

How To Extract Files Using Tar in Linux

Learn how to extract files using the tar command in Linux with step-by-step instructions for different archive formats and practical examples for beginners.

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Introduction

Tar, also known as Tape Archive, is a built-in Linux archiving utility that creates and manages archives by combining multiple files into a single archive file with the `.tar` extension. The `tar` command is used to create, compress, and extract archives in various formats, providing an organized and systematic way to efficiently manage large amounts of data.

This article explains how to extract files using `tar` Command in Linux. You will extract compressed and non-compressed archive formats, including `tar.gz`, `tar.xz`, and `tar.bz2` to multiple files.

The `tar` Command Syntax

Below is the basic `tar` command syntax:

CONSOLE

```
$ tar [options] [archive-file] [file or directory to extract]
```

Within the above command:

- `[options]`: Includes command line options that specify and modify the `tar` command functionality.
- `[archive-file]`: Specifies the target archive name, such as `.tar`, `.tar.gz`, or `.tar.bz2`, depending on the compression method.
- `[file or directory to extract]`: Specifies optional files or directories to extract from the archive. You can enter multiple files and directories to extract from the target archive.

`tar` Command Options

The `tar` command supports the following command options for extracting files in Linux.

- `c`: Creates a new archive.
- `-x`: Extracts files from an archive.
- `-f`: Specifies the target archive.
- `-v`: Verbose mode displays the `tar` command progress.
- `-t`: Lists the archive contents.
- `-z`: Enables Gzip compression.
- `-j`: Enables Bzip2 compression.
- `-J`: Enables XZ compression.

Create Archives Using Tar

The `c` option allows you to create archives using Tar on your Linux workstation. Follow the steps below to create archives using Tar with sample files you can extract.

1. Switch to your user's home directory.

```
CONSOLE
$ cd
```

2. Create a sample `tar_dir` directory.

```
CONSOLE
$ mkdir tar_dir
```

3. Switch to the new `tar_dir` directory.

```
CONSOLE
```

```
$ cd tar_dir
```

4. Create sample files such as `file.txt` using the [touch command](#).

CONSOLE

```
$ touch file.txt file1.txt file2.txt file3.txt nil.txt
```

5. Create a new `.tar` archive using the `c` option with all files.

CONSOLE

```
$ tar -cvf archive.tar file.txt file1.txt file2.txt  
file3.txt nil.txt
```

The above command creates a new `archive.tar` with the `file.txt` files.

Within the command:

- `-c`: Creates a new archive.
- `v`: Displays the `tar` command progress.
- `f`: Specifies the archive filename.
- `file.txt file1.txt file2.txt file3.txt nil.txt`: Specifies the files to add to the archive.

List Archive Contents Using Tar

Before extracting files from an archive, you can list its contents using the `-t` option with the `tar` command. This allows you to verify the archive contents and identify the target files to extract. Follow the steps below to list the `archive.tar` contents.

- List the `archive.tar` contents.

CONSOLE

```
$ tar -tf archive.tar
```

The above command lists all files in `archive.tar`. The `-t` option enables the listing of the archive contents while `f` specifies the target archive.

Output:

```
file.txt
file1.txt
file2.txt
file3.txt
nil.txt
```

Search Specific Files in an Archive

You can search specific files in an archive by combining the `tar` command with `grep`. The [grep command](#) searches for specific files or patterns without extracting the entire archive. Follow the steps below to search specific files by listing `archive.tar` and filtering the contents using the `grep` command.

- List all files in `archive.tar` and pipe the output to `grep` to search all files with the `file` search term.

CONSOLE

```
$ tar -tf archive.tar | grep "file"
```

Your output should be similar to the one below:

```
file.txt
file1.txt
file2.txt
file3.txt
```

Extract Files Using the `tar` Command

You can extract all files from an archive or specific files using the `x` `tar` command option. Follow the steps below to extract files from `archive.tar` you created earlier.

1. Extract all files from `archive.tar`.

CONSOLE

```
$ tar -xvf archive.tar
```

Your output should be similar to the one below:

```
file.txt
file1.txt
file2.txt
file3.txt
nil.txt
```

2. Extract specific files such as `file1.txt` and `file3.txt` from `archive.tar`.

CONSOLE

```
$ tar -xvf archive.tar file1.txt file3.txt
```

Extract Files to a Specific Directory Using Tar

The `tar` command extracts files to your working directory by default unless you specify a target directory. You can extract files from an archive to a specific directory using the `-C` option with the `tar` command. Follow the steps below to extract files from `archive.tar` to a specific directory.

1. Create a new `extract_dir` directory.

```
CONSOLE
```

```
$ mkdir extract_dir
```

2. Extract the `archive.tar` contents to the `extract_dir` directory.

```
CONSOLE
```

```
$ tar -xf archive.tar -C extract_dir
```

The above command extracts all files from `archive.tar` to the `extract_dir` directory.

3. Navigate to the `extract_dir` directory.

```
CONSOLE
```

```
$ cd extract_dir
```

4. List all files and verify that the extracted files are available.

```
CONSOLE
```

```
$ ls
```

Output:

```
file1.txt file2.txt file3.txt file.txt nil.txt
```

Extract Files From Compressed Archives Using Tar

Compressed archives reduce the size of files for storage and transfer. The `tar` command allows you to extract files from compressed archives by specifying

the compression type. Follow the steps below to extract files from compressed archives such as `tar.gz`, `.tar.xz`, and `tar.bz2` using the `tar` command.

1. Use the `-z` option to extract `.tar.gz` or `.tgz` Gzip compressed archives. For example, run the following command to extract files from `archive.tar.gz`.

CONSOLE

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

The `-z` option enables the `tar` command to decompress Gzip archives.

2. Use the `-j` option to extract files from Bzip2 compressed archives. For example, run the following command to extract files from `archive.tar.bz2`.

CONSOLE

```
$ tar -xjf archive.tar.bz2
```

3. Use the `-J` option to extract files from XZ compressed archives. For example, run the following command to extract files from `archive.tar.xz`.

CONSOLE

```
$ tar -xJf archive.tar.xz
```

Conclusion

You have used the `tar` command to create and extract archives. You can use the `tar` command to create archives and compress files for faster file sharing and management. For more information and command options, run the `man tar` command to view the Tar manual page.



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