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.

When installing from the package version, you can also install the MySQL preference pane, which will enable you to control the startup and execution of your MySQL server from System Preferences. For more information, see Chapter 4, *Installing and Using the MySQL Preference Pane*.

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-5.6.33-osx10.9-x86_64.dmg` installs MySQL into `/usr/local/mysql-5.6.33-osx10.9-x86_64/` . The following table shows the layout of the installation directory.

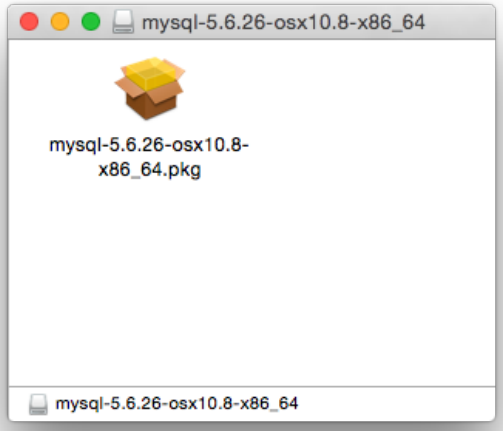
Table 2.1 MySQL Installation Layout on OS X

Directory	Contents of Directory
`bin`, `scripts`	`mysqld` server, client and utility programs
`data`	Log files, databases
`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
`sql-bench`	Benchmarks
`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.

1. Download and open the MySQL package installer, which is provided on a disk image (`.dmg`) that includes the main MySQL installation package file. Double-click the disk image to open it.

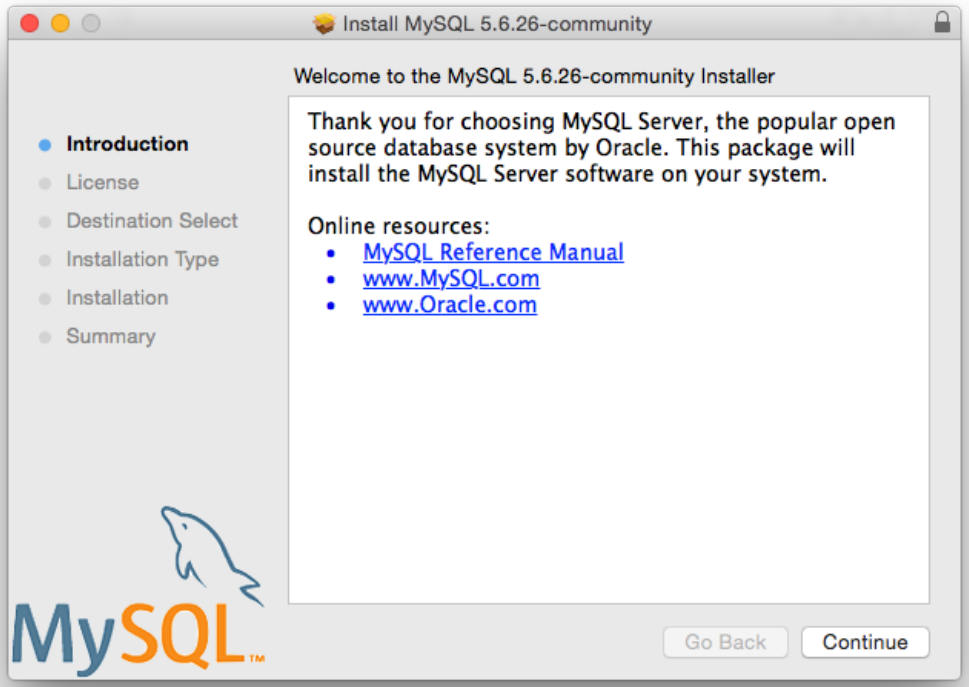
Figure 2.1 MySQL Package Installer: DMG Contents



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 5.6.33, double-click `mysql-5.6.33-osx-10.9-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

