

NAME

IO::Compress::Deflate - Write RFC 1950 files/buffers

SYNOPSIS

```
use IO::Compress::Deflate qw(deflate $DeflateError) ;
my $status = deflate $input => $output [,OPTS]
    or die "deflate failed: $DeflateError\n";
my $z = new IO::Compress::Deflate $output [,OPTS]
    or die "deflate failed: $DeflateError\n";
$z->print($string);
$z->printf($format, $string);
$z->write($string);
$z->syswrite($string [, $length, $offset]);
$z->flush();
$z->tell();
$z->eof();
$z->seek($position, $whence);
$z->binmode();
$z->fileno();
$z->opened();
$z->autoflush();
$z->input_line_number();
$z->newStream( [OPTS] );
$z->deflateParams();
$z->close() ;
$DeflateError ;
# IO::File mode
print $z $string;
printf $z $format, $string;
tell $z
eof $z
seek $z, $position, $whence
binmode $z
fileno $z
close $z ;
```

DESCRIPTION

This module provides a Perl interface that allows writing compressed data to files or buffer as defined in RFC 1950.

For reading RFC 1950 files/buffers, see the companion module IO::Uncompress::Inflate.



Functional Interface

A top-level function, deflate, is provided to carry out "one-shot" compression between buffers and/or files. For finer control over the compression process, see the *OO Interface* section.

```
use IO::Compress::Deflate qw(deflate $DeflateError) ;
    deflate $input_filename_or_reference => $output_filename_or_reference
[,OPTS]
```

```
or die "deflate failed: $DeflateError\n";
```

The functional interface needs Perl5.005 or better.

deflate \$input_filename_or_reference => \$output_filename_or_reference [, OPTS]

deflate expects at least two parameters, \$input_filename_or_reference and \$output_filename_or_reference.

The \$input_filename_or_reference parameter

The parameter, \$input_filename_or_reference, is used to define the source of the uncompressed data.

It can take one of the following forms:

A filename

If the <\$input_filename_or_reference> parameter is a simple scalar, it is assumed to be a filename. This file will be opened for reading and the input data will be read from it.

A filehandle

If the \$input_filename_or_reference parameter is a filehandle, the input data will be read from it. The string '-' can be used as an alias for standard input.

A scalar reference

If \$input_filename_or_reference is a scalar reference, the input data will be read
from \$\$input_filename_or_reference.

An array reference

If $\texttt{sinput_filename_or_reference}$ is an array reference, each element in the array must be a filename.

The input data will be read from each file in turn.

The complete array will be walked to ensure that it only contains valid filenames before any data is compressed.

An Input FileGlob string

If \$input_filename_or_reference is a string that is delimited by the characters "<" and
">" deflate will assume that it is an *input fileglob string*. The input is the list of files that
match the fileglob.

See File::GlobMapper for more details.

If the \$input_filename_or_reference parameter is any other type, undef will be returned.

The \$output_filename_or_reference parameter

The parameter <code>\$output_filename_or_reference</code> is used to control the destination of the compressed data. This parameter can take one of these forms.

A filename

If the <code>\$output_filename_or_reference</code> parameter is a simple scalar, it is assumed to



be a filename. This file will be opened for writing and the compressed data will be written to it.

A filehandle

If the <code>\$output_filename_or_reference</code> parameter is a filehandle, the compressed data will be written to it. The string '-' can be used as an alias for standard output.

A scalar reference

If \$output_filename_or_reference is a scalar reference, the compressed data will be
stored in \$\$output_filename_or_reference.

An Array Reference

If $\texttt{soutput_filename_or_reference}$ is an array reference, the compressed data will be pushed onto the array.

An Output FileGlob

If <code>\$output_filename_or_reference</code> is a string that is delimited by the characters "<" and ">" deflate will assume that it is an *output fileglob string*. The output is the list of files that match the fileglob.

When \$output_filename_or_reference is an fileglob string,
\$input_filename_or_reference must also be a fileglob string. Anything else is an
error.

See File::GlobMapper for more details.

If the \$output_filename_or_reference parameter is any other type, undef will be returned.

Notes

When \$input_filename_or_reference maps to multiple files/buffers and
\$output_filename_or_reference is a single file/buffer the input files/buffers will be stored in
\$output_filename_or_reference as a concatenated series of compressed data streams.

