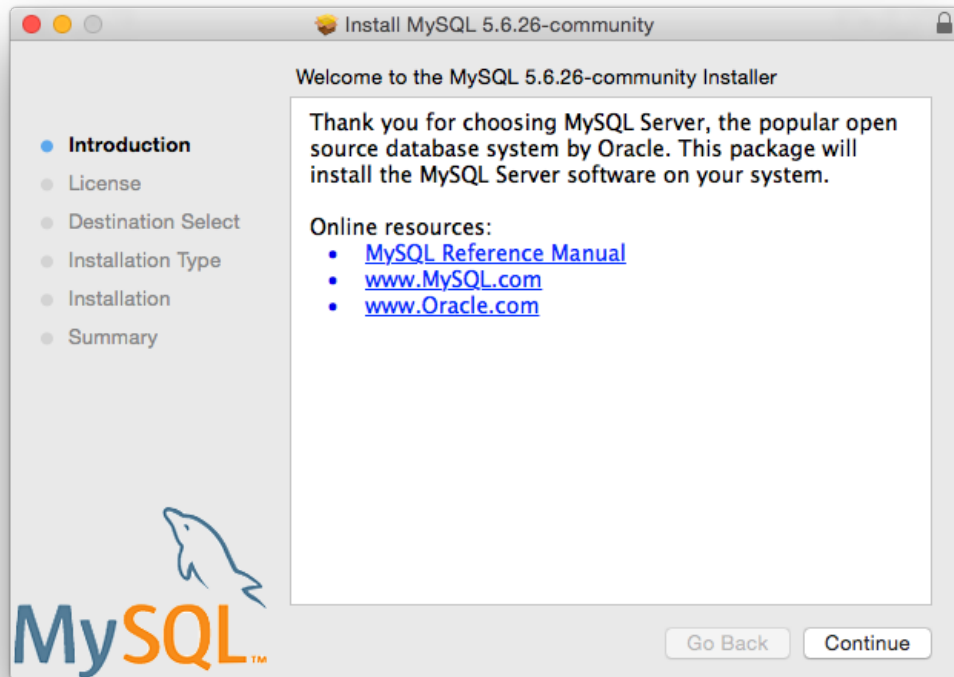
1. Download the disk image ([.dmg](#)) file (the community version is available [here](#)) that contains the MySQL package installer. Double-click the file to mount the disk image and see its contents.

Figure 2.1 MySQL Package Installer: DMG Contents



2. Double-click the MySQL installer package. It will be named according to the version of MySQL you have downloaded. For example, if you have downloaded MySQL server 5.7.18, double-click [mysql-5.7.18-osx-10.11-x86_64.pkg](#).
3. You will be presented with the opening installer dialog. Click **Continue** to begin installation.

Figure 2.2 MySQL Package Installer: Introduction



4. If you have downloaded the community version of MySQL, you will be shown a copy of the relevant GNU General Public License. Click **Continue** and then **Agree** to continue.
5. From the **Installation Type** page you can either click **Install** to execute the installation wizard using all defaults, click **Customize** to alter which components to install (MySQL server, Preference Pane, Launchd Support -- all enabled by default), or click **Change Installation Location** to change the type of installation, if available.

