How do I open/extract/unpack a tar.gz file on Linux or Unix like operating systems using shell prompt?  
  
A .tar.gz (also .tgz) file is nothing but an archive. It is a file that acts as a container for other files. An archive can contain many files, folders, and subfolders, usually in compressed form using gzip or bzip2 program on Unix like operating systems.

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| --- | --- |
| **Tutorial details** |  |
| Difficulty | [**Easy**](http://www.cyberciti.biz/faq/tutorial-difficulty-level/easy/) (**[rss](http://www.cyberciti.biz/faq/tutorial-difficulty-level/easy/feed/" \o "See all Easy Linux / Unix System Administrator Tutorials via rss feed)**) |
| Root privileges | No |
| Requirements | tar |
| Estimated completion time | 2m |

**Say hi to tar command line tool**

You need to use the tar command which can create and manipulate archive files in .tar.gz under Unix like operating systems. Open a command-line terminal (select Applications > Accessories > Terminal), and then type the following to open and extract a .tar.gz file:

**tar** -zxvf data.**tar**.gz

 Where,

* **-z** : Uncompress the resulting archive with gzip command.
* **-x** : Extract to disk from the archive.
* **-v** : Produce verbose output i.e. show progress and file names while extracting files.
* **-f data.tar.gz** : Read the archive from the specified file called data.tar.gz.

By defaults files will be extracted into the current directory. To change the directory use -C option. In this example, extract files in /data/projects directory:

**tar** -zxvf data.**tar**.gz -C /data/projects

 To view a detailed table of contents (list all files) for this archive, enter:

**tar** -tzvf data.**tar**.gz

 Sample outputs:

-rw-r--r-- root/root 2981 2012-01-11 03:24 etc/adduser.conf

-rw-r--r-- root/root 6302 2012-01-11 04:46 etc/ca-certificates.conf

-rw-r--r-- root/root 2969 2011-01-31 00:14 etc/debconf.conf

-rw-r--r-- root/root 600 2010-11-22 02:46 etc/deluser.conf

-rw-r--r-- root/root 346 2010-12-05 20:23 etc/discover-modprobe.conf

-rw-r--r-- root/root 8661 2011-12-31 21:45 etc/ffserver.conf

-rw-r--r-- root/root 2940 2011-01-24 00:26 etc/gai.conf

-rw-r--r-- root/root 899 2009-08-31 12:51 etc/gssapi\_mech.conf

-rw-r--r-- root/root 4794 2010-09-30 17:44 etc/hdparm.conf

-rw-r--r-- root/root 9 2006-08-07 22:44 etc/host.conf

-rw-r--r-- root/root 145 2010-08-26 08:09 etc/idmapd.conf

-rw-r--r-- root/root 882 2010-05-07 15:33 etc/insserv.conf

-rw-r--r-- root/root 31393 2007-10-21 13:50 etc/jwhois.conf

-rw-r--r-- root/root 144 2012-01-11 04:55 etc/kernel-img.conf

-rw-r--r-- root/root 1180 2009-04-24 02:55 etc/kerneloops.conf

-rw-r--r-- root/root 34 2012-01-11 03:23 etc/ld.so.conf

-rw-r--r-- root/root 3587 2010-04-10 03:54 etc/lftp.conf

-rw-r--r-- root/root 26 2010-08-14 20:40 etc/libao.conf

-rw-r--r-- root/root 191 2010-06-18 19:54 etc/libaudit.conf

-rw-r--r-- root/root 599 2009-02-19 17:27 etc/logrotate.conf

-rw-r--r-- root/root 15752 2009-07-25 20:43 etc/ltrace.conf

-rw-r--r-- root/root 801 2011-06-20 08:24 etc/mke2fs.conf

-rw-r--r-- root/root 624 2010-02-15 10:09 etc/mtools.conf

-rw-r--r-- root/root 513 2012-01-11 04:53 etc/nsswitch.conf

-rw-r--r-- root/root 552 2010-10-19 22:22 etc/pam.conf

-rw-r--r-- root/root 7649 2012-01-11 04:53 etc/pnm2ppa.conf

-rw-r--r-- root/root 2724 2010-08-08 01:33 etc/reportbug.conf

-rwxr-xr-x root/root 332 2012-05-05 14:14 etc/resolv.conf

-rw-r--r-- root/root 2573 2012-04-06 00:00 etc/rsyslog.conf

-rw-r--r-- root/root 8596 2010-05-26 23:02 etc/sensors3.conf

-rw-r--r-- root/root 7093 2010-12-26 17:23 etc/smartd.conf

-rw-r--r-- root/root 2089 2012-02-26 03:35 etc/sysctl.conf

-rw-r--r-- root/root 645 2009-03-25 16:35 etc/ts.conf

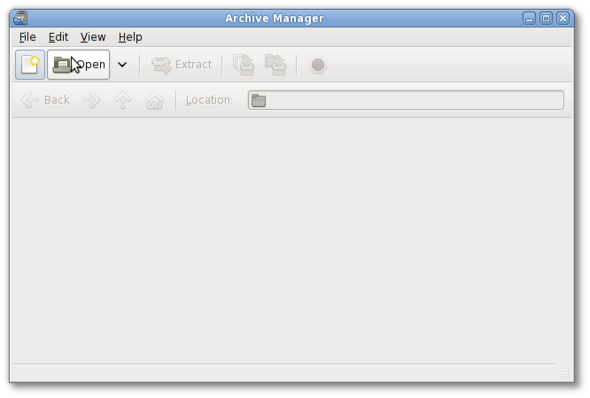
-rw-r--r-- root/root 1260 2008-05-30 11:52 etc/ucf.conf

