A Quick Guide to Using the MySQL Yum Repository

Abstract

The MySQL Yum repository provides RPM packages for installing the MySQL server, client, and other components on Linux platforms. The packages also upgrade and replace any third-party MySQL packages installed from the Linux distros' native software repositories, if replacements for them are available from MySQL.

The MySQL Yum repository supports the following Linux distributions:

- EL6 and EL7-based platforms (for example, the corresponding versions of Oracle Linux, Red Hat Enterprise Linux, and CentOS)

- Fedora 28 and 29

> **Note**
>
> Not all versions of MySQL are supported on all these Linux distributions. See Selecting a Release Series on how to determine if your Linux distribution supports a particular version.

This is a quick guide to using the MySQL Yum repository. For more information, see Further Readings.

For legal information, see the Legal Notices.

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.

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Steps for a Fresh Installation of MySQL

> **Note**
>
> 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 [Replacing a Native Third-Party Distribution of MySQL](#).

Adding¹ the MySQL Yum Repository

First, add the MySQL Yum repository to your system's repository list. Follow these steps:

a. Go to the download page for MySQL Yum repository at https://dev.mysql.com/downloads/repo/yum/.

b. Select and download the release package for your platform.

c. Install the downloaded release package with the following command, replacing `platform-and-version-specific-package-name` with the name of the downloaded package:

```
shell> sudo rpm -Uvh platform-and-version-specific-package-name.rpm
```

For example, for version `n` of the package for EL6-based systems, the command is:

```
shell> sudo rpm -Uvh mysql80-community-release-el6-n.noarch.rpm
```

> **Note**
>
> Once the release package is installed on your system, any system-wide update by the `yum update` command (or `dnf upgrade` for dnf-enabled systems) will automatically upgrade MySQL packages on your system and also replace any native third-party packages, if Yum finds replacements for them in the MySQL Yum repository. See [Upgrading MySQL with the MySQL Yum Repository](#) and [Replacing a Native Third-Party Distribution of MySQL](#) for details.

Selecting² a Release Series

When using the MySQL Yum repository, the latest GA release of MySQL is selected for installation by default. If this is what you want, you can skip to the next step, [Installing MySQL with Yum](#).

Within the MySQL Yum repository (https://repo.mysql.com/yum/), different release series of the MySQL Community Server are hosted in different subrepositories. The subrepository for the latest

GA series (currently MySQL 8.0) is enabled by default, and the subrepositories for all other series (for example, the MySQL 5.7 series) are disabled by default. Use this command to see all the subrepositories in the MySQL Yum repository, and see which of them are enabled or disabled (for dnf-enabled systems, replace `yum` in the command with `dnf`):

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

To install the latest release from the latest GA series, no configuration is needed. To install the latest release from a specific series other than the latest GA series, disable the subrepository for the latest GA 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, for example, the following commands, which disable the subrepository for the 8.0 series and enable the one for the 5.7 series; for platforms that are not dnf-enabled:

```
shell> sudo yum-config-manager --disable mysql80-community
shell> sudo yum-config-manager --enable mysql57-community
```

For dnf-enabled platforms:

```
shell> sudo dnf config-manager --disable mysql80-community
shell> sudo dnf config-manager --enable mysql57-community
```

Besides using `yum-config-manager` or the `dnf config-manager` command, you can also select a series by editing manually the `/etc/yum.repos.d/mysql-community.repo` file. This is a typical entry for a release series' subrepository in the file:

```
[mysql80-community]
name=MySQL 8.0 Community Server
baseurl=http://repo.mysql.com/yum/mysql-8.0-community/el/6/$basearch/
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
```

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 MySQL 5.7, make sure you have `enabled=0` for the above subrepository entry for MySQL 8.0, and have `enabled=1` for the entry for the 5.7 series:

```
# Enable to use MySQL 5.7
[mysql57-community]
name=MySQL 5.7 Community Server
baseurl=http://repo.mysql.com/yum/mysql-5.7-community/el/6/$basearch/
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
```

You should only enable subrepository for one release series at any time. When subrepositories for more than one release series are enabled, the latest series will be used by Yum.

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`):

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

Installing MySQL

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

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

This installs the package for the MySQL server, as well as other required packages.

Starting the MySQL Server

Start the MySQL server with the following command:

```
shell> sudo service mysqld start
```

For EL7-based platforms, this is the preferred command:

```
shell> sudo systemctl start mysqld.service
```

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

```
shell> sudo service mysqld status
```

For EL7-based platforms, this is the preferred command:

```
shell> sudo systemctl status mysqld.service
```

MySQL Server Initialization (as of MySQL 5.7): 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.

- An SSL certificate and key files are generated in the data directory.