Figure 2.3 MySQL Package Installer: Installation Type

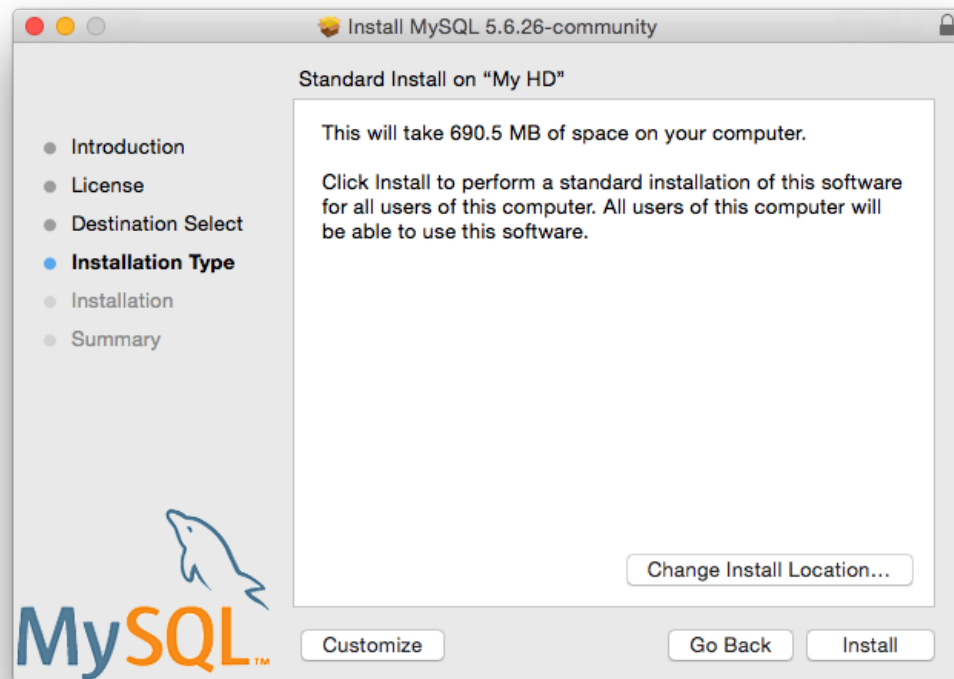


Figure 2.4 MySQL Package Installer: Destination Select (Change Installation Location)

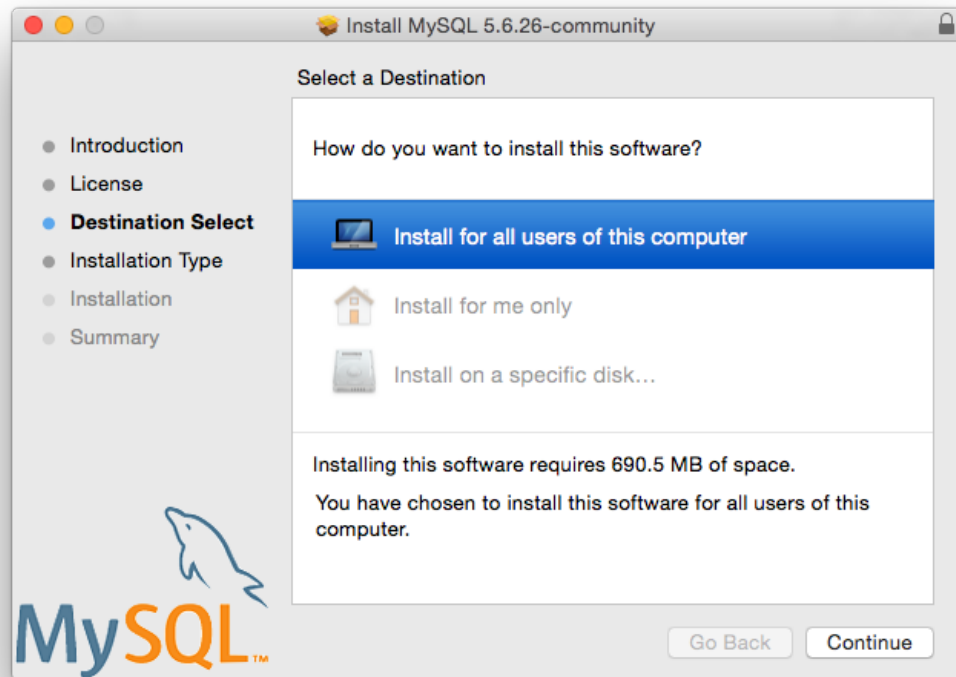
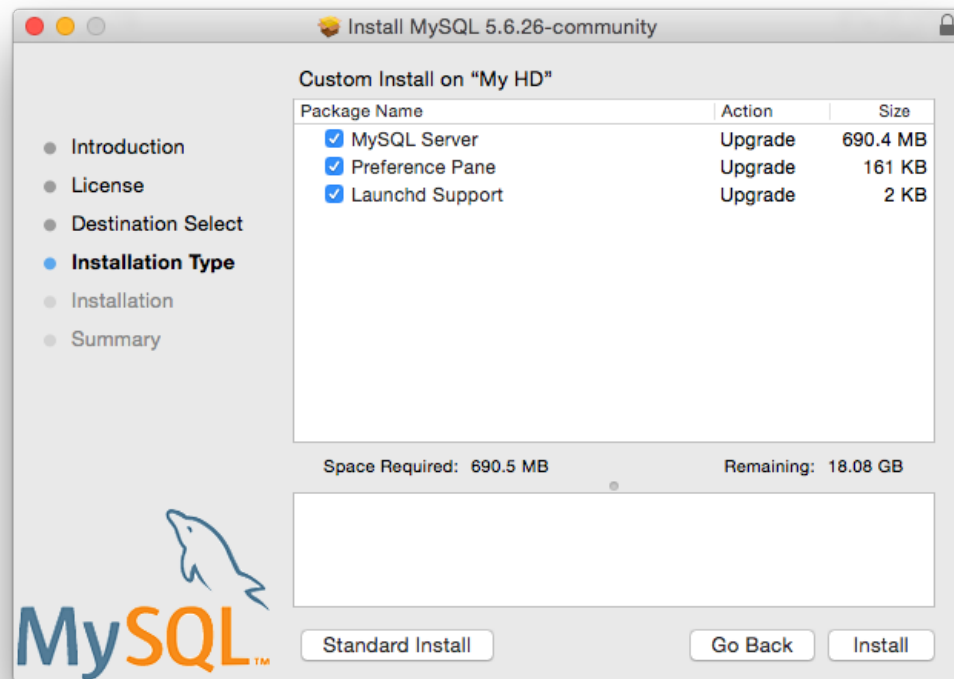
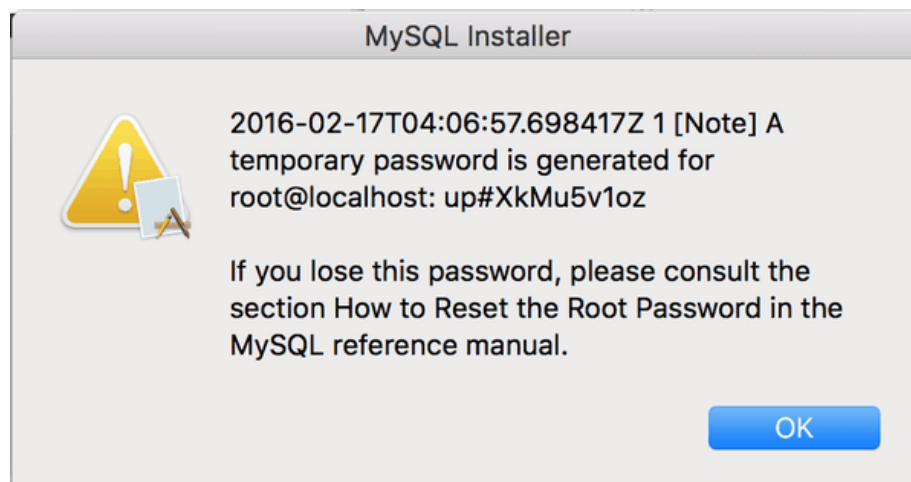