-rw-r--r-- root/root 274 2009-11-04 03:46 etc/updatedb.conf

-rw-r--r-- root/root 571 2010-11-11 20:13 etc/usb\_modeswitch.conf

**file-roller: GUI tool**

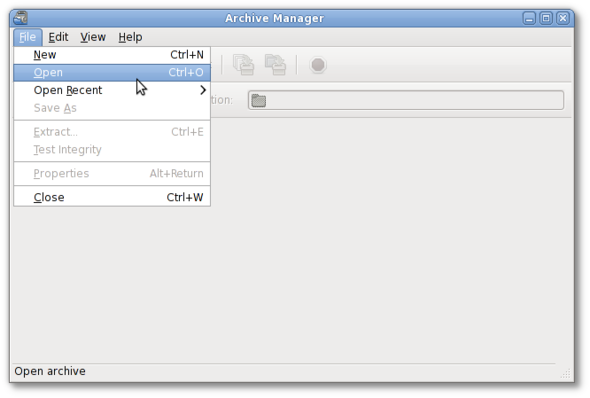
You can use the Archive Manager GUI application to create, view, modify, or unpack an archive. You can start Archive Manager by clicking on  
**Applications** menu > Choose **Accessories** > **Archive Manager**

*[](http://www.cyberciti.biz/faq/howto-open-a-tar-gz-file-in-linux-unix/file-roller/)*

*Fig.01: Gnome Archive Manager*

To open an archive:

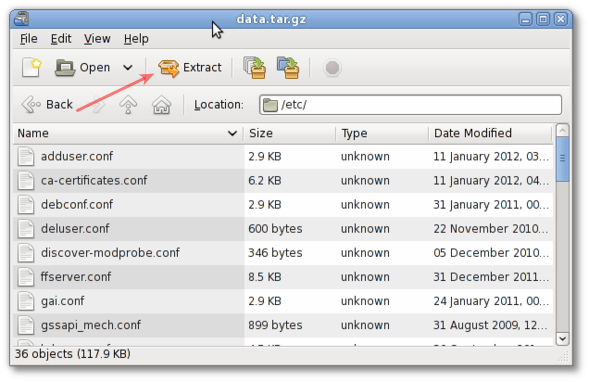
1. Choose File.
2. Open to display the Open dialog.
3. Select the archive that you want to open.
4. Click Open.

*[](http://www.cyberciti.biz/faq/howto-open-a-tar-gz-file-in-linux-unix/archive-manager_063/)*

*Fig.02: Linux: Open Files With an Archive Manager*

Once opened you can view or extract files. To select all files in an archive, choose Edit > Select All or press Ctrl+A. To extract files from an open archive:  
Select the files that you want to extract.

1. Choose Archive > Extract to display the Extract dialog. Alternatively click Extract in the toolbar.
2. Select the folder where Archive Manager extracts the files.
3. Click Extract.

*[](http://www.cyberciti.biz/faq/howto-open-a-tar-gz-file-in-linux-unix/data-tar-gz-_064/)*

In [Unix](https://kb.iu.edu/d/agat), the name of the tar command is short for tape archiving, the storing of entire file systems onto magnetic tape, which is one use for the command. However, a more common use for tar is to simply combine a few files into a single file, for easy storage and distribution.

To combine multiple files and/or directories into a single file, use the following command:

tar -cvf file.tar inputfile1 inputfile2

Replace inputfile1 and inputfile2 with the files and/or directories you want to combine. You can use any name in place of file.tar, though you should keep the .tarextension. If you don't use the f option, tar assumes you really **do** want to create a tape archive instead of joining up a number of files. The v option tells tar to be verbose, which reports all files as they are added.

To separate an archive created by tar into separate files, at the [shell](https://kb.iu.edu/d/agvf) prompt, enter:

tar -xvf file.tar

**Compressing and uncompressing tar files**

Many modern Unix systems, such as Linux, use [GNU](https://kb.iu.edu/d/acuo) tar, a version of tar produced by the [Free Software Foundation](https://kb.iu.edu/d/acun). If your system uses GNU tar, you can easily use gzip(the GNU file compression program) in conjunction with tar to create compressed archives. To do this, enter:

tar -cvzf file.tar.gz inputfile1 inputfile2

Here, the z option tells tar to zip the archive as it is created. To unzip such a zipped tar file, enter:

tar -xvzf file.tar.gz

Alternatively, if your system does **not** use GNU tar, but nonetheless does have gzip, you can still create a compressed tar file, via the following command:

tar -cvf - inputfile1 inputfile2 | gzip > file.tar.gz

**Note:** If gzip isn't available on your system, use the Unix compress command instead. In the example above, replace gzip with compress and change the .gz extension to .Z(the compress command specifically looks for an uppercase Z). You can use other compression programs in this way as well. Just be sure to use the appropriate extension for the compressed file, so you can identify which program to use to decompress the file later.

If you are not using GNU tar, to separate a tar archive that was compressed by gzip, enter:

gunzip -c file.tar.gz | tar -xvf -

Similarly, to separate a tar archive compressed with the Unix compress command, replace gunzip with uncompress.

Lastly, the extensions .tgz and .tar.gz are equivalent; they both signify a tar file zipped with gzip.

**Additional information**

Keep the following in mind when using the tar command:

* The order of the options sometimes matters. Some versions of tar require that the f option be immediately followed by a space and the name of the .tar file being created or extracted.
* Some versions require a single dash before the option string (e.g., -cvf).

GNU tar does not have either of these limitations.

