NAME

lz4 − lz4, unlz4, lz4cat − Compress or decompress .lz4 files

SYNOPSIS

lz4 [*OPTIONS*] [−|INPUT−FILE] *OUTPUT−FILE*

unlz4 is equivalent to **lz4 −d**

lz4cat is equivalent to **lz4 −dcfm**

When writing scripts that need to decompress files, it is recommended to always use the name **lz4** with appropriate arguments (**lz4 −d** or **lz4 −dc**) instead of the names **unlz4** and **lz4cat**.

DESCRIPTION

lz4 is an extremely fast lossless compression algorithm, based on **byte−aligned LZ77** family of compression scheme. **lz4** offers compression speeds of 400 MB/s per core, linearly scalable with multi−core CPUs. It features an extremely fast decoder, with speed in multiple GB/s per core, typically reaching RAM speed limit on multi−core systems. The native file format is the **.lz4** format.

Difference between lz4 and gzip

lz4 supports a command line syntax similar *but not identical* to **gzip(1)**. Differences are :

• **lz4** compresses a single file by default (see **−m** for multiple files)

• **lz4 file1 file2** means : compress file1 *into* file2

• **lz4 file.lz4** will default to decompression (use **−z** to force compression)

• **lz4** preserves original files

• **lz4** shows real−time notification statistics during compression or decompression of a single file (use **−q** to silence them)

• When no destination is specified, result is sent on implicit output, which depends on **stdout** status. When **stdout** *is Not the console*, it becomes the implicit output. Otherwise, if **stdout** is the console, the implicit output is **filename.lz4**.

• It is considered bad practice to rely on implicit output in scripts. because the script´s environment may change. Always use explicit output in scripts. **−c** ensures that output will be **stdout**. Conversely, providing a destination name, or using **−m** ensures that the output will be either the specified name, or **filename.lz4** respectively.

Default behaviors can be modified by opt−in commands, detailed below.

• **lz4 −m** makes it possible to provide multiple input filenames, which will be compressed into files using suffix **.lz4**. Progress notifications become disabled by default (use **−v** to enable them). This mode has a behavior which more closely mimics **gzip** command line, with the main remaining difference being that source files are preserved by default.

• Similarly, **lz4 −m −d** can decompress multiple ***.lz4** files.

• It´s possible to opt−in to erase source files on successful compression or decompression, using **−−rm** command.

• Consequently, **lz4 −m −−rm** behaves the same as **gzip**.

Concatenation of .lz4 files

It is possible to concatenate **.lz4** files as is. **lz4** will decompress such files as if they were a single **.lz4** file. For example:

        lz4 file1 > foo.lz4
        lz4 file2 >> foo.lz4

Then **lz4cat foo.lz4** is equivalent to **cat file1 file2**.

OPTIONS

Short commands concatenation

In some cases, some options can be expressed using short command **−x** or long command **−−long−word**. Short commands can be concatenated together. For example, **−d −c** is equivalent to **−dc**. Long commands cannot be concatenated. They must be clearly separated by a space.

Multiple commands

When multiple contradictory commands are issued on a same command line, only the latest one will be applied.

Operation mode

−z −−compress

Compress. This is the default operation mode when no operation mode option is specified, no other operation mode is implied from the command name (for example, **unlz4** implies **−−decompress**), nor from the input file name (for example, a file extension **.lz4** implies **−−decompress** by default). **−z** can also be used to force compression of an already compressed **.lz4** file.

−d −−decompress −−uncompress

Decompress. **−−decompress** is also the default operation when the input filename has an **.lz4** extension.

−t −−test

Test the integrity of compressed **.lz4** files. The decompressed data is discarded. No files are created nor removed.

−b#   Benchmark mode, using **#** compression level.

−−list   List information about .lz4 files. note : current implementation is limited to single−frame .lz4 files.

Operation modifiers

−#   Compression level, with # being any value from 1 to 12. Higher values trade compression speed for compression ratio. Values above 12 are considered the same as 12. Recommended values are 1 for fast compression (default), and 9 for high compression. Speed/compression trade−off will vary depending on data to compress. Decompression speed remains fast at all settings.

−−fast[=#]

Switch to ultra−fast compression levels. The higher the value, the faster the compression speed, at the cost of some compression ratio. If **=#** is not present, it defaults to **1**. This setting overrides compression level if one was set previously. Similarly, if a compression level is set after **−−fast**, it overrides it.

−−favor−decSpeed

Generate compressed data optimized for decompression speed. Compressed data will be larger as a consequence (typically by ˜0.5%), while decompression speed will be improved by 5−20%, depending on use cases. This option only works in combination with very high compression levels (>=10).

−D dictionaryName

Compress, decompress or benchmark using dictionary *dictionaryName*. Compression and decompression must use the same dictionary to be compatible. Using a different dictionary during decompression will either abort due to decompression error, or generate a checksum error.

−f −−[no−]force

This option has several effects:

If the target file already exists, overwrite it without prompting.

When used with **−−decompress** and **lz4** cannot recognize the type of the source file, copy the source file as is to standard output. This allows **lz4cat −−force** to be used like **cat (1)** for files that

have not been compressed with **lz4**.

−c −−stdout −−to−stdout

Force write to standard output, even if it is the console.

−m −−multiple

Multiple input files. Compressed file names will be appended a **.lz4** suffix. This mode also reduces notification level. Can also be used to list multiple files. **lz4 −m** has a behavior equivalent to **gzip −k** (it preserves source files by default).

−r   operate recursively on directories. This mode also sets **−m** (multiple input files).

−B#   Block size [4−7](default : 7)
              −B4= 64KB ; **−B5**= 256KB ; **−B6**= 1MB ; **−B7**= 4MB

−BI   Produce independent blocks (default)

−BD   Blocks depend on predecessors (improves compression ratio, more noticeable on small blocks)

−−[no−]frame−crc

Select frame checksum (default:enabled)

−−[no−]content−size

Header includes original size (default:not present)
Note : this option can only be activated when the original size can be determined, hence for a file.
It won´t work with unknown source size, such as stdin or pipe.

−−[no−]sparse

Sparse mode support (default:enabled on file, disabled on stdout)

−l   Use Legacy format (typically for Linux Kernel compression)
              Note : **−l** is not compatible with **−m** (**−−multiple**) nor **−r**

Other options

−v −−verbose

Verbose mode

−q −−quiet

Suppress warnings and real−time statistics; specify twice to suppress errors too

−h −H −−help

Display help/long help and exit

−V −−version

Display Version number and exit

−k −−keep

Preserve source files (default behavior)

−−rm   Delete source files on successful compression or decompression

−−   Treat all subsequent arguments as files

Benchmark mode

−b#   Benchmark file(s), using # compression level

−e#   Benchmark multiple compression levels, from b# to e# (included)

−i#   Minimum evaluation time in seconds [1−9] (default : 3)

BUGS

Report bugs at: https://github.com/lz4/lz4/issues

AUTHOR

Yann Collet