NETPBM 7/12/93

COLLABORATORS

	TITLE : NETPBM 7/12/93	

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NETPBM 7/12/93

1.1 NETPBM 7/12/93

```
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                       Release 7 December 1993

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                  Copyright
                     The  archives/binaries  and  the  documentation were printed/ ↩
                         compiled/
prepared  by
                Ingo  Wilken
                .   (Documentation  merged  and converted to
AmigaGuide(tm) by
                Julie Brandon
                 with permission from Ingo.)
```

1.2 copyright

Netpbm consists of code contributed by many authors. In every file of the source code, there is a copyright notice, telling you what you may or may not do with the code. All authors have granted you the right to use and distribute their code without having to pay them, as long as you do it on a non-commercial basis. Most authors allow you to do even more, but remember to check their copyright notices.

1.3 What is NETPBM?

NETPBM is a revised version of the PBMplus package, containing corrections and enhancements to the 10dec91 version of PBMplus. It is not "official" in the sense of being released by the original author, but the idea of a net supported version has been approved by him.

NETPBM is a collection of tools which do the following:

1. Import - read images in popular formats and convert to one of the internal PBM formats.

2. Image processing - manipulate the image data to produce many effects including scaling, contrast and gamma adjustment, edge detection, etc.

3. Export - write images in popular formats for use with other software.

NETPBM uses three intermediate formats:

PBM
= portable bitmap (black&white)

PGM
= portable gray map (greyscale, usually 8bit)

PPM
= portable pix map (color, usually 24bit)

The formats are upward compatible, PGM programs can read both PBM and PGM and write PGM, PPM programs can read all three and write PPM. There are also PNM programs (
PNM
= portable anymap), these work on all three formats. The difference between PPM and PNM programs is that PPM programs always write PPM, but PNM programs can write any of

the three formats (usually they write the same format as they got as input). There is no PNM format!

The great advantage of using intermediate formats is that for a conversion between N formats only 2*N converters are needed instead of N^2; and if yet another graphic format appears, all that is needed are the newtop?m and p?mtonew filters, and you are immediately able to convert the new format to and from any other old format. The disadvantage is that two commands are needed to convert an image:

```
giftopnm
 mypic.gif >mypic.ppm

ppmtoilbm
 -hamif mypic.ppm >mypic.iff
```

or on Unix-like shells:

```
giftopnm
 mypic.gif |
ppmtoilbm
 > mypic.iff
```

Another disadvantage is that the intermediate formats are very simple and therefore the files get quite big, for example a 1024x768 PPM picture needs 1024*768*3 bytes = 2.25MB.

NETPBM also includes a lot of tools that manipulate the intermediate formats in some way: scaling, rotating, reducing the number of colors and more. For example, to convert a GIF of any size to a 320*200 IFF-ILBM you could do this:

```
giftopnm
 mypic.gif >mypic.ppm

pnmscale
 -xysize 320 200 mypic.ppm >mypic.ppm2

ppmtoilbm
 -hamif mypic.ppm2 >mypic.iff
```

or

```
giftopnm
 mypic.gif |
pnmscale
 -xysize 320 200 |

ppmtoilbm
 -hamif >mypic.iff
```

If you are not using an Unix-like shell, you can use the PIPE: handler to avoid using temporary files:

```
  run
            giftopnm
             mypic.gif >pipe:1
  run
            pnmscale
             -xysize 320 200 <pipe:1 >pipe:2
  run
            ppmqvga
             <pipe:2 >pipe:3

            ppmtoilbm
             -aga <pipe:3 >mypic.iff
```

1.4 Binaries

```
                Binaries     are    available    at    ftp.informatik.uni- ↩
                   oldenburg.de
[134.106.1.9]   in  /pub/netpbm/amiga,  or  on  all  Aminet  sites  in
/pub/aminet/gfx/pbm.

The full distribution consists of these archives:

texts.lha     REQ   textfiles, miscellaneous stuff
manuals.lha   REQ   formatted Unix manuals
mergedbin.lha REQ*
            merged binaries
                pbmbin.lha    REQ*
            PBM
             binaries, for B&W images
pgmbin.lha    REQ*
            PGM
             binaries, for greyscale images
ppmbin1.lha   REQ*
            PPM
             binaries #1, for color images
ppmbin2.lha   REQ*
            PPM
             binaries #2, for color images
pnmbin.lha    REQ*
            PNM
             binaries, tools and special converters
scripts.lha   OPT   Unix shell scripts
source1.lha   DEV   source: tools and main libraries
source2.lha   DEV   source: TIFF library, Unix nroff mans., VMS stuff
dicelibs.lha  DEV   compiled link libraries, for DICE

REQ = required, OPT = optional, DEV = only useful for programmers

* You need  either  all  the  p?mbin  archives, or  just the mergedbin
  archive.  See the section
            Merged binaries vs Separate binaries
             for
  an explanation.
```

1.5 Requirements

* OS 2.04 or higher, or 1.3 with disk-based mathieeesingbas/ mathieeesingtrans libraries (available from C=).

