MySQL and Solaris
Abstract

This is the MySQL Solaris extract from the MySQL 5.6 Reference Manual.

For legal information, see the Legal Notices.

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

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Table of Contents

Preface and Legal Notices ................................................................. v
1 Installing MySQL on Unix/Linux Using Generic Binaries ................................. 1
2 Installing MySQL on Solaris .................................................................. 5
  2.1 Installing MySQL on Solaris Using a Solaris PKG ................................. 5
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Chapter 1 Installing MySQL on Unix/Linux Using Generic Binaries

Oracle provides a set of binary distributions of MySQL. These include generic binary distributions in the form of compressed tar files (files with a .tar.gz extension) for a number of platforms, and binaries in platform-specific package formats for selected platforms.

This section covers the installation of MySQL from a compressed tar binary distribution on Unix/Linux platforms. For other platform-specific binary package formats, see the other platform-specific sections in this manual. For example, for Windows distributions, see Installing MySQL on Microsoft Windows. See How to Get MySQL on how to obtain MySQL in different distribution formats.

MySQL compressed tar file binary distributions have names of the form mysql-VERSION-OS.tar.gz, where VERSION is a number (for example, 5.6.51), and OS indicates the type of operating system for which the distribution is intended (for example, pc-linux-i686 or winx64).

**Warnings**

- If you have previously installed MySQL using your operating system native package management system, such as Yum or APT, you may experience problems installing using a native binary. Make sure your previous MySQL installation has been removed entirely (using your package management system), and that any additional files, such as old versions of your data files, have also been removed. You should also check for configuration files such as /etc/my.cnf or the /etc/mysql directory and delete them.

  For information about replacing third-party packages with official MySQL packages, see the related APT guide or Yum guide.

- MySQL has a dependency on the libaio library. Data directory initialization and subsequent server startup steps fail if this library is not installed locally. If necessary, install it using the appropriate package manager. For example, on Yum-based systems:

```
shell> yum search libaio  # search for info
shell> yum install libaio  # install library
```

  Or, on APT-based systems:

```
shell> apt-cache search libaio  # search for info
shell> apt-get install libaio1  # install library
```

- **SLES 11**: As of MySQL 5.6.37, the Linux Generic tarball package format is EL6 instead of EL5. As a side effect, the MySQL client bin/mysql needs libtinfo.so.5.

  A workaround is to create a symlink, such as

  ```
  ln -s libncurses.so.5.6 /lib64/libtinfo.so.5
  ```

  on 64-bit systems or

  ```
  ln -s libncurses.so.5.6 /lib/libtinfo.so.5
  ```

  on 32-bit systems.

To install a compressed tar file binary distribution, unpack it at the installation location you choose (typically /usr/local/mysql). This creates the directories shown in the following table.

**Table 1.1 MySQL Installation Layout for Generic Unix/Linux Binary Package**

<table>
<thead>
<tr>
<th>Directory</th>
<th>Contents of Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>bin, scripts</td>
<td>mysql, server, client and utility programs</td>
</tr>
<tr>
<td>data</td>
<td>Log files, databases</td>
</tr>
<tr>
<td>docs</td>
<td>MySQL manual in Info format</td>
</tr>
</tbody>
</table>
Create a mysql User and Group

<table>
<thead>
<tr>
<th>Directory</th>
<th>Contents of Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>include</td>
<td>Include (header) files</td>
</tr>
<tr>
<td>lib</td>
<td>Libraries</td>
</tr>
<tr>
<td>mysql-test</td>
<td>Test suite</td>
</tr>
<tr>
<td>man</td>
<td>Unix manual pages</td>
</tr>
<tr>
<td>share</td>
<td>Error messages, dictionary, and SQL for database installation</td>
</tr>
<tr>
<td>sql-bench</td>
<td>Benchmarks</td>
</tr>
<tr>
<td>support-files</td>
<td>Miscellaneous support files, including sample configuration files</td>
</tr>
</tbody>
</table>

Debug versions of the mysqld binary are available as mysqld-debug. To compile your own debug version of MySQL from a source distribution, use the appropriate configuration options to enable debugging support. See Installing MySQL from Source.

