sha256sum Cheatsheet

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Quick reference for generating and verifying SHA-256 and MD5 checksums with sha256sum, md5sum, and related Linux hash commands

The `sha256sum` command prints and checks SHA-256 checksums, and `md5sum` does the same for MD5 digests. This cheatsheet covers generating checksums, verifying `SHA256SUMS` files, scripting flags, and the wider family of Linux hash tools.

Generate Checksums

Print a digest for one or more files.

`sha256sum file.iso`	Print the SHA-256 digest of a file
`sha256sum file1 file2`	One digest line per file
`sha256sum *.tar.gz > SHA256SUMS`	Save digests to a checksum file
`printf '%s' "text" | sha256sum`	Hash a string from stdin
`find dir/ -type f -exec sha256sum {} +`	Hash every file in a directory tree

Verify Checksums

Check files against a checksum list with `-c`.

`sha256sum -c SHA256SUMS`	Verify every file in the list
`sha256sum -c --ignore-missing SHA256SUMS`	Verify only the files that are present
`grep file.iso SHA256SUMS | sha256sum -c -`	Verify a single file from a larger list
`echo "DIGEST file.iso" | sha256sum -c -`	Compare against a pasted digest (two spaces)
`sha256sum -c --quiet SHA256SUMS`	Print failures only, skip OK lines

Useful Options

Flags shared by `sha256sum`, `md5sum`, and the other GNU hash tools.

`-c, --check`	Read digests from a file and verify them
`--quiet`	Do not print `OK` for verified files
`--status`	Print nothing; report via exit status only
`--warn`	Warn about improperly formatted lines
`--strict`	Exit non-zero when a line is badly formatted
`--ignore-missing`	Skip listed files that do not exist
`--tag`	BSD-style output, `SHA256 (file) = digest`
`-b, --binary`	Mark files with `*` in the output
`-z, --zero`	End output lines with NUL instead of newline

Scripting and Exit Codes

Automate checks in scripts and CI jobs.

`sha256sum -c --status SHA256SUMS && echo ok`	Branch on the verification result
`sha256sum -c SHA256SUMS || exit 1`	Abort a script on any mismatch
`[ "$(sha256sum < f)" = "$(sha256sum < g)" ]`	Compare two files by digest
`sha256sum file | cut -d' ' -f1`	Extract the bare digest value

Other Hash Commands

Same interface, different algorithms.

`md5sum file`	128-bit MD5; corruption checks only, not security
`sha1sum file`	160-bit SHA-1; legacy, avoid for new uses
`sha512sum file`	512-bit SHA-2 digest
`b2sum file`	BLAKE2; fast modern alternative
`cksum -a sha256 file`	Unified hash tool in newer coreutils

Troubleshooting

Quick checks for common verification problems.

`Digest mismatch on a download`	Re-download, ideally from a different mirror
`no properly formatted checksum lines found`	Fix CRLF endings with `dos2unix`, check the file format
`No such file or directory with -c`	Run from the directory that holds the listed files
`Every other release fails as missing`	Add `--ignore-missing` to scope the check
`Digest source is untrusted`	Verify the GPG signature on the checksum file itself

Related Guides

Full walkthroughs for checksums and signing.

Verify a Checksum in Linux	Full `sha256sum` and `md5sum` tutorial
Encrypt and Decrypt Files with GPG	Work with GPG keys and signatures
wget Command Examples	Download files and checksum lists