* mathtrans, mathieeedoubbas and mathieeedoubtrans libraries in LIBS:

A hard disk, a fast CPU, and lots of memory are recommended. It will work on 68000's if you have sufficient memory; on machines with 020+MMU, non-EC 030, or non-EC 040, a virtual memory program like GigaMem will be useful if you are processing large images.

A full binary installation takes 1MB of HD space for merged binaries, 3MB for separate binaries. Source (not including libtiff source, unix nroff manuals and the vms subdir) takes another 3MB.

There is no special 68020/881 binary distribution. The FPU is already used by the math libraries, and most programs are I/O-bound instead of CPU-bound.

1.6 Merged binaries vs Separate binaries

Netpbm consists of more than 130 programs, each being stand- ↩ alone and not depending on the other programs. This means a lot of disk space is wasted, since all programs use the same routines for reading, writing, allocation etc., and the code for these routines has to be in every single program. To avoid this, the programs can be merged into a single huge executable (actually four of them) and the individual programs are just hardlinks to this binary. Both methods have advantages and disadvantages:

Separate binaries:

+ executables can be individually tuned for maximum performance (register args and small data model are used whenever possible).

+ most executables are "pure" and can be made resident

- full installation takes MUCH more disk space (3MB)

Merged
binaries
:

+ only 4 executables and a bunch of links. Requires only 1MB of disk space for a full installation.

- executables are slower, since all have to be compiled with stack-args and large data model

- executables are huge and require more RAM to execute. This will be fixed in the future by using overlays.

Why no shared library? Its just too much work. If you think your life depends on having a pbm.library, go ahead and create it... or pay me for a month or two of full-time work, and I'm doing it :-)

1.7 Installation

Seperate binaries
:

You need the following
archives
: pbmbin, pgmbin, ppmbin1, ppmbin2, pnmbin. Extract the programs that you need from the archives and copy them to a directory in your search path.

Merged binaries
:

You only need the mergedbin
archive
. Extract the four p?mmerge programs and copy them to a directory in your search path. Then CD to this directoy and execute the "link_merged" script. This generates all the hardlinks.

Links are not supported by 1.3, so if you are still running it, you have no choice but to use the separate binaries. Some 2.x and 3.x filesystems have bugs with links that trashes the disk if the original file is deleted and a link still exists. A safe way is to use the merged binaries on these systems is to install them in their own directory, and if you decide one day to de- install them do it in this way:

```
    delete ~(#?merge)
    delete #?
```

X11 color names file: Some programs (for example
pgmtoppm
and

ppmmake
) can use a color names file, so you can specify colors by names instead of RGB values. An example color names file is included in the texts archives, as "RGB.txt". Just copy the file to a convenient place (S: is a good choice) and set the environment variable "RGBDEF" to the full path and name of this file:

```
    setenv RGBDEF "s:RGB.txt"
```

Unix shell scripts: I didn't bother to convert the scripts to AmigaDOS-scripts (it's almost impossible anyway). If you want to run them, use a Bourne-shell or Csh clone.

Stack size: Don't worry about it. The programs automatically allocate a larger stack if they need more.

1.8 Memory usage

You can control the way how the programs allocate their memory with the environment variable "PBMMEM". The following keywords are used:

fast
The programs will not try to allocate chipmem if they run out of fastmem. If this keyword is not used, then the programs will allocate both fast- and chipmem (fastmem first).

pool
pool=<n>
With this keyword, the programs use memory pools. This is faster and avoids run-time memory fragmentation, but unfortunately crashes if used with GigaMem. Note that OS 3.x is *NOT* required, it works under 2.x (tested on 2.1) and probably even under 1.3 (not tested). The optional number selects the size of the pools, the default being 32K. If this keyword is not used, all allocations are done with normal AllocMem() calls. This should work on all systems and with virtual memory programs like GigaMem.

max=<n>
The maximum memory a program allocates. This does not include the memory used for the code, data and stack segments. The default value (if this keyword is not used) is "unlimited" (2GB, to be precise).

Multiple keywords are delimited by whitespace or commas. Numbers can be in decimal, hex (prefix "0x") or octal (prefix "0") and can be given in bytes, Kbytes (suffix "k") or megabytes (suffix "m").

Example:

```
setenv PBMMEM "pool=64k,fast,max=2M"
```

Selects allocation via memory pools, fast memory only, and sets the poolsize to 64KB and the maximum memory usage to 2MB.

1.9 Misc info

NETPBM does not include converters for JPEG, but the freely distributable programs "djpeg" and "cjpeg" can convert JPEG to and from P?M. You can get them from Aminet:/pub/aminet/gfx/conv, look for an archive called "jpegV?.lha" or "AmigaJPEG?.lha" or something similar.

The hpcdtoppm included in NETPBM converter is an older version, an up-to-date version is available on Aminet:/pub/aminet/gfx/pbm, archive "hpcdtoppm*.lha".

