

DNF Configuration Reference

 dnf.readthedocs.io/en/latest/conf_ref.html

Description

DNF by default uses the global configuration file at `/etc/dnf/dnf.conf` and all `*.repo` files found under `/etc/yum.repos.d`. The latter is typically used for repository configuration and takes precedence over global configuration.

The configuration file has INI format consisting of section declaration and `name=value` options below each on separate line. There are two types of sections in the configuration files: main and repository. Main section defines all global configuration options and should be only one.

The repository sections define the configuration for each (remote or local) repository. The section name of the repository in brackets serve as repo ID reference and should be unique across configuration files. The allowed characters of repo ID string are lower and upper case alphabetic letters, digits, `-`, `_`, `.` and `:`. The minimal repository configuration file should aside from repo ID consists of baseurl, metalink or mirrorlist option definition.

[main] Options

arch

string

The architecture used for installing packages. By default this is auto-detected. Often used together with ignorearch option.

assumeyes

boolean

If enabled dnf will assume **Yes** where it would normally prompt for confirmation from user input (see also defaultyes). Default is False.

autocheck_running_kernel

boolean

Automatic check whether there is installed newer kernel module with security update than currently running kernel. Default is True.

best

boolean

When upgrading a package, always try to install its highest version available, even only to find out some of its deps are not satisfiable. Enable this if you want to experience broken dependencies in the repositories firsthand. The default is False.

check_config_file_age

boolean

Specifies whether dnf should automatically expire metadata of repos, which are older than their corresponding configuration file (usually the dnf.conf file and the foo.repo file).

Default is **True** (perform the check). Expire of metadata is also affected by metadata age. See also metadata_expire.

clean_requirements_on_remove

boolean

Remove dependencies that are no longer used during **dnf remove**. A package only qualifies for removal via **clean_requirements_on_remove** if it was installed through DNF but not on explicit user request, i.e. it was pulled in as a dependency. The default is True.
(installonlypkgs are never automatically removed.)

config_file_path

string

Path to the default main configuration file. Default is **/etc/dnf/dnf.conf**.

debuglevel

integer

Debug messages output level, in the range 0 to 10. The higher the number the more debug output is put to stdout. Default is 2.

defaultyes

boolean

If enabled the default answer to user confirmation prompts will be **Yes**. Not to be confused with assumeyes which will not prompt at all. Default is False.

errorlevel

integer

Error messages output level, in the range 0 to 10. The higher the number the more error output is put to stderr. Default is 3. This is deprecated in DNF and overwritten by --verbose commandline option.

exit_on_lock

boolean

Should the dnf client exit immediately when something else has the lock. Default is False

gpgkey_dns_verification

boolean

Should the dnf attempt to automatically verify GPG verification keys using the DNS system. This option requires libunbound to be installed on the client system. This system has two main features. The first one is to check if any of the already installed keys have been revoked. Automatic removal of the key is not yet available, so it is up to the user, to remove revoked keys from the system. The second feature is automatic verification of new keys when a repository is added to the system. In interactive mode, the result is written to the output as a suggestion to the user. In non-interactive mode (i.e. when -y is used), this system will automatically accept keys that are available in the DNS and are correctly signed using DNSSEC. It will also accept keys that do not exist in the DNS system and their NON-existence is cryptographically proven using DNSSEC. This is mainly to preserve backward compatibility.

group_package_types

list

List of the following: optional, default, mandatory. Tells dnf which type of packages in groups will be installed when 'groupinstall' is called. Default is: default, mandatory

ignorearch

boolean

If set to **True**, RPM will allow attempts to install packages incompatible with the CPU's architecture. Defaults to **False**. Often used together with arch option.

install_weak_deps

boolean

When this option is set to True and a new package is about to be installed, all packages linked by weak dependency relation (Recommends or Supplements flags) with this package will pulled into the transaction.
Default is True.

installonlypkgs

list

List of provide names of packages that should only ever be installed, never

upgraded. Kernels in particular fall into this category.

These packages are never removed by `dnf autoremove` even if they were installed as dependencies (see `clean_requirements_on_remove` for auto removal details).

This option append the list values to the default `installonlypkgs` list used by DNF. The number of kept package versions is regulated by `installonly_limit`.

installonly_limit

integer

Number of installonly packages allowed to be installed concurrently. Defaults to 3. The minimal number of installonly packages is 2. Value 0 or 1 means unlimited number of installonly packages.

keepcache

boolean

Keeps downloaded packages in the cache when set to True. Even if it is set to False and packages have not been installed they will still persist until next successful transaction. The default is False.

logdir

string

Directory where the log files will be stored. Default is `/var/log`.

metadata_timer_sync

time in seconds

The minimal period between two consecutive `makecache timer` runs. The command will stop immediately if it's less than this time period since its last run. Does not affect simple `makecache` run. Use `0` to completely disable automatic metadata synchronizing. The default corresponds to three hours. The value is rounded to the next commenced hour.

module_platform_id

string

Set this to `$name:$stream` to override `PLATFORM_ID` detected from `/etc/os-release`. It is necessary to perform a system upgrade and switch to a new platform.

obsoletes

boolean

This option only has affect during an install/update. It enables dnf's obsoletes processing logic, which means it makes dnf check whether any dependencies of given package are no longer required and removes them. Useful when doing distribution level upgrades. Default is 'true'.

