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# How to Use the RPM Command in Linux

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## Introduction

RPM is a command-line utility for managing packages on Unix/Linux systems. It allows you to install, query, update, verify and remove RPM packages.

It is the default [package manager](#) for Red Hat based systems and only works with the [.rpm](#) format. You can install such packages using [the rpm or the yum command](#).

In this article, you will learn how to use `rpm` commands with easy to follow examples.



## How to Use the RPM Command in Linux



## Prerequisites

- A system running Linux.
- Access to the command line/terminal.
- Access to root or an account with [sudo](#) privileges.

## Linux RPM Command Syntax

The basic syntax for the command is:

```
sudo rpm [option] [package_name]
```

To see a full list of command options, run:



```
sudo rpm --help
```

```
Options implemented via popt alias/exec:  
  --scripts          list install/erase scriptlets from package(s)  
  --setperms         set permissions of files in a package  
  --setuids          set user/group ownership of files in a package  
  --conflicts        list capabilities this package conflicts with  
  --obsoletes        list other packages removed by installing this package  
  --provides         list capabilities that this package provides  
  --requires         list capabilities required by package(s)  
  --info             list descriptive information from package(s)  
  --changelog        list change logs for this package  
  --xml              list metadata in xml  
  --triggers         list trigger scriptlets from package(s)  
  --last             list package(s) by install time, most recent first  
  --dups             list duplicated packages  
  --filesbypkg       list all files from each package  
  --fileclass        list file names with classes  
  --filecolor        list file names with colors  
  --fscontext        list file names with security context from file system  
  --fileprovide      list file names with provides  
  --filerequire      list file names with requires  
  --filecaps         list file names with POSIX1.e capabilities  
  
Help options:  
  -?, --help          Show this help message  
  --usage            Display brief usage message  
[root@localhost ~]#
```

## RPM Command Options

Below you will find the most popular command options used with the `rpm` command and their meaning.

<code>-e, --erase</code>	Remove (uninstall) package(s).
<code>-h, --hash</code>	Print hash marks as the package installs.
<code>-i, --install</code>	Install package(s).
<code>-l, --list</code>	List files in a package.
<code>-q, --query</code>	Query package(s).
<code>-s, --state</code>	Display the state of the listed files.
<code>-U, --upgrade</code>	Upgrade package(s).
<code>-v, --verbose</code>	Provide more detailed output.
<code>-V, --verify</code>	Verify package(s).

## RPM Command Examples

The `rpm` command is simple to use and allows combining multiple options to customize each query. Explore some of the most commonly used commands listed below and try out how they work with a sample package.

### Install RPM Packages

To install RPM packages with the `rpm` command, use the syntax:

```
sudo rpm -ivh package_name
```

The command includes the options:

- `-i` (install)
- `-v` (verbose output)
- `-h` (print hash marks to show the installation process)

Before installing, you need to download the appropriate file. The package has to be compatible with the system architecture of the machine.



**Note:** To download packages, use the [curl](#) or [wget](#) command.

For instance, to install the MySQL package, you run:

```
sudo rpm -ivh mysql80-community-release-el7-5.noarch.rpm
```

To install an RPM package without previously downloading it, provide the URL:

```
sudo rpm -ivh package_URL
```

For example:

```
sudo rpm -ivh https://dev.mysql.com/get/mysql80-community-releas  
e-el7-5.noarch.rpm
```

```
[kbt@phoenixMAP ~]# sudo rpm -ivh https://dev.mysql.com/get/mysql80-community-release-el7-5.noarch.rpm  
Retrieving https://dev.mysql.com/get/mysql80-community-release-el7-5.noarch.rpm  
warning: /var/tmp/rpm-tmp.UB9Heb: Header V4 RSA/SHA256 Signature, key ID 3a79bd29: NOKEY  
Preparing...  
Updating / installing...  
1:mysql80-community-release-el7-5 [100%]  
[kbt@phoenixMAP ~]#
```



**Note:** For a more detailed guide on installing RPM packages, check out our guide on [how to install RPM packages on Ubuntu](#).