The tar command has many additional command options available. For more information, consult the [manual page](https://kb.iu.edu/d/afjm). At the shell prompt, enter:

man tar

GNU tar comes with additional documentation, including a tutorial, accessible through the GNU Info interface. You can access this documentation by entering:

info tar

# How to untar a tar file or gzip-bz2 tar file

[Tar](http://how-to.wikia.com/wiki/Tar) file can come compressed or uncompressed. Generally that are compressed using [gzip](http://how-to.wikia.com/wiki/Gzip" \o "Gzip) or [bzip2](http://how-to.wikia.com/wiki/Bzip2). The program, tar, will uncompress both types and extract the files from archive.

* **-z** : Uncompress the resulting archive with gzip command.
* **-x** : Extract to disk from the archive.
* **-v** : Produce verbose output i.e. show progress and file names while extracting files.
* **-f data.tar.gz** : Read the archive from the specified file called data.tar.gz.

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Steps

Type at the command prompt

tar xvzf file-1.0.tar.gz - to uncompress a gzip tar file (.tgz or .tar.gz)

tar xvjf file-1.0.tar.bz2 - to uncompress a bzip2 tar file (.tbz or .tar.bz2)

tar xvf file-1.0.tar - to uncompressed tar file (.tar)

x = eXtract, this indicated an extraction c = create to create )

v = verbose (optional) the files with relative locations will be displayed.

z = gzip-ped; j = bzip2-zipped

f = from/to file ... (what is next after the f is the archive file)

The files will be extracted in the current folder (most of the times in a folder with the name

About tar

The **tar** program is used to create, maintain, modify, and extract [files](http://www.computerhope.com/jargon/f/file.htm) that are [archived](http://www.computerhope.com/jargon/a/archive.htm) in the **tar** format.

Syntax

tar [-] A --catenate --concatenate | c --create | d --diff --compare |

--delete | r --append | t --list | --test-label | u --update |

x --extract --get [*options*] [*pathname* ...]

Description

"**tar**" stands for *tape archive*. It is an archiving [file format](http://www.computerhope.com/jargon/f/fileform.htm).  
  
**tar** was originally developed in the early days of [Unix](http://www.computerhope.com/jargon/u/unix.htm) for the purpose of backing up files to [tape](http://www.computerhope.com/jargon/t/tape.htm)-based [storage devices](http://www.computerhope.com/jargon/s/stordevi.htm). It was later formalized as part of the [POSIX](http://www.computerhope.com/jargon/p/posix.htm) standard, and today is used to collect, distribute, and archive files, while preserving [file system](http://www.computerhope.com/jargon/f/filesyst.htm)[attributes](http://www.computerhope.com/jargon/a/attribut.htm) such as [user](http://www.computerhope.com/jargon/u/user.htm) and [group](http://www.computerhope.com/jargon/g/group.htm) [permissions](http://www.computerhope.com/jargon/p/permissi.htm), [access](http://www.computerhope.com/jargon/a/access.htm) and [modification](http://www.computerhope.com/jargon/m/modify.htm) dates, and [directory structures](http://www.computerhope.com/jargon/h/hierfile.htm).   
  
This documentation covers the [GNU](http://www.computerhope.com/jargon/g/gnu.htm) version of **tar**, which is included with most modern variants of the [Linux](http://www.computerhope.com/jargon/l/linux.htm) [operating system](http://www.computerhope.com/os.htm).

Operation

The first [argument](http://www.computerhope.com/jargon/a/argument.htm) to **tar** should be a *function* specification: either one of the letters **A**,**c**, **d**, **r**, **t**, **u**, or **x**, or one of the long function names. A function letter does not need to be prefixed with a dash ("**-**"), and may be combined with other single-letter options. A long function name must be prefixed with a double dash ("**--**"). Some options take a[parameter](http://www.computerhope.com/jargon/p/paramete.htm); with the single-letter form these must be given as separate arguments. With the long form, they may be given by appending "**=***value*" to the option.  
  
For example, the following commands are all equivalent:

tar --create --file=archive.tar file1 file2

tar -c -f archive.tar file1 file2

tar -cf archive.tar file1 file2

tar cf archive.tar file1 file2

Functions

Specifying one of the following functions selects what **tar**'s main mode of operation will be:

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| --- | --- |
| **A**, **--catenate**, **--concatenate** | [Append](http://www.computerhope.com/jargon/a/append.htm) **tar** files to an archive. |
| **c**, **--create** | Create a new archive. |
| **d**, **--diff**, **--compare** | Calculate any differences between the archive and the file system. |
| **--delete** | Delete from the archive. (This function doesn't work on magnetic tapes). |
| **r**, **--append** | Append files to the end of a **tar** archive. |
| **t**, **--list** | List the contents of an archive. |
| **--test-label** | Test the archive label, and exit. |
| **u**, **--update** | Append files, but only those that are newer than the copy in the archive. |
| **x**, **--extract**, **--get** | Extract files from an archive. |

Other Options

The following options specify the way **tar** operates:

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| --- | --- |
| **-**[**0**-**7**][**lmh**] | Specifies drive and density. (If you're not sure what this means, you don't need to use this option.) |
| **-a**, **--auto-compress** | Use the archive's [suffix](http://www.computerhope.com/jargon/s/suffix.htm) to determine the [compression](http://www.computerhope.com/jargon/c/compress.htm) program. For example, if this option is specified, an archive with the extension **.tar.gz**will always be handled as if the **--gzip** option had been specified (see **--gzip**, below). |
| **--add-file=***file* | Add *file* to the archive. (This option is especially useful when the name of the file begins with a dash.) |
| **--anchored** | Filename patterns must match from the begining of a file name. |
| **--no-anchored** | Filename patterns may match after any "**/**" (this is the default for excluding files; see **--exclude**, below). |
| **--atime-preserve** | Preserve access times on archived files, either by restoring the times, or (if the operating system sypports it) not changing them in the first place. |
| **--no-auto-compress** | Do not automatically determine the compression program using the archive filename suffix. |
| **-b**, **--blocking-factor***BLOCKS* | Use *BLOCKS* x 512 [bytes](http://www.computerhope.com/jargon/b/byte.htm)-per-record when handling the archive. |
| **-B**, **--read-full-records** | "Re-block" all input. This option can help read damaged archives. |
| **--backup**[**=***backup-method* | Rather than deleting files from the file system, **tar** will back them up using the specified backup method *backup-method*, which may be one of the following:   |  |  | | --- | --- | | **t**,**numbered** | Always make numbered backups. | | **nil**,**existing** | Make numbered backups of files that already have them, and simple backups of the others. | | **never**,**simple** | Always make simple backups. |   If not specified, *backup-method* defaults to the value of environment variable **VERSION\_CONTROL**; if **VERSION\_CONTROL** is undefined,*backup-method* defaults to **existing**. |
| **-C**, **--directory** *DIR* | Change to directory *DIR* before performing any operations. |
| **--check-device** | check device numbers when creating incremental archives. This is the default behavior. |
| **--no-check-device** | Do not check device numbers when creating incremental archives. |
| **--checkpoint**[**=***NUMBER*] | Use "checkpoints": display a progress message every *NUMBER* records (default **10**). |
| **--checkpoint-action=***ACTION* | Execute *ACTION* at every checkpoint. *ACTION* may be one of the following:   |  |  | | --- | --- | | **bell** | Play an audible bell at the console. | | **dot**, **.** | Print a single dot. | | **echo** | Display a text message at the console (to standard error). | | **echo=***string* | Display [string](http://www.computerhope.com/jargon/s/string.htm) *string* on standard error; before output, any [metacharacters](http://www.computerhope.com/jargon/m/metachar.htm) in *string* are expanded. | | **exec=***command* | Execute the given *command*. | | **sleep=***time* | Wait for *time* seconds. | | **ttyout=***string* | Output *string* on the current console ('**/dev/tty**'). |   Several **--checkpoint-action** options can be specified. The supplied actions will be executed in the order of their appearance on the command line.  Using **--checkpoint-action** without **--checkpoint** will assume the default checkpoint interval of **10** records. |
| **--delay-directory-restore** | Delay setting modification times and permissions of extracted directories until the end of extraction. |
| **--no-delay-directory-restore** | Modification times and permissions of extracted directories are set when all files from this directory have been extracted. This is the default. |
| **--exclude=***PATTERN* | Avoid operating on files whose names match filename pattern *PATTERN*. |
| **--exclude-backups** | exclude backup and lock files from all operations. |
| **--exclude-caches** | Causes **tar** to exclude all directories that contain a cache directory tag.  A cache directory tag is a short file with the name **CACHEDIR.TAG** and having a standard header specified in<http://www.brynosaurus.com/cachedir/spec.html>. This option excludes the contents of the directory, but archives the directory itself and the**CACHEDIR.TAG** file. |
| **--exclude-caches-all** | Omit directories containing a **CACHEDIR.TAG** file entirely. |
| **--exclude-caches-under** | Exclude everything under directories containing a **CACHEDIR.TAG** file, including the **CACHEDIR.TAG** file; but, archive the directory. |
| **--exclude-tag=***FILE* | Exclude the contents of any directory containing file *FILE*, but archive the directory and the file *FILE*. |
| **--exclude-tag-all=***FILE* | Omit directories containing file *FILE* entirely. |
| **--exclude-tag-under=***FILE* | Exclude everything under directories containing file *FILE* including the file*FILE*; but, archive the directory. |
| **--exclude-vcs** | Exclude version control subdirectories. This option recognizes the files and directories used by many widely-used VCSs. The files excluded are:   * **CVS/**, and everything under it * **RCS/**, and everything under it * **SCCS/**, and everything under it * **.git/**, and everything under it * **.gitignore** * **.cvsignore** * **.svn/**, and everything under it * **.arch-ids/**, and everything under it * **{arch}/**, and everything under it * **=RELEASE-ID** * **=meta-update** * **=update** * **.bzr** * **.bzrignore** * **.bzrtags** * **.hg** * **.hgignore** * **.hgrags** * **\_darcs** |
| **-f**, **--file=***ARCHIVE* | Use archive file (or device) *ARCHIVE*. |
| **-F**, **--info-script**, **--new-volume-script=***NAME* | run script *NAME* at the end of each tape (implies **-M**). |
| **--force-local** | Force **tar** to treat the archive file as a local file, even if its name contains a colon. |
| **--full-time** | Print the full resolution of all file times. |
| **-g**, **--listed-incremental=***FILE* | During a **--create** operation, this option specifies that the archive be a new GNU-format incremental backup, using snapshot file *FILE* to determine which files to backup. With other operations, this option informs**tar** that the archive is in incremental format. |
| **-G**, **--incremental** | Handle old GNU-format incremental backups. |
| **--group=***NAME* | Force *NAME* as group for added files. |
| **-h**, **--dereference** | Follow [symlinks](http://www.computerhope.com/jargon/s/symblink.htm); archive the files they point to. |
| **-H**, **--format=***FORMAT* | Create archive of the given format, where *FORMAT* is one of the following:   |  |  | | --- | --- | | **gnu** | GNU **tar** 1.13.x format | | **oldgnu** | GNU format used in **tar** versions 1.12 and lower | | **pax** | POSIX 1003.1-2001 ("pax") format | | **posix** | Same as **pax** | | **ustar** | POSIX 1003.1-1988 ("ustar") format | | **v7** | old Unix Version 7 **tar** format | |
| **--hard-dereference** | Follow [hard links](http://www.computerhope.com/jargon/h/hardlink.htm); archive the files they refer to. |
| **-i**, **--ignore-zeros** | Ignore zeroed blocks in archive. Normally an entire block of bytes with a value of zero indicates an end-of-archive; this option helps **tar** handle a damaged archive, or any other oddly-formed archive with blocks of zeros in its contents. |
| **-I**, **--use-compress-program=***PROG* | Use external compression program *PROG*. Use this option if you are not happy with the compression program associated with the suffix at compile time, or if you have a compression program that GNU **tar** does not support. The *PROG* argument must be a valid command, as you would type it at the [command line](http://www.computerhope.com/jargon/c/commandi.htm) [prompt](http://www.computerhope.com/jargon/p/prompt.htm), with any additional options as needed. Enclose it in quotes if it contains [white space](http://www.computerhope.com/jargon/w/whitspac.htm).  *PROG* should follow two conventions: First, when invoked without additional options, it should read data from [standard input](http://www.computerhope.com/jargon/s/stdin.htm), compress it and output it on standard output. Secondly, if invoked with the additional '**-d**' option, it should do exactly the opposite: read the compressed data from the standard input and produce uncompressed data on the standard output.  The latter requirement means that you must not use the '**-d**' option as a part of the *PROG* command invocation itself. |