Figure 2.5 MySQL Package Installer: Customize



6. Click **Install** to begin the installation process.
7. Once the installation has been completed successfully, you will be provided with your temporary root password. This cannot be recovered, so you must save this password. For example:

Figure 2.6 MySQL Package Installer: Temporary Root Password



Note

After logging into MySQL using this temporary password, MySQL will expire this password and require you to create a new password.

8. Next is an **Install Succeeded** message with a short summary. **Close** the wizard.

Figure 2.7 MySQL Package Installer: Summary



MySQL server is now installed, but it is not loaded (or started) by default. Use either `launchctl` from the command line, or start MySQL by clicking "Start" using the MySQL preference pane. For additional information, see [Chapter 3, Installing a MySQL Launch Daemon](#), and [Chapter 4, Installing and Using the MySQL Preference Pane](#). Use the MySQL Preference Pane or `launchd` to configure MySQL to automatically start at bootup.

When installing using the package installer, the files are installed into a directory within `/usr/local` matching the name of the installation version and platform. For example, the installer file `mysql-5.7.18-osx10.11-x86_64.dmg` installs MySQL into `/usr/local/mysql-5.7.18-osx10.11-x86_64/`. The following table shows the layout of the installation directory.

Table 2.1 MySQL Installation Layout on OS X

Directory	Contents of Directory
<code>bin, scripts</code>	<code>mysqld</code> server, client and utility programs
<code>data</code>	Log files, databases

Directory	Contents of Directory
docs	Helper documents, like the Release Notes and build information
include	Include (header) files
lib	Libraries
man	Unix manual pages
mysql-test	MySQL test suite
share	Miscellaneous support files, including error messages, sample configuration files, SQL for database installation
support-files	Scripts and sample configuration files
/tmp/mysql.sock	Location of the MySQL Unix socket

During the package installer process, a symbolic link from [/usr/local/mysql](#) to the version/platform specific directory created during installation will be created automatically.

Chapter 3 Installing a MySQL Launch Daemon

OS X uses launch daemons to automatically start, stop, and manage processes and applications such as MySQL.

Note

Before MySQL 5.7.8, the OS X builds installed startup items instead of launchd daemons. However, startup items do not function as of OS X 10.10 (Yosemite). The OS X builds now install launchd daemons.

