

## 11.6 File Compression and Archiving with Gzip, Zip, and Tar

### 11.6.1 Compressing with Gzip and Zip

Compressed files use less disk space and download faster than large, uncompressed files. You can compress Linux files with the open-source compression tool **Gzip** or with **Zip**, which is recognized by most operating systems.

By convention, compressed files are given the extension `.gz`. The command **Gzip** creates a compressed file ending with `.gz`; **Gunzip** extracts the compressed files and removes the `.gz` file.

To compress a file, at a shell prompt, type the following command:

```
gzip filename.ext
```

The file will be compressed and saved as `filename.ext.gz`.

To expand a compressed file, type:

```
gunzip filename.ext.gz
```

The `filename.ext.gz` is deleted and replaced with `filename.ext`.

If you exchange files with non-Linux users, you may want to use **zip** to avoid compatibility problems. Red Hat Linux can easily open zip or gzip files, but non-Linux operating systems may have problems with gzip files.

To compress a file with **zip**, type the following:

```
zip -r filename.zip files
```

In this example, *filename* represents the file you are creating and *files* represents the files you want to put in the new file:

To extract the contents of a zip file, type:

```
unzip filename.zip
```

You can zip or gzip multiple files at the same time. List the files with a space between each one.

```
gzip filename.gz file1 file2 file3 /user/work/school
```

The above command will compress `file1`, `file2`, `file3`, and the contents of the `/user/work/school` directory and put them in `filename.gz`.

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## 11.6.2 Archiving with Tar

Tar files place several files or the contents of a directory or directories in one file. This is a good way to create backups and archives. Usually, tar files end with the `.tar` extension.

To create a tar file, type:

```
tar -cvf filename.tar files/directories
```

In this example, `filename.tar` represents the file you are creating and `files/directories` represents the files or directories you want to put in the new file.

You can use absolute or relative pathnames for these files and directories. Separate the names of files and directories with a space.

The following input would create a tar file using absolute pathnames:

```
tar -cvf foo.tar /home/mine/work /home/mine/school
```

The above command would place all the files in the `/work` subdirectory and the `/school` subdirectory in a new file called `foo.tar` in the current working directory.

The command `tar -cvf foo.tar file1.txt file2.txt file3.txt` would place `file1.txt`, `file2.txt` and `file3.txt` in a new file called `foo.tar`.

To list the contents of a tar file, type:

```
tar -tvf foo.tar
```

To extract the contents of a tar file, type:

```
tar -xvf foo.tar
```

This command does not remove the `.tar` file, but it places copies of the `.tar` contents in the current working directory.

The **tar** command does not compress files automatically. You can compress tar files with:

```
tar -czvf foo.tar
```

Compressed tar files are conventionally given the extension `.tgz` and are compressed with `gzip`.

To expand a compressed tar file type:

```
tar -xzvf foo.tgz
```

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