| **--ignore-case** | Ignore character [case](http://www.computerhope.com/jargon/c/case.htm) when matching patterns or file names. |
| **--no-ignore-case** | Use [case-sensitive](http://www.computerhope.com/jargon/c/casesens.htm) pattern and filename matching (this is the default). |
| **--ignore-command-error** | Ignore exit codes of subprocesses. |
| **--no-ignore-command-error** | Treat non-zero exit codes of subprocesses as an error. |
| **--ignore-failed-read** | Do not exit merely because an unreadable file was encountered. |
| **--index-file=***FILE* | Send [verbose](http://www.computerhope.com/jargon/v/verbose.htm) output to file *FILE* for later use. |
| **-j**, **--bzip2** | This option tells **tar** to read or write archives using the **bzip2** compressor. |
| **-J**, **--xz** | Tells **tar** to read or write archives using the [xz](http://www.computerhope.com/unix/xz.htm) compressor. |
| **-k**, **--keep-old-files** | Do not overwrite existing files when extracting files from an archive, and return an error if such files exist. |
| **-K**, **--starting-file=***NAME* | This option affects extraction only; **tar** will skip extracting files in the archive until it finds one that matches *name*. |
| **--keep-newer-files** | Don't replace existing files that are newer than their archive copies. |
| **-l**, **--check-links** | Check the number of links dumped for each processed file. If this number does not match the total number of hard links for the file, print a warning message. |
| **-L**, **--tape-length=***size*[*suf*] | Change tape after writing a certain number of bytes. If *suf* is not specified,*SIZE* is treated as a number of kilobytes (1024 bytes), which is equivalent to specifying *suf* as **B**. *suf* may be one of the following:   |  |  |  | | --- | --- | --- | | **suffix** | **units** | **byte equivalent** | | **b** | Blocks | size x 512 | | **B** | Kilobytes | size x 1024 | | **c** | Bytes | size | | **G** | Gigabytes | size x 1024^3 | | **K** | Kilobytes | size x 1024 | | **k** | Kilobytes | size x 1024 | | **M** | Megabytes | size x 1024^2 | | **P** | Petabytes | size x 1024^5 | | **T** | Terabytes | size x 1024^4 | | **w** | Words | size x 2 | |
| **--level=***n* | When using the **--listed-incremental** option, force an incremental backup of level *n*. |
| **--lzip** | Read or write archives through the **lzip** compressor. |
| **--lzma** | Read or write archives through the [lzma](http://www.computerhope.com/unix/xz.htm) compressor. |
| **--lzop** | Read or write archives through the **lzop** compressor. |
| **-m**, **--touch** | Sets the data modification time of extracted files to the extraction time, rather than the data modification time stored in the archive. In other words, [touch](http://www.computerhope.com/unix/utouch.htm) all extracted files. |
| **-M**, **--multi-volume** | Create, list, or extract a multi-volume archive. Such archives are broken into parts so that they may fit on media too small to contain the entire archive. |
| **--mode=***permissions* | When adding files to an archive, **tar** will assign *permissions* to the archive members, rather than the permissions from the files. *permissions* can be specified either as an [octal](http://www.computerhope.com/jargon/o/octal.htm) number or as symbolic [permissions](http://www.computerhope.com/jargon/p/permissi.htm), as with[chmod](http://www.computerhope.com/unix/uchmod.htm). |
| **--mtime=***date* | When adding files to an archive, **tar** will use *date* as the modification time of members when creating archives, instead of their actual modification times. The value of date can be either a textual date representation or a name of the existing file, starting with "**/**" or "**.**", in which case the modification time of that file is used. |
| **-n**, **--seek** | Assume that the archive media supports seeking to arbitrary locations. Usually **tar** determines automatically whether the archive can be seeked or not; this option is intended for use in cases when such recognition fails. It takes effect only if the archive is open for reading with "**--list**" or "**--extract**" options). |
| **-N**, **--newer**, **--after-date=***date* | Only store files whose data or status has changed on or after *date*. If *date*is a filename, the date of that file is used. |
| **--newer-mtime=***date* | Like **--after-time**, but looks at modification times only. |
| **--null** | When **tar** is using the '**--files-from**' option, this option instructs **tar** to expect file names terminated with [NUL](http://www.computerhope.com/jargon/n/null.htm), so **tar** can correctly work with file names that contain [newlines](http://www.computerhope.com/jargon/n/newline.htm). |
| **--no-null** | Cancels any previous **--null** option specified. |
| **--numeric-owner** | Always use numberic IDs, rather than names, for user/group ownership information. |
| **-O**, **--to-stdout** | Extract files to standard output. |
| **--occurrence**[**=***number*] | This option can be used in conjunction with one of the subcommands "**--delete**", "**--diff**", "**--extract**" or "**--list**" when a list of files is given either on the command line or via '**-T**' option.  This option instructs **tar** to process only the *number*th occurrence of each named *file*. *number* defaults to **1**, so   tar -x -f archive.tar --occurrence filename  will extract the first occurrence of the member "**filename**" from "**archive.tar**" and will terminate without scanning to the end of the archive. |
| **--old-archive**, **--portability** | Same as "**--format=v7**". |
| **--one-file-system** | Prevents **tar** from crossing file system boundaries when archiving. Can be used with any write operation. |
| **--overwrite** | Overwrite existing files when extracting. |
| **--overwrite-dir** | Overwrite metadata of existing directories when extracting (this is the default behavior). |
| **--no-overwrite-dir** | Preserve metadata of existing directories when extracting. |
| **--owner=***user* | Specifies that **tar** should use *user* as the owner of members when creating archives, instead of the user associated with the source file. *user* can be a username, or a user's numeric ID, or both as "*name***:***id*". |
| **-p**, **--preserve-permissions**, **--same-permissions** | When **tar** is extracting an archive, it normally subtracts the user's [umask](http://www.computerhope.com/unix/uumask.htm)from the permissions specified in the archive and uses that number as the permissions to create the destination file. Specifying this option instructs tar that it should use the permissions directly from the archive. |
| **-P**, **--absolute-names** | Don't strip leading "**/**"s from file names. |
| **--pax-option=***keyword-list* | Enables creation of the archive in POSIX.1-2001 format, where *keyword-list* is a comma-separated list of keyword options specific to that format. |
| **--posix** | Same as **--format=posix**. |
| **--preserve** | This is the same as specifying both "**--preserve-permissions**" and "**--same-order**". |
| **--quote-chars=***STRING* | When displaying files and other members of an archive, **tar** treats file names in a special way to avoid ambiguities caused by certain characters that may occur in the filename; this is called name quoting. The **--quote-chars** option will, additionally, quote any characters occurring in *STRING*. |
| **--no-quote-chars=***STRING* | When name quoting, **tar** will never quote any of the characters in *STRING*. |
| **--quoting-style=***STYLE* | When name quoting, use name quoting style *STYLE*. Valid values of *STYLE*are: **literal**, **shell**, **shell-always**, **c**, **escape**, **locale**, and **clocale**. The default quoting style is **escape**, unless overridden while configuring the package. |