Optional Parameters

Unless specified below, the optional parameters for deflate, OPTS, are the same as those used with the OO interface defined in the *Constructor Options* section below.

AutoClose => 0|1

This option applies to any input or output data streams to deflate that are filehandles.

If AutoClose is specified, and the value is true, it will result in all input and/or output filehandles being closed once deflate has completed.

This parameter defaults to 0.

BinModeIn => 0|1

When reading from a file or filehandle, set binmode before reading. Defaults to 0.

Append => 0|1

The behaviour of this option is dependent on the type of output data stream.

* A Buffer

If Append is enabled, all compressed data will be append to the end of the output buffer. Otherwise the output buffer will be cleared before any compressed data is written to it.

* A Filename

If Append is enabled, the file will be opened in append mode. Otherwise the



contents of the file, if any, will be truncated before any compressed data is written to it.

* A Filehandle

If Append is enabled, the filehandle will be positioned to the end of the file via a call to seek before any compressed data is written to it. Otherwise the file pointer will not be moved.

When Append is specified, and set to true, it will *append* all compressed data to the output data stream.

So when the output is a filehandle it will carry out a seek to the eof before writing any compressed data. If the output is a filename, it will be opened for appending. If the output is a buffer, all compressed data will be appended to the existing buffer.

Conversely when Append is not specified, or it is present and is set to false, it will operate as follows.

When the output is a filename, it will truncate the contents of the file before writing any compressed data. If the output is a filehandle its position will not be changed. If the output is a buffer, it will be wiped before any compressed data is output.

Defaults to 0.

Examples

To read the contents of the file file1.txt and write the compressed data to the file file1.txt.1950.

```
use strict ;
use warnings ;
use IO::Compress::Deflate qw(deflate $DeflateError) ;
my $input = "file1.txt";
deflate $input => "$input.1950"
        or die "deflate failed: $DeflateError\n";
```

To read from an existing Perl filehandle, \$input, and write the compressed data to a buffer, \$buffer.

```
use strict ;
use warnings ;
use IO::Compress::Deflate qw(deflate $DeflateError) ;
use IO::File ;
my $input = new IO::File "<file1.txt"
    or die "Cannot open 'file1.txt': $!\n" ;
my $buffer ;
deflate $input => \$buffer
    or die "deflate failed: $DeflateError\n";
```

To compress all files in the directory "/my/home" that match "*.txt" and store the compressed data in the same directory

```
use strict ;
use warnings ;
use IO::Compress::Deflate qw(deflate $DeflateError) ;
deflate '</my/home/*.txt>' => '<*.1950>'
```



or die "deflate failed: \$DeflateError\n";

and if you want to compress each file one at a time, this will do the trick

```
use strict ;
use warnings ;
use IO::Compress::Deflate qw(deflate $DeflateError) ;
for my $input ( glob "/my/home/*.txt" )
{
    my $output = "$input.1950" ;
    deflate $input => $output
        or die "Error compressing '$input': $DeflateError\n";
}
```

OO Interface

Constructor

The format of the constructor for IO::Compress::Deflate is shown below

It returns an IO:::Compress::Deflate object on success and undef on failure. The variable \$DeflateError will contain an error message on failure.

If you are running Perl 5.005 or better the object, z_z , returned from IO::Compress::Deflate can be used exactly like an *IO::File* filehandle. This means that all normal output file operations can be carried out with z_z . For example, to write to a compressed file/buffer you can use either of these forms

```
$z->print("hello world\n");
print $z "hello world\n";
```

The mandatory parameter *soutput* is used to control the destination of the compressed data. This parameter can take one of these forms.

A filename

If the *\$output* parameter is a simple scalar, it is assumed to be a filename. This file will be opened for writing and the compressed data will be written to it.

A filehandle

If the soutput parameter is a filehandle, the compressed data will be written to it. The string '-' can be used as an alias for standard output.

A scalar reference

If \$output is a scalar reference, the compressed data will be stored in \$\$output.

If the \$output parameter is any other type, IO::Compress::Deflate::new will return undef.

Constructor Options

OPTS is any combination of the following options:

AutoClose => 0|1

This option is only valid when the soutput parameter is a filehandle. If specified, and the value is true, it will result in the soutput being closed once either the close method is



called or the IO:::Compress::Deflate object is destroyed.

This parameter defaults to 0.

Append => 0 | 1

Opens \$output in append mode.

The behaviour of this option is dependent on the type of *\$output*.

