

NAME

hpcdtoppm – convert a Photo-CD file into a portable bitmap file

SYNOPSIS

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hpcdtoppm infile [-a] [{-C|-0|-Overview|-O}] file opt [-c0] [-c-] [-c+] [-crop] [-d]
[-dpi f] [-eps] [-epsd] [-epsg] [-fak scale] [-hori] [-i] [-quality N] [-l] [-m]
[-maxmemory N] [-n] [-optimize] [-pb pos] [-pgm] [-ph height] [-pl pos] [-pos]
[-ppm] [-ps] [-psd] [-psg] [-pw width] [-qualityN] [-r] [-rep] [-S long short] [-s] [-vert]
[-x] [-ycc] [-1|-Base/16 |-128x192] [-2|-Base/4 |-256x384] [-3|-Base |-512x768]
[-4|-4Base |-1024x1536] [-5|-16Base |-2048x3072] [-6|-64Base |-4096x6144] [outfile]
```

DESCRIPTION

This program accepts Photo-CD image or overview file data from the specified input file, *infile* (or, if the resolution is lower than 64Base and the file argument is specified as -, from standard input), and writes either Portable Bitmap Format or POSTSCRIPT to the specified output file (or to standard output if no file is specified).

On a standard Photo-CD, image files appear in *photo_cd/images*, where they appear in files with names of the form *imgnnnn.pcd*, where *nnnn* is a 4-digit-number. The overview file appears in *photo_cd/overview.pcd*.

Photo-CD images are stored using as many as 6 different resolutions:

Format	Resolution
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64Base	4096x6144 (ProPhotoCD only)
16Base	2048x3072
4Base	1024x1536
Base	512x768
Base/4	256x384
Base/16	128x192

The overview file employs Base/16 format.

OPTIONS

Invoking *hpcdtoppm* without arguments produces a list of default values. Note that you can supply only one size option.

-a Automatically determine image orientation (this option is experimental, and does not work for overview files).

{-C | -0 | -Overview | -O } *file opt*

Extract all images from an overview file. The mandatory *file* argument is the name of a *ppm* file; output files are named *filennnn*, where *nnnn* is a 4-digit number. Overview images are extracted in their original Base/16 format. The value of *opt* determines the orientation of the contact sheet image; recognized values are:

n Do not rotate the image.

l Rotate the picture counter-clockwise (portrait mode).

r Rotate the picture clockwise (portrait mode).

-c0 Do not correct (brighten or darken) the image.

-c- Darken the image.

-c+ Brighten the image.

-crop Cut off the black frame which sometimes appears at the image borders.

-d Show only the decompressed difference rather than the complete image (applicable only to 4Base and 16Base images).

- dpi res**
Set the printer resolution to *res* for dithered POSTSCRIPT images.
- eps** Write a RGB Encapsulated POSTSCRIPT color image.
- epsd** Write a Floyd-Steinberg dithered image in Encapsulated POSTSCRIPT.
- jpeg** Write image in JPEG format.
- quality N**
Scale quantization tables to adjust image quality. (JPEG output only) Quality is 0 (worst) to 100 (best); default is 75.
- epsd** Write a grayscale image in Encapsulated POSTSCRIPT.
- fak scale**
Set the scaling factor for dithered POSTSCRIPT images to *scale*.
- hori** Flip the image horizontally.
- i** Send information from an image file header to standard error.
- l** Rotate the picture counter-clockwise (portrait mode).
- m** Write messages about the phases of decoding to standard error.
- maxmemory N**
Set limit for amount of memory used by the JPEG encoder. Value is in thousands of bytes. If more space is needed, temporary files will be used. Default is 50000 bytes.
- n** Do not rotate the image.
- optimize**
Perform optimization of entropy encoding parameters. (JPEG output only) Without this, default encoding parameters are used. **-optimize** usually makes the JPEG file a little smaller, but encoding is somewhat slower and needs much more memory. Image quality and speed of decompression are unaffected by **-optimize**.
- pb pos**
Set the bottom position of the POSTSCRIPT image to *pos*.
- pgm** Write a *pgm* (grayscale) image.
- ph height**
Set the height of the POSTSCRIPT image to *height*.
- pl pos**
Set the leftmost position of the POSTSCRIPT image to *pos*.