By default, the installation package (DMG) on OS X installs a launchd file named `/Library/LaunchDaemons/com.oracle.oss.mysql.mysqld.plist` that contains a plist definition similar to:

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE plist PUBLIC "-//Apple Computer//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.
<plist version="1.0">
<dict>
  <key>Label</key>          <string>com.oracle.oss.mysql.mysqld</string>
  <key>ProcessType</key>    <string>Interactive</string>
  <key>Disabled</key>       <false/>
  <key>RunAtLoad</key>      <true/>
  <key>KeepAlive</key>      <true/>
  <key>SessionCreate</key>  <true/>
  <key>LaunchOnlyOnce</key> <false/>
  <key>UserName</key>       <string>_mysql</string>
  <key>GroupName</key>     <string>_mysql</string>
  <key>ExitTimeOut</key>    <integer>600</integer>
  <key>Program</key>        <string>/usr/local/mysql/bin/mysqld</string>
  <key>ProgramArguments</key>
    <array>
      <string>/usr/local/mysql/bin/mysqld</string>
      <string>--user=_mysql</string>
      <string>--basedir=/usr/local/mysql</string>
      <string>--datadir=/usr/local/mysql/data</string>
      <string>--plugin-dir=/usr/local/mysql/lib/plugin</string>
      <string>--log-error=/usr/local/mysql/data/mysqld.local.err</string>
      <string>--pid-file=/usr/local/mysql/data/mysqld.local.pid</string>
    </array>
  <key>WorkingDirectory</key> <string>/usr/local/mysql</string>
</dict>
</plist>
```

Note

Some users report that adding a plist DOCTYPE declaration causes the launchd operation to fail, despite it passing the lint check. We suspect it's a copy-n-paste error. The md5 checksum of a file containing the above snippet is `24710a27dc7a28fb7ee6d825129cd3cf`.

To enable the launchd service, you can either:

- Click **Start MySQL Server** from the MySQL preference pane.

Figure 3.1 MySQL Preference Pane: Location

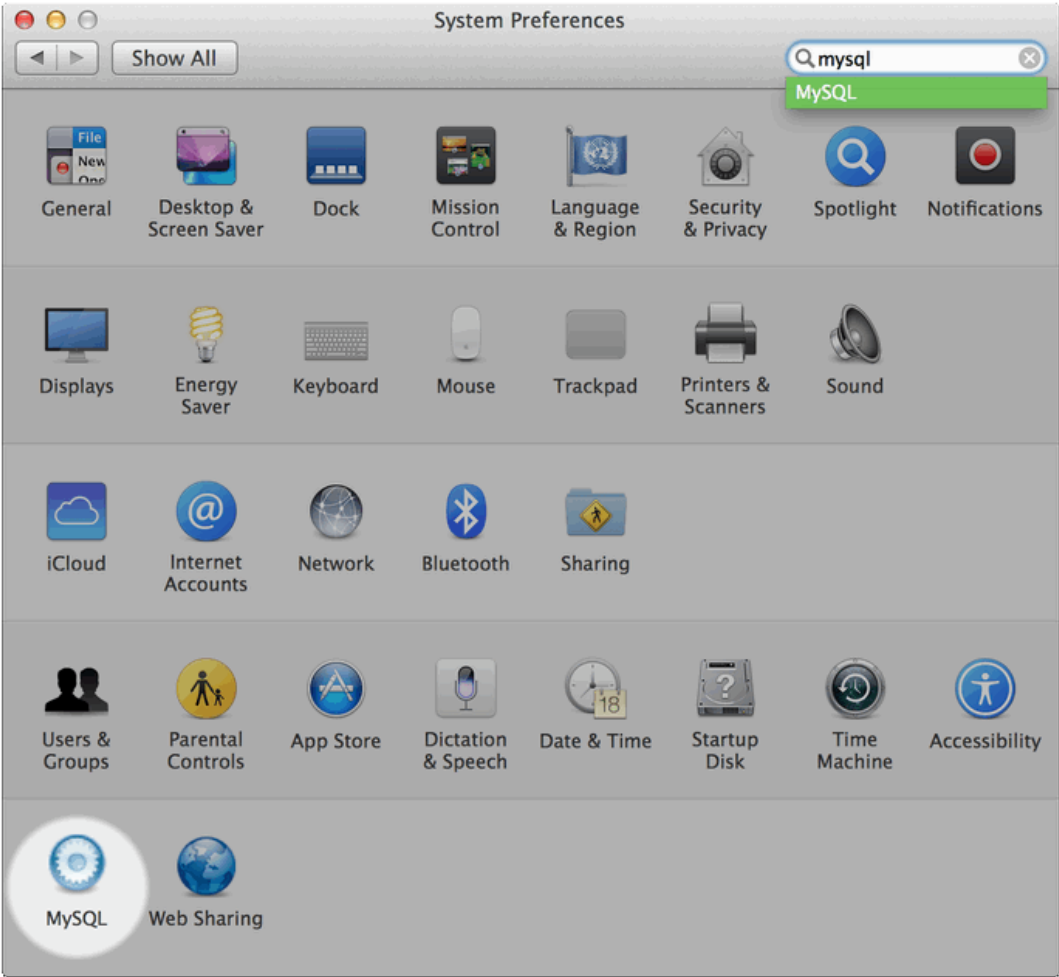
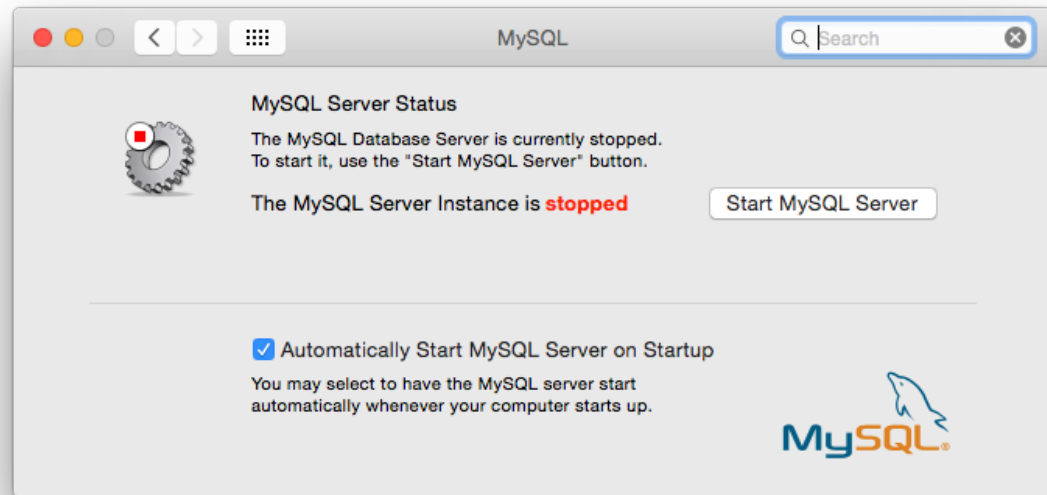


Figure 3.2 MySQL Preference Pane: Usage



- Or, manually load the launchd file.