## Upgrade RPM Packages

RPM upgrades a package by uninstalling the current version and installing the latest one.

The command for upgrading a package is:

```
sudo rpm -Uvh package_name
```

- **-U** (upgrade)
- **-v** (verbose mode)
- **-h** (print hash marks to show upgrading process)

To upgrade MySQL, use:

```
sudo rpm -Uvh mysql80-community-release-el7-5.noarch.rpm
```

```
[kbt@phoenixMAP ~]# sudo rpm -Uvh mysql80-community-release-el7-5.noarch.rpm  
warning: mysql80-community-release-el7-5.noarch.rpm: Header V4 RSA/SHA256 Signature, key ID 3a79bd29  
: NOKEY  
Preparing...  
Updating / installing...  
1:mysql80-community-release-el7-5 [100%]
```

If the new version requires additional dependencies, you must install them manually. RPM lists the missing dependencies in the output after running the command.

To ignore the message and update without the dependencies, add the **--nodeps** option to the command:

```
sudo rpm -Uvh --nodeps package_name
```

## Remove RPM Packages

Remove RPM packages using the `-e (--erase)` option:

```
sudo rpm -e package_name
```

To see the verbose output, add the `-v` option to the command:

```
sudo rpm -ev package_name
```

To delete an RPM package without removing dependencies, add `--nodeps`:

```
sudo rpm -ev --nodeps package_name
```

For example, to remove MySQL without removing its dependencies, you run:

```
sudo rpm -ev --nodeps mysql180-community-release-el7-5.noarch
```

```
[lkb@phoenix ~]$ sudo rpm -ev --nodeps mysql180-community-release-el7-5.noarch
Preparing packages...
mysql180-community-release-el7-5.noarch
```



**Note:** For a more detailed guide on removing RPM packages, check out our guide on [how to remove packages in CentOS](#).

## Display Package Information After Installing

To see available information about an installed RPM package, use the `-qi` option, which instructs RPM to `query info`:

```
sudo rpm -qi package_name
```

The output displays the installed information, package version, and a short description.

To do so for MySQL, run:

```
sudo rpm -qi mysql189-community-release-el7-5.noarch
```

```
[lkb@phoenix ~]$ sudo rpm -qi mysql180-community-release-el7-5.noarch
Name        : mysql180-community-release
Version     : el7
Release    : 5
Architecture: noarch
Install Date: Thu 21 Apr 2022 09:00:13 AM EDT
Group       : System Environment/Base
Size        : 9313
License     : GPLv2
Signature   : RSA/SHA256, Wed 12 Jan 2022 02:30:31 PM EST, Key ID 467b942d3a79bd29
Source RPM  : mysql180-community-release-el7-5.src.rpm
Build Date  : Wed 12 Jan 2022 02:00:45 PM EST
Build Host  : pb2-e17-01.regionallab02.mysqlciad.oraclecloud.com
Relocations : (not relocatable)
Packager    : MySQL Release Engineering <mysql-build@oss.oracle.com>
Vendor     : MySQL
URL        : http://dev.mysql.com
Summary    : MySQL repository configuration for yum
Description : Package for installation of setup/configuration files required for
               installation of MySQL packages by yum.
```

## Display Package Information Before Installing

The command for displaying information about a package prior to installation is:

```
sudo rpm -qip package_name
```

The command includes the options:

- **-qi** (query information)
- **-p** (query/verify a package)

To display information before installing the MySQL package, use the command:

```
sudo rpm -qip mysql89-community-release-el7-5.noarch
```

```
Name        : mysql80-community-release
Version    : el7
Release   : 5
Architecture: noarch
Install Date: Thu 21 Apr 2022 09:00:13 AM EDT
Group      : System Environment/Base
Size       : 9313
License    : GPLv2
Signature  : RSA-SHA256, Wed 12 Jan 2022 02:30:31 PM EST, Key ID 467b942d3a79bd29
Source RPM : mysql80-community-release-el7-5.src.rpm
Build Date : Wed 12 Jan 2022 02:00:45 PM EST
Build Host : pb2-el7-01.regionallad02.mysqlciiad.oraclelevcn.com
Relocations: (not relocatable)
Packager   : MySQL Release Engineering <mysql-build@oss.oracle.com>
Vendor    : MySQL
URL       : http://dev.mysql.com
Summary   : MySQL repository configuration for yum
Description: Package for installation of setup/configuration files required for
installation of MySQL packages by yum.
```