| **-R**, **--block-number** | With this option specified, **tar** prints error messages for read errors with the block number in the archive file. |
| **--record-size=***siz*[*suf*] | Instructs **tar** to use *size* bytes-per-record when accessing the archive. The argument can be suffixed with a size suffix, e.g. "**--record-size=10K**" for 10 Kilobytes. |
| **--recursion** | [Recurse](http://www.computerhope.com/jargon/r/recursio.htm) into directories (this is the default). |
| **--no-recursion** | Do not recurse into subdirectories when archiving. |
| **--recursive-unlink** | Remove existing directory [hierarchies](http://www.computerhope.com/jargon/h/hierfile.htm) before extracting directories of the same name from the archive. |
| **--remove-files** | [Remove](http://www.computerhope.com/unix/urm.htm) files after adding them to an archive. |
| **--restrict** | Disable use of some potentially harmful **tar** options. Currently this option disables [shell](http://www.computerhope.com/jargon/s/shell.htm) invocation. |
| **--rmt-command=***cmd* | In cases where **tar** is using a remote tape server, this option notifies **tar**that it should use *cmd* as the remote tape server program instead of the default, "**/usr/libexec/rmt**". |
| **--rsh-command=***cmd* | In cases where **tar** is using a remote shell to communicate with non-local devices, this option notifies **tar** that it should use *cmd* instead of the default, **rsh**. |
| **-s**, **--preserve-order**,**--same-order** | This option helps when processing large lists of file names on machines with small amounts of memory. It is used in conjunction with **--compare**,**--list** or **--extract**.  The **--same-order** option tells tar that the list of file names to be listed or extracted is sorted in the same order as the files in the archive. This allows a large list of names to be used, even on a small machine that would not otherwise be able to hold all the names in memory at the same time. Such a sorted list can easily be created by running **tar -t** on the archive and editing its output.  This option is probably never needed on modern computer systems. |
| **-S**, **--sparse** | This option instructs **tar** to test each file for sparseness before attempting to archive it. If the file is found to be sparse it is treated specially, thus allowing to decrease the amount of space used by its image in the archive.  This option is meaningful only when creating or updating archives. It has no effect on extraction. |
| **--same-owner** | Attempt to give extracted files the same ownership as exists in the archive (this is the default for superuser). |
| **--no-same-owner** | Do not attempt to restore ownership when extracting. This is the default behavior for ordinary users, so this option has an effect only for the superuser. |
| **--no-same-permissions** | Apply the user's [umask](http://www.computerhope.com/unix/uumask.htm) when extracting permissions from the archive. This is the default behavior for ordinary users. |
| **--no-seek** | Do not attempt to seek to arbitrary locations within an archive. |
| **--show-defaults** | Display **tar**'s default options. This can be useful in certain shell scripts. |
| **--show-omitted-dirs** | When listing or extracting, list each directory that does not match search criteria. |
| **--show-transformed-names**, **--show-stored-names** | Display file or member names after applying any name transformations. In particular, when used in conjunction with one of the archive creation operations it instructs **tar** to list the member names stored in the archive, as opposed to the actual file names. |
| **--sparse-version=***version-number* | Specifies the format version to use when archiving sparse files. Implies '**--sparse**'. |
| **--strip-components=***number* | Strip given number of leading components from file names before extraction. For example, if archive "**archive.tar**" contained a member named "**/some/file/name**", then running:  tar --extract --file archive.tar --strip-components=2  would extract this file to file "**name**". |
| **--suffix=***suffix* | Uses the filename suffix *suffix* when backing up files. If **--suffix** is not specified, the default backup suffix is the value of the [environment variable](http://www.computerhope.com/jargon/e/envivari.htm) **DEFAULT\_BACKUP\_SUFFIX**, or if that variable is not defined, "**~**". |
| **-T**, **--files-from=***file* | **tar** will use the contents of *file* as a list of archive members or files to operate on, in addition to those specified on the command line. |
| **--to-command=***command* | During extraction, **tar** will [pipe](http://www.computerhope.com/jargon/p/pipe.htm) extracted files to the [standard input](http://www.computerhope.com/jargon/s/stdin.htm) of*command*. |
| **--totals**[**=***signum*] | Display byte totals when processing an archive. If *signum* is specified, these totals are displayed when **tar** receives [signal](http://www.computerhope.com/unix/signals.htm) number *signum*. |
| **--transform**, **--xform=***sed-expr* | Replace filenames with [sed](http://www.computerhope.com/unix/used.htm) replacement expression *sed-expr*. For example,   tar cf archive.tar --transform 's,^\./,usr/,'  will add to **archive.tar** files from the current working directory, replacing initial "**./**" prefix with "**usr/**". |
| **-U**, **--unlink-first** | Remove a corresponding file from the file system before extracting it from the archive, rather than simply overwriting it. |
| **--unquote** | Unquote filenames read in with **-T**; this is the default. |
| **--no-unquote** | Do not unquote filenames read in with **-T**. |
| **--utc** | Print all file times in UTC (universal time). |
| **-v**, **--verbose** | Operate [verbosely](http://www.computerhope.com/jargon/v/verbose.htm). |
| **-V**, **--label=***name* | When creating an archive, write *name* as a name record in the archive. When extracting or listing archives, **tar** will only operate on archives that have a label matching the pattern specified in *name*. |
| **--volno-file=***file* | Used in conjunction with "**--multi-volume**", **tar** will keep track of which volume of a multi-volume archive it is working on in file *file*. |
| **-w**, **--interactive**, **--confirmation** | Ask for confirmation for every action. |
| **-W**, **--verify** | Attempt to verify the archive after writing it. |
| **--warning=***keyword* | Control display of the warning messages identified by *keyword*. If *keyword*starts with the prefix "**no-**", such messages are suppressed. Otherwise, they are enabled.  Multiple "**--warning**" specifications may be used.  There are keywords for various warning messages available in **tar**. The two global keywords are:   |  |  | | --- | --- | | **all** | Enable all warning messages. This is the default. | | **none** | Disable all warning messages. | |
| **--wildcards** | Use [wildcards](http://www.computerhope.com/jargon/w/wildcard.htm). |
| **--wildcards-match-slash** | When this option is specified, a wildcard like "**\***" in the pattern can match a "**/**" in the name. Otherwise, "**/**" is matched only by "**/**". This is the default when **tar** is excluding files. |
| **--no-wildcards-match-slash** | "**/**" can not be matched by a wildcard, only by "**/**". |
| **--no-wildcards** | Wildcards are not permitted. Filenames may only be matched verbatim. |
| **-X**, **--exclude-from=***file* | Like **--exclude**, but excludes files matching the patterns listed in the file*file*. |
| **-z**, **--gzip**, **--gunzip** | This option tells **tar** to read or write archives through **[gzip](http://www.computerhope.com/jargon/g/gzip.htm)**, allowing **tar** to directly operate on several kinds of compressed archives transparently. This option should be used, for example, when operating on files with the extension **.tar.gz**. |
| **-Z**, **--compress**, **--uncompress** | **tar** will use the [compress](http://www.computerhope.com/unix/ucompres.htm) program when operating on files. |

