



DNF (software)

DNF (abbreviation for **Dandified 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 libolv, 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.



DNF5 running on Fedora 41

Developer

Fedora Project (Red Hat)

Initial release

18 January 2012^[1]

Stable release

5.3.0.0 / 4

Penalties

```
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

1. 0.6.4-1 for rpm-software-management/dnf dnf (<https://github.com/Tag>) on GitHub
2. "5.3.0.0" (<https://github.com/rpm-software-management/dnf5/releases/tag/5.3.0.0>). 4 November 2025. Retrieved 5 November 2025.
3. "GitHub - rpm-software-management/dnf: Package manager based on libdnf and libsolv. Replaces YUM" (<https://github.com/rpm-software-management/dnf>). GitHub. Retrieved 6 October 2016.
4. "GitHub - rpm-software-management/dnf5: Next-generation RPM package management system" (<https://github.com/rpm-software-management/dnf5>). GitHub. Retrieved 11 March 2023.
5. "The dnf Open Source Project on Open Hub: Languages Page" (https://openhub.net/p/dnf/analyses/latest/languages_summary). Open Hub. Retrieved 2 May 2024.
6. "The dnf5 Open Source Project on Open Hub: Languages Page" (https://openhub.net/p/dnf5/analyses/latest/languages_summary). Open Hub. Retrieved 2 May 2024.
7. "DNF" (<https://fedoraproject.org/wiki/DNF>). Fedoraproject Wiki. Archived (<https://web.archive.org/web/20181014204047/https://fedoraproject.org/wiki/DNF>) from the original on 2018-10-14. Retrieved 2018-05-21.

- 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>)

8. "What does DNF stand for" (https://dnf.readthedocs.io/en/latest/user_faq.html#what-does-dnf-stand-for). *DNF User's FAQ*. Archived (https://web.archive.org/web/20181014204116/https://dnf.readthedocs.io/en/latest/user_faq.html#what-does-dnf-stand-for) from the original on 2018-10-14. Retrieved 2018-05-21.
9. README.rst · rpm-software-management/dnf (<https://github.com/rpm-software-management/dnf/blob/master/README.rst>) on GitHub
10. Byfield, Bruce. "Will DNF Replace Yum?" (<http://www.linux-magazine.com/Online/Features/Will-DNF-Replace-Yum>). *Linux Magazine*. Archived (<https://web.archive.org/web/20150926071643/http://www.linux-magazine.com/Online/Features/Will-DNF-Replace-Yum>) from the original on 2015-09-26. Retrieved 2015-05-28.
11. "Fedora 22 Released, See What's New [Workstation]" (<http://www.webupd8.org/2015/05/fedora-22-released-see-whats-new.html>). WebUpd8. 2015-05-26. Archived (<https://web.archive.org/web/20150925093141/http://www.webupd8.org/2015/05/fedora-22-released-see-whats-new.html>) from the original on 2015-09-25. Retrieved 2015-05-28.
12. Matteson, Scott (2019-03-30). "What's new with Red Hat Enterprise Linux 8 and Red Hat Virtualization" (<https://www.techrepublic.com/article/whats-new-with-red-hat-enterprise-linux-8-and-red-hat-virtualization/>). *TechRepublic*. Archived (<https://web.archive.org/web/20190924185646/https://www.techrepublic.com/article/whats-new-with-red-hat-enterprise-linux-8-and-red-hat-virtualization/>) from the original on 2019-09-24. Retrieved 2019-09-24.
13. "Dnf Package Manager - Documentation" (https://docs.rockylinux.org/10/guides/package_management/dnf_package_manager/). *docs.rockylinux.org*. Retrieved 2025-11-24.
14. Djere, Rex (2025-10-23). "The Histories, Similarities and Differences of the APT and DNF GNU/Linux Package Managers" (<https://djere.com/the-histories-similarities-and-differences-of-the-apt-and-dnf-gnulinux-package-managers.html>). *Djere.com*. Retrieved 2025-11-24.