* A Buffer

If <code>\$output</code> is a buffer and Append is enabled, all compressed data will be append to the end of <code>\$output</code>. Otherwise <code>\$output</code> will be cleared before any data is written to it.

* A Filename

If *\$output* is a filename and Append is enabled, the file will be opened in append mode. Otherwise the contents of the file, if any, will be truncated before any compressed data is written to it.

* A Filehandle

If <code>\$output</code> is a filehandle, the file pointer will be positioned to the end of the file via a call to <code>seek</code> before any compressed data is written to it. Otherwise the file pointer will not be moved.

This parameter defaults to 0.

Merge => 0|1

This option is used to compress input data and append it to an existing compressed data stream in <code>\$output</code>. The end result is a single compressed data stream stored in <code>\$output</code>. It is a fatal error to attempt to use this option when <code>\$output</code> is not an RFC 1950 data stream.

There are a number of other limitations with the Merge option:

- 1 This module needs to have been built with zlib 1.2.1 or better to work. A fatal error will be thrown if Merge is used with an older version of zlib.
- 2 If soutput is a file or a filehandle, it must be seekable.

This parameter defaults to 0.

-Level

Defines the compression level used by zlib. The value should either be a number between 0 and 9 (0 means no compression and 9 is maximum compression), or one of the symbolic constants defined below.

Z_NO_COMPRESSION Z_BEST_SPEED Z_BEST_COMPRESSION Z_DEFAULT_COMPRESSION

The default is Z_DEFAULT_COMPRESSION.

Note, these constants are not imported by IO::Compress::Deflate by default.

```
use IO::Compress::Deflate qw(:strategy);
use IO::Compress::Deflate qw(:constants);
use IO::Compress::Deflate qw(:all);
```

-Strategy

Defines the strategy used to tune the compression. Use one of the symbolic constants



defined below.

Z_FILTERED Z_HUFFMAN_ONLY Z_RLE Z_FIXED Z_DEFAULT_STRATEGY

The default is Z_DEFAULT_STRATEGY.

Strict => 0|1

This is a placeholder option.

Examples

TODO

Methods

print

Usage is

```
$z->print($data)
print $z $data
```

Compresses and outputs the contents of the data parameter. This has the same behaviour as the print built-in.

Returns true if successful.

printf

Usage is

\$z->printf(\$format, \$data)
printf \$z \$format, \$data

Compresses and outputs the contents of the \$data parameter.

Returns true if successful.

syswrite

Usage is

```
$z->syswrite $data
$z->syswrite $data, $length
$z->syswrite $data, $length, $offset
```

Compresses and outputs the contents of the \$data parameter.

Returns the number of uncompressed bytes written, or undef if unsuccessful.

write

Usage is

\$z->write \$data
\$z->write \$data, \$length
\$z->write \$data, \$length, \$offset

Compresses and outputs the contents of the \$data parameter.



Returns the number of uncompressed bytes written, or undef if unsuccessful.

flush

Usage is

\$z->flush; \$z->flush(\$flush_type);

Flushes any pending compressed data to the output file/buffer.

This method takes an optional parameter, $flush_type$, that controls how the flushing will be carried out. By default the $flush_type$ used is Z_FINISH. Other valid values for $flush_type$ are Z_NO_FLUSH, Z_SYNC_FLUSH, Z_FULL_FLUSH and Z_BLOCK. It is strongly recommended that you only set the flush_type parameter if you fully understand the implications of what it does - overuse of flush can seriously degrade the level of compression achieved. See the zlib documentation for details.

Returns true on success.

tell

Usage is

```
$z->tell()
tell $z
```

Returns the uncompressed file offset.

eof

Usage is

\$z->eof(); eof(\$z);

Returns true if the close method has been called.

seek

```
$z->seek($position, $whence);
seek($z, $position, $whence);
```

Provides a sub-set of the seek functionality, with the restriction that it is only legal to seek forward in the output file/buffer. It is a fatal error to attempt to seek backward.

Empty parts of the file/buffer will have NULL (0x00) bytes written to them.

The $\$ mence parameter takes one the usual values, namely SEEK_SET, SEEK_CUR or SEEK_END.

