

**NAME**

toast -- GSM 06.10 lossy sound compression

**SYNOPSIS**

**toast** [ **-cdfpvhualsFC** ] [ *filename...* ]

**untoast** [ **-cfpvhuaslF** ] [ *filename...* ]

**tcat** [ **-vhuaslF** ] [ *filename...* ]

**DESCRIPTION**

Toast compresses the sound files given on its command line. Each file is replaced by a file with the extension *.gsm*. If no files are specified, the compression is applied to the standard input, and its result is written to standard output.

Toasted files can be restored to something not quite unlike their original form by running *toast -d*, or *untoast*, on the *.gsm*-files or standard input.

The program *tcat* (the same as running *untoast -c*) uncompresses its input on standard output, but leaves the compressed *.gsm*-files alone.

When files are compressed or uncompressed into other files, the ownership (if run by root), modes, accessed and modified times are maintained between both versions.

**OPTIONS**

- c** (cat) Write to the standard output; no files are changed.
- d** (decode) Decode, rather than encode, the files.
- f** (force) Force replacement of output files if they exist. If **-f** is omitted and toast (or untoast) is run interactively from a terminal, the user is prompted as to whether the file should be replaced.
- p** (precious) Do not delete the source files. Source files are implicitly left alone whenever **-c** is specified or *tcat* is run.
- C** (LTP cut-off) Ignore most sample values when calculating the GSM long-term correlation lag during encoding. (The multiplications that do this are a bottleneck of the algorithm.) The resulting encoding process will not produce exactly the same results as GSM 06.10 would, but remains close enough to be compatible.  
The **-C** option applies only to the encoder and is silently ignored by the decoder.

- F** (fast) On systems with a floating point processor, but without a multiplication instruction, -F sacrifices standard conformance to performance and nearly doubles the speed of the algorithm. The resulting encoding and decoding process will not produce exactly the same results as GSM 06.10 would, but remains close enough to be compatible. The default is standard-conforming operation.
- v** (version) outputs the version of toast (or untoast or tcat) to stdout and exits.
- h** (help) prints a short overview of the options.

Toast, untoast and tcat try to guess the appropriate audio data format from the file suffix. Command line options can also specify a format to be used for all files.

The following formats are supported:

- u** (<mu>U-law) 8 kHz, 8 bit <mu>U-law encoding (file suffix .u)
- a** (A-law) 8 kHz, 8 bit A-law encoding (file suffix .A)
- s** (Sun audio) 8 kHz, 8 bit <mu>U-law encoding with audio header (file suffix .au)
- l** (linear) 8 kHz, 16 bit signed linear encoding in host byte order with 13 significant bits (file suffix .l)

In absence of options or suffixes to specify a format, <mu>U-law encoding as forced by -u is assumed.

## PECULIARITIES

A four bit magic number is prefixed to each 32 1/2-byte GSM frame, mainly because 32 1/2-bytes are rather clumsy to handle.

## WARNING

The compression algorithm used is a lossy compression algorithm devised especially for speech; on no account should it be used for text, pictures or any other non-speech-data you consider valuable.

## BUGS

Please direct bug reports to [jutta@pobox.com](mailto:jutta@pobox.com) and [cabo@tzi.org](mailto:cabo@tzi.org).

## SEE ALSO

[gsm\(3\)](#)