- The validate_password plugin 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:

```
shell> 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:

```
shell> mysql -uroot -p
```

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

> **Note**
>
> MySQL's validate_password plugin is installed by default. This will require that passwords contain at least one upper case letter, one lower case letter, one digit, and one special character, and that the total password length is at least 8 characters.

Securing the MySQL Installation (for MySQL 5.6 only)

The program `mysql_secure_installation` allows you to perform important operations like setting the root password, removing anonymous users, and so on. Always run it to secure your MySQL 5.6 installation:

```
shell> mysql_secure_installation
```

It is important to remember the root password you set. See `mysql_secure_installation` — Improve MySQL Installation Security for details.

Do not run `mysql_secure_installation` after an installation of MySQL 5.7 or higher, as the function of the program has already been performed by the Yum repository installation.

> **Note**
>
> *For EL7-based platforms:* See Compatibility Information for EL7-based platforms.

Installing Additional MySQL Products and Components

You can use Yum to install and manage individual components of MySQL. Some of these components are hosted in subrepositories of the MySQL Yum repository. Use the following command to list the packages for all the MySQL components available for your platform from all subrepositories in the MySQL Yum repository (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
shell> 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`):

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

For example, to install MySQL Workbench on Fedora:

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

Upgrading MySQL with the MySQL Yum Repository

> **Note**
>
> • 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.

Use the MySQL Yum repository to perform an in-place update (that is, replacing the old version and then running the new version using the old data files) for your MySQL installation by following these steps (they 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 Native Third-Party Distribution of MySQL instead):

Selecting a Target Series

By default, the MySQL Yum repository updates MySQL to the latest version in the release series you have chosen during installation (see Selecting a Release Series for details), which means, for example, a 5.7.x installation will *not* be updated to a 8.0.x release automatically. To update to another release series, you need to 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. For upgrading from MySQL 5.7 to 8.0, perform the *reverse* of the steps illustrated in Selecting a Release Series, disabling the subrepository for the MySQL 5.7 series and enabling that for the MySQL 8.0 series.

As a general rule, to upgrade from one release series to another, go to the next series rather than skipping a series. For example, if you are currently running MySQL 5.6 and wish to upgrade to 8.0, upgrade to MySQL 5.7 first before upgrading to 8.0.

> **Important**
>
> - 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 and its components by the following command, for platforms that are not dnf-enabled:

```
shell> sudo yum update mysql-server
```

For dnf-enabled systems:

```
shell> sudo dnf --refresh 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:

```
shell> sudo yum update
```

For dnf-enabled systems:

```
shell> sudo dnf upgrade
```

Restarting MySQL

The MySQL server always restarts after an update by Yum. Once the server restarts, run `mysql_upgrade` to check and possibly resolve any incompatibilities between the old data and the upgraded software. `mysql_upgrade` also performs other functions; see `mysql_upgrade` — Check and Upgrade MySQL Tables for details.

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`):

```
shell> 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:

```
shell> sudo yum update package-name
```

For dnf-enabled systems:

```
shell> sudo dnf upgrade package-name
```

Replacing a Native Third-Party Distribution of MySQL

To replace third-party distributions of MySQL that were installed from the supported Linux platforms' native software repositories with the latest GA release (from the MySQL 8.0 series currently) from the MySQL Yum repository, 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 will replace your native, third-party MySQL with the latest GA release (from the MySQL 8.0 series currently) 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.

> **Notes**
>
> - *For EL7-based platforms:* See Compatibility Information for EL7-based platforms.
>
> - If you have a third-party distribution of MySQL that you have downloaded and installed from a nonnative repository (for example, from MariaDB or Percona), it is important to follow the instructions for replacing them given in the MySQL server's reference manual.

Installing MySQL NDB Cluster Using the Yum Repository

> **Notes**
>
> - The following instructions assume that neither the MySQL server nor MySQL NDB Cluster has already been installed on your system; if that is not the case, remove the MySQL server or MySQL NDB Cluster, including all its executables, libraries, configuration files, and data directories, before you continue. However there is no need to remove the release package you might have used to enable the MySQL Yum repository on your system.
>
> - The NDB Cluster SQL node package has a dependency on the Perl `Class::MethodMaker` module. Yum can take care of this dependency if the

> EPEL (Extra Packages for Enterprise Linux) repository has been enabled on your system; see the instructions here for how to enable the EPEL repository.
>
> • The MySQL Yum repository supports installation of MySQL NDB Cluster only for release 7.5.6 and later, and only for EL6 and EL7 platforms. For other methods of installing NDB Cluster, see Installation of NDB Cluster on Linux, or Installation of NDB Cluster on Linux, depending on the release series that you are using.

Adding the MySQL Yum Repository for MySQL NDB Cluster

Follow the steps in Adding the MySQL Yum Repository to add the MySQL Yum repository to your system's repository list. If you have already performed the step before, make sure you have the most up-to-date version of the release package by running the following command, for platforms that are not dnf-enabled:

```
shell> sudo yum update mysql57-community-release
```

For dnf-enabled systems:

```
shell> sudo dnf --refresh upgrade mysql57-community-release
```

Selecting the MySQL NDB Cluster Subrepository

Within the MySQL Yum repository (https://repo.mysql.com/yum/), the MySQL Community Server and MySQL NDB Cluster are hosted in different subrepositories. By default, the subrepository for the latest GA series of the MySQL server is enabled and the subrepository for MySQL NDB Cluster is disabled. To install NDB Cluster, disable the subrepository for the MySQL server and enable the subrepository for NDB Cluster. If your platform supports the yum-config-manager or dnf config-manager command, you can do that by issuing, for example, the following commands, which disable the subrepository for the MySQL 5.7 series and enable the one for the MySQL NDB Cluster 7.5; for platforms that are not dnf-enabled:

```
shell> sudo yum-config-manager --disable mysql57-community
shell> sudo yum-config-manager --enable mysql-cluster-7.5-community
```

For dnf-enabled platforms:

```
shell> sudo dnf config-manager --disable mysql57-community
shell> sudo dnf config-manager --enable mysql-cluster-7.5-community
```

Besides using yum-config-manager or the dnf config-manager command, you can also select a subrepository by editing manually the /etc/yum.repos.d/mysql-community.repo file. This is a sample entry for the MySQL 5.7 subrepository in the file:

```
[mysql57-community]
name=MySQL 5.7 Community Server
baseurl=http://repo.mysql.com/yum/mysql-5.7-community/el/6/$basearch/
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
```

To install NDB Cluster 7.5, you must disable the MySQL 5.7 subrepository by making enabled=0 for the above subrepository entry and enable the NDB Cluster 7.5 subrepository by making enabled=1 for its entry:

```
[mysql-cluster-7.5-community]
name=MySQL Cluster 7.5 Community
```

```
baseurl=http://repo.mysql.com/yum/mysql-cluster-7.5-community/el/6/$basearch/
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
```

After saving the changes to the file, verify that the correct subrepositories have been enabled by running the following command (for dnf-enabled systems, replace `yum` in the command with `dnf`):

```
shell> yum repolist enabled | grep mysql
!mysql-cluster-7.5-community/x86_64 MySQL Cluster 7.5 Community          18
!mysql-connectors-community/x86_64  MySQL Connectors Community           31
!mysql-tools-community/x86_64       MySQL Tools Community                33
```

The subrepository for NDB Cluster 7.5 (Community edition) has now been enabled. Also in the list are a number of other subrepositories of the MySQL Yum repository that have been enabled by default.

Installing MySQL NDB Cluster

For a minimal installation of MySQL NDB Cluster, follow these steps (for dnf-enabled systems, replace `yum` in the commands with `dnf`):

- Install the components for SQL nodes:

```
shell> sudo yum install mysql-cluster-community-server
```

After the installation is completed, start and initialize the SQL node by following the steps given in Starting the MySQL Server.

If you choose to initialize the data directory manually using the `mysqld --initialize` command (see Initializing the Data Directory Manually Using mysqld for details), a `root` password is going to be generated and stored in the SQL node's error log; see MySQL Server Initialization [3] for how to find the password, and for a few things you need to know about it.

- Install the executables for management nodes:

```
shell> sudo yum install mysql-cluster-community-management-server
```

- Install the executables for data nodes:

```
shell> sudo yum install mysql-cluster-community-data-node
```

Configuring and Starting MySQL NDB Cluster

See Initial Configuration of NDB Cluster on how to configure MySQL NDB Cluster and Initial Startup of NDB Cluster on how to start it for the first time.

> **Note**
>
> *For EL7-based platforms:* See Compatibility Information for EL7-based platforms.

Installing Additional MySQL NDB Cluster Products and Components

You can use Yum to install individual components and additional products of MySQL NDB Cluster from the MySQL Yum repository. To do that, assuming you already have the MySQL Yum repository on your system's repository list (if not, follow Step 1 and 2 of Installing MySQL NDB Cluster Using the Yum Repository), follow the same steps given in Installing Additional MySQL Products and Components.

> **Note**
>
> *Known issue:* Currently, not all components required for running the MySQL
> NDB Cluster test suite are installed automatically when you install the test suite
> package (`mysql-cluster-community-test`). Install the following packages
> with `yum install` (or `dnf install` for dnf-enabled systems) before you run
> the test suite:
>
> - `mysql-cluster-community-auto-installer`
>
> - `mysql-cluster-community-management-server`
>
> - `mysql-cluster-community-data-node`
>
> - `mysql-cluster-community-memcached`
>
> - `mysql-cluster-community-java`
>
> - `mysql-cluster-community-ndbclient-devel`

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:

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

> **Note**
>
> ARM 64-bit (aarch64) is supported on Oracle Linux 7 as of MySQL 8.0.12.

> **Known Limitation**
>
> The 8.0.12 release requires you to adjust the *libstdc++7* path by executing `ln
> -s /opt/oracle/oracle-armtoolset-1/root/usr/lib64 /usr/
> lib64/gcc7` after executing the `yum install` step.

Further Readings

More information on the MySQL Yum repository can be found at the following sections in the MySQL
server's reference manual:

- Installing MySQL on Linux Using the MySQL Yum Repository

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

- Upgrading MySQL with the MySQL Yum Repository

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