Rsync Cheatsheet

A comprehensive cheat sheet for using Rsync, covering essential options, examples, and use cases for efficient file synchronization and backup.

Rsync Basics

Basic Syntax

`rsync [options] source destination`

Example:
`rsync -avz /path/to/source/ user@host:/path/to/destination/`

Essential Options

`a`	Archive mode; preserves permissions, ownership, timestamps, etc.
`v`	Verbose mode; increases the amount of information displayed during the transfer.
`z`	Compress file data during the transfer.
`r`	Recursively copy directories and files.
`t`	Preserve modification times.
`o`	Preserve owner.
`g`	Preserve group.
`p`	Preserve permissions.

Basic Examples

Copy a file to a remote server:
`rsync myfile.txt user@host:/path/to/destination/`

Copy a directory recursively to a remote server:
`rsync -r /local/directory/ user@host:/remote/directory/`

Synchronize two directories:
`rsync -avz /source/directory/ /destination/directory/`

Advanced Options

Deletion Options

`--delete`	Delete extraneous files from the destination directory.
`--delete-before`	Deletion happens before transfer.
`--delete-after`	Deletion happens after transfer.
`--delete-during`	Deletion happens during transfer.
`--delete-excluded`	Also delete excluded files from destination.

Transfer Options

`--progress`	Show progress during transfer.
`--partial`	Keep partially transferred files if the transfer is interrupted.
`--checksum`	Skip files based on checksum, not modification time and size.
`--ignore-existing`	Skip updating files that exist on destination.
`--remove-source-files`	Remove source files after successful transfer.
`--max-size=SIZE`	Don't transfer any file larger than SIZE.

Filtering Options

`--exclude='pattern'`	Exclude files matching pattern.
`--include='pattern'`	Include files matching pattern.
`--exclude-from=FILE`	Read exclude patterns from FILE.
`--include-from=FILE`	Read include patterns from FILE.

Security and Remote Transfers

SSH Options

`-e 'ssh -p port'`	Specify a different SSH port.
`--rsh='ssh -l user'`	Specify a remote shell program.
`--rsync-path=PATH`	Specify where rsync is installed on the remote machine.

Using SSH Keys

Ensure SSH keys are set up for passwordless authentication to avoid interactive prompts.

Use `ssh-keygen` to generate keys and `ssh-copy-id` to copy them to the remote server.

Security Considerations

Always use secure protocols like SSH for remote transfers.
Avoid using rsync over unencrypted connections, especially for sensitive data.

Real-world examples

Backup

Incremental backup of a directory to an external drive:
`rsync -av --delete /home/user/documents/ /mnt/backup/documents/`

Daily incremental backup:
`rsync -av --link-dest=/mnt/backup/yesterday /home/user/ /mnt/backup/today`

Synchronization

Sync a website to web server:
`rsync -az -e "ssh -i /path/to/key" /local/website user@host:/var/www/website`

Mirroring

Create a mirror of a website:
`rsync -avz --delete /path/to/source/ user@host:/path/to/destination/`