```
shell> cd /Library/LaunchDaemons
shell> sudo launchctl load -F com.oracle.oss.mysql.mysqld.plist
```

- To configure MySQL to automatically start at bootup, you can:

```
shell> sudo launchctl load -w com.oracle.oss.mysql.mysqld.plist
```

Note

When upgrading MySQL server, the launchd installation process will remove the old startup items that were installed with MySQL server 5.7.7 and below.

Also, upgrading will replace your existing launchd file of the same name.

Additional launchd related information:

- The plist entries override [my.cnf](#) entries, because they are passed in as command line arguments. For additional information about passing in program options, see [Specifying Program Options](#).
- The **ProgramArguments** section defines the command line options that are passed into the program, which is the [mysqld](#) binary in this case.
- The default plist definition is written with less sophisticated use cases in mind. For more complicated setups, you may want to remove some of the arguments and instead rely on a MySQL configuration file, such as [my.cnf](#).
- If you edit the plist file, then uncheck the installer option when reinstalling or upgrading MySQL. Otherwise, your edited plist file will be overwritten, and all edits will be lost.

Because the default plist definition defines several **ProgramArguments**, you might remove most of these arguments and instead rely upon your [my.cnf](#) MySQL configuration file to define them. For example:

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE plist PUBLIC "-//Apple Computer//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.dtd"
<plist version="1.0">
<dict>
  <key>Label</key>          <string>com.oracle.oss.mysql.mysql</string>
  <key>ProcessType</key>    <string>Interactive</string>
  <key>Disabled</key>       <false/>
  <key>RunAtLoad</key>      <true/>
  <key>KeepAlive</key>      <true/>
  <key>SessionCreate</key>  <true/>
  <key>LaunchOnlyOnce</key> <false/>
  <key>UserName</key>       <string>_mysql</string>
  <key>GroupName</key>     <string>_mysql</string>
  <key>ExitTimeOut</key>    <integer>600</integer>
  <key>Program</key>        <string>/usr/local/mysql/bin/mysql</string>
  <key>WorkingDirectory</key> <string>/usr/local/mysql</string>
  <key>ProgramArguments</key>
    <array>
      <string>/usr/local/mysql/bin/mysql</string>
      <string>--user=_mysql</string>
    </array>
</dict>
</plist>
```

