rsync File sync tool

Source local or host:path → quick check → **Compare** size + mtime → delta → **Transfer** changed parts only → apply → **Destination** local or host:path

CONCEPTS

> A trailing slash on the source copies its contents; without it the folder itself lands inside the destination.

> Always rehearse with -n (dry run) before using --delete or --remove-source-files.

BASIC COPY

`rsync -av <src>/ <dest>/`
Copy contents, keep attributes

`rsync -av <src> <dest>/`
Copy the folder itself into dest

`rsync -n -av <src>/ <dest>/`
Dry run, change nothing

`rsync -avP <src> <dest>`
Show progress, keep partial files

`rsync -avh --info=progress2 <src>/ <dest>/`
One overall progress line

`rsync -avi <src>/ <dest>/`
Itemize what changes per file

BASIC COPY (cont.)

`rsync -a --stats -h <src>/ <dest>/`
Print transfer totals

`rsync -r <src>/ <dest>/`
Recurse without attributes

REMOTE SYNC

`rsync -avz <src>/ <user>@<host>:<dir>/`
Push to a remote host

`rsync -avz <user>@<host>:<dir>/ <dest>/`
Pull from a remote host

`rsync -avz -e "ssh -p <port>" <src>/ <host>:<dir>/`
Use a custom ssh command

`rsync -a --bwlimit=<rate> <src>/ <host>:<dir>/`
Limit bandwidth

`rsync -a --rsync-path="sudo rsync" <src>/ <host>:<dir>/`
Run remote side as root

INCLUDE & EXCLUDE

`--exclude '<pattern>'`
Skip matching files

INCLUDE & EXCLUDE (cont.)

`--exclude '<dir>/'`
Skip a directory

`--exclude '/<path>'`
Skip only at the transfer root

`--include '<pattern>'`
Re-include; must precede the exclude

`--exclude-from <file>`
Read exclude patterns from a file

`--files-from <file>`
Copy exactly the listed paths

Pattern wildcards

Pattern	Matches
`*`	any chars except /
`**`	any chars including /
`?`	one char except /
`[abc]`	one of a, b, c
`dir/**`	dir and everything in it

DELETING & SAFETY

`rsync -av --delete <src>/ <dest>/`
Remove extras from destination

`rsync -av --delete-after <src>/ <dest>/`
Delete only after the transfer

DELETING & SAFETY (cont.)

`rsync -av --max-delete=<n> <src>/ <dest>/`
Cap number of deletions

`rsync -av --remove-source-files <src>/ <dest>/`
Move files, not copy

`rsync -av -b --backup-dir=<dir> <src>/ <dest>/`
Keep replaced files in a folder

`rsync -av --ignore-existing <src>/ <dest>/`
Never overwrite existing files

`rsync -avu <src>/ <dest>/`
Skip files newer on the receiver

COMPARING & RESUMING

`rsync -avc <src>/ <dest>/`
Compare by checksum

`rsync -av --link-dest=<prev> <src>/ <new>/`
Hard-link unchanged files

COMPARING & RESUMING (cont.)

`rsync -avn --itemize-changes <src>/ <dest>/`
Preview exactly what would change

ATTRIBUTES

`rsync -aHAX <src>/ <dest>/`
Add hard links, ACLs, xattrs

`rsync -a --numeric-ids <src>/ <dest>/`
Keep raw uid/gid numbers

RECIPES

Deploy a site

```
rsync -avz --delete \
  --exclude '.git/' --
exclude 'node_modules/' \
  ./build/ <user>@<host>:/
var/www/site/
```

Dated hard-link backups

```
today=$(date +%F)
rsync -a --delete --link-
dest=../latest \
  <src>/ <backup>/$today/
ln -sfn $today <backup>/
latest
```

HELP

`man rsync`
Full manual