dpkg Debian package tool

START HERE

`sudo dpkg -i <file.deb>`
Install a package file

`dpkg -s <pkg>`
Status and details

`dpkg -l '<pattern>'`
List matching packages

`sudo dpkg -r <pkg>`
Remove, keep config

`dpkg -L <pkg>`
Files a package installed

`sudo dpkg -P <pkg>`
Purge incl. config

`dpkg -S <path>`
Which package owns this file

`dpkg-deb -I <file.deb>`
Inspect a .deb

.deb file ar archive → `--unpack` → **Unpacked** files placed → `--configure` → **Installed** maintainer scripts run → `-r` → **Removed** config kept (rc) → `-P` → **Purged** config gone

CONCEPTS

dpkg works on single .deb files and the local database. It does not fetch packages or resolve dependencies: use apt for that.

The two-letter state in dpkg -l: ii is installed, rc is removed with config left, hi is installed and held.

The package database lives in /var/lib/dpkg; the action log is /var/log/dpkg.log.

INSTALL AND REMOVE

`sudo dpkg -i <file.deb>`
Install or upgrade from a file

`sudo dpkg -i <dir>/*.deb`
Install several files at once

`sudo dpkg -R <dir>`
Install every .deb in a directory

`sudo dpkg -r <pkg>`
Remove, keep config files

`sudo dpkg -P <pkg>`
Purge: remove with config files

`sudo dpkg --configure -a`
Finish interrupted configuration
Run this after an aborted install; then sudo apt -f install fixes missing dependencies.

`sudo dpkg-reconfigure <pkg>`
Rerun a package's configuration questions
Part of debconf; may need installing.

`sudo dpkg --configure <pkg>`
Configure one unpacked package

`sudo dpkg --unpack <file.deb>`
Unpack without configuring

`sudo dpkg -i --force-depends <file.deb>`
Install despite unmet dependencies
Leaves the system inconsistent; use only to unblock a repair.

`sudo dpkg -i -E <file.deb>`
Skip if same version is installed

`sudo dpkg -i -G <file.deb>`
Refuse to downgrade

`dpkg --force-help`
List all --force- options

INSTALL AND REMOVE (cont.)

Prefer sudo apt install ./<file.deb>: it installs a local file and pulls in dependencies.

QUERY INSTALLED

`dpkg -l`
List all packages

`dpkg -l '<pattern>'`
List packages matching a glob

`dpkg -s <pkg>`
Show status, version, depends

`dpkg -L <pkg>`
List files owned by a package

`dpkg -S <path>`
Find the package owning a file

`dpkg -l | grep ^ii`
Only installed packages

`dpkg -l | grep ^rc`
Removed packages with config left

`dpkg -C`
Audit for half-installed packages

`dpkg -V [<pkg>]`
Verify installed files against the database

`dpkg --print-architecture`
Native architecture

`dpkg --print-foreign-architectures`
Enabled extra architectures

`dpkg --add-architecture <arch>`
Enable a foreign architecture
Run apt update afterwards.

`dpkg --compare-versions <a> lt <b>`
Test version order (exit code)

DPKG-QUERY

`dpkg-query -W <pkg>`
Package and version

`dpkg-query -W -f='${Package} ${Version}\n'`
Custom output for all packages

`dpkg-query -W -f='${Installed-Size}\t${Package}\n' | sort -n`
Largest packages last

DPKG-QUERY (cont.)

`dpkg-query -W -f='${Status}\n' <pkg>`
Raw status string

`dpkg-query -l '<pattern>'`
Same as dpkg -l

`dpkg-query --control-list <pkg>`
List maintainer scripts

`dpkg-query --control-show <pkg> <file>`
Print a control file

HOLDS AND SELECTIONS

`echo '<pkg> hold' | sudo dpkg --set-selections`
Hold a package at its version

`echo '<pkg> install' | sudo dpkg --set-selections`
Release a hold

`dpkg --get-selections`
List selections

`dpkg --get-selections | grep hold`
Show held packages

`dpkg --get-selections > <file>`
Save the package list

`sudo dpkg --set-selections < <file>`
Restore a saved list
Then run sudo apt-get dselect-upgrade to apply it.

`apt-mark hold <pkg>`
apt's equivalent of a hold

INSPECT .DEB FILES

`dpkg-deb -I <file.deb>`
Show control info

`dpkg-deb -c <file.deb>`
List contained files

`dpkg-deb -W <file.deb>`
Name and version only

`dpkg-deb -f <file.deb> <field>`
Print one control field

`dpkg-deb -x <file.deb> <dir>`
Extract files without installing

`dpkg-deb -e <file.deb> <dir>`
Extract control files and scripts

INSPECT .DEB FILES (cont.)

`dpkg-deb -R <file.deb> <dir>`
Extract files and control together

`dpkg-deb -b <dir> <file.deb>`
Build a .deb from a tree
The tree needs a DEBIAN/control file.

`dpkg --contents <file.deb>`
Same as dpkg-deb -c

DIVERT AND OVERRIDE

`dpkg-divert --list`
List diversions

`sudo dpkg-divert --add --rename <path>`
Move a file aside for upgrades

`sudo dpkg-divert --remove --rename <path>`
Undo a diversion

`dpkg-statoverride --list`
List owner/mode overrides

`sudo dpkg-statoverride --update --add <user> <group> <mode> <path>`
Set owner and mode persistently

A diversion keeps package upgrades from overwriting your own copy of a file.

RECIPES

Which package owns this command

```
# resolve symlinks first
dpkg -S "$(readlink -f
"$(command -v <cmd>)")"
```

Clean up removed packages' config

```
dpkg -l | awk '/^rc/ {print $2}'
dpkg -l | awk '/^rc/ {print $2}'
| xargs sudo dpkg -P
```

Look inside a download before installing

```
dpkg-deb -I <file.deb>
dpkg-deb -c <file.deb>
dpkg-deb -x <file.deb> /tmp/peek
```

Recover from a broken install

```
sudo dpkg --configure -a
sudo apt -f install
dpkg -C
```