Environment

The following environment variables affect the operation of **tar**:

|  |  |
| --- | --- |
| **SIMPLE\_BACKUP\_SUFFIX** | Filename suffix to use when backing up files, if **--suffix** is not specified. The default backup suffix is "**~**". |
| **TAR\_OPTIONS** | Any options specified in this variable will be prepended to options specified to **tar** on the command line. |
| **TAPE** | The archiving tape or file to use if **--file** is not specified. If this variable is not defined, and no **--file** is specified, **tar** uses standard input and standard output instead. |

Examples

tar cf archive.tar file1 file2

Create archive **archive.tar** containing files **file1** and **file2**. Here, the **c** tells **tar** you will be creating an archive; the **f** tells **tar** that the next option (here it's **archive.tar**) will be the name of the archive it creates. **file1** and **file2**, the final arguments, are the files to be archived.

tar tvf archive.tar

List the files in the archive **archive.tar** verbosely. Here, the **t** tells **tar** to list the contents of an archive; **v** tells **tar** to operate verbosely; and **f** indicates that the next argument will be the name of the archive file to operate on.

tar xf archive.tar

Extract the files from archive **archive.tar**. **x** tells **tar** to extract files from an archive; **f**tells **tar** that the next argument will be the name of the archive to operate on.

tar xzvf archive.tar.gz

Extract the files from **gzip**ped archive **archive.tar.gz** verbosely. Here, the **z** tells **tar** that the archive will be compressed with **gzip**.

tar cf archive.tar mydir/

Creates an archive of the directory **mydir**.

tar czf archive.tar.gz mydir/

Creates an **gzip**-compressed archive of the directory **mydir**.