Returns 1 on success, 0 on failure.

binmode

Usage is

\$z->binmode
binmode \$z ;

This is a noop provided for completeness.



opened

```
$z->opened()
```

Returns true if the object currently refers to a opened file/buffer.

autoflush

```
my $prev = $z->autoflush()
my $prev = $z->autoflush(EXPR)
```

If the zz object is associated with a file or a filehandle, this method returns the current autoflush setting for the underlying filehandle. If EXPR is present, and is non-zero, it will enable flushing after every write/print operation.

If z is associated with a buffer, this method has no effect and always returns undef.

Note that the special variable \$ | cannot be used to set or retrieve the autoflush setting.

input_line_number

```
$z->input_line_number()
$z->input_line_number(EXPR)
```

This method always returns undef when compressing.

fileno

```
$z->fileno()
fileno($z)
```

If the z object is associated with a file or a filehandle, fileno will return the underlying file descriptor. Once the close method is called fileno will return undef.

If the z object is associated with a buffer, this method will return undef.

close

```
$z->close() ;
close $z ;
```

Flushes any pending compressed data and then closes the output file/buffer.

For most versions of Perl this method will be automatically invoked if the IO::Compress::Deflate object is destroyed (either explicitly or by the variable with the reference to the object going out of scope). The exceptions are Perl versions 5.005 through 5.00504 and 5.8.0. In these cases, the close method will be called automatically, but not until global destruction of all live objects when the program is terminating.

Therefore, if you want your scripts to be able to run on all versions of Perl, you should call close explicitly and not rely on automatic closing.

Returns true on success, otherwise 0.

If the AutoClose option has been enabled when the IO::Compress::Deflate object was created, and the object is associated with a file, the underlying file will also be closed.

newStream([OPTS])

Usage is

```
$z->newStream( [OPTS] )
```



Closes the current compressed data stream and starts a new one.

OPTS consists of any of the options that are available when creating the z object.

See the Constructor Options section for more details.

deflateParams

Usage is

\$z->deflateParams

TODO

Importing

A number of symbolic constants are required by some methods in IO::Compress::Deflate. None are imported by default.

:all

Imports deflate, \$DeflateError and all symbolic constants that can be used by
IO::Compress::Deflate. Same as doing this

use IO::Compress::Deflate qw(deflate \$DeflateError :constants) ;

:constants

Import all symbolic constants. Same as doing this

```
use IO::Compress::Deflate qw(:flush :level :strategy) ;
```

:flush

These symbolic constants are used by the flush method.

```
Z_NO_FLUSH
Z_PARTIAL_FLUSH
Z_SYNC_FLUSH
Z_FULL_FLUSH
Z_FINISH
Z_BLOCK
```

:level

These symbolic constants are used by the Level option in the constructor.

Z_NO_COMPRESSION Z_BEST_SPEED Z_BEST_COMPRESSION Z_DEFAULT_COMPRESSION

:strategy

These symbolic constants are used by the Strategy option in the constructor.

Z_FILTERED Z_HUFFMAN_ONLY Z_RLE Z_FIXED Z_DEFAULT_STRATEGY



EXAMPLES

Apache::GZip Revisited

See IO::Compress::FAQ

Working with Net::FTP

See IO::Compress::FAQ

SEE ALSO

Compress::Zlib, IO::Compress::Gzip, IO::Uncompress::Gunzip, IO::Uncompress::Inflate, IO::Compress::RawDeflate, IO::Uncompress::RawInflate, IO::Compress::Bzip2, IO::Uncompress::Bunzip2, IO::Compress::Lzma, IO::Uncompress::UnLzma, IO::Compress::Xz, IO::Uncompress::UnXz, IO::Compress::Lzop, IO::Uncompress::UnLzop, IO::Compress::Lzf, IO::Uncompress::UnLzf, IO::Uncompress::AnyUncompress::AnyUncompress

IO::Compress::FAQ

File::GlobMapper, Archive::Zip, Archive::Tar, IO::Zlib

For RFC 1950, 1951 and 1952 see http://www.faqs.org/rfcs/rfc1950.html, http://www.faqs.org/rfcs/rfc1951.html and http://www.faqs.org/rfcs/rfc1952.html

The *zlib* compression library was written by Jean-loup Gailly gzip@prep.ai.mit.edu and Mark Adler madler@alumni.caltech.edu.

The primary site for the *zlib* compression library is *http://www.zlib.org*.

The primary site for gzip is *http://www.gzip.org*.

AUTHOR

This module was written by Paul Marquess, pmqs@cpan.org.

MODIFICATION HISTORY

See the Changes file.

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