

A yellow rubber duck is positioned on a dark, cylindrical base, which is part of a hydraulic press. The background is dark and industrial, with some electrical components and warning signs visible. The text is overlaid on the left side of the image.

CIS241

System-Level Programming and Utilities

Compression

Erik Fredericks, frederer@gvsu.edu

Fall 2025

Based on material provided by Erin Carrier, Austin Ferguson, and Katherine Bowers

How to squish (compress) a file

Windows compatible (by default) ... usually

```
zip file.zip files_to_compress
```

```
unzip file.zip
```

- Note, not all distributions come with `zip` / `unzip` installed!

Compressing - Linux edition

gzip - fastest

- `gzip file`
 - `gunzip file.gz`

bz2 - old standard, better compression

- `bzip2 file`
- `bunzip2 file.bz2`

xz - new standard, may not be installed

- `xz file`
- `unxz file.xz`

Compressing - directories!

Zip can handle by default

- Others work on single files only!

So, let's `tar` it

- `tar -cvf name.tar file1 file2`
 - Files can be directories here!

Can extract:

- `tar -xvf name.tar`

Or view its table of contents:

- `tar -tvf name.tar`

But more commonly, `tar` + compression!

Let's automatically compress/decompress!

- `-z` for gzip
- `-j` for bzip2
- `-J` for xz

Ex (compress): `tar -zcvf name.tar.gz dir1 dir2 file1`

- Note: toss on the common extension to tell others what type of compression is used

Ex (decompress): `tar -zxvf name.tar.gz`