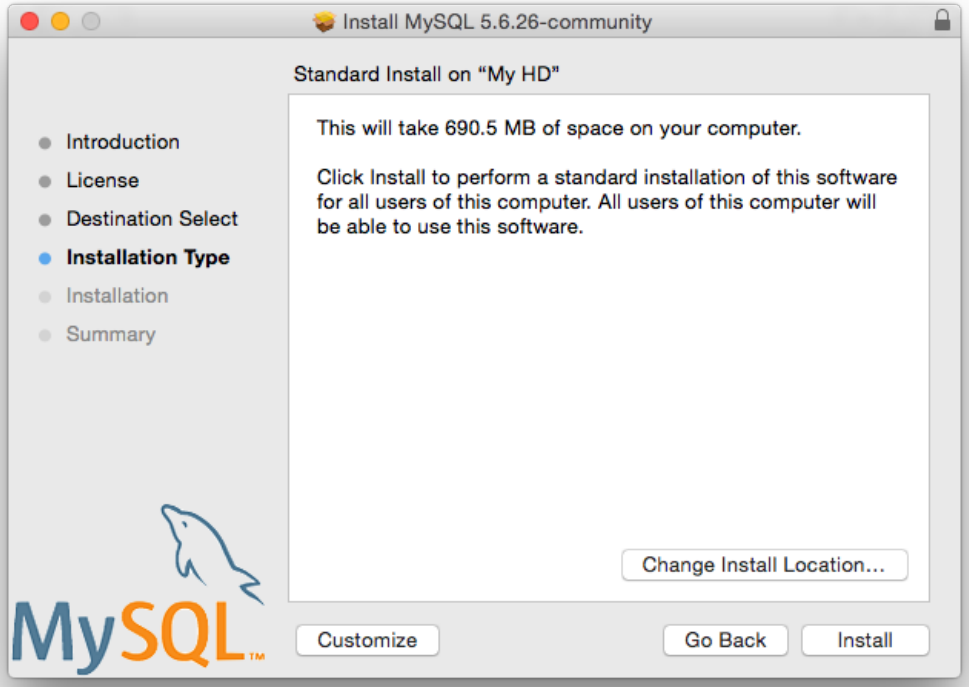


Figure 2.4 MySQL Package Installer: Destination Select (Change Installation Location)