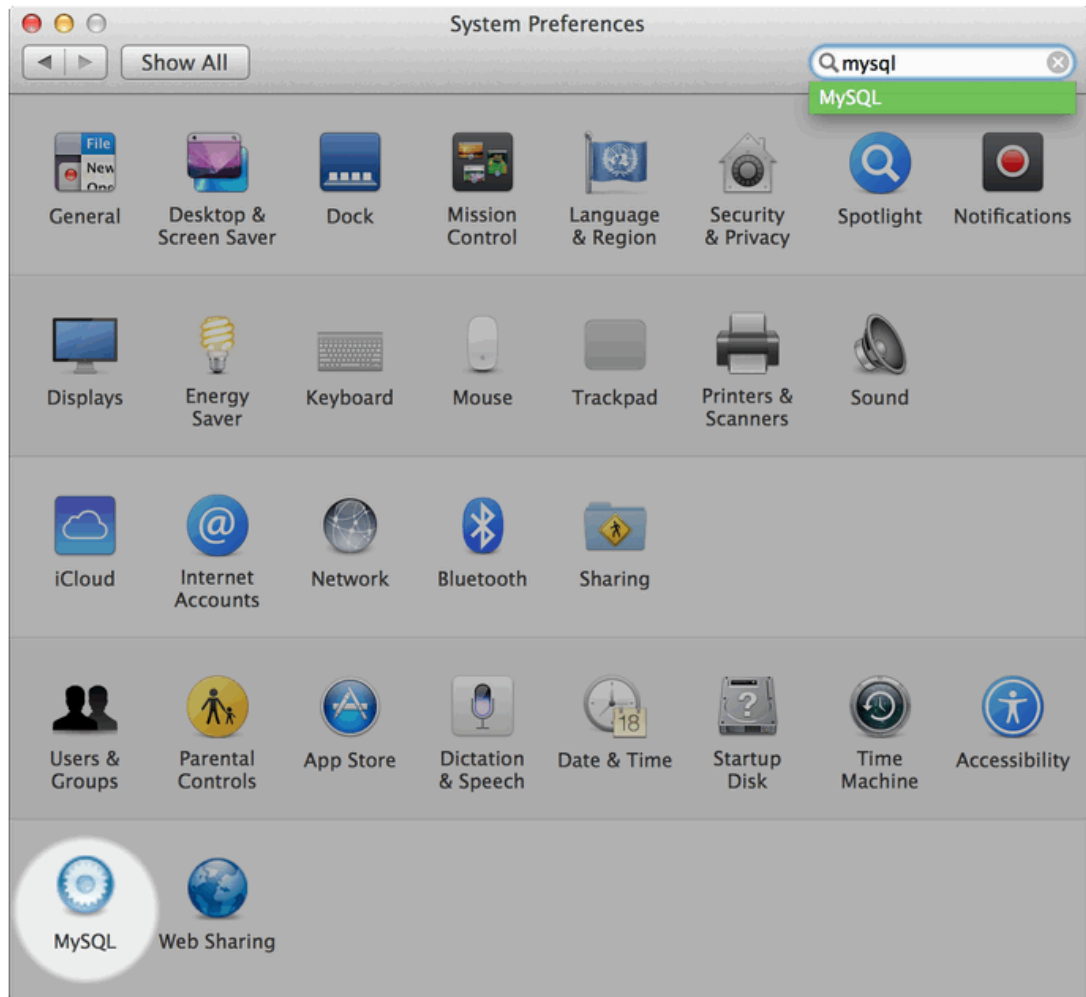
In this case, the [basedir](#), [datadir](#), [plugin_dir](#), [log_error](#), and [pid_file](#) options were removed from the plist definition, and then you might define them in [my.cnf](#).

Chapter 4 Installing and Using the MySQL Preference Pane

The MySQL Installation Package includes a MySQL preference pane that enables you to start, stop, and control automated startup during boot of your MySQL installation.

This preference pane is installed by default, and is listed under your system's *System Preferences* window.

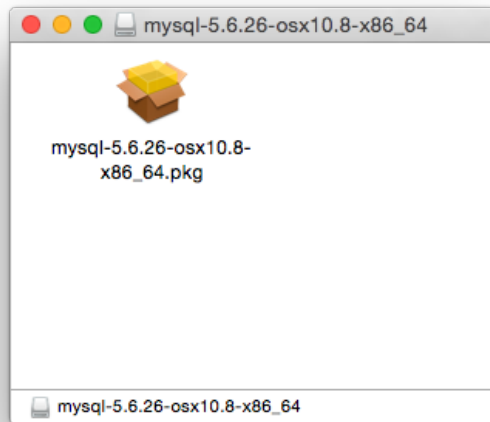
Figure 4.1 MySQL Preference Pane: Location



To install the MySQL Preference Pane:

1. Download the disk image ([.dmg](#)) file (the community version is available [here](#)) that contains the MySQL package installer. Double-click the file to mount the disk image and see its contents.

