APT Debian package manager

Sources sources.list → `apt update` → **Package lists** local index → `apt install` → **Downloaded .deb** /var/cache/apt → `dpkg` → **Installed system** dpkg database

CONCEPTS

update only refreshes the lists; upgrade is what installs new versions. Run them in that order.

apt is the interactive front end; apt-get and apt-cache behave more stably and are better in scripts.

Debian and Ubuntu family only. Changing the system needs root, so prefix with sudo.

UPDATE AND UPGRADE

`sudo apt update`
Refresh the package lists

`sudo apt upgrade`
Upgrade, never remove packages

`sudo apt full-upgrade`
Upgrade, allow removals if needed

`apt list --upgradeable`
List packages with updates

`sudo apt install --only-upgrade <pkg>`
Upgrade one package only

`sudo apt -s upgrade`
Simulate, change nothing

INSTALL AND REMOVE

`sudo apt install <pkg>`
Install a package

`sudo apt install <pkg1> <pkg2>`
Install several at once

`sudo apt remove <pkg>`
Remove, keep config files

`sudo apt purge <pkg>`
Remove including config files

`sudo apt autoremove`
Remove unneeded dependencies

`sudo apt autoremove --purge`
Also delete their config

`sudo apt install ./<file>.deb`
Install a local .deb with deps

`sudo apt reinstall <pkg>`
Reinstall a package

`sudo apt install <pkg>=<version>`
Install an exact version

`sudo apt install --no-install-recommends <pkg>`
Skip recommended packages

`sudo apt install -f`
Repair broken dependencies

SEARCH AND INSPECT

`apt search <term>`
Search names and descriptions

`apt show <pkg>`
Show version, depends, size

`apt list --installed`
List installed packages

`apt list --installed | grep <name>`
Is it installed?

`apt list --all-versions <pkg>`
Show every available version

`apt policy <pkg>`
Installed, candidate, sources

`apt depends <pkg>`
What a package needs

`apt rdepends <pkg>`
What needs a package

HOLD AND MARK

`sudo apt-mark hold <pkg>`
Freeze at current version

`sudo apt-mark unhold <pkg>`
Allow upgrades again

`apt-mark showhold`
List held packages

HOLD AND MARK (cont.)

`apt-mark showmanual`
List manually installed packages

`sudo apt-mark manual <pkg>`
Protect from autoremove

`sudo apt-mark auto <pkg>`
Let autoremove take it

Autoremove only removes packages marked auto. Mark a package manual to keep it.

SOURCES AND CACHE

`sudo apt edit-sources`
Edit the sources file

`ls /etc/apt/sources.list.d/`
See extra repositories

`sudo apt clean`
Delete all downloaded .deb files

DPKG PAIRING

`dpkg -l`
List installed packages

`dpkg -l <pattern>`
Status of matching packages

DPKG PAIRING (cont.)

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

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

`dpkg -s <pkg>`
Installed status and details

`sudo dpkg -i <file>.deb`
Install a .deb, no deps

`sudo dpkg --configure -a`
Finish interrupted installs

RECIPES

Routine system update

```
sudo apt update
apt list --upgradeable
sudo apt upgrade
sudo apt autoremove
```

Find which package provides a file

```
dpkg -S /usr/bin/<cmd>
# not installed yet? use apt-file
sudo apt install apt-file &&
sudo apt-file update
apt-file search <path>
```

Pin a package, then release it

```
sudo apt-mark hold <pkg>
apt-mark showhold
sudo apt upgrade   # skips it
sudo apt-mark unhold <pkg>
```