Command-line option: `--obsoletes`

pluginconfpath

list

List of directories that are searched for plugin configurations to load. All configuration files found in these directories, that are named same as a plugin, are parsed. The default path is `/etc/dnf/plugins`.

pluginpath

list

List of directories that are searched for plugins to load. Plugins found in *any of the directories* in this configuration option are used. The default contains a Python version-specific path.

protected_packages

list

List of packages that DNF should never completely remove. They are protected via Obsoletes as well as user/plugin removals.

The default is: `dnf`, `glob:/etc/yum/protected.d/*.conf` and `glob:/etc/dnf/protected.d/*.conf`. So any packages which should be protected can do so by including a file in `/etc/dnf/protected.d` with their package name in it.

DNF will protect also the package corresponding to the running version of the kernel.

reposdir

list

DNF searches for repository configuration files in the paths specified by `reposdir`. The behavior of `reposdir` could differ when it is used along with `--installroot` option.

rpmverbosity

string

RPM debug scriptlet output level. One of: `critical`, `emergency`, `error`, `warn`, `info` or `debug`. Default is `info`.

upgrade_group_objects_upgrade

boolean

Set this to False to disable the automatic running of `group upgrade` when running the `upgrade` command. Default is True (perform the operation).

Repo Options

baseurl

list

URLs for the repository.

cost

integer

The relative cost of accessing this repository, defaulting to 1000. This value is compared when the priorities of two repositories are the same. The repository with *the lowest cost* is picked. It is useful to make the library prefer on-disk repositories to remote ones.

enabled

boolean

Include this repository as a package source. The default is True.

gpgkey

list of strings

URLs of a GPG key files that can be used for signing metadata and packages of this repository, empty by default. If a file can not be verified using the already imported keys, import of keys from this option is attempted and the keys are then used for verification.

metalink

string

URL of a metalink for the repository.

mirrorlist

string

URL of a mirrorlist for the repository.

module_hotfixes

boolean

Set this to True to disable module RPM filtering and make all RPMs from the repository available. The default is False.

This allows user to create a repository with cherry-picked hotfixes that are included in a package

set on a modular system.

name

string

A human-readable name of the repository. Defaults to the ID of the repository.

priority

integer

The priority value of this repository, default is 99. If there is more than one candidate package for a particular operation, the one from a repo with *the lowest priority value* is picked, possibly despite being less convenient otherwise (e.g. by being a lower version).

retries

integer

Overrides the retries option from the [main] section for this repository.

skip_if_unavailable

boolean

If enabled, DNF will continue running and disable the repository that couldn't be contacted for any reason when downloading metadata. This option doesn't affect skipping of unavailable packages after dependency resolution. To check inaccessibility of repository use it in combination with refresh command line option. The default is True.

strict

boolean

If disabled, all unavailable packages or packages with broken dependencies given to DNF command will be skipped without raising the error causing the whole operation to fail. Currently works for install command only. The default is True.

type

string

Type of repository metadata. Supported values are: `rpm-md` .

Aliases for `rpm-md` : `rpm` , `repomd` , `rpmmd` , , .

Repo Variables

Right side of every repo option can be enriched by the following variables:

\$arch

Refers to the system's CPU architecture e.g, aarch64, i586, i686 and x86_64.

\$basearch

Refers to the base architecture of the system. For example, i686 and i586 machines both have a base architecture of i386, and AMD64 and Intel64 machines have a base architecture of x86_64.

\$releasever

Refers to the release version of operating system which DNF derives from information available in RPMDB.

Options for both [main] and Repo

Some options can be applied in either the main section, per repository, or in a combination. The value provided in the main section is used for all repositories as the default value and concrete repositories can override it in their configuration.

bandwidth

storage size

Total bandwidth available for downloading. Meaningful when used with the throttle option. Storage size is in bytes by default but can be specified with a unit of storage. Valid units are 'k', 'M', 'G'.

deltarpm

boolean

When enabled, DNF will save bandwidth by downloading much smaller delta RPM files, rebuilding them to RPM locally. However, this is quite CPU and I/O intensive. Default is True.

deltarpm_percentage

integer

When the relative size of delta vs pkg is larger than this, delta is not used. Default value is 75 (Deltas must be at least 25% smaller than the pkg). Use 0 to turn off delta rpm processing. Local repositories (with file:// baseurl) have delta rpms turned off by default.

enablegroups

boolean

Determines whether DNF will allow the use of package groups for this repository. Default is True (package groups are allowed).

excludepkgs

list

Exclude packages of this repository, specified by a name or a glob and separated by a comma, from all operations.

