

Package ‘libdeflate’

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Type Package

Title DEFLATE Compression and Static Library

Version 1.25-0

Description Whole-buffer DEFLATE-based compression and decompression of raw vectors using the 'libdeflate' library (see <<https://github.com/ebiggers/libdeflate>>). Provides the user with additional control over the speed and the quality of DEFLATE compression compared to the fixed level of compression offered in R's 'memCompress()' function. Also provides the 'libdeflate' static library and 'C' headers along with a 'CMake' target and 'package-config' file that ease linking of 'libdeflate' in packages that compile and statically link bundled libraries using 'CMake'.

Depends R (>= 3.5.0)

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Encoding UTF-8

SystemRequirements GNU make, CMake

RoxygenNote 7.3.2

Config/build/compilation-database true

BugReports <https://github.com/tylermorganwall/libdeflate/issues>

NeedsCompilation yes

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alloc_compressor	<i>Allocate a libdeflate compressor</i>
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Description

Create a new libdeflate compressor at the specified compression level.

Usage

```
alloc_compressor(level = 6L)
```

Arguments

level	Default '6L'. Integer in [0, 12] giving the compression level (0 = no compression, 1 = fastest, 6 = default, 12 = slowest).
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Value

An external pointer ('externalptr') to a libdeflate compressor.

See Also

[base::memDecompress()] also provides DEFLATE compression via libdeflate, but it fixes the compression level at 6. # allocate a compressor and compress a simple string `cmp = alloc_compressor()`
`raw_in = charToRaw("Example data") raw_cmp = deflate_compress(cmp, raw_in) stopifnot(is.raw(raw_cmp))`

alloc_decompressor	<i>Allocate a libdeflate decompressor</i>
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Description

Create a new libdeflate decompressor for raw DEFLATE streams.

Usage

```
alloc_decompressor()
```

Value

An external pointer ('externalptr') to a libdeflate decompressor.

Examples

```
dcmp = alloc_decompressor()
stopifnot(inherits(dcmp, "externalptr"))
```

deflate_compress	<i>Compress a raw vector with libdeflate</i>
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Description

Compress the given raw vector using the specified libdeflate compressor.

Usage

```
deflate_compress(compressor, input)
```

Arguments

compressor	An external pointer created by 'alloc_compressor()'.
input	A raw vector (or object coercible to raw) containing the data to compress.

Value

A raw vector containing the DEFLATE-compressed output.

Examples

```
# Low compression values might not compress at all
cmp = alloc_compressor(1L)
raw_in = charToRaw("Fast compression test: 1231231231231231")
raw_cmp_1 = deflate_compress(cmp, raw_in)
print(sprintf("Length in: %i Length out: %i", length(raw_in), length(raw_cmp_1) ))
# Max compression is 12
cmp = alloc_compressor(12L)
raw_cmp_12 = deflate_compress(cmp, raw_in)
print(sprintf("Length in: %i Length out: %i", length(raw_in), length(raw_cmp_12) ))
```

deflate_decompress *Decompress a raw vector with libdeflate*

Description

Decompress a raw DEFLATE stream to its original length.

Usage

```
deflate_decompress(decompressor, input, out_len)
```

Arguments

decompressor	An external pointer created by 'alloc_decompressor()'.
input	A raw vector containing the compressed DEFLATE stream.
out_len	Integer giving the expected uncompressed length (in bytes).

Value

A raw vector of length 'out_len' containing the decompressed data.

Examples

```
# round-trip example
msg = "Round-trip test: 123123123123"
raw_in = charToRaw(msg)
cmp = alloc_compressor(12L)
raw_cmp = deflate_compress(cmp, raw_in)
dcmp = alloc_decompressor()
raw_out = deflate_decompress(dcmp, raw_cmp, length(raw_in))
stopifnot(identical(raw_out, raw_in))
```

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