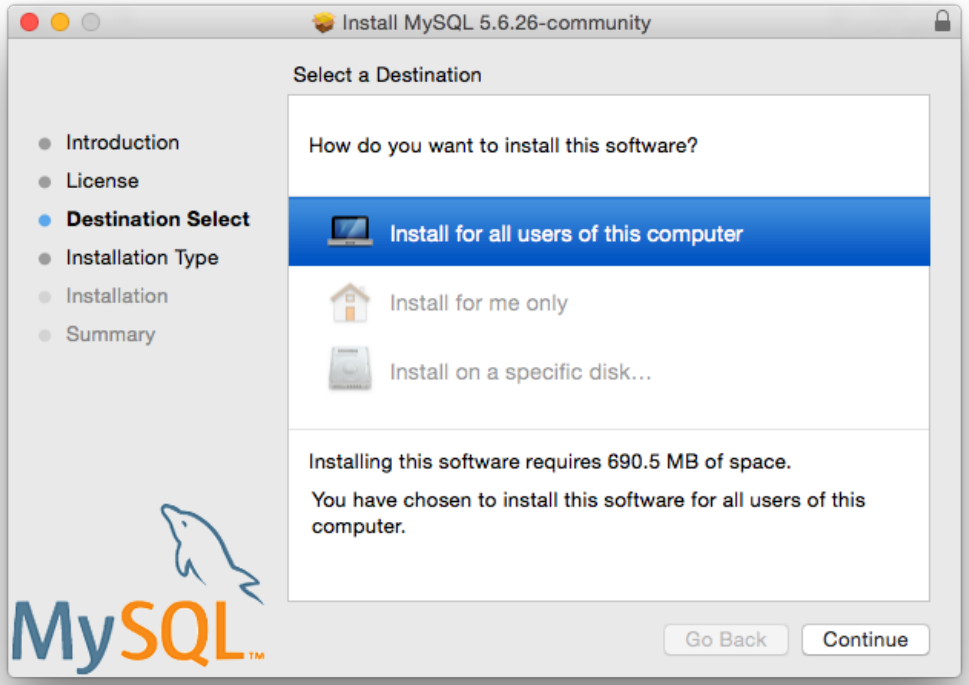
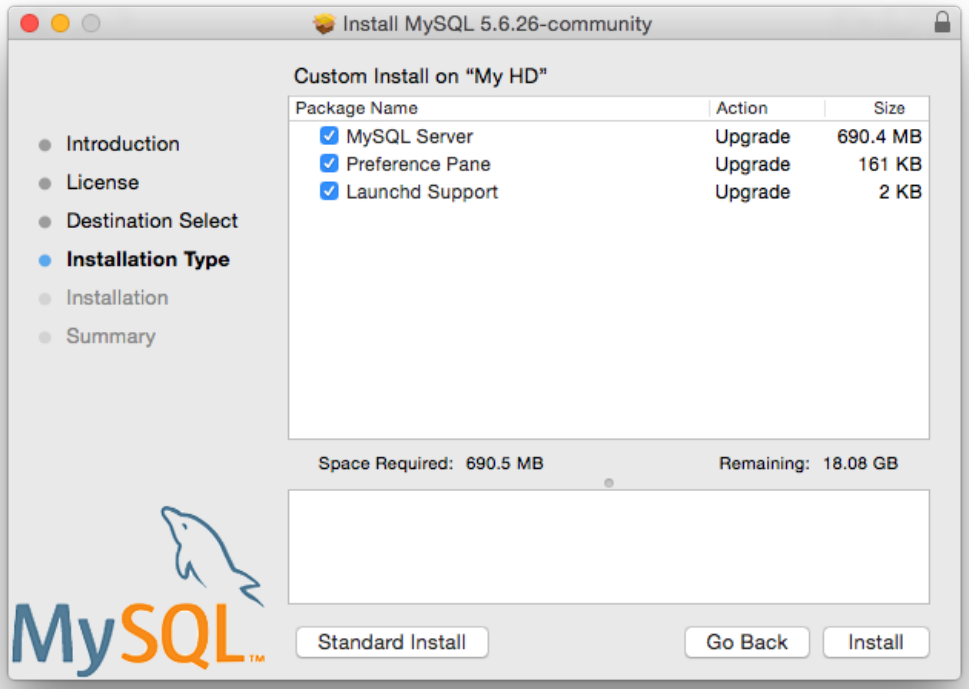


