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DNF (software)

DNF (abbreviation for **D**andified **YUM**)^{[7][8][9]} is a package manager for Red Hat-based Linux distributions and derivatives. DNF was introduced in Fedora 18 in 2013 as a replacement for yum;^[10] it has been the default package manager since Fedora 22 in 2015^[11] and Red Hat Enterprise Linux 8 in 2019^[12] and is also an alternative package manager for Mageia. DNF performs package management tasks on top of RPM, and supporting libraries.

Usage

The DNF package manager works similarly to other package managers.^[13] Its core usage works very similarly to the Apt Package Manager, such as `install`, `remove`, `update`, and `upgrade`.^{[14][13]}

Usage for basic command is as follows:^[13]

```
sudo dnf install <package_name>
```

```
sudo dnf remove <package_name>
```

```
sudo dnf update
```

```
sudo dnf upgrade
```

History

Perceived deficiencies of yum (which DNF is intended to address) include poor performance, high memory usage, and the slowness of its iterative dependency resolution.^[15] DNF uses libsolv, an external dependency resolver (developed by openSUSE).^[15]

DNF was originally written in Python, but as of 2016, efforts were under way to port it to C and move most functionality from Python code into the new libdnf library.

Dandified Yum



```
dnf@fedora:~$ dnf info dnf
Updating and loading repositories:
Repositories loaded.
Installed packages:
Name           : dnf
Epoch         : 0
Version        : 5.2.0-1
Release        : 2.fc41
Architecture   : x86_64
Installed size : 2.1 MiB
Source         : dnf-5.2.0-1.2.fc41.src.rpm
From repository: updates
Summary        : Command-line package manager
URL            : https://github.com/rpm-software-management/dnf
License        : GPL-2.0-or-later
Description    : DNF is a command-line package manager that automates the process of installing, upgrading, configuring, and removing computer programs in a consistent manner. It supports RPM packages, module modules, and content groups & environments.
Vendor         : Fedora Project

Available packages:
Name           : dnf
Epoch         : 0
Version        : 5.2.0-1
Release        : 2.fc41
Architecture   : x86_64
Download size  : 888.8 KiB
Installed size : 2.1 MiB
Source         : dnf-5.2.0-1.2.fc41.src.rpm
From repository: updates
Summary        : Command-line package manager
URL            : https://github.com/rpm-software-management/dnf
License        : GPL-2.0-or-later
Description    : DNF is a command-line package manager that automates the process of installing, upgrading, configuring, and removing computer programs in a consistent manner. It supports RPM packages, module modules, and content groups & environments.
Vendor         : Fedora Project

dnf@fedora:~$ dnf --version
dnf version 5.2.0-1
dnf plugin API version 3.0
libdnf version 5.2.0-1
libdnf plugin API version 3.0

Loaded dnf plugins:
name: builddep
version: 1.0.0
API version: 2.0

name: changelog
version: 1.0.0
API version: 2.0

name: config-manager
version: 0.1.0
API version: 2.0

name: copr
version: 0.1.0
API version: 2.0

name: needs_restarting
version: 1.0.0
API version: 2.0

name: repository
version: 1.0.0
API version: 2.0

name: repository
version: 1.0.0
API version: 2.0

dnf@fedora:~$ sudo dnf upgrade --refresh
Loading and loading repositories:
Copr repo for Python3 used by anaconda
dnf-5.2.0-1.2.fc41 - updates
google-chrome
RPM Fusion for Fedora 41 - Nonfree - Steam
Fedora 41 updates from Cloud - x86_64
Fedora 41 - x86_64
RPM Fusion for Fedora 41 - Nonfree - NVIDIA Driver
Repositories loaded.
Nothing to do.
dnf@fedora:~$
```

DNF5 running on Fedora 41


Developer

Fedora Project (Red Hat)

Initial release

18 January 2012^[1]

Stable release


5.3.0.0^[2]  / 4

November 2025

Repository

<https://github.com/rpm-software-management/dnf>,^[3] <https://github.com/rpm-software-management/dnf5>^[4] 

Written in

- dnf4: Python,^[5] XML,^[5] CMake,^[5] shell script^[5] 

^[16] In 2018, the DNF team announced the decision to move libdnf from C to C++.^{[17][18]} libdnf is already used by PackageKit, a Linux distribution-agnostic package system abstraction library, even though the library doesn't have most of DNF's features.^[19]

Since the launch of Fedora Linux 41, DNF5 is the new default packaging tool. This release features new performance enhancements, updated terminal output, and fully integrated modularity.^[20]

Adoption

DNF has been the default command-line package manager for Fedora since version 22, which was released in May 2015.^[11] The libdnf library is used as a package backend in PackageKit,^[19] which offers a graphical user interface (GUI). Later, dnfdragora was developed for Fedora 27 as another alternative graphical front-end of DNF.^{[21][22]} DNF has also been available as an alternate package manager for Mageia Linux since version 6 and may become the default sometime in the future.^[23]

In Red Hat Enterprise Linux, and by extension, AlmaLinux and Rocky Linux, yum is an alias for dnf.^[12]

References

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- dnf5: C++,^[6] Python,^[6] CMake,^[6] XML,^[6] Ruby,^[6] SQL,^[6] C,^[6] Perl,^[6] shell script^[6]



Operating system Linux, IBM AIX

Platform RPM

Available in English

Type Package management system

License GPLv2+ & LGPLv2.1+ & New BSD License

Website rpm-software-management.github.io (<https://rpm-software-management.github.io>)

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External links

- [Official website \(https://rpm-software-management.github.io/\)](https://rpm-software-management.github.io/)
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