# pacman Arch package manager

**START HERE**

`sudo pacman -Syu`
Sync and upgrade everything

`sudo pacman -Rns <pkg>`
Remove with unused deps

`pacman -Ss <term>`
Search the repositories

`pacman -Qs <term>`
Search installed packages

`pacman -Si <pkg>`
Show repo package info

`pacman -Qo <file>`
Which package owns a file

`sudo pacman -S <pkg>`
Install a package

`pacman -Qdt`
List orphans

**Repositories** sync databases → `-Sy` → **Package cache** /var/cache/pacman/pkg → `-S` / `-U` → **Installed system** local database → `-Q` → **Query results** owners, files, orphans

## CONCEPTS

The capital letter picks the operation (S sync, R remove, Q query, U upgrade, F files, D database); lowercase letters modify it.

Never run -Sy alone or install after it without upgrading. A partial upgrade can break the system; use -Syu.

Arch and Arch-based distributions only. Changing the system needs root, so prefix with sudo. AUR packages need a helper or makepkg.

## SYNC AND UPGRADE

`sudo pacman -Syu`
Refresh databases and upgrade all

`sudo pacman -S <pkg>`
Install a package with deps

`sudo pacman -S <pkg1> <pkg2>`
Install several at once

`sudo pacman -Sy`
Refresh the sync databases only
*Do not install afterwards without a full upgrade; it risks a partial upgrade.*

`sudo pacman -Syyu`
Force-refresh, then upgrade

`sudo pacman -S --needed <pkg>`
Skip packages already current

`sudo pacman -S <repo>/<pkg>`
Install from a specific repo

`sudo pacman -Sw <pkg>`
Download only, do not install

`sudo pacman -Syu --ignore <pkg>`
Upgrade but skip a package

`sudo pacman -S --asdeps <pkg>`
Install and mark as dependency

`sudo pacman -Syu --noconfirm`
Upgrade without prompts

`sudo pacman -Syuu`
Upgrade and allow downgrades

`sudo pacman -S --overwrite <glob> <pkg>`
Overwrite conflicting files
*Only for known file conflicts; the glob limits what may be replaced.*

## REMOVE

`sudo pacman -R <pkg>`
Remove just the package

`sudo pacman -Rs <pkg>`
Remove with unused dependencies

`sudo pacman -Rns <pkg>`
Also skip .pacsave backups

`sudo pacman -Rsu <pkg>`
Remove only if nothing needs it

`sudo pacman -Rc <pkg>`
Also remove dependent packages
*Cascades to everything that depends on the target; read the list.*

`sudo pacman -Rdd <pkg>`
Remove ignoring all dependencies

`sudo pacman -R --dbonly <pkg>`
Drop the db entry, keep files

Removed config files you edited are saved as .pacsave; changed upgrades leave .pacnew next to the live file.

## SEARCH AND INSPECT

`pacman -Ss <term>`
Search repos by name and description

`pacman -Si <pkg>`
Show repo package details

`pacman -Qi <pkg>`
Show installed package details

`pacman -Qs <term>`
Search installed packages

`pacman -Ql <pkg>`
List files a package installed

`pacman -Qo <file>`
Which package owns a file

`pacman -Q`
List all installed packages

`pacman -Qe`
List explicitly installed packages

`pacman -Qm`
List foreign (AUR) packages

`pacman -Qn`
List packages from the repos

`pacman -Qu`
List out-of-date packages
*Compares against the local sync databases, so run -Sy first.*

`pacman -Qk <pkg>`
Check that a package's files exist

## SEARCH AND INSPECT (cont.)

`pacman -Qc <pkg>`
Show a package's changelog

`pacman -Sl <repo>`
List all packages in a repo

`pacman -Sg <group>`
List members of a group

`pacman -Qip <file>.pkg.tar.zst`
Inspect a package file

`pacman -Qq`
Print names only, for scripts

## ORPHANS AND INSTALL REASON

`pacman -Qdt`
List orphaned dependencies

`pacman -Qdtq | sudo pacman -Rns -`
Remove all orphans
*Check the list first; an empty list makes pacman -Rns complain about missing targets.*

`pacman -Qet`
Explicit packages nothing requires

`pacman -Qt`
Packages nothing requires

`sudo pacman -D --asexplicit <pkg>`
Mark explicit, protect from cleanup

`sudo pacman -D --asdeps <pkg>`
Mark as dependency

## FILES AND LOCAL PACKAGES

`sudo pacman -Fy`
Refresh the file databases

`pacman -F <file>`
Which repo package ships a file
*Searches repo packages you may not have installed; needs -Fy first.*

`pacman -Fl <pkg>`
List files of a repo package

`pacman -Fx <regex>`
Search files by regex

`sudo pacman -U <file>.pkg.tar.zst`
Install a local package file

`sudo pacman -U <url>`
Install a package from a URL

`sudo pacman -U /var/cache/pacman/pkg/<file>`
Downgrade from the cache

## CACHE AND CONFIG

`sudo pacman -Sc`
Clean uninstalled packages from cache

`sudo pacman -Scc`
Empty the whole cache
*Removes every cached package, so you lose the option to downgrade from it.*

`paccache -r`
Keep the last 3 versions of each
*paccache comes from the pacman-contrib package.*

`ls /var/cache/pacman/pkg`
See cached package files

`pacman -v`
Show config, db and cache paths

`pacman-conf`
Print the effective pacman.conf

`find /etc -name '*.pacnew'`
Find config files to merge

`pacdiff`
Merge .pacnew and .pacsave files
*pacdiff is part of pacman-contrib.*

`sudo pacman-key --init && sudo pacman-key --populate`
Set up the signing keyring

`sudo pacman -S archlinux-keyring`
Refresh the keyring package

Config lives in /etc/pacman.conf: enable Color, ParallelDownloads and extra repos there. IgnorePkg holds a package back.

## RECIPES

**Routine system update**

```
sudo pacman -Syu
pacman -Qdt
find /etc -name '*.pacnew'
```

**Find what owns a file or provides a command**

```
pacman -Qo /usr/bin/<cmd>
# not installed yet?
sudo pacman -Fy
pacman -F <cmd>
```

**Downgrade a package from the cache**

```
ls /var/cache/pacman/pkg | grep <pkg>
sudo pacman -U /var/cache/pacman/pkg/<pkg>-<ver>.pkg.tar.zst
# then add it to IgnorePkg in pacman.conf
```

**List packages you installed by hand**

```
pacman -Qeq
pacman -Qm
pacman -Qeq > pkglist.txt
```