To install and use a MySQL binary distribution, the command sequence looks like this:

```shell
shell> groupadd mysql
shell> useradd -r -g mysql -s /bin/false mysql
shell> cd /usr/local
shell> tar zxvf /path/to/mysql-VERSION-OS.tar.gz
shell> ln -s full-path-to-mysql-VERSION-OS mysql
shell> cd mysql
shell> scripts/mysql_install_db --user=mysql
shell> bin/mysqld_safe --user=mysql &
# Next command is optional
shell> cp support-files/mysql.server /etc/init.d/mysql.server
```

**Note**
This procedure assumes that you have root (administrator) access to your system. Alternatively, you can prefix each command using the sudo (Linux) or pfexec (Solaris) command.

**Note**
The procedure does not assign passwords to MySQL accounts. To do so, use the instructions in Securing the Initial MySQL Accounts.

mysql_install_db creates a default option file named my.cnf in the base installation directory. This file is created from a template included in the distribution package named my-default.cnf. For more information, see Using a Sample Default Server Configuration File.

A more detailed version of the preceding description for installing a binary distribution follows.

Create a mysql User and Group

If your system does not already have a user and group to use for running mysqld, you may need to create them. The following commands add the mysql group and the mysql user. You might want to call the user and group something else instead of mysql. If so, substitute the appropriate name in the following instructions. The syntax for useradd and groupadd may differ slightly on different versions of Unix/Linux, or they may have different names such as adduser and addgroup.

```shell
shell> groupadd mysql
shell> useradd -r -g mysql -s /bin/false mysql
```

**Note**
Because the user is required only for ownership purposes, not login purposes, the useradd command uses the -r and -s /bin/false options to create
Obtain and Unpack the Distribution

Pick the directory under which you want to unpack the distribution and change location into it. The example here unpacks the distribution under `/usr/local`. The instructions, therefore, assume that you have permission to create files and directories in `/usr/local`. If that directory is protected, you must perform the installation as `root`.

```shell>
cd /usr/local
```

Obtain a distribution file using the instructions in How to Get MySQL. For a given release, binary distributions for all platforms are built from the same MySQL source distribution.

Unpack the distribution, which creates the installation directory. `tar` can uncompress and unpack the distribution if it has `z` option support:

```shell>
tar zxvf /path/to/mysql-VERSION-OS.tar.gz
```

The `tar` command creates a directory named `mysql-VERSION-OS`.

To install MySQL from a compressed `tar` file binary distribution, your system must have GNU `gunzip` to uncompress the distribution and a reasonable `tar` to unpack it. If your `tar` program supports the `z` option, it can both uncompress and unpack the file.

GNU `tar` is known to work. The standard `tar` provided with some operating systems is not able to unpack the long file names in the MySQL distribution. You should download and install GNU `tar`, or if available, use a preinstalled version of GNU tar. Usually this is available as `gnutar`, `gtar`, or as `tar` within a GNU or Free Software directory, such as `/usr/sfw/bin` or `/usr/local/bin`. GNU `tar` is available from http://www.gnu.org/software/tar/.

If your `tar` does not have `z` option support, use `gunzip` to uncompress the distribution and `tar` to unpack it. Replace the preceding `tar` command with the following alternative command to uncompress and extract the distribution:

```shell>
gunzip < /path/to/mysql-VERSION-OS.tar.gz | tar xvf -
```

Next, create a symbolic link to the installation directory created by `tar`:

```shell>
ln -s full-path-to-mysql-VERSION-OS mysql
```

The `ln` command makes a symbolic link to the installation directory. This enables you to refer more easily to it as `/usr/local/mysql`. To avoid having to type the path name of client programs always when you are working with MySQL, you can add the `/usr/local/mysql/bin` directory to your `PATH` variable:

```shell>
export PATH=$PATH:/usr/local/mysql/bin
```

Perform Postinstallation Setup

The remainder of the installation process involves setting distribution ownership and access permissions, initializing the data directory, starting the MySQL server, and setting up the configuration file. For instructions, see Postinstallation Setup and Testing.
Chapter 2 Installing MySQL on Solaris

Table of Contents

2.1 Installing MySQL on Solaris Using a Solaris PKG ................................................................. 5

Note
MySQL 5.6 supports Solaris 10 (Update 11 and later), and Solaris 11 (Update 3 and later).