Figure 4.2 MySQL Package Installer: DMG Contents

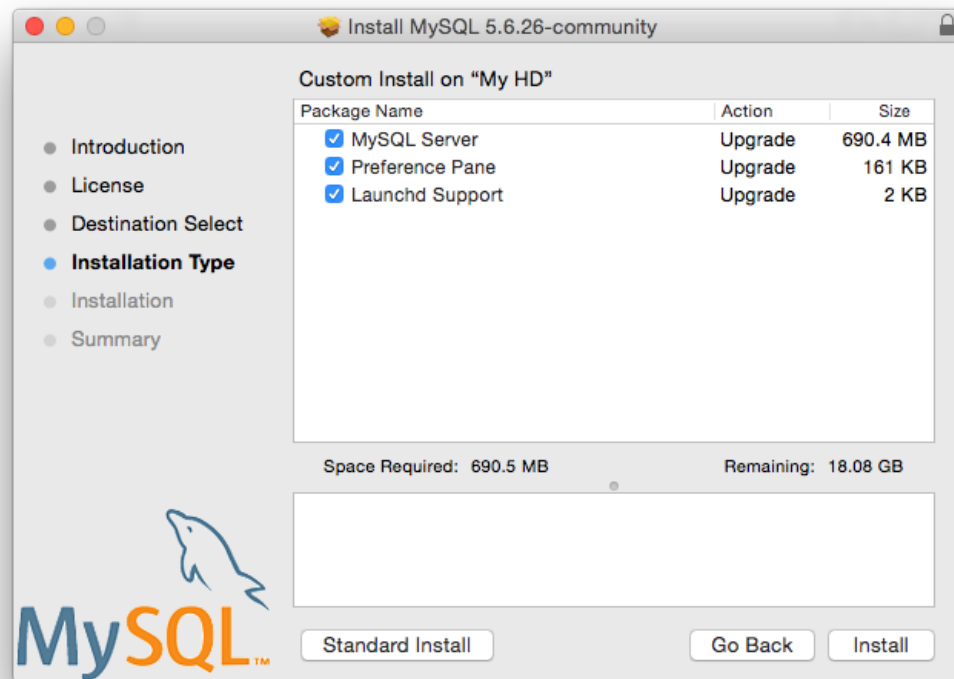


Note

Before MySQL 5.7.8, OS X packages included the deprecated startup items instead of launchd daemons, and the preference pane managed that instead of launchd.

2. Go through the process of installing the MySQL server, as described in the documentation at [Chapter 2, *Installing MySQL on OS X Using Native Packages*](#).
3. Click **Customize** at the **Installation Type** step. The "Preference Pane" option is listed there and enabled by default; make sure it is not deselected.

Figure 4.3 MySQL Installer on OS X: Customize



4. Complete the MySQL server installation process.

Note

The MySQL preference pane only starts and stops MySQL installation installed from the MySQL package installation that have been installed in the default location.

Once the MySQL preference pane has been installed, you can control your MySQL server instance using the preference pane. To use the preference pane, open the **System Preferences...** from the Apple menu. Select the MySQL preference pane by clicking the MySQL logo within the **bottom** section of the preference panes list.

