rsync cheat sheet

Copy, sync and back up, locally or over SSH: preview first, then run.

`--delete` removes files from the destination for good. No trash, no undo: only a backup gets them back. Preview with `--dry-run` first and read every `deleting` line. Files you want to keep listed? Stop: source and destination may be the wrong way round.

The safe order

1. Preview (nothing is copied or deleted)

```
rsync -avh --dry-run --delete ./site/ \
  /mnt/mirror/site/
```

2. Run it for real

```
rsync -avh --delete ./site/ /mnt/mirror/site/
```

The trailing slash

`rsync -a src/ dest/`	Copies what's inside `src` into `dest`
`rsync -a src dest/`	Copies the folder: `dest/src/…`

Only the source's slash matters, never the destination's.

Common commands

Copy a folder to a server over SSH

```
rsync -avzh ./site/ \
  deploy@example.com:/var/www/site/
```

Download a folder from a server

```
rsync -avzh deploy@example.com:/var/www/site/ \
  ./site-backup/
```

Copy the folder itself, not just what's inside

```
rsync -avh photos /mnt/backup/
```

Mirror a folder exactly (delete extra files)

```
rsync -avh --dry-run --delete ./site/ \
  /mnt/mirror/site/
```

Exclude folders and files

```
rsync -avh --exclude=node_modules --exclude=.git \
  --exclude='*.log' ./project/ /mnt/backup/project/
```

Use a different SSH port or key

```
rsync -avh -e 'ssh -p 2222 -i ~/.ssh/deploy_key' \
  ./site/ deploy@example.com:/var/www/site/
```

Resume a big transfer and show progress

```
rsync -avhP ./videos/ \
  deploy@example.com:/srv/videos/
```

Limit the bandwidth

```
rsync -avh --bwlimit=2m ./exports/ \
  deploy@example.com:/srv/exports/
```

Copy only files whose content changed

```
rsync -avhc ./site/ /mnt/backup/site/
```

Back up a system folder with its owners

```
rsync -avh --numeric-ids /home/ /mnt/backup/home/
```

Flags you'll use most

`-a`	Archive: recurse, keep times, permissions, links, owners
`-v` / `-h`	List files / human-readable sizes
`-z`	Compress on the way (slow connections)
`-P`	Show progress, keep partial files to resume
`-n`, `--dry-run`	Preview: change nothing
`-i`	Say why each file changes
`--delete`	Delete what isn't in the source
`--exclude=PATTERN`	Skip matching files and folders
`--exclude-from=FILE`	Patterns from a file, one per line
`-e 'ssh -p 2222'`	Another SSH port or key
`-u`	Skip files that are newer at the destination
`-c`	Compare checksums, not size and time
`--bwlimit=2m`	Cap the speed (about 2 MB/s)
`--numeric-ids`	Keep user and group ID numbers
`--modify-window=1`	FAT drives: allow 1 s time difference

Good to know

- Without `--delete`, rsync never removes files, but it does overwrite files that differ, even newer ones (`-u` skips those).
- Quote wildcards: `--exclude='*.log'`. Unquoted, zsh refuses to run the command.
- Copies everything again? Times weren't kept (use `-a`), or the drive is FAT: add `--modify-window=1`.
- An undo for `--delete`, with rsync 3: `--backup` plus `--backup-dir=/outside/dest` keeps every deleted or overwritten file there. macOS's openrsync skips the deletions instead.
- Windows: run rsync inside WSL. macOS ships openrsync; for rsync 3, use Homebrew.