

# Using the MySQL Yum Repository

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## Abstract

This document provides some basic instructions for using the MySQL Yum Repository to install and upgrade MySQL. It is excerpted from the MySQL 8.3 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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# Chapter 1 Installing MySQL on Linux Using the MySQL Yum Repository

The [MySQL Yum repository](#) for Oracle Linux, Red Hat Enterprise Linux, CentOS, and Fedora provides RPM packages for installing the MySQL server, client, MySQL Workbench, MySQL Utilities, MySQL Router, MySQL Shell, Connector/ODBC, Connector/Python and so on (not all packages are available for all the distributions; see [Installing Additional MySQL Products and Components with Yum](#) for details).

## Before You Start

As a popular, open-source software, MySQL, in its original or re-packaged form, is widely installed on many systems from various sources, including different software download sites, software repositories, and so on. The following instructions assume that MySQL is not already installed on your system using a third-party-distributed RPM package; if that is not the case, follow the instructions given in [Chapter 2, Upgrading MySQL with the MySQL Yum Repository](#) or [Replacing a Third-Party Distribution of MySQL Using the MySQL Yum Repository](#).

### Note

Repository setup RPM file names begin with `mysql80-community` to highlight the default active MySQL subrepository, which is MySQL 8.0 today. They also install subrepositories for the MySQL innovation track, which allows installing and upgrading the MySQL 8.3 innovation release.

## Steps for a Fresh Installation of MySQL

Follow these steps to choose and install the latest MySQL products:

### Adding<sup>1</sup>the MySQL Yum Repository

Add the MySQL Yum repository to your system's repository list. This is typically a one-time operation that's performed by installing the RPM provided by MySQL. Follow these steps:

- Download it from the MySQL Yum Repository page (<https://dev.mysql.com/downloads/repo/yum/>) in the MySQL Developer Zone.
- Select and download the release package for your platform.
- Install the downloaded release package. The package file format is:

```
mysql80-community-release-{platform}-{version-number}.noarch.rpm
```

- `mysql80`: Indicates the MySQL version that's enabled by default. In this case, MySQL 8.0 is enabled by default and MySQL 8.3 (the innovation track) is available but disabled by default.
- `{platform}`: The platform code, such as el7, el8, el9, fc37, fc38, or fc39. The 'el' represents Enterprise Linux, 'fc' for Fedora, and it ends with the platform's base version number.
- `{version-number}`: Version of the MySQL repository configuration RPM as they do receive occasional updates.

Install the RPM you downloaded for your system, for example:

```
$> sudo yum localinstall mysql80-community-release-{platform}-{version-number}.noarch.rpm
```

The installation command adds the MySQL Yum repository to your system's repository list and downloads the GnuPG key to check the integrity of the software packages. See [Signature Checking Using GnuPG](#) for details on GnuPG key checking.

You can check that the MySQL Yum repository has been successfully added and enabled by the following command (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
$> yum repolist enabled | grep mysql.*-community
```

Example output:

```
mysql-connectors-community      MySQL Connectors Community
mysql-tools-community          MySQL Tools Community
mysql80-community              MySQL 8.0 Community Server
```

This also demonstrates that the latest bugfix or LTS MySQL version is enabled by default. Methods to choose a different release series, such as the innovation track (which today is 8.3), are described below.

### Note

Once the MySQL Yum repository is enabled on your system, any system-wide update by the `yum update` command (or `dnf upgrade` for dnf-enabled systems) upgrades MySQL packages on your system and replaces any native third-party packages, if Yum finds replacements for them in the MySQL Yum repository; see [Chapter 2, Upgrading MySQL with the MySQL Yum Repository](#), for a discussion on some possible effects of that on your system, see [Upgrading the Shared Client Libraries](#).

## Selecting a Release Series

When using the MySQL Yum repository, the latest bugfix series (currently MySQL 8.0) is selected for installation by default. If this is what you want, you can skip to the next step, [Installing MySQL](#).

Within the MySQL Yum repository, each MySQL Community Server release series is hosted in a different subrepository. The subrepository for the latest bugfix series (currently MySQL 8.0) is enabled by default, and the subrepositories for all other series' (for example, the MySQL Innovation series) are disabled by default. Use this command to see all available MySQL-related subrepositories (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
$> yum repolist all | grep mysql
```