Figure 4.4 MySQL Preference Pane: Location

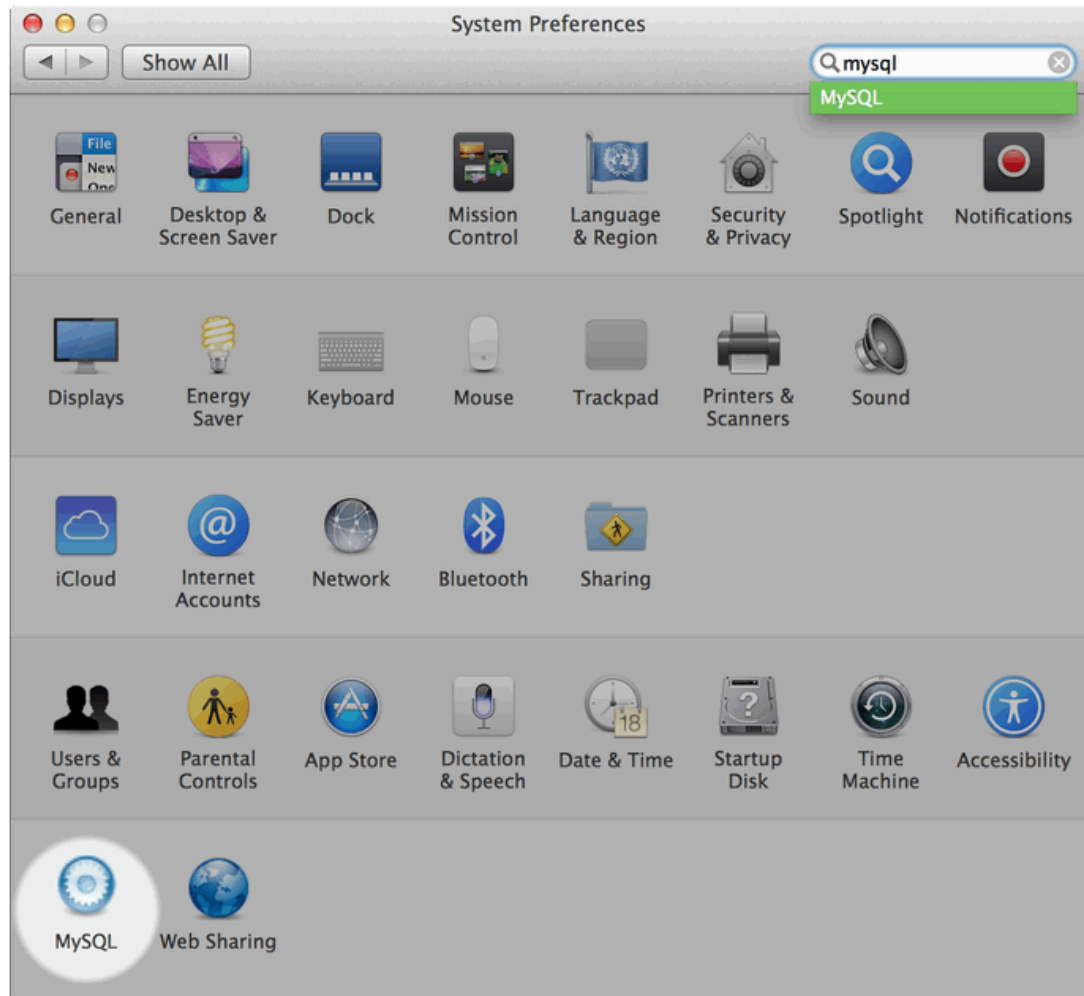


Figure 4.5 MySQL Preference Pane: Usage



The MySQL Preference Pane shows the current status of the MySQL server, showing **stopped** (in red) if the server is not running and **running** (in green) if the server has already been started. The preference pane also shows the current setting for whether the MySQL server has been set to start automatically.

- **To start the MySQL server using the preference pane:**

Click **Start MySQL Server**. You may be prompted for the username and password of a user with administrator privileges to start the MySQL server.

- **To stop the MySQL server using the preference pane:**

Click **Stop MySQL Server**. You may be prompted for the username and password of a user with administrator privileges to stop the MySQL server.

- **To automatically start the MySQL server when the system boots:**

Check the check box next to **Automatically Start MySQL Server on Startup**.

- **To disable automatic MySQL server startup when the system boots:**

Uncheck the check box next to **Automatically Start MySQL Server on Startup**.

You can close the [System Preferences...](#) window once you have completed your settings.

Chapter 5 General Notes on Installing MySQL on OS X

You should keep the following issues and notes in mind:

- As of MySQL server 5.7.8, the DMG bundles a launchd daemon instead of the deprecated startup item. Startup items do not function as of OS X 10.10 (Yosemite), so using launchd is preferred. The available MySQL preference pane under OS X **System Preferences** was also updated to use launchd.
- You may need (or want) to create a specific `mysql` user to own the MySQL directory and data. You can do this through the [Directory Utility](#), and the `mysql` user should already exist. For use in single user mode, an entry for `_mysql` (note the underscore prefix) should already exist within the system `/etc/passwd` file.
- Because the MySQL package installer installs the MySQL contents into a version and platform specific directory, you can use this to upgrade and migrate your database between versions. You will need to either copy the `data` directory from the old version to the new version, or alternatively specify an alternative `datadir` value to set location of the data directory. By default, the MySQL directories are installed under `/usr/local/`.
- You might want to add aliases to your shell's resource file to make it easier to access commonly used programs such as `mysql` and `mysqladmin` from the command line. The syntax for `bash` is:

```
alias mysql=/usr/local/mysql/bin/mysql
alias mysqladmin=/usr/local/mysql/bin/mysqladmin
```

For `tcsh`, use:

```
alias mysql /usr/local/mysql/bin/mysql
alias mysqladmin /usr/local/mysql/bin/mysqladmin
```

Even better, add `/usr/local/mysql/bin` to your `PATH` environment variable. You can do this by modifying the appropriate startup file for your shell. For more information, see [Invoking MySQL Programs](#).

- After you have copied over the MySQL database files from the previous installation and have successfully started the new server, you should consider removing the old installation files to save disk space. Additionally, you should also remove older versions of the Package Receipt directories located in `/Library/Receipts/mysql-VERSION.pkg`.
- Prior to OS X 10.7, MySQL server was bundled with OS X Server.

