

NAME

OptiPNG – Advanced optimization program for **Portable Network Graphics (PNG)**

SYNOPSIS

optipng [-? | -h | -help]

optipng [*options...*] *files...*

DESCRIPTION

OptiPNG is a PNG optimizer that recompresses image files to a smaller size without losing any information. In addition, this program performs a suite of useful functions like integrity checks, meta-data recovery and pixmap-to-PNG conversion.

FILES

The input files are raster image files encoded either in PNG format (the native format), or in an external format. The currently supported external formats are GIF, BMP, PNM and TIFF.

OptiPNG processes each image file given in the command line as follows:

– If it is in PNG format:

Attempt to optimize the given file in-place. If optimization is successful, or if the option **-force** is in effect, replace the original file with its optimized version. The original file is backed up if the option **-keep** is in effect.

– If it is an external format:

Create an optimized PNG version of the given file. The output file name is composed from the original file name and the `.png` extension.

OPTIONS**Basic options**

-?, -h, -help

Show a complete summary of options.

-o level

Select the optimization level.

Use **-o0** to disable IDAT recompression trials.

Use **-o1** to enable a single IDAT recompression trial.

Use a higher *level* to enable more trials (the higher the *level*, the more trials).

The behavior and the default value of this user option may change across different program versions. Use option **-h** to see the details pertaining to your specific version.

-i type Select the interlace type (0–1).

Use **-i0** to produce a non-interlaced output.

Use **-i1** to produce an interlaced (*Adam7*) output.

If this option is not used, the output will have the same interlace type as the input.

-k, -keep

Keep a backup of the modified file(s).

The files that use the backup names prior to the program execution are *not* overwritten.

-q, -quiet

Run in quiet mode.

-v

Show copyright, version and build info; run in verbose mode.

Advanced options

-zc levels

Select the zlib compression levels.

The behavior and the default value of this user option may change across different program versions. Use option **-h** to see the details pertaining to your specific version.

- zm** *levels*
Select the zlib memory levels.
The behavior and the default value of this user option may change across different program versions. Use option **-h** to see the details pertaining to your specific version.
- zs** *strategies*
Select the zlib compression strategies.
The behavior and the default value of this user option may change across different program versions. Use option **-h** to see the details pertaining to your specific version.
- zw** *window size*
Select the zlib window size (32k,16k,8k,4k,2k,1k,512,256).
The window size can be specified either in bytes (e.g. 16384) or kilobytes (e.g. 16k).
- f** *filters*
Select the PNG delta filters.
The behavior and the default value of this user option may change across different program versions. The filter values 0, 1, 2, 3, 4 correspond to the PNG standard filters (*None*, *Left*, *Up*, *Average* and *Paeth*, respectively). The other values are used to specify adaptive filtering. Use option **-h** to see the details pertaining to your specific version.
- nb** Do not apply bit depth reduction.
- nc** Do not apply color type reduction.
- np** Do not apply palette reduction.
- nz** Do not perform IDAT recompression (also disable reductions).
- fix** Enable error recovery.
- force** Enforce writing of a new output file. Use this option to override the program's decision not to write such file, e.g. when the PNG input is digitally signed (using dSIG), or when the PNG output becomes larger than the PNG input.
- full** Produce a full report on IDAT. This option might slow down the trials.
- preserve**
Preserve file attributes (time stamps, file access rights, etc.) where applicable.
- simulate**
Run in simulation mode: perform the trials, but do not create output files.
- snip** Cut one image out of multi-image, animation or video file(s). Depending on the input format, this may be either the first or the most relevant (e.g. the largest) image.
- out** *file*
Write output file to *file*. The command line must not contain more than one input file.
- dir** *directory*
Write output file(s) to *directory*.
- log** *file*
Log messages to *file*. For safety reasons, *file* must have the extension `.log`.
- Stop option switch parsing.

Notes

The option names are case-insensitive and can be abbreviated. Any abbreviation must uniquely identify the full option name and must be no shorter than two letters, unless one letter is explicitly permitted. For example, **-quiet** can be abbreviated as **-q** or **-qu** (because **-q** is explicitly mentioned in the list of possible options), while **-preserve** can be abbreviated as **-pr** but not as **-p**.

Some options may have arguments that follow the option name, with or without a whitespace used as a separator; e.g.

```
-i1 <=> -i 1
-o3 <=> -o 3
```

Range arguments are cumulative; e.g.

```
-f0 -f3-5 <=> -f0,3-5
-zs0 -zs1 -zs2-3 <=> -zs0,1,2,3 <=> -zs0-3
```

The zlib window size is automatically set to a minimum that does not affect the compression ratio.

The output files will have all IDAT in a single chunk, even if no recompression is performed.

Extremely exhaustive searches are not generally recommended.

EXAMPLES

```
optipng file1.png file2.gif file3.tif
optipng -o5 file1.png file2.gif file3.tif
optipng -i1 -o7 -v -full -sim experiment.png -log experiment.log
```

BUGS

Lossless image reductions are not completely implemented. (This does NOT affect the integrity of the output files.) Here are the missing pieces:

- The color palette reductions are implemented only partially.
- The bit depth reductions below 8, for grayscale images, are not implemented yet.

TIFF support is limited to uncompressed, PNG-compatible (grayscale, RGB and RGBA) images.

Metadata is not imported from the external image formats.

SEE ALSO

png(5), **libpng(3)**, **zlib(3)**, **pngcrush(1)**, **pngrewrite(1)**.

Glenn Randers-Pehrson et al. *Portable Network Graphics (PNG) Specification, Second Edition*.
W3C Recommendation 10 November 2003; ISO/IEC IS 15948:2003 (E).
<http://www.w3.org/TR/PNG/>

AUTHOR

OptiPNG is written and maintained by Cosmin Truta.

This manual page was originally written by Nelson A. de Oliveira for the Debian Project. It was later updated by Cosmin Truta, and is now part of the **OptiPNG** distribution.