## Check Package Dependencies Before Installing

RPM allows you to check the dependencies of packages prior to installing them on the system. Bear in mind, you need to have the RPM package downloaded locally to see a list of dependencies.

The command for doing so is:

```
rpm -qpR package_name
```

The options are:

- **-q** (query format)
- **-p** (query/verify a package)
- **-R** (list package dependencies)

For example, to list the dependencies for installing the MySQL RPM package, you run:

```
rpm -qpR mysql80-community-release-el7-5.noarch
```

## Verify Packages

Verifying packages means comparing metadata from the RPM database with the information from the installed files.

You can verify all installed packages using the command:

```
sudo rpm -Va
```

- **-v** (verify)
- **-a** (all)

To verify a specific package run:

```
sudo rpm -Vp package_name
```

- **-V** (verify)
- **-p** (package)

Verify the installed MySQL package with:

```
sudo rpm -Vp mysql80-community-release-el7-5.noarch.rpm
```

```
[kb@phoenix ~]$ sudo rpm -Vp mysql80-community-release-el7-5.noarch.rpm
warning: mysql80-community-release-el7-5.noarch.rpm: Header V4 RSA/SHA256 Signature, key ID 3a79bd29
: NOKEY
```

## Find Manual Pages

To list available documentation related to an installed RPM package, use the **-qdf** option:

```
sudo rpm -qdf package_name
```

The command options are:

- **-q** (query format)
- **-d** (list documentation files)
- **-f** (query package owning file)

To find manual pages for MySQL, use the command:

```
sudo rpm -qdf mysql80-community-release-el7-5.noarch.rpm
```

```
[kb@phoenix ~]$ sudo rpm -qdf mysql80-community-release-el7-5.noarch.rpm
file /home/kb/mysql80-community-release-el7-5.noarch.rpm is not owned by any package
```

## List All Files of an Installed Package

See detailed information about a package by listing all its files, use the **-ql** option and instructs RPM to **query list**:

```
sudo rpm -ql package_name
```

For example, to list files of the sample MySQL package, you run:

```
sudo rpm -ql mysql80-community-release-el7-5.noarch
```

```
[kb@phoenix ~]$ sudo rpm -ql mysql80-community-release-el7-5.noarch
/etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
/etc/pki/rpm-gpg/RPM-GPG-KEY-mysql-2022
/etc/yum.repos.d/mysql-community-source.repo
/etc/yum.repos.d/mysql-community.repo
```

## List Installed Packages

List all of the installed RPM packages on the system by running the following:

```
sudo rpm -qa
```

The command includes the `-qa` option, which instructs RPM to **query all**.

## List Recently Installed Packages

To display a list of all the recently installed packages, use the `-qa (query all)` option along with the `--last` attribute:

```
sudo rpm -qa --last
```

The output lists all the installed RPM packages, ordering them by the latest package on top.

## Where to Find and Download RPM Packages?

You can find and download RPM packages on the following websites:

- [rpmfind.net](http://rpmfind.net)
- <http://rpm.pbone.net/>
- <https://freshrpms.net/>

## Conclusion

In this article, you learned how to use the `rpm` command for installing, verifying, upgrading, and deleting packages. Still, it is recommended to use the `yum` or `dnf` command for such actions as they automatically deal with dependencies.

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Sofija Simic

Sofija Simic is an experienced Technical Writer. Alongside her educational background in teaching and writing, she has had a lifelong passion for information technology. She is committed to unscrambling confusing IT concepts and streamlining intricate software installations.

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