rsync File sync tool

START HERE

rsync -av *<src>/ <dest>/*
Mirror a folder

rsync -avn *<src>/ <dest>/*
Dry run first

rsync -avz *<src>/ <user>@<host>:<dir>/*
Push over ssh

rsync -avz *<user>@<host>:<dir>/ <dest>/*
Pull over ssh

rsync -avP *<src> <dest>*
Progress, resumable

rsync -av --delete *<src>/ <dest>/*
Make dest identical

rsync -av --exclude *'<pat>' <src>/ <dest>/*
Skip files

rsync -avh --stats *<src>/ <dest>/*
Totals at the end

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.

Remote jobs need rsync installed on both ends. Daemon mode (host::module) is unencrypted; use ssh for sensitive data.

BASIC COPY

rsync -av *<src>/ <dest>/*
Copy contents, keep attributes
-a = recursive plus permissions, times, symlinks, owner, group.

rsync -av *<src> <dest>/*
Copy the folder itself into dest
No trailing slash on <src> creates <dest>/<src>.

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

rsync -avP *<src> <dest>*
Show progress, keep partial files
-P = --partial --progress; rerun to resume.

BASIC COPY (cont.)

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

rsync -avi *<src>/ <dest>/*
Itemize what changes per file
*Output like >f+++++++++ means a new file; *deleting means removal.*

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

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

rsync -a *<file> <dest>/<newname>*
Copy one file, renaming it
No trailing slash on the destination, or it is treated as a folder.

rsync -R *<path/./sub/file> <dest>/*
Keep part of the source path

rsync --mkpath -a *<src> <dest>/new/dir/*
Create missing destination folders

REMOTE SYNC

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

REMOTE SYNC (cont.)

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
Plain number is KiB/s; suffixes like 5M work.

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

INCLUDE & EXCLUDE

--exclude '*<pattern>'*
Skip matching files
No slash in the pattern: matches any name at any depth.

--exclude '*<dir>/'*
Skip a directory
A trailing slash matches directories only.

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

--include '*<pattern>'*
Re-include; must precede the exclude
First matching rule wins.

INCLUDE & EXCLUDE (cont.)

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

--files-from *<file>*
Copy exactly the listed paths
Not recursive by itself; -a does not imply -r here.

--max-size=*<size>* **/ --min-size=***<size>*
Skip big or tiny files

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
Destination becomes a mirror. Rehearse with -n.

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

rsync -av --max-delete=*<n> <src>/ <dest>/*
Cap number of deletions
Exit code 25 if the limit stopped deletions.

DELETING & SAFETY (cont.)

rsync -av --remove-source-files *<src>/ <dest>/*
Move files, not copy
Source folders remain; only files are removed.

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
Reads every file on both sides; slow.

rsync -av --size-only *<src>/ <dest>/*
Compare by size only

rsync -av --link-dest=*<prev> <src>/ <new>/*
Hard-link unchanged files
Core of snapshot-style backups.

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
```

Only one file type

```
rsync -av --include='*/' --
include='*.jpg' \
  --exclude='*' -m <src>/
<dest>/
```

Resume a large transfer

```
rsync -avP --partial-
dir=.rsync-partial \
  <big-dir>/
<user>@<host>:<dir>/
# rerun the same command after
an interruption
```

HELP

man rsync
Full manual