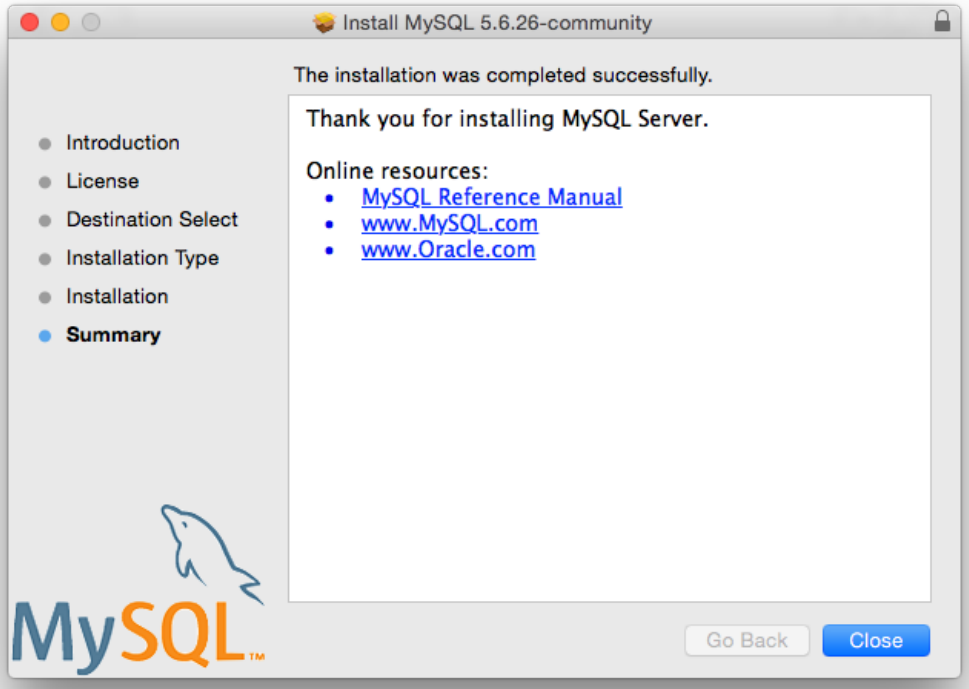
Figure 2.5 MySQL Package Installer: Customize



6. Click **Install** to begin the installation process.

7. Once the installation has been completed successfully, you will be shown an **Install Succeeded** message with a short summary. Now, **Close** the wizard and begin using the MySQL server.

Figure 2.6 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 launchd to configure MySQL to automatically start at bootup.

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 5.6.26, 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 60d7963a0bb2994b69b8b9c123db09df.

To enable the launchd service, you can either:

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

Figure 3.1 MySQL Preference Pane: Location

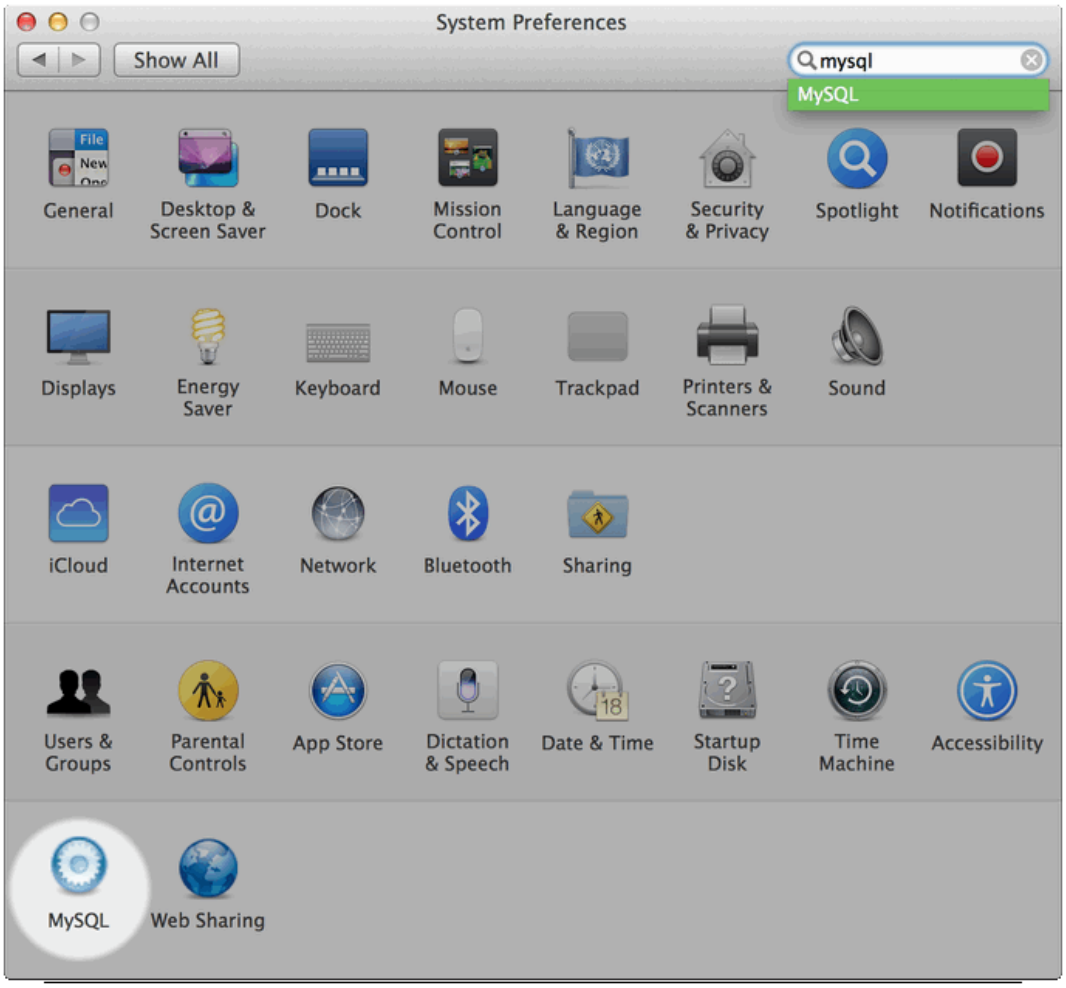
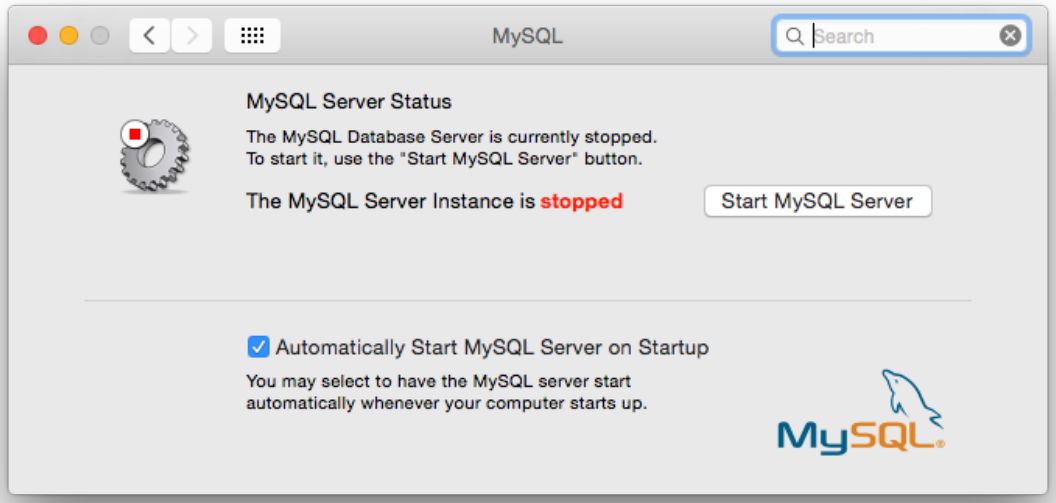