tar xvf archive.tar documents/work/budget.doc

Extract only the file **documents/work/budget.doc** from the archive **archive.tar**. Produce verbose output.

tar xvf archive.tar documents/work/

Extract only the directory **documents/work/**, and any files it contains, from the archive **archive.tar**. Produce verbose output.

tar xvf archive.tar --wildcards '\*.doc'

Extract only files with the [extension](http://www.computerhope.com/jargon/e/extensio.htm) **.doc** from the archive **archive.tar**. The **--wildcards**option tells **tar** to interpret [wildcards](http://www.computerhope.com/jargon/w/wildcard.htm) in the name of the files to be extracted; the filename (**\*.doc**) is enclosed in single-quotes to protect the wildcard (**\***) from being expanded incorrectly by the shell.

tar rvf archive.tar documents/work/budget.doc

Add the file **documents/work/budget.doc** to the existing archive **archive.tar**. The **r** option is the same as the long option **--append**.

tar uvf archive.tar documents/work/budget.doc

Add the file **documents/work/budget.doc** to the archive **archive.tar** only if it is newer than the version already in the archive (or does not yet exist in the archive). Here, **u** is the same as the long option **--update**.

tar cf - documents/work/ | wc -c

Estimate the file size of an archive of the directory **documents/work**, but do not create the file. Here, the archive file is specified as a dash ("**-**"), which tells **tar** to send its archived output to the standard output rather than a file on disk. This output is the n[piped](http://www.computerhope.com/jargon/p/pipe.htm) to the **[wc](http://www.computerhope.com/jargon/w/wc.htm)** command, which reports how many bytes (**-c**) were in the input it received.

Related commands

[**ar**](http://www.computerhope.com/unix/uar.htm) — Create, modify, and extract files from archives.  
[**basename**](http://www.computerhope.com/unix/ubasenam.htm) — Strip directory information and suffixes from filenames.  
[**cd**](http://www.computerhope.com/unix/ucd.htm) — Change the working directory.  
[**chown**](http://www.computerhope.com/unix/uchown.htm) — Change the ownership of files or directories.  
[**cpio**](http://www.computerhope.com/unix/ucpio.htm) — Copy files to or from archives.  
[**dirname**](http://www.computerhope.com/unix/udirname.htm) — Strip the filename from a pathname, leaving only the directory component.  
[**ls**](http://www.computerhope.com/unix/uls.htm) — List the contents of a directory or directories.  
[**mt**](http://www.computerhope.com/unix/umt.htm) — Control magnetic tapes.  
[**zcat**](http://www.computerhope.com/unix/uzcat.htm) — Print the uncompressed contents of compressed files.

# Linux: tar Extract Files

can I extract or uncompress a file from tar ball downloaded from the Internet under Linux using bash command prompt?  
  
You need to use the tar command to extract files from an archive or to create an archive (also known as tarball). A tarball or an archive is nothing but a single file that contains various individual files. It also includes information which allows your to restore files to their original form by one or more extraction programs such as tar command.

## Extract or Unpack a TarBall File

To unpack or extract a tar file, type:

**tar** -xvf **file**.**tar**

To save disk space and bandwidth over the network all files are saved using compression program such as gzip or bzip2. To extract / unpack a .tar.gz (gzip) file, enter (note -z option):

**tar** -xzvf **file**.**tar**.gz

To extract / unpack a .tar.bz2 (bzip2) file, enter (note -j option):

**tar** -xjvf **file**.**tar**.bz2

Where,

* **-x** : Extract a tar ball.
* **-v** : Verbose output or show progress while extracting files.
* **-f** : Specify an archive or a tarball filename.
* **-j** : Decompress and extract the contents of the compressed archive created by bzip2 program (tar.bz2 extension).
* **-z** : Decompress and extract the contents of the compressed archive created by gzip program (tar.gz extension).

## How Do I Extract A Single File Called foo.txt?

To extract a single file called foo.txt, enter:

**tar** -xvf **file**.**tar** foo.txt

**tar** -xzvf **file**.**tar**.gz foo.txt

**tar** -xjvf **file**.**tar**.bz2 foo.txt

You can also specify path such as etc/resolv.conf, enter:

**tar** -xvf **file**.**tar** etc/resolv.conf

**tar** -xzvf **file**.**tar**.gz etc/resolv.conf

**tar** -xjvf **file**.**tar**.bz2 etc/resolv.conf

### How Do I Extract a Single Directory Called etc?

To extract a single directory called etc, enter:

**tar** -xvf **file**.**tar** etc

**tar** -xzvf **file**.**tar**.gz etc

**tar** -xjvf **file**.**tar**.bz2 etc

Sample outputs:

etc/

etc/pulse/

etc/pulse/default.pa

etc/pulse/client.conf

etc/pulse/daemon.conf

etc/pulse/system.pa

etc/xml/

etc/xml/docbook-xml.xml.old

etc/xml/xml-core.xml

etc/xml/catalog

etc/xml/catalog.old

etc/xml/docbook-xml.xml

etc/xml/rarian-compat.xml

etc/xml/sgml-data.xml

etc/xml/xml-core.xml.old

etc/xml/sgml-data.xml.old

etc/mail.rc

etc/Wireless/

etc/Wireless/RT2870STA/

etc/Wireless/RT2870STA/RT2870STA.dat

etc/logrotate.conf

etc/compizconfig/

etc/compizconfig/config

.....

...

....

etc/python/

etc/python/debian\_config

etc/ConsoleKit/

etc/ConsoleKit/seats.d/

etc/ConsoleKit/seats.d/00-primary.seat

etc/ConsoleKit/run-session.d/

etc/ConsoleKit/run-seat.d/

etc/opt/