tar Archive files

CONCEPTS

Exactly one mode letter is needed: c create, x extract, t list. -f <file> names the archive and must be followed by it.

Files on disk
↓ tar -c
Archive .tar
↓ -z / -j / -J
Compressed .tar.gz .bz2 .xz
↓ tar -x
Files restored

Reading an archive, GNU tar detects the compression itself, so -xf works for .gz, .bz2 and .xz alike.

Archives store the paths you gave. Pack with relative paths and use -C to control where things land.

This sheet covers GNU tar 1.35. macOS and BSD ship bsdtar, which lacks some options here (--sort, --one-top-level, --exclude-vcs-ignores).

CREATE

tar -cf *<out.tar>* *<path>*...
Create an archive

tar -czf *<out.tar.gz>* *<path>*...
Create gzip archive

tar -cjf *<out.tar.bz2>* *<path>*...
Create bzip2 archive

tar -cJf *<out.tar.xz>* *<path>*...
Create xz archive

tar --zstd -cf *<out.tar.zst>* *<path>*...
Create zstd archive

tar -czvf *<out.tar.gz>* *<path>*
Create, list files as added

tar -czf *<out.tar.gz>* **-C** *<dir>* **.**
Pack a dir's contents, no prefix

CREATE (cont.)

tar -rf *<out.tar>* *<path>*
Append to an uncompressed archive

tar -cf - *<path>* **| gzip >** *<out.tar.gz>*
Write the archive to stdout

EXTRACT

tar -xf *<archive>*
Extract everything

tar -xf *<archive>* **-C** *<dir>*
Extract into a directory

tar -xzf *<archive>*
Extract, forcing gzip

tar -xf *<archive>* *<member>*...
Extract named members only

tar -xf *<archive>* **--wildcards '*.conf'**
Extract members by pattern

tar -xf *<archive>* **--strip-components=1**
Drop leading path levels

tar -xvf *<archive>*
Extract and show names

tar -xf *<archive>* **--keep-old-files**
Never overwrite existing files

tar -xf *<archive>* **--one-top-level**
Extract into a dir named after archive

tar -xpf *<archive>*
Keep permissions as stored

tar -xf *<archive>* **-O** *<member>*
Print one member to stdout

LIST AND CHECK

tar -tf *<archive>*
List member names

tar -tvf *<archive>*
List with size, owner, date

tar -tf *<archive>* **| grep** *<pat>*
Find a file in an archive

tar -df *<archive>*
Compare archive with disk

LIST AND CHECK (cont.)

tar -tf *<archive>* **| head**
Peek at the first entries

SELECT FILES

--exclude=*<pattern>*
Skip matching names

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

--exclude-vcs
Skip .git, .svn and similar

--exclude-vcs-ignores
Honour .gitignore-style files

-C *<dir>*
Change directory first

-T *<file>*
Read paths from a file

COMPRESSION

-z / --gzip
Filter through gzip

-j / --bzip2
Filter through bzip2

-J / --xz
Filter through xz

--zstd
Filter through zstd

-a / --auto-compress
Pick compressor from the suffix

RECIPES

Backup a project, skipping junk

```
tar -czf proj.tar.gz \
  --exclude-vcs --
exclude='node_modules' \
  -C ~/code proj
```

Copy a tree over ssh

```
tar -cf - -C <src> . | ssh <host>
'tar -xf - -C <dst>'
# no temporary archive on either
side
```

Pull one file out of a big archive

```
tar -tf big.tar.gz | grep app.conf
tar -xzf big.tar.gz path/to/
app.conf -C /tmp
```

Unpack a release tarball flat

```
tar -xzf app-1.2.tar.gz --strip-
components=1 -C /opt/app
```