Can be disabled using `--disableexcludes` command line switch.

fastestmirror

boolean

If enabled a metric is used to find the fastest available mirror. This overrides the order provided by the mirrorlist/metalink file itself. This file is often dynamically generated by the server to provide the best download speeds and enabling fastestmirror overrides this. The default is False.

gpgcheck

boolean

Whether to perform GPG signature check on packages found in this repository. The default is False.

includepkgs

list

Include packages of this repository, specified by a name or a glob and separated by a comma, in all operations.

Inverse of excludepkgs, DNF will exclude any package in the repository that doesn't match this list. This works in conjunction with exclude and doesn't override it, so if you 'excludepkgs=*.i386' and 'includepkgs=python*' then only packages starting with python that do not have an i386 arch will be seen by DNF in this repo.

Can be disabled using `--disableexcludes` command line switch.

ip_resolve

IP address type

Determines how DNF resolves host names. Set this to '4'/'IPv4' or '6'/'IPv6' to resolve to IPv4 or IPv6 addresses only. By default, DNF resolves to either addresses.

localpkg_gpgcheck

boolean

Whether to perform a GPG signature check on local packages (packages in a file, not in a repository). The default is False.

max_parallel_downloads

integer

Maximum number of simultaneous package downloads. Defaults to 3.

metadata_expire

time in seconds

The period after which the remote repository is checked for metadata update and in the positive

case the local metadata cache is updated. The default corresponds to 48 hours. Set this to **-1** or **never** to make the repo never considered expired. Expire of metadata can be also triggered by change of timestamp of configuration files (**dnf.conf** , **<repo>.repo**). See also **check_config_file_age**.

minrate

storage size

This sets the low speed threshold in bytes per second. If the server is sending data at the same or slower speed than this value for at least timeout option seconds, DNF aborts the connection. The default is 1000. Valid units are 'k', 'M', 'G'.

proxy

string

URL of a proxy server to connect through. If none is specified then direct connection is used (the default).

proxy_username

string

The username to use for connecting to the proxy server. Empty by default.

proxy_password

string

The password to use for connecting to the proxy server. Empty by default.

proxy_auth_method

string

The authentication method used by the proxy server. Valid values are 'basic', 'digest', 'negotiate', 'ntlm', 'digest_ie', 'ntlm_wb', 'none' and 'any' (default).

repo_gpgcheck

boolean

Whether to perform GPG signature check on this repository's metadata. The default is False.

retries

integer

Set the number of times any attempt to retrieve a file should retry before returning an error. Setting this to 0 makes dnf try forever. Default is 10.

sslcacert

string

Path to the directory or file containing the certificate authorities to verify SSL certificates. Empty by default - uses system default.

sslverify

boolean

When enabled, remote SSL connections are verified. If the client can not be authenticated connecting fails and the given repo is not used further. On False, SSL connections can be used but are not verified. Default is True.

sslclientcert

string

Path to the SSL client certificate used to connect to remote sites. Empty by default.

sslclientkey

string

Path to the SSL client key used to connect to remote sites. Empty by default.

throttle

storage size

Limits the downloading speed. It might be an absolute value or a percentage, relative to the value of the bandwidth option option. 0 means no throttling (the default). The absolute value is in bytes by default but can be specified with a unit of storage. Valid units are 'k', 'M', 'G'.

timeout

time in seconds

Number of seconds to wait for a connection before timing out. Used in combination with minrate option option. Defaults to 30 seconds.

username

string

The username to use for connecting to repo with basic HTTP authentication. Empty by default.

password

string

The password to use for connecting to repo with basic HTTP authentication. Empty by default.

Types of Options

boolean

This is a data type with only two possible values.

One of following options can be used: 1, 0, True, False, yes, no

integer

It is a whole number that can be written without a fractional component.

list

It is an option that could represent one or more strings separated by space or comma characters.

string

It is a sequence of symbols or digits without any whitespace character.

Files

Cache Files

/var/cache/dnf

Main Configuration File

/etc/dnf/dnf.conf

Repository

/etc/yum.repos.d/

Variables

Any properly named file in /etc/dnf/vars is turned into a variable named after the filename (or overrides any of the above variables but those set from commandline). Filenames may contain only

alphanumeric characters and underscores and be in lowercase.

See Also

dnf(8), DNF Command Reference