Figure 3.2 MySQL Preference Pane: Usage



- 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
```

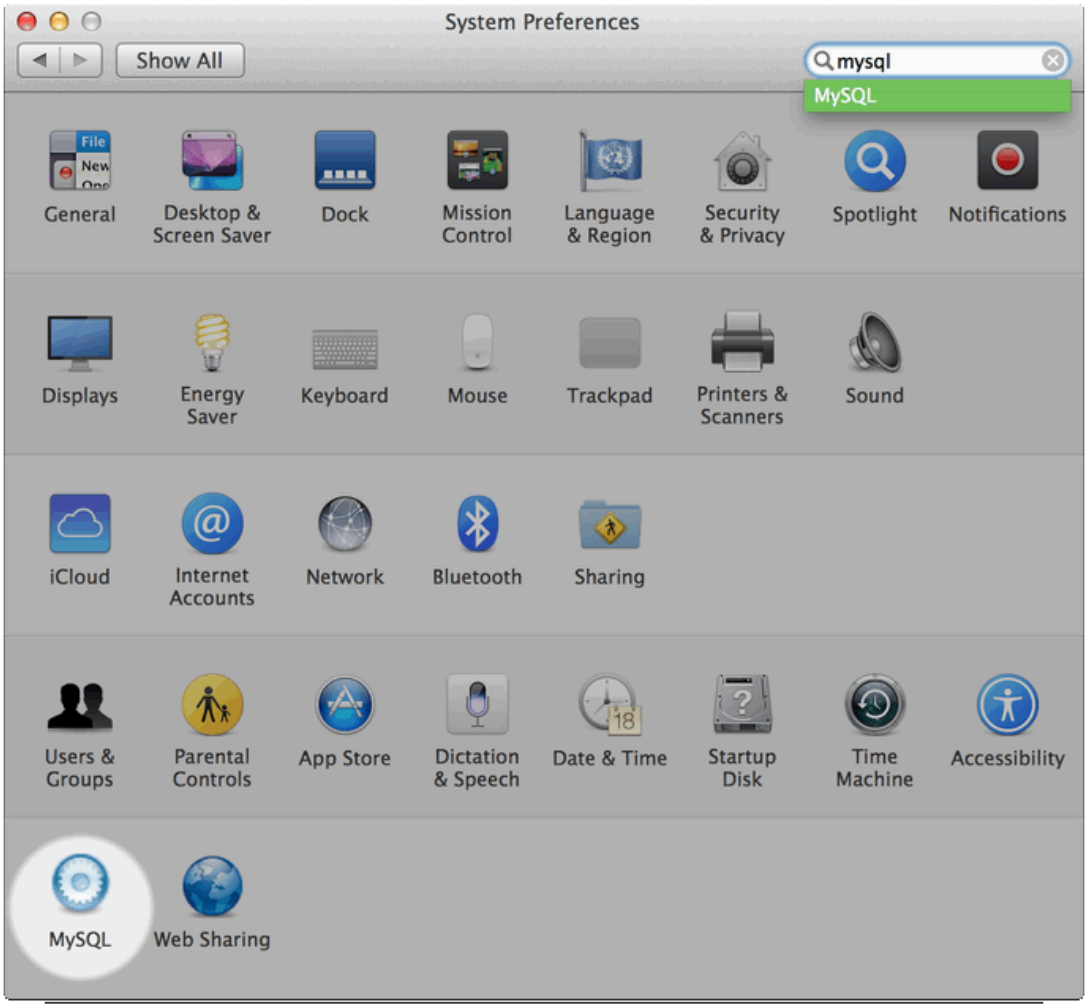
> **Note**
>
> When upgrading MySQL server, the launchd installation process will remove the old startup items that were installed with MySQL server 5.6.25 and below.

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

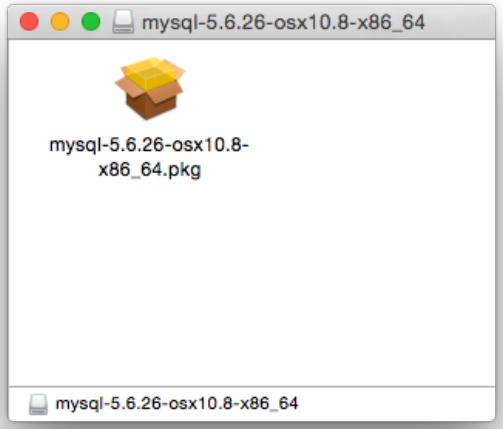