15. Edge, Jake (2014-01-15). "DNF and Yum in Fedora" (<https://lwn.net/Articles/580223/>). LWN.net. Archived (<https://web.archive.org/web/20150930225233/https://lwn.net/Articles/580223/>) from the original on 2015-09-30. Retrieved 2015-03-29.
16. Šilhan, Jan (2016-02-24). "DNF into C initiative started" (<https://web.archive.org/web/20170702103537/http://dnf.baseurl.org/2016/02/24/dnf-into-c-initiative-started/>). *DNF blog*. Archived from the original (<http://dnf.baseurl.org/2016/02/24/dnf-into-c-initiative-started/>) on 2017-07-02. Retrieved 2017-07-05.
17. Mach, Daniel; Mracek, Jaroslav (22 March 2018). "Announcing DNF 3 development" (<https://rpm-software-management.github.io/announcement/2018/03/22/dnf-3-announcement/>). *DNF: A Blog of The DNF Team*. Archived (<https://web.archive.org/web/20180918123929/https://rpm-software-management.github.io/announcement/2018/03/22/dnf-3-announcement/>) from the original on September 18, 2018. Retrieved 8 August 2023.
18. Edge, Jake (28 March 2018). "DNF 3: better performance and a move to C++" (<https://lwn.net/Articles/750238/>). LWN.net. Archived (<https://web.archive.org/web/20181014204126/https://lwn.net/Articles/750238/>) from the original on October 14, 2018. Retrieved 8 August 2023.

19. Aleksandersen, Daniel (2017-07-05). "Use DNF rather than PackageKit on Fedora" (<https://ctrl.blog/entry/packagekit-dnf>). *Ctrl blog*. Archived (<https://web.archive.org/web/20170807192837/https://ctrl.blog/entry/packagekit-dnf>) from the original on 2017-08-07. Retrieved 2017-08-07.
20. "Changes/ReplaceDnfWithDnf5" (<https://fedoraproject.org/wiki/Changes/ReplaceDnfWithDnf5>). Archived (<https://web.archive.org/web/20231112164657/https://fedoraproject.org/wiki/Changes/ReplaceDnfWithDnf5>) from the original on 2023-11-12. Retrieved 2023-11-12.
21. "Changes/Replace yumex-dnf with dnfdragora - Fedora Project Wiki" (https://fedoraproject.org/wiki/Changes/Replace_yumex-dnf_with_dnfdragora). *fedoraproject.org*. Archived (https://web.archive.org/web/20210927075456/https://fedoraproject.org/wiki/Changes/Replace_yumex-dnf_with_dnfdragora) from the original on 2021-09-27. Retrieved 2021-09-27.
22. "F27 Self Contained Change: Replace Yumex-DNF with dnfdragora - devel - Fedora Mailing-Lists" (<https://lists.fedoraproject.org/archives/list-devel@lists.fedoraproject.org/message/UK3RBRADUMUOONCEQSGWA5GY625N6YQG/>). *lists.fedoraproject.org*. Archived (<https://web.archive.org/web/20210927075842/https://lists.fedoraproject.org/archives/list-devel@lists.fedoraproject.org/message/UK3RBRADUMUOONCEQSGWA5GY625N6YQG/>) from the original on 2021-09-27. Retrieved 2021-09-27.
23. Larabel, Michael (2016-09-05). "Mageia To Offer DNF, But Will Keep Using URPMI By Default" (https://www.phoronix.com/scan.php?page=news_item&px=Megia-6-To-Have-DNF-Yum). Phoronix. Archived (https://web.archive.org/web/20171206005751/https://www.phoronix.com/scan.php?page=news_item&px=Megia-6-To-Have-DNF-Yum) from the original on 2017-12-06. Retrieved 2017-12-04.

External links

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

Retrieved from "[https://en.wikipedia.org/w/index.php?title=DNF_\(software\)&oldid=1328917313](https://en.wikipedia.org/w/index.php?title=DNF_(software)&oldid=1328917313)"