Example output:

```
mysql-connectors-community      MySQL Connectors Community  enabled
mysql-connectors-community-debuginfo  MySQL Connectors Community - disabled
mysql-connectors-community-source  MySQL Connectors Community - disabled
mysql-innovation-community        MySQL Innovation Release Com disabled
mysql-innovation-community-debuginfo  MySQL Innovation Release Com disabled
mysql-innovation-community-source  MySQL Innovation Release Com disabled
mysql-tools-community            MySQL Tools Community       enabled
mysql-tools-community-debuginfo  MySQL Tools Community - Debu disabled
mysql-tools-community-source      MySQL Tools Community - Sour disabled
mysql-tools-innovation-community  MySQL Tools Innovation Commu disabled
mysql-tools-innovation-community-debuginfo  MySQL Tools Innovation Commu disabled
mysql-tools-innovation-community-source  MySQL Tools Innovation Commu disabled
mysql80-community                MySQL 8.0 Community Server  enabled
mysql80-community-debuginfo      MySQL 8.0 Community Server - disabled
mysql80-community-source          MySQL 8.0 Community Server - disabled
```

To install the latest release from a specific series other than the latest bugfix series, disable the bug subrepository for the latest bugfix series and enable the subrepository for the specific series before running the installation command. If your platform supports the `yum-config-manager` or `dnf config-manager` command, you can do that by issuing the following commands to disable the subrepository for the 8.0 series and enable the one for the innovation track:

```
$> sudo yum-config-manager --disable mysql80-community
```

```
$> sudo yum-config-manager --enable mysql-innovation-community
```

For dnf-enabled platforms:

```
$> sudo dnf config-manager --disable mysql80-community
$> sudo dnf config-manager --enable mysql-innovation-community
```

Instead of using the config-manager commands you can manually edit the `/etc/yum.repos.d/mysql-community.repo` file by toggling the `enabled` option. For example, a typical default entry for EL8:

```
[mysql80-community]
name=MySQL 8.0 Community Server
baseurl=http://repo.mysql.com/yum/mysql-8.0-community/el/8/$basearch/
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql-2023
       file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql-2022
```

Find the entry for the subrepository you want to configure and edit the `enabled` option. Specify `enabled=0` to disable a subrepository or `enabled=1` to enable a subrepository. For example, to install from the MySQL innovation track, make sure you have `enabled=0` for the MySQL 8.0 subrepository entries and have `enabled=1` for the innovation entries:

```
[mysql-innovation-community]
name=MySQL Innovation Release Community Server
baseurl=http://repo.mysql.com/yum/mysql-innovation-community/el/8/$basearch
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql-2023
```

You should only enable subrepository for one release series at any time.

Verify that the correct subrepositories have been enabled and disabled by running the following command and checking its output (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
$> yum repolist enabled | grep mysql
```

## Disabling the Default MySQL Module

(EL8 systems only) EL8-based systems such as RHEL8 and Oracle Linux 8 include a MySQL module that is enabled by default. Unless this module is disabled, it masks packages provided by MySQL repositories. To disable the included module and make the MySQL repository packages visible, use the following command (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
$> sudo yum module disable mysql
```

## Installing MySQL

Install MySQL by the following command (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
$> sudo yum install mysql-community-server
```

This installs the package for MySQL server (`mysql-community-server`) and also packages for the components required to run the server, including packages for the client (`mysql-community-client`), the common error messages and character sets for client and server (`mysql-community-common`), and the shared client libraries (`mysql-community-libs`).

## Starting the MySQL Server

Start the MySQL server with the following command:

```
$> systemctl start mysqld
```

You can check the status of the MySQL server with the following command:

```
$> systemctl status mysqld
```

If the operating system is systemd enabled, standard `systemctl` (or alternatively, `service` with the arguments reversed) commands such as `stop`, `start`, `status`, and `restart` should be used to manage the MySQL server service. The `mysqld` service is enabled by default, and it starts at system reboot. See [Managing MySQL Server with systemd](#) for additional information.

At the initial start up of the server, the following happens, given that the data directory of the server is empty:

- The server is initialized.
- SSL certificate and key files are generated in the data directory.
- `validate_password` is installed and enabled.
- A superuser account `'root'@'localhost'` is created. A password for the superuser is set and stored in the error log file. To reveal it, use the following command:

```
$> sudo grep 'temporary password' /var/log/mysqld.log
```

Change the root password as soon as possible by logging in with the generated, temporary password and set a custom password for the superuser account:

```
$> mysql -uroot -p
```

```
mysql> ALTER USER 'root'@'localhost' IDENTIFIED BY 'MyNewPass4!';
```

### Note

`validate_password` is installed by default. The default password policy implemented by `validate_password` requires that passwords contain at least one uppercase letter, one lowercase letter, one digit, and one special character, and that the total password length is at least 8 characters.

For more information on the postinstallation procedures, see [Postinstallation Setup and Testing](#).

### Note

*Compatibility Information for EL7-based platforms:* The following RPM packages from the native software repositories of the platforms are incompatible with the package from the MySQL Yum repository that installs the MySQL server. Once you have installed MySQL using the MySQL Yum repository, you cannot install these packages (and vice versa).

- `akonadi-mysql`

## Installing Additional MySQL Products and Components with Yum

You can use Yum to install and manage individual components of MySQL. Some of these components are hosted in sub-repositories of the MySQL Yum repository: for example, the MySQL Connectors are to be found in the MySQL Connectors Community sub-repository, and the MySQL Workbench in MySQL Tools Community. You can use the following command to list the packages for all the MySQL components available for your platform from the MySQL Yum repository (for `dnf`-enabled systems, replace `yum` in the command with `dnf`):

```
$> sudo yum --disablerepo=* --enablerepo='mysql*-community*' list available
```

Install any packages of your choice with the following command, replacing `package-name` with name of the package (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
$> sudo yum install package-name
```

For example, to install MySQL Workbench on Fedora:

```
$> sudo dnf install mysql-workbench-community
```

To install the shared client libraries (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
$> sudo yum install mysql-community-libs
```

## Platform Specific Notes

### ARM Support

ARM 64-bit (aarch64) is supported on Oracle Linux 7 and requires the Oracle Linux 7 Software Collections Repository (`ol7_software_collections`). For example, to install the server:

```
$> yum-config-manager --enable ol7_software_collections
$> yum install mysql-community-server
```

## Updating MySQL with Yum

Besides installation, you can also perform updates for MySQL products and components using the MySQL Yum repository. See [Chapter 2, Upgrading MySQL with the MySQL Yum Repository](#) for details.

## Replacing a Third-Party Distribution of MySQL Using the MySQL Yum Repository

To replace third-party distributions of MySQL that were installed from the supported Linux platforms' native software repositories with the latest bug release (from the MySQL 8.0 series currently) from the MySQL Yum repository, follow these steps:

## Replacing a Native Third-Party Distribution of MySQL

If you have installed a third-party distribution of MySQL from a native software repository (that is, a software repository provided by your own Linux distribution), follow these steps:

## Backing Up Your Database

To avoid loss of data, always back up your database before trying to replace your MySQL installation using the MySQL Yum repository. See [Backup and Recovery](#), on how to back up your database.

## Adding the MySQL Yum Repository

Add the MySQL Yum repository to your system's repository list by following the instructions given in [Adding the MySQL Yum Repository](#).

## Replacing the Native Third-Party Distribution by a Yum Update or a DNF Upgrade

By design, the MySQL Yum repository replaces your native, third-party MySQL with the latest bugfix release from the MySQL Yum repository when you perform a `yum update` command (or

`dnf upgrade` for dnf-enabled systems) on the system, or a `yum update mysql-server` (or `dnf upgrade mysql-server` for dnf-enabled systems).

After updating MySQL using the Yum repository, applications compiled with older versions of the shared client libraries should continue to work. However, *if you want to recompile applications and dynamically link them with the updated libraries*, see [Upgrading the Shared Client Libraries](#), for some special considerations.

**Note**

*For EL7-based platforms:* See [Compatibility Information for EL7-based platforms \[4\]](#).

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## Chapter 2 Upgrading MySQL with the MySQL Yum Repository

For supported Yum-based platforms (see [Chapter 1, \*Installing MySQL on Linux Using the MySQL Yum Repository\*](#), for a list), you can perform an in-place upgrade for MySQL (that is, replacing the old version and then running the new version using the old data files) with the MySQL Yum repository.

### Notes

- An innovation series, such as MySQL 8.3, is in a separate track than a bugfix series, such as MySQL 8.0. The newest bugfix series is active by default.
- Before performing any update to MySQL, follow carefully the instructions in [Upgrading MySQL](#). Among other instructions discussed there, it is especially important to back up your database before the update.
- The following instructions assume you have installed MySQL with the MySQL Yum repository or with an RPM package directly downloaded from [MySQL Developer Zone's MySQL Download page](#); if that is not the case, following the instructions in [Replacing a Third-Party Distribution of MySQL Using the MySQL Yum Repository](#).

### Selecting a Target Series

By default, the MySQL Yum repository updates MySQL to the latest version in the release track you have chosen during installation (see [Selecting a Release Series](#) for details), which means, for example, a 5.7.x installation is *not* updated to a 8.0.x release automatically. To update to another release series, you must first disable the subrepository for the series that has been selected (by default, or by yourself) and enable the subrepository for your target series. To do that, see the general instructions given in [Selecting a Release Series](#) for editing the subrepository entries in the `/etc/yum.repos.d/mysql-community.repo` file.

As a general rule, to upgrade from one bugfix series to another, go to the next bugfix series rather than skipping a bugfix series. For example, if you are currently running MySQL 5.6 and wish to upgrade to MySQL 8.0, upgrade to MySQL 5.7 first before upgrading to MySQL 8.0. For additional details, see [Changes in MySQL 8.3](#).

- For important information about upgrading from MySQL 5.6 to 5.7, see [Upgrading from MySQL 5.6 to 5.7](#).
- For important information about upgrading from MySQL 5.7 to 8.0, see [Upgrading from MySQL 5.7 to 8.0](#).
- In-place downgrading of MySQL is not supported by the MySQL Yum repository. Follow the instructions in [Downgrading MySQL](#).

### Upgrading MySQL

Upgrade MySQL components using standard yum (or dnf) commands, such as MySQL Server:

```
sudo yum update mysql-server
```

For platforms that are dnf-enabled:

```
sudo dnf upgrade mysql-server
```

Alternatively, you can update MySQL by telling Yum to update everything on your system, which might take considerably more time. For platforms that are not dnf-enabled:

```
sudo yum update
```

For platforms that are dnf-enabled:

```
sudo dnf upgrade
```

### Note

The MySQL server always restarts after an update by Yum.

You can also update only a specific component. Use the following command to list all the installed packages for the MySQL components (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
sudo yum list installed | grep "^mysql"
```

After identifying the package name of the component of your choice, update the package with the following command, replacing `package-name` with the name of the package. For platforms that are not dnf-enabled:

```
sudo yum update package-name
```

For dnf-enabled platforms:

```
sudo dnf upgrade package-name
```

## Upgrading the Shared Client Libraries

After updating MySQL using the Yum repository, applications compiled with older versions of the shared client libraries should continue to work.

*If you recompile applications and dynamically link them with the updated libraries:* As typical with new versions of shared libraries where there are differences or additions in symbol versioning between the newer and older libraries (for example, between the newer, standard 8.3 shared client libraries and some older—prior or variant—versions of the shared libraries shipped natively by the Linux distributions' software repositories, or from some other sources), any applications compiled using the updated, newer shared libraries require those updated libraries on systems where the applications are deployed. As expected, if those libraries are not in place, the applications requiring the shared libraries fail. For this reason, be sure to deploy the packages for the shared libraries from MySQL on those systems. To do this, add the MySQL Yum repository to the systems (see [Adding the MySQL Yum Repository](#)) and install the latest shared libraries using the instructions given in [Installing Additional MySQL Products and Components with Yum](#).