To install the MySQL Preference Pane:

1. Download and open the MySQL package installer, which is provided on a disk image (`.dmg`) that includes the main MySQL installation package.

> **Note**
>
> Before MySQL 5.6.26, OS X packages included the deprecated startup items instead of launchd daemons, and the preference pane managed that intstead of launchd.

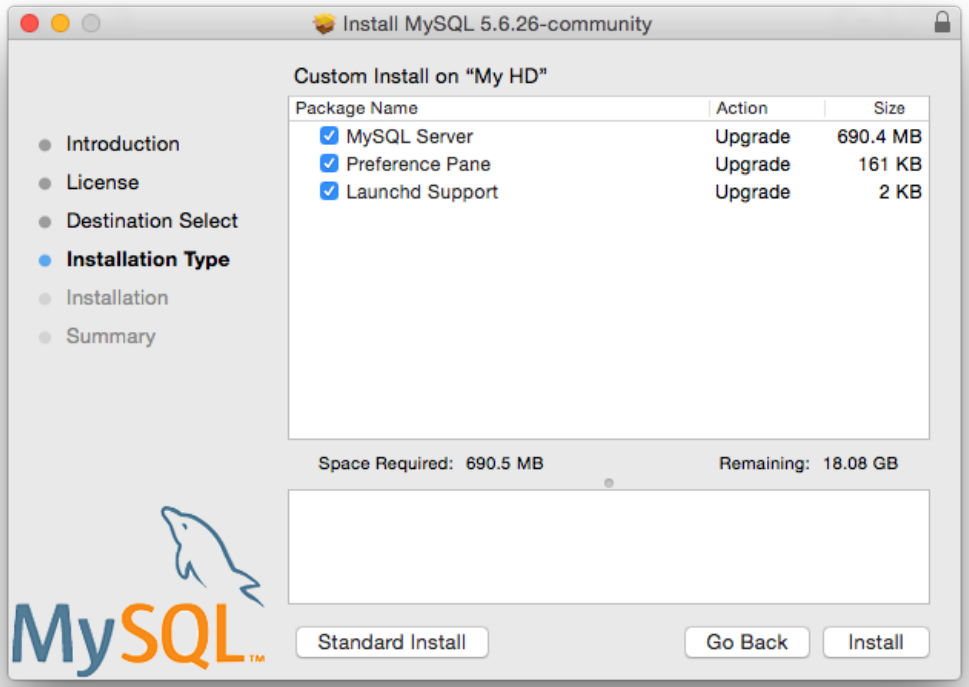