- pos** Print the relative starting position of the data for the current resolution.
- ppm** Write a *ppm* RGB (color) image.
- ps** Write a RGB POSTSCRIPT color image.
- psd** Write a Floyd-Steinberg dithered image in POSTSCRIPT.
- psg** Write a POSTSCRIPT grayscale image.
- pw width**
Set the width of the POSTSCRIPT image to *width*.
- r** Rotate the picture clockwise (portrait mode).
- rep** Try to jump over reading errors in the Huffman code.
- S long short**
Cut out a subrectangle with boundaries defined by the values:
long For the longer side of the image.

short For the shorter side of the image.

where *long* and *short* take one of two forms:

a-b Cut from position *a* to position *b*.

a+b Starting at offset *a*, cut a length of *b*.

and where *a* and *b* are either integers representing pixel locations, or floating point values over the range [0.0 ... 1.0], representing the fraction of the length of a side.

- s Apply a simple sharpness operator to the luminosity channel.
- vert Flip the image vertically.
- x Overskip Mode (applicable to Base/16, Base/4, Base and 4Base). In Photo-CD images the luminosity channel is stored in full resolution, the two chromaticity channels are stored in half resolution only and have to be interpolated. In Overskip Mode, the chromaticity channels of the next higher resolution are taken instead of interpolating. To see the difference, generate one *ppm* with and one *ppm* without this flag. Use *pnmarith*(1L) to generate the difference image of these two images. Call *ppmhist*(1L) for this difference or show it with *xv*(1L) (push the **HistEq** button in the color editor).
- ycc Write the image in *ppm* YCC format.
- 1|-Base/16|-128x192
Extract the Base/16 image.
- 2 | -Base/4 | -256x384
Extract the Base/4 image.
- 3 | -Base | -512x768
Extract the Base image.
- 4 | -4Base | -1024x1536
Extract the 4Base image.
- 5 | -16Base | -2048x3072
Extract the 16Base image.
- 6 | -64Base | -4096x6144
Extract the 64Base image. This resolution can be extracted from ProPhotoCD images only. The path of the 64Base extension files is derived from the path to the image file. This means that it doesn't work on stdin and the directory structure must be the very same as on the ProPhotoCD.

POSTSCRIPT OUTPUT

For POSTSCRIPT output (options **-ps**, **-eps**, **-psg**, **-epsd**, **-psd**, **-epsd**) you can define both the resolution and placement of the image. Both size and position are specified in points (1/72 inch).

The position of the image (where the origin is assumed to be at the lower left corner of the page) is controlled by the **-pl** and **-pb** options (applicable at all resolutions).

The size of color and grayscale images is changed with the **-pw** and **-ph** options. Every image pixel is mapped onto one POSTSCRIPT pixel.

There are three modes of control for dithered POSTSCRIPT:

Image size

(**-pw** and **-ph**)

Printer resolution

(**-dpi**)

Scaling factor
(**-fak**)

These three factors are interdependent, hence no more than two can be specified simultaneously. Using **-dpi** and the **-pw/-ph** options together often yields pleasing results. Even using the default values for these options will produce results differing from those obtained without use of the options.

BUGS

The program ignores read protection.

The **-i** option is not working correctly.

Available information about the Photo-CD format is vague; this program was developed by trial-and-error after staring at hex-dumps. Please send bugs reports and patches to the author.

SEE ALSO

pnmarith(1L), ppm(5L), ppmhist(1L), ppmquant(1L), ppmtopgm(1L), ppmtorgb3(1L), cjpeg(1L), xv(1L)

VERSION

The name *hpcdtoppm* stands for "Hadmut's pcdtoppm," to make it distinguishable in the event that someone else is building a similar application and naming it *pcdtoppm*. This is version 0.6.

AUTHOR

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Manual page extensively modified by R. P. C. Rodgers (rodgers@nlm.nih.gov).

Amiga port and JPEG support added by Günther Röhrich (Guenther@studbox.uni-stuttgart.de)