MySQL and OS X

Abstract

This is the MySQL OS X extract from the MySQL 5.1 Reference Manual.

For help with using MySQL, please visit either the MySQL Forums or MySQL Mailing Lists, where you can discuss your issues with other MySQL users.

For additional documentation on MySQL products, including translations of the documentation into other languages, and downloadable versions in variety of formats, including HTML and PDF formats, see the MySQL Documentation Library.

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Preface and Legal Notices

This is the MySQL OS X extract from the MySQL 5.1 Reference Manual.

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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 format, 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 10.6 and later, and the package is available for both 32-bit and 64-bit architectures. The user you use to perform the installation must have administrator privileges.

- Tar package format, 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.You can use the package installer with OS X 10.6 and later, and available for both 32-bit and 64-bit architectures.

  In addition to the core installation, the Package Installer also includes Chapter 4, *Installing the MySQL Startup Item* and Chapter 5, *Installing and Using the MySQL Preference Pane*, both of which simplify the management of your installation.

- OS X server includes a version of MySQL as standard. If you want to use a more recent version than that supplied with the OS X server release, you can make use of the package or tar formats. For more information on using the MySQL bundled with OS X, see Chapter 6, *Using the Bundled MySQL on OS X Server*.

For additional information on using MySQL on OS X, see Chapter 7, *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) or `mysqladmin shutdown` on the command line.

When installing from the package version, you should 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 5, *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-5.1-osx10.6-x86_64.dmg` installs MySQL into `/usr/local/mysql-5.1-osx10.6-x86_64/` . The following table shows the layout of the installation directory.

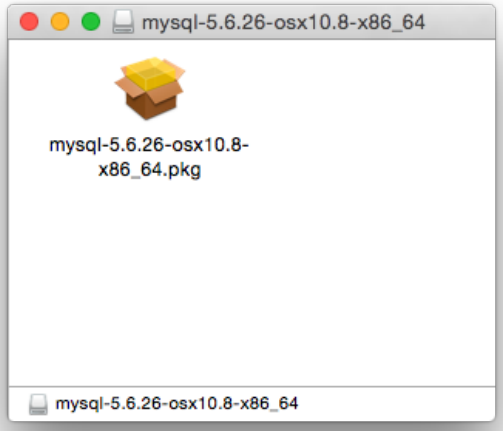
Table 2.1 MySQL Installation Layout on OS X

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, the `MySQLStartupItem.pkg` installation package, and the `MySQL.prefPane`. Double-click the disk image to open it.

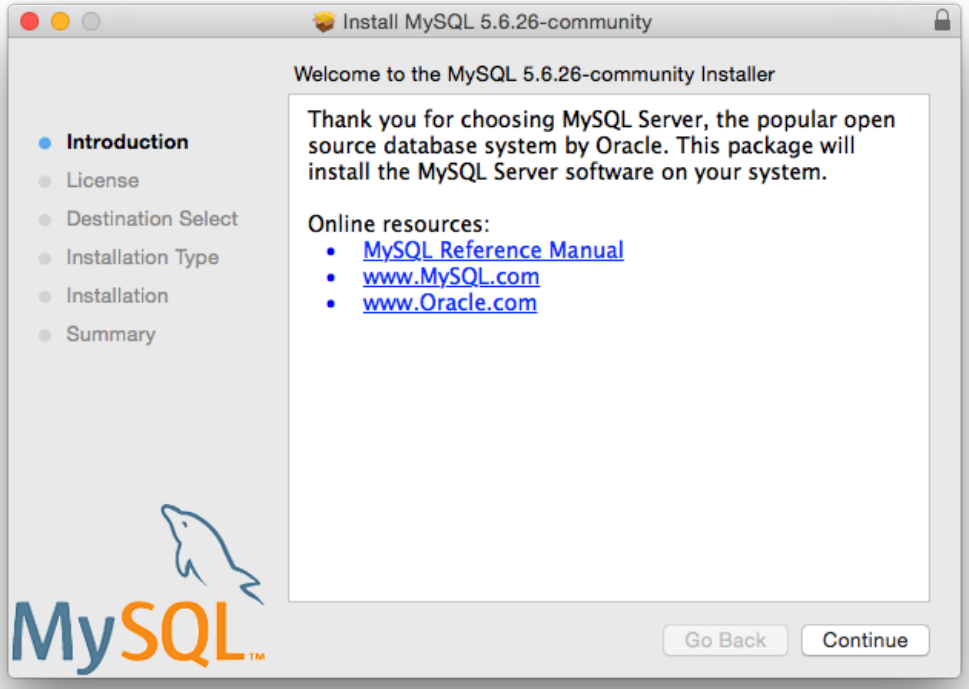
Figure 2.1 MySQL Package Installer: DMG Contents