Figure 4.2 MySQL Package Installer: DMG Contents



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.

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

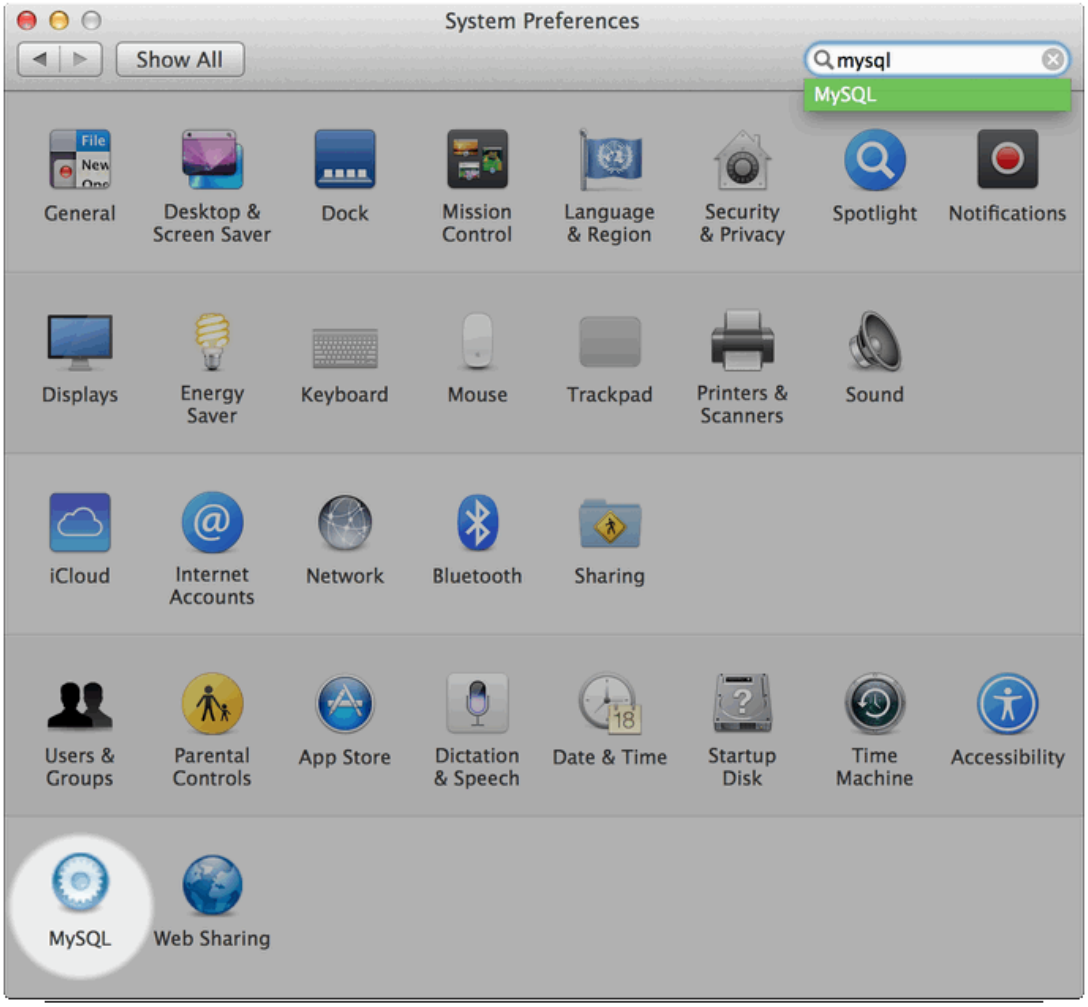
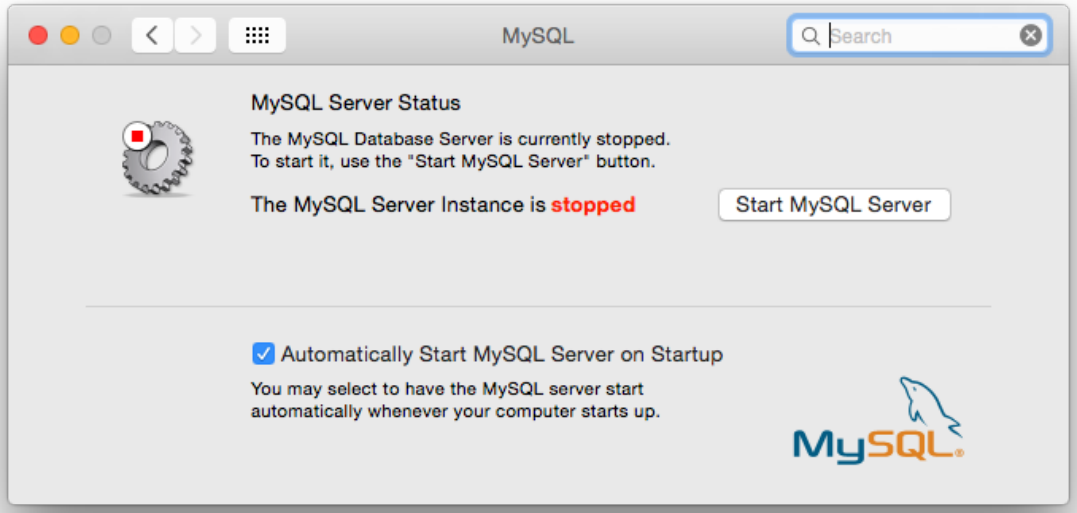


Figure 4.5 MySQL Preference Pane: Usage



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 5.6.26, 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.