In order to extract a gzipped tarball, use the following command:

```
$ tar -xavvf archive.tar.gz -C extract_directory
```

In the above command, the `-a` option is used to detect the compression format automatically.

zcat - reading gzipped files without extracting

`zcat` is a command that can be used to dump an extracted file from a `.gz` file to `stdout` without manually extracting it. The `.gz` file remains as before but it will dump the extracted file into `stdout` as follows:

```
$ ls
test.gz


$ zcat test.gz
A test file
# file test contains a line "A test file"


$ ls
test.gz
```

Compression ratio

We can specify the compression ratio, which is available in range 1 to 9, where:

- ▶ 1 is the lowest, but fastest
- ▶ 9 is the best, but slowest

You can specify any ratio in that range as follows:

```
$ gzip -5 test.img
```

This should give a good balance between compression speed and ratio.

Using bzip2

`bzip2` is another commonly used tool which is very similar to `gzip` in function and syntax. The only difference is that `bzip2` offers more effective compression than `gzip`, while taking more time than `gzip`.

To compress a file using `bzip2`:

```
$ bzip2 filename
```

Extract a bzipped file as follows:

$ bunzip2 filename.bz2

The way to compress to and extract from tar.bz2 files is similar to tar.gz discussed earlier:

$ tar -xjvf archive.tar.bz2

where -j denotes that the archive is bzip2 format.

Using lzma

lzma is a compression tool which has even better compression ratios than gzip and bzip2. To compress a file using lzma:

$ lzma filename

Extract a lzma'd file as follows:

$ unlzma filename.lzma

A tarball can be compressed by using the --lzma option passed to the tar command while archiving and extracting.

$ tar -cvvf --lzma archive.tar.lzma [FILES]

or

$ tar -cavvf archive.tar.lzma [FILES]

In order to extract a tarball compressed with lzma compression to a specified directory, use:

$ tar -xvvf --lzma archive.tar.lzma -C extract_directory

In this command, -x is used for extraction. --lzma specifies the use of lzma to decompress the resulting file.

Or, we could also use:

$ tar -xavvf archive.tar.lzma -C extract_directory

See also

▸ *Archiving with tar*, explains the tar command