MySQL on Solaris is available in a number of different formats.

- For information on installing using the native Solaris PKG format, see Section 2.1, “Installing MySQL on Solaris Using a Solaris PKG”.

- To use a standard tar binary installation, use the notes provided in Chapter 1, Installing MySQL on Unix/Linux Using Generic Binaries. Check the notes and hints at the end of this section for Solaris specific notes that you may need before or after installation.

To obtain a binary MySQL distribution for Solaris in tarball or PKG format, https://dev.mysql.com/downloads/mysql/5.6.html.

Additional notes to be aware of when installing and using MySQL on Solaris:

- If you want to use MySQL with the mysql user and group, use the groupadd and useradd commands:

  ```
  groupadd mysql
  useradd -g mysql -s /bin/false mysql
  ```

- If you install MySQL using a binary tarball distribution on Solaris, because the Solaris tar cannot handle long file names, use GNU tar (gtar) to unpack the distribution. If you do not have GNU tar on your system, install it with the following command:

  ```
  pkg install archiver/gnu-tar
  ```

- You should mount any file systems on which you intend to store InnoDB files with the forcedirectio option. (By default mounting is done without this option.) Failing to do so causes a significant drop in performance when using the InnoDB storage engine on this platform.

- If you would like MySQL to start automatically, you can copy support-files/mysql.server to /etc/init.d and create a symbolic link to it named /etc/rc3.d/S99mysql.server.

- If too many processes try to connect very rapidly to mysqld, you should see this error in the MySQL log:

  ```
  Error in accept: Protocol error
  ```
  
  You might try starting the server with the --back_log=50 option as a workaround for this.

- To configure the generation of core files on Solaris you should use the coreadm command. Because of the security implications of generating a core on a setuid() application, by default, Solaris does not support core files on setuid() programs. However, you can modify this behavior using coreadm. If you enable setuid() core files for the current user, they are generated using mode 600, and are owned by the superuser.

2.1 Installing MySQL on Solaris Using a Solaris PKG

You can install MySQL on Solaris using a binary package using the native Solaris PKG format instead of the binary tarball distribution.
To use this package, download the corresponding `mysql-VERSION-solaris10-PLATFORM.pkg.gz` file, then uncompress it. For example:

```shell
$ gunzip mysql-5.6.51-solaris10-x86_64.pkg.gz
```

To install a new package, use `pkgadd` and follow the onscreen prompts. You must have root privileges to perform this operation:

```shell
$ pkgadd -d mysql-5.6.51-solaris10-x86_64.pkg
```

The following packages are available:

```
1  mysql     MySQL Community Server (GPL) (i86pc) 5.6.51
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

The PKG installer installs all of the files and tools needed, and then initializes your database if one does not exist. To complete the installation, you should set the root password for MySQL as provided in the instructions at the end of the installation. Alternatively, you can run the `mysql_secure_installation` script that comes with the installation.

By default, the PKG package installs MySQL under the root path `/opt/mysql`. You can change only the installation root path when using `pkgadd`, which can be used to install MySQL in a different Solaris zone. If you need to install in a specific directory, use a binary `tar` file distribution.

The `pkg` installer copies a suitable startup script for MySQL into `/etc/init.d/mysql`. To enable MySQL to startup and shutdown automatically, you should create a link between this file and the init script directories. For example, to ensure safe startup and shutdown of MySQL you could use the following commands to add the right links:

```shell
$ ln /etc/init.d/mysql /etc/rc3.d/S91mysql
$ ln /etc/init.d/mysql /etc/rc0.d/K02mysql
```

To remove MySQL, the installed package name is `mysql`. You can use this in combination with the `pkgrm` command to remove the installation.

To upgrade when using the Solaris package file format, you must remove the existing installation before installing the updated package. Removal of the package does not delete the existing database information, only the server, binaries and support files. The typical upgrade sequence is therefore:

```shell
$ mysqladmin shutdown
$ pkgrm mysql
$ pkgadd -d mysql-5.6.51-solaris10-x86_64.pkg
$ mysqld_safe &
$ mysql_upgrade
```

You should check the notes in Upgrading MySQL before performing any upgrade.