

# File Compression in Linux

One of the most versatile tools for file compression in Linux is the `tar` command. It allows you to create, extract, and manipulate archives, which can then be compressed using various algorithms.

## Tar Compression

- To create a compressed archive using `tar`, you can use the following command:

```
tar -czf archive.tar.gz files_to_compress
```

Here's what each part of the command does:

`-c`: Used to create a new archive.

`-z`: Enables gzip compression.

`-f`: Specifies the output file name (in this case, `archive.tar.gz`).

- `files_to_compress`: The files or directories we want to compress, separated by spaces.
- To extract the contents of a compressed archive:

```
tar -xzf archive.tar.gz
```

The `-x` flag tells `tar` to extract the files from the archive.

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## gzip Compression

- To compress a file using gzip

```
gzip file
```

- To decompress a file

```
gzip -d file.gz
```

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## bzip2 compression

- To compress a file using bzip2

```
bzip2 file
```

- To decompress a file

```
bzip2 -d file.bz2
```

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## XZ Compression

To compress a file with xz :

```
xz file
```

To decompress an xz -compressed file:

```
xz -d file.xz
```

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