All programs have two hidden options, "-version" and "-quiet". The first does the obvious: it prints version and configuration information of the program. The other suppresses all messages from the program (unfortunately, some programs ignore this option). Most programs print usage information if a "-?" option is given.

1.10 Support

Your can reach me via:

E-mail:
Ingo.Wilken@informatik.uni-oldenburg.de
IRC:
Nobody (usually on channel "#amigager")
Carrier pigeon and other ancient communication channels:
Ingo Wilken
Bloherfelder Str. 72
26129 Oldenburg
W-Germany

For bug reports, please describe exactly what you were doing, what went wrong (guru number?) what OS version you are using, your machine configuration, and everything else that could be important. If

possible, provide the following:

* "enforcer" & "mungwall" output
* "showconfig" output
* a sample image that triggers the bug (unless it appears with any image)
* the output of running the NETPBM-program with the -version option

Also, make sure that it's really the NETPBM-program thats causing the problems, not some background-utility playing corewar.

1.11 Julie Brandon

Your can reach me via:

E-mail:
csc157@cent1.lancs.ac.uk (probably only until September '95)
IRC:
Jewelie (usually on channels "#amiga" or "#gb")

Please keep in mind all -I- have done is convert the original documents into one large AmigaGuide(tm) database, so I can't help with any queries/problems with the actual programs obviously.

1.12 Manual Pages

PNM UTILITIES

PNM
Portable anymap file format. No actual file format, the pnm programs operate on ppm, pgm and pbm files.

PNM General

PNMALIAS
Antialias a portable anymap.

PNMARITH
Perform arithmetic on two portable anymaps.

PNMCAT
Concatenate portable anymaps.

PNMCOMP
Composite two portable anymap files together.

PNMCONVOL

General MxN convolution on a portable anymap.

PNMCROP
Crop a portable anymap.

PNMCUT
Cut a rectangle out of a portable anymap.

PNMDEPTH
Change the maxval in a portable anymap.

PNMENLARGE
Read a portable anymap and enlarge it N times.

PNMFILE
Describe a portable anymap.

PNMFLIP
Perform one or more flip operations on a portable anymap.

PNMGAMMA
Perform gamma correction on a portable anymap.

PNMHISTMAP
Draw a histogram for a PGM or PPM file.

PNMINDEX
Build a visual index of a bunch of anymaps.

PNMINVERT
Invert a portable anymap.

PNMMARGIN
Add a border to a portable anymap.

PNMNLFILT
Non-linear filters: smooth, alpha trim mean, optimal.

PNMNORAW
Force a portable anymap into plain format.

PNMPAD
Add borders to portable anymap.

PNMPASTE
Paste a rectangle into a portable anymap.

PNMROTATE
Rotate a portable anymap by some angle.

PNMSCALE
Scale a portable anymap.

PNMSHEAR
Shear a portable anymap by some angle.

PNMSMOOTH
Smooth out an image.

PNMTILE
Replicate a portable anymap into a specified size.

Convert From PNM

PNMTODDIF
convert a portable anymap to DDIF format.

PNMTOFITS
Convert a portable anymap into FITS format.

PNMTOPS
Convert portable anymap to PostScript.

PNMTORAST
Convert a portable pixmap into a Sun rasterfile.

PNMTOSGI
Convert a portable anymap to a SGI image file.

PNMTOSIR
Convert a portable anymap into a Solitaire format.

PNMTOTIFF
Convert a a portable anymap into a TIFF file.

PNMTOXWD
Convert a portable anymap into an X11 window dump.

Convert To PNM

ANYTOPNM
Attempt to convert an unknown type of image file to a portable anymap.

FITSTOPNM
Convert a FITS file into a portable anymap.

GIFTOPNM
Convert a GIF file into a portable anymap.

PSTOPNM
Convert a PostScript file into a portable anymap.

RASTTOPNM
Convert a Sun rasterfile into a portable anymap.

SGITOPNM
Convert a SGI image file to a portable anymap.

SIRTOPNM
Convert a Solitaire file into a portable anymap.

TIFFTOPNM
Convert a TIFF file into a portable anymap.

XWDTOPNM
Convert a X11 or X10 window dump file into a portable anymap.

ZEISSTOPNM
Convert a Zeiss confocal file into a portable anymap.

PPM UTILITIES

PPM
Portable pixmap file format. Lowest common ↩ denominator color image file format.

PPM General

PPM3D
Convert two portable pixmap into a red/blue 3d glasses pixmap.

PPMBRIGHTEN
Change an images Saturation and Value from an HSV map.

PPMCHANGE
Change all pixels of one color to another in a portable pixmap.

PPMDIM
Dim a portable pixmap down to total blackness.

PPMDIST
Simplistic grayscale assignment for machine generated, color images.

PPMDITHER
Ordered dither for color images.

PPMFLASH
Brighten a picture up to complete white-out.

PPMFORGE
Fractal forgeries of clouds, planets, and starry skies.

PPMHIST
Print a histogram of a portable pixmap.

PPMMAKE
Create a pixmap of a specified size and color.

PPMMