Package management system in Linux - Concept of archiving_files

> **Archiving** : An archive is a single file that contains any number of individual files plus information to allow them to be restored to their original form by one or more extraction programs.

> **Compression** : Compression is simply compressing your file's size using different techniques.

Comparitive analysis between archiving and compression tools

ARCHIVING	COMPRESSING
tar - The standard UNIX archiving utility.	**gzip** - The standard GNU/UNIX compression utility
shar - Shell archiving utility, shar has been replaced by **tar/gzip**.	**bzip2** - An alternate compression utility, usually more efficient (but slower) than gzip
ar - Creation and manipulation utility for archives, mainly used for binary object file libraries.	**compress** - This is an older, proprietary compression utility found in commercial UNIX distributions.
rpm - The Red Hat Package Manager	**sq** - Yet another compression (squeeze) utility, a filter that works only on sorted ASCII word lists
cpio - (**c**opy **i**nput and **o**utput), been supplanted by **tar/gzip**. But still has some uses.	**zip** - Cross-platform file archiving and compression utility
rpm2cpio - This command extracts a cpio archive from an rpm one.	**(unarc,unarj,unrar)** - These Linux utilities permit unpacking archives compressed with the DOS arc.exe, arj.exe, and rar.exe programs.
pax -The pax portable archive exchange toolkit facilitates periodic file backups and is designed to be cross-compatible between various flavors of UNIX.	**(lzma, unlzma, lzcat)** - Highly efficient Lempel-Ziv-Markov compression.
	(xz, unxz, xzcat) - A new high-efficiency compression tool, backward compatible with lzma, and with an invocation syntax similar to gzip.

The `tar` (tape archive) program creates archives by combining files and directories into a single file. Tarballs (archive files created by tar and usually compressed with gzip or bzip2) are often used to distribute software packages in the Linux world.

Tar archives combine multiple files and/or directories together into a single file. Tar archives are not necessarily compressed but they can be. Permissions are preserved and it supports many compression formats.

▼ Syntax

```
tar [options] [archive-file] [file or directory to be archived]
```

▼ **Option's**

-c : Creates archive-

-x : Extracts the archive

-f : creates archive with given filename

-t : displays or lists files in archived file

-u : archives and adds to an existing archive file-

-v : Displays verbose information

-A : Concatenates the archive files

-z : compresses the tar file using gzip

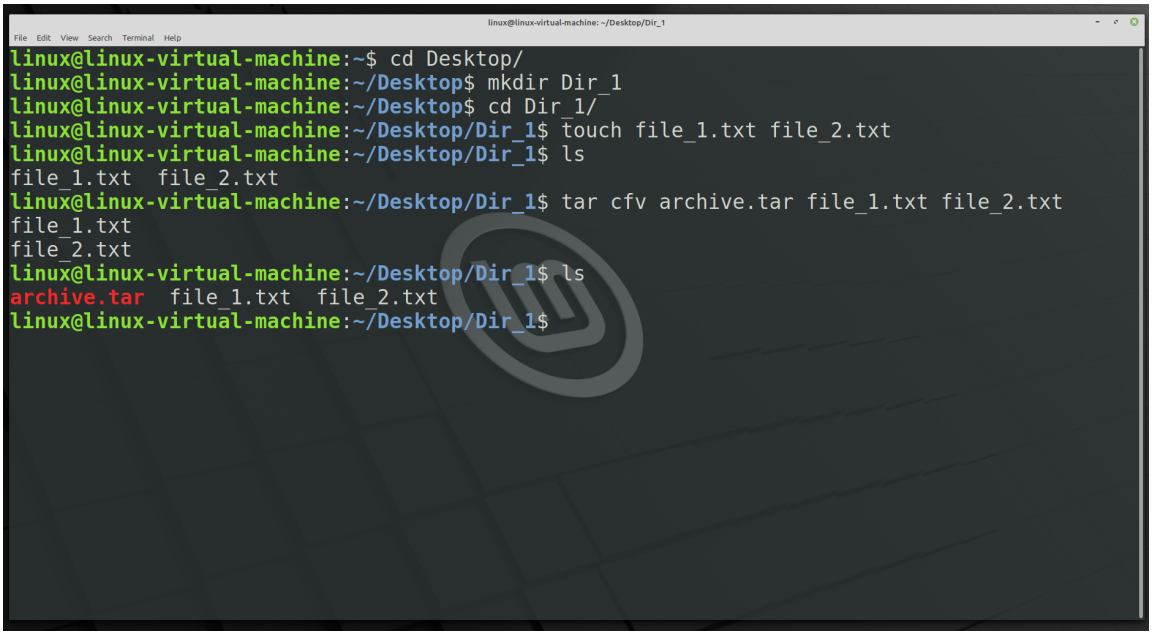
-j : compresses the tar file using bzip2

-W : Verifies an archive file

-r : updates or adds file or directory in already existing .tar file

Usage Examples

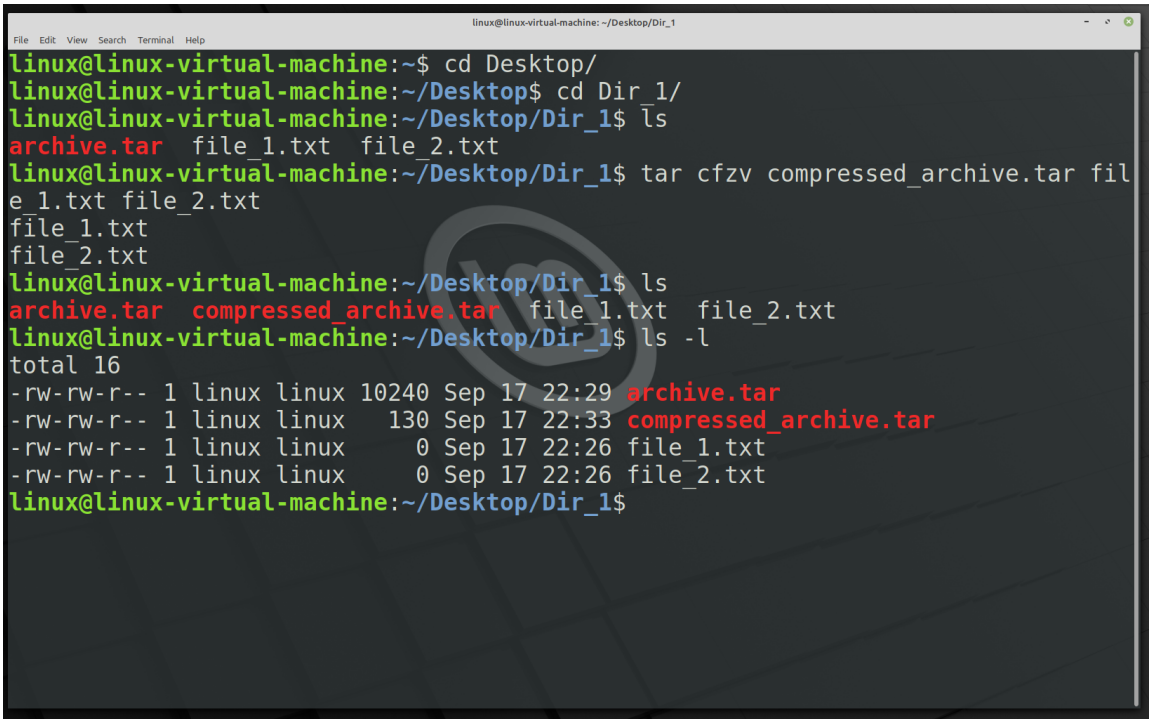
▼ **Create an archive with files or folder:** `tar cfv archive.tar file1 file2 file3` (Options: c = create)



Create an archive with 2 files [Using command : tar cfv archive.tar file_1.txt file_2.txt

▼ **Extract an archive:** `tar xfv archive.tar` (Options: x = extract, f = file, v = verbose)

▼ **Create compressed archives:** `tar cfzv archive.tar file1 file2 file3` (Options: z = compress with gzip)

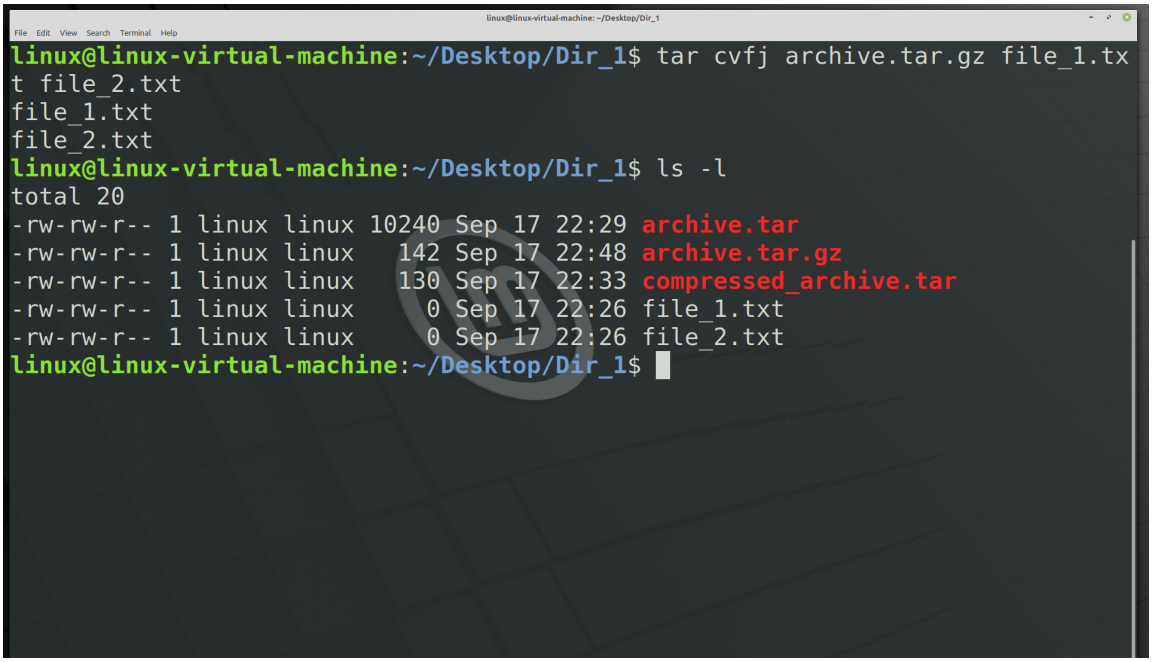


Create and compressed archive file via command tar cfzv file_name.tar file_1.txt file_2.txt

▼ **Show all files of an archive:** `tar tvf archive.tar`

▼ **Create an uncompressed archive of all .txt files in current directory:** `tar cfv archive.tar *.txt`

▼ **Extract files from gzip tar Archive archive.tar.gz:** `tar xvzf archive.tar.gz`

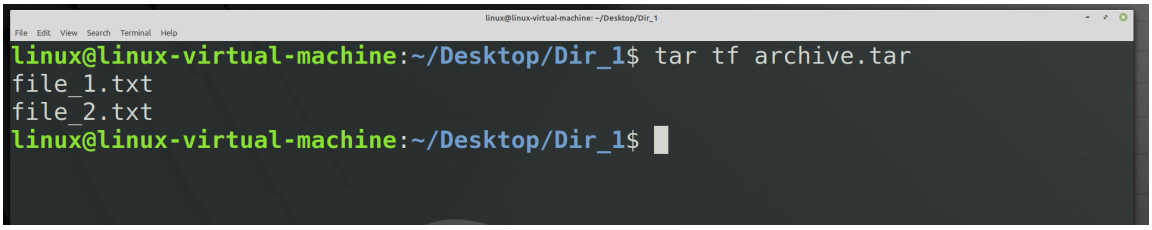


Create a archive using gzip via command tar cvfj archive.tar.gz file_1.txt file_2.txt

▼ **Create a compressed tar archive file using bzip2:** `tar cvfj archive.tar.tbz example.cpp` (Options: j = compress with bzip2, smaller file size but takes longer than `z`)

▼ **Update existing tar file by adding file_3.txt, file_4.txt and file_5.txt file to archive:** `tar rvf archive.tar todo.txt` (Options: r = add file)

▼ **List contents of tar file:** `tar tf file.tar` (Options: t = display, f = file)



Display the content of tar file

▼ **Create a compressed archive of current directory but exclude certain directories:** `tar --exclude='./folder' --exclude='./upload/folder2' cfzv archive.tar .` ("folder" and "folder2" are excluded)