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 5.1.73, double-click `mysql-5.1.73-osx-10.6-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

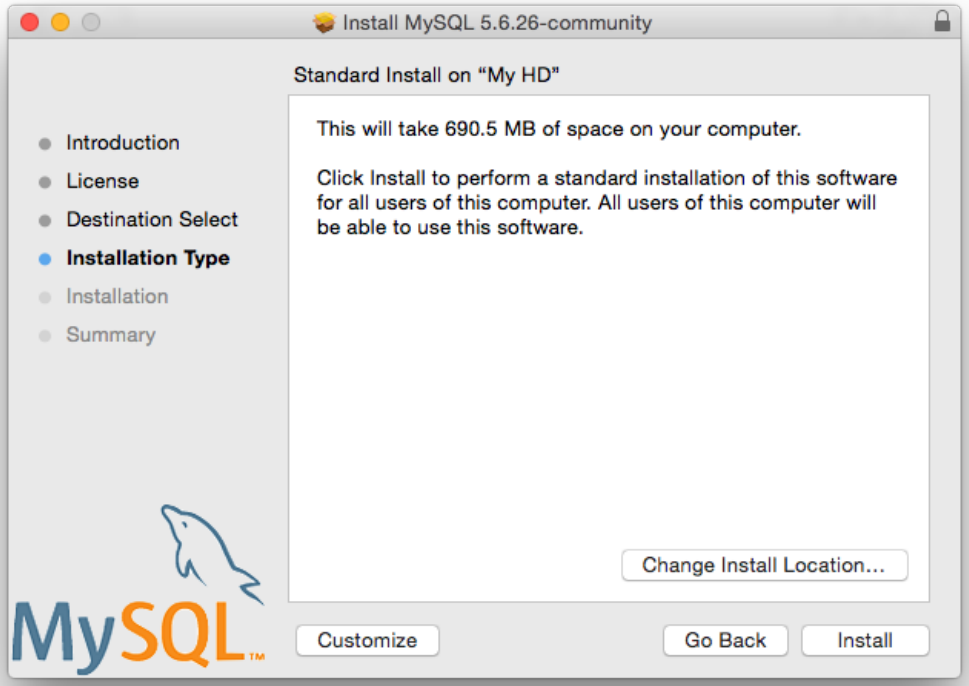


4. A copy of the installation instructions and other important information relevant to this installation are displayed. Click **Continue** .

5. If you have downloaded the community version of MySQL, you will be shown a copy of the relevant GNU General Public License. Click **Continue** .

6. Select the drive you want to use to install the MySQL Startup Item. The drive must have a valid, bootable, OS X operating system installed. Click **Continue**.

Figure 2.3 MySQL Package Installer: Choose your Hard drive



7. You will be asked to confirm the details of the installation, including the space required for the installation. To change the drive on which the MySQL server is installed, click either **Go Back** or **Change Install Location...**. To install the MySQL server, click **Install**.

8. Once the installation has been completed successfully, you will be shown an **Install Succeeded** message.

For convenience, you may also want to install the startup item and preference pane. See Chapter 4, *Installing the MySQL Startup Item*, and Chapter 5, *Installing and Using the MySQL Preference Pane*.

Chapter 3 Installing a MySQL Launch Daemon

OS X uses launch daemons to automatically start, stop, and manage processes and applications such as MySQL. Using launch daemons is recommended over startup items on OS X.

> **Note**
>
> OS X 10.4 deprecated startup items in favor of launchd daemons, and as of OS X 10.10 (Yosemite), startup items do not function. For these reasons, using launchd daemons is preferred over startup items.

Here is an example **launchd** file that starts MySQL:

```
<?xml version="1.0" encoding="UTF-8"?>
<plist version="1.0">
  <dict>
    <key>KeepAlive</key>
    <true/>
    <key>Label</key>
    <string>com.mysql.mysqld</string>
    <key>ProgramArguments</key>
    <array>
    <string>/usr/local/mysql/bin/mysqld_safe</string>
    <string>--user=mysql</string>
    </array>
  </dict>
</plist>
```

> **Note**
>
> Some users report that adding a plist DOCTYPE declaration causes the launchd operation to fail, despite it passing the lint check. For this reason, we have removed it from the example above.

Adjust the *ProgramArguments* array according to your system, as for example your path to `mysqld_safe` might be different. After making the proper adjustments, do the following:

- Save the XML as a file named `/Library/LaunchDaemons/com.mysql.mysql.plist`
- Adjust the file permissions using the Apple recommended owner "root", owning group "wheel", and file permissions "644"

  ```
  shell> sudo chown root:wheel /Library/LaunchDaemons/com.mysql.mysql.plist
  shell> sudo chmod 644 /Library/LaunchDaemons/com.mysql.mysql.plist
  ```

- Enable this new MySQL service

  ```
  shell> sudo launchctl load -w /Library/LaunchDaemons/com.mysql.mysql.plist
  ```

The MySQL daemon is now running, and automatically starts when your system is rebooted.

Chapter 4 Installing the MySQL Startup Item

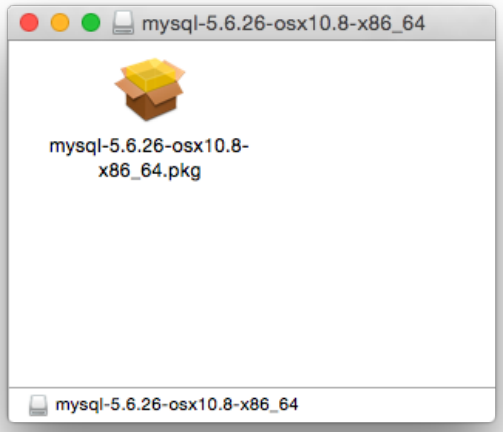
The MySQL Installation Package includes a startup item that can be used to automatically start and stop MySQL.

> **Important**
>
> Startup items are deprecated in favor of launchd daemons. For additional information, see Chapter 3, *Installing a MySQL Launch Daemon*.

To install the MySQL Startup Item:

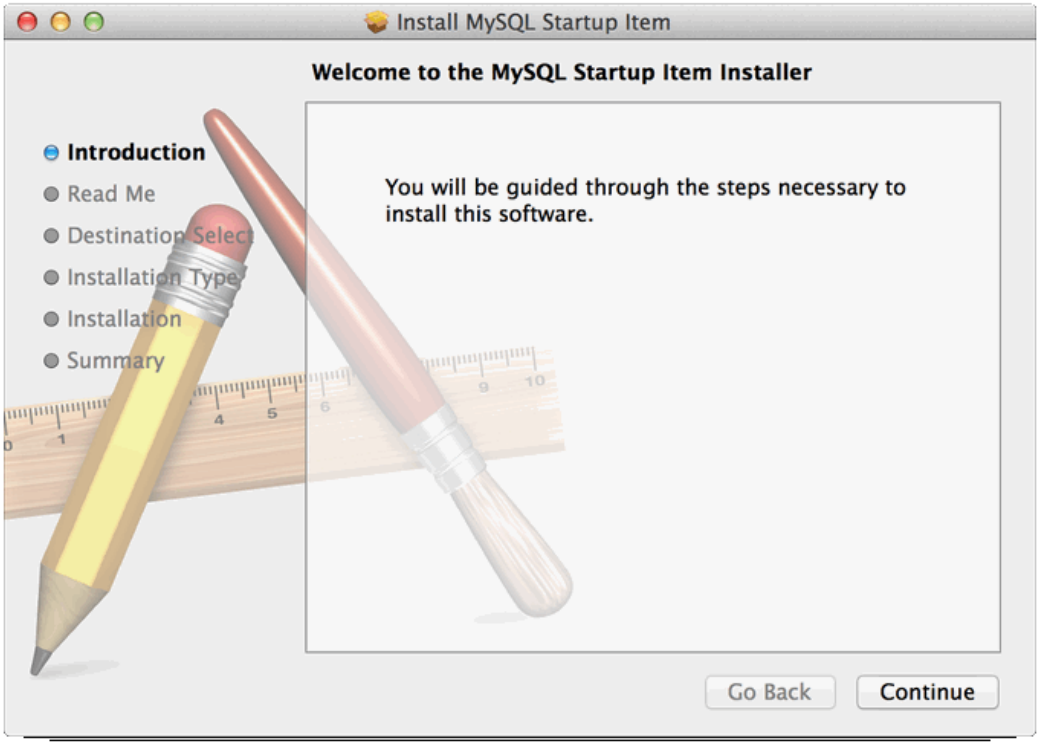
1. Download and open the MySQL package installer, which is provided on a disk image (`.dmg`) that includes the main MySQL installation package, the `MySQLStartupItem.pkg` installation package, and the `MySQL.prefPane`. Double-click the disk image to open it.

   Figure 4.1 MySQL Package Installer: DMG Contents

2. Double-click the `MySQLStartItem.pkg` file to start the installation process.
3. You will be presented with the **Install MySQL Startup Item** dialog.

Figure 4.2 MySQL Startup Item Installer: Introduction

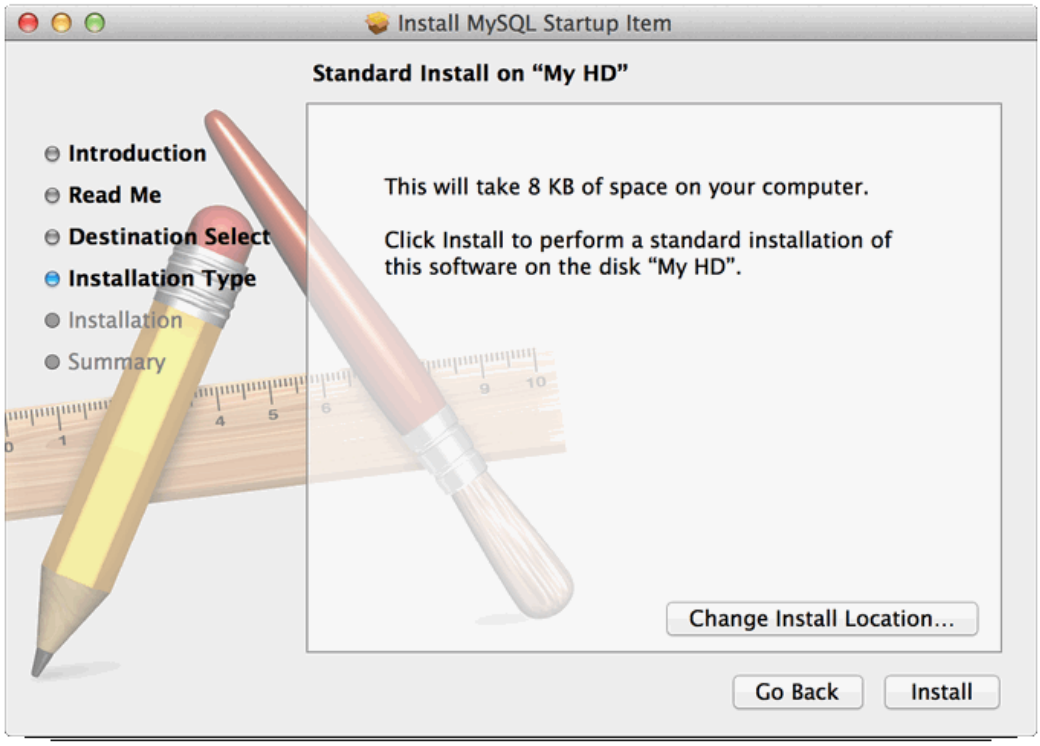


Click **Continue** to continue the installation process.

4. A copy of the installation instructions and other important information relevant to this installation are displayed. Click **Continue** .

5. Select the drive you want to use to install the MySQL Startup Item. The drive must have a valid, bootable, OS X operating system installed. Click **Continue**.

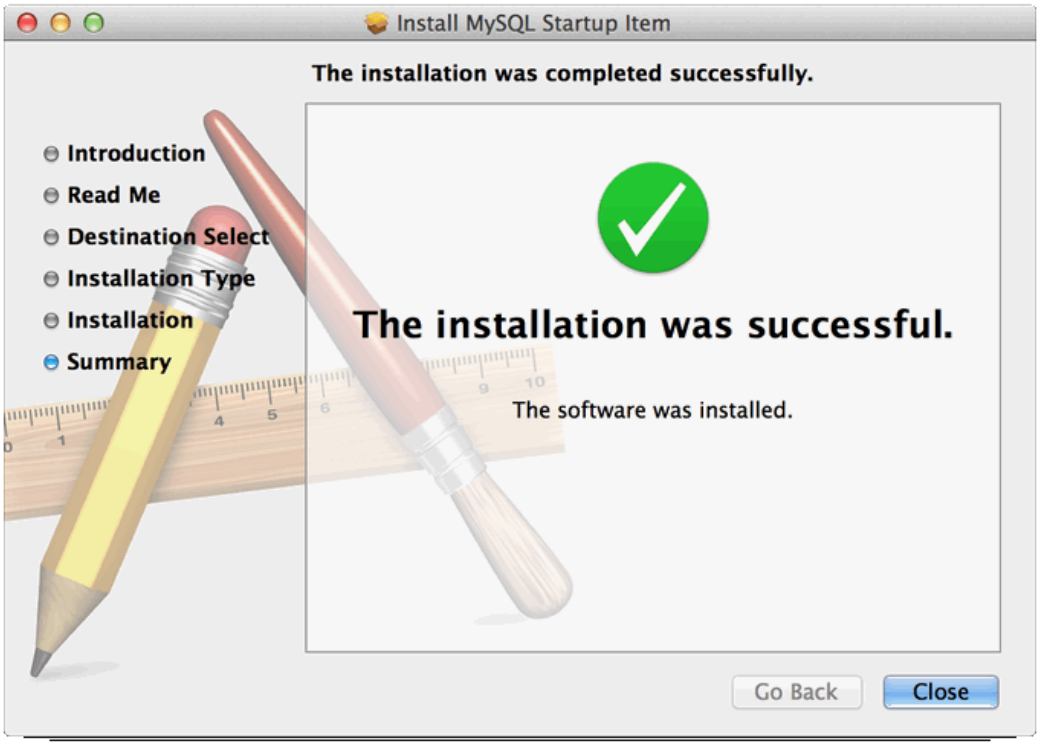
Figure 4.3 MySQL Startup Item Installer: Choose Your Hard drive



6. You will be asked to confirm the details of the installation. To change the drive on which the startup item is installed, click either **Go Back** or **Change Install Location...**. To install the startup item, click **Install**.

7. Once the installation has been completed successfully, you will be shown an **Install Succeeded** message.

Figure 4.4 MySQL Startup Item Installer: Summary



The Startup Item for MySQL is installed into `/Library/StartupItems/MySQLCOM`. The Startup Item installation adds a variable `MYSQLCOM=-YES-` to the system configuration file `/etc/hostconfig`. If you want to disable the automatic startup of MySQL, change this variable to `MYSQLCOM=-NO-`.

> **Note**
>
> Deselecting **Automatically Start MySQL Server on Startup** from the MySQL Preference Pane sets the `MYSQLCOM` variable to **-NO-**.

After the installation, you can start and stop the MySQL server from the MySQL Preference Pane (preferred), or by running the following commands in a terminal window. You must have administrator privileges to perform these tasks, and you may be prompted for your password.

If you have installed the Startup Item, use this command to start the server:

```
shell> sudo /Library/StartupItems/MySQLCOM/MySQLCOM start
```

If you have installed the Startup Item, use this command to stop the server:

```
shell> sudo /Library/StartupItems/MySQLCOM/MySQLCOM stop
```

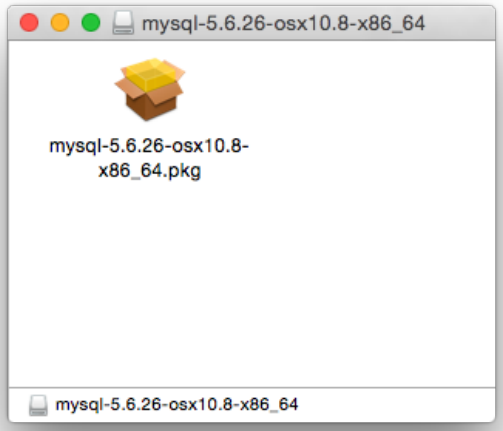
Chapter 5 Installing and Using the MySQL Preference Pane

The MySQL Package installer disk image also includes a custom MySQL Preference Pane that enables you to start, stop, and control automated startup during boot of your MySQL installation.

To install the MySQL Preference Pane:

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

   Figure 5.1 MySQL Package Installer: DMG Contents

2. Double-click the `MySQL.prefPane`. The MySQL System Preferences will open.

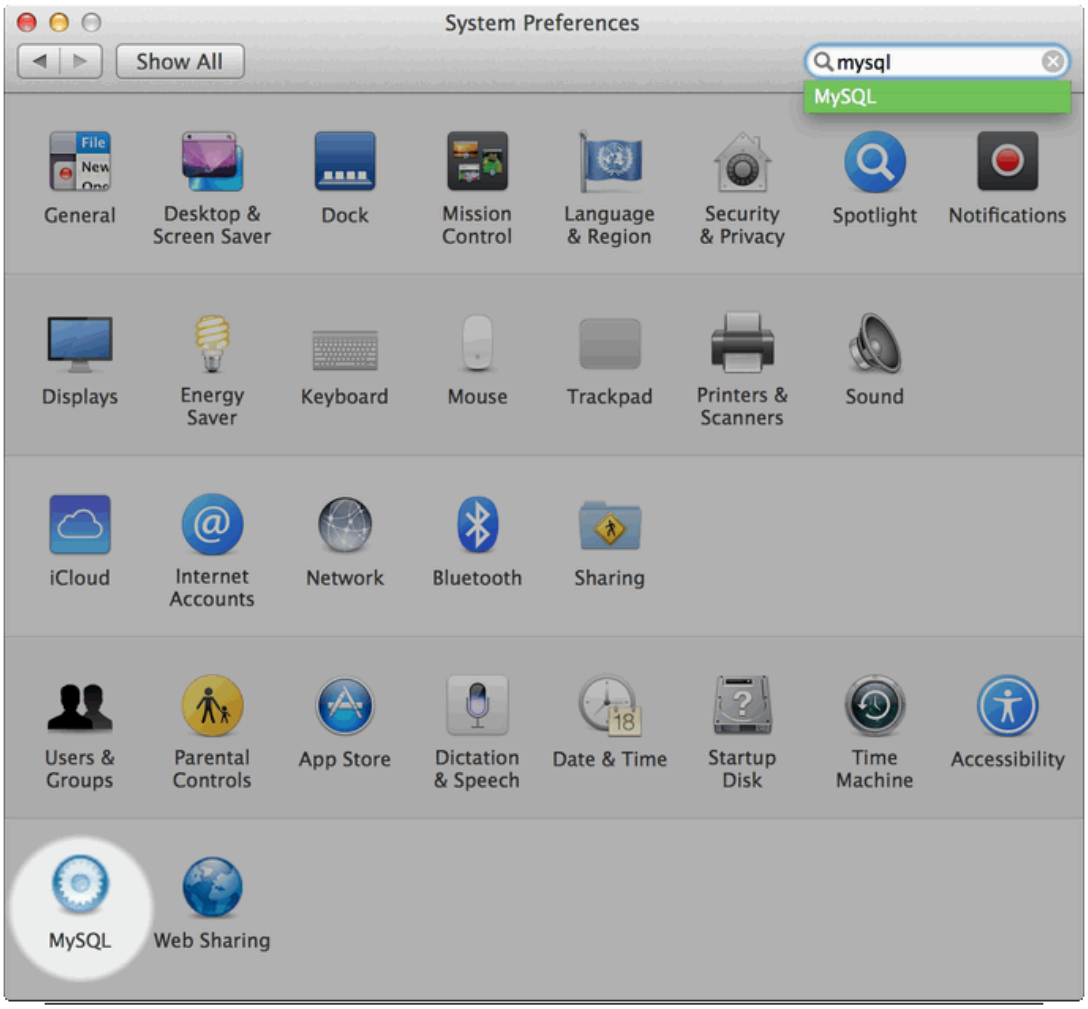
3. If this is the first time you have installed the preference pane, you will be asked to confirm installation and whether you want to install the preference pane for all users, or only the current user. To install the preference pane for all users you will need administrator privileges. If necessary, you will be prompted for the username and password for a user with administrator privileges.

4. If you already have the MySQL Preference Pane installed, you will be asked to confirm whether you want to overwrite the existing MySQL Preference Pane.

   > **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 **Other** section of the preference panes list.

Figure 5.2 MySQL Preference Pane: Location



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 6 Using the Bundled MySQL on OS X Server

If you are running OS X Server, a version of MySQL should already be installed. The following table shows the versions of MySQL that ship with OS X Server versions.

Table 6.1 MySQL Versions Preinstalled with OS X Server

OS X Server Version	MySQL Version
10.2-10.2.2	3.23.51
10.2.3-10.2.6	3.23.53
10.3	4.0.14
10.3.2	4.0.16
10.4.0	4.1.10a
10.5.0	5.0.45
10.6.0	5.0.82

The following table shows the installation layout of MySQL on OS X Server.

Table 6.2 MySQL Directory Layout for Preinstalled MySQL Installations on OS X Server

Directory	Contents of Directory
`/usr/bin`	Client programs
`/var/mysql`	Log files, databases
`/usr/libexec`	The `mysqld` server
`/usr/share/man`	Unix manual pages
`/usr/share/mysql/mysql-test`	MySQL test suite
`/usr/share/mysql`	Miscellaneous support files, including error messages, character set files, sample configuration files, SQL for database installation
`/var/mysql/mysql.sock`	Location of the MySQL Unix socket

Additional Resources

- For more information on managing the bundled MySQL instance in OS X Server 10.5, see Mac OS X Server: Web Technologies Administration For Version 10.5 Leopard.
- For more information on managing the bundled MySQL instance in OS X Server 10.6, see Mac OS X Server: Web Technologies Administration Version 10.6 Snow Leopard.
- The MySQL server bundled with OS X Server does not include the MySQL client libraries and header files required to access and use MySQL from a third-party driver, such as Perl DBI or PHP. For more information on obtaining and installing MySQL libraries, see OS X Server version 10.5: MySQL libraries available for download. Alternatively, you can ignore the bundled MySQL server and install MySQL from the package or tarball installation.

Chapter 7 General Notes on Installing MySQL on OS X

You should keep the following issues and notes in mind:

- OS X 10.4 deprecated startup items in favor of launchd daemons, and as of OS X 10.10 (Yosemite), startup items do not function. For these reasons, using launchd daemons is preferred over startup items.
- The default location for the MySQL Unix socket is different on OS X and OS X Server depending on the installation type you chose. The following table shows the default locations by installation type.

  Table 7.1 MySQL Unix Socket Locations on OS X by Installation Type

Installation Type	Socket Location
Package Installer from MySQL	`/tmp/mysql.sock`
Tarball from MySQL	`/tmp/mysql.sock`
MySQL Bundled with OS X Server	`/var/mysql/mysql.sock`

  To prevent issues, you should either change the configuration of the socket used within your application (for example, changing `php.ini`), or you should configure the socket location using a MySQL configuration file and the `socket` option. For more information, see Server Command Options.
- 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.
- If you get an “insecure startup item disabled” error when MySQL launches, use the following procedure. Adjust the pathnames appropriately for your system.

  1. Modify the `mysql.script` using this command (enter it on a single line):

     ```
     shell> sudo /Applications/TextEdit.app/Contents/MacOS/TextEdit
       /usr/local/mysql/support-files/mysql.server
     ```

  2. Locate the option file that defines the `basedir` value and modify it to contain these lines:

     ```
     basedir=/usr/local/mysql
     datadir=/usr/local/mysql/data
     ```

     In the `/Library/StartupItems/MySQLCOM/` directory, make the following group ID changes from `staff` to `wheel`:

     ```
     shell> sudo chgrp wheel MySQLCOM StartupParameters.plist
     ```

  3. Start the server from System Preferences or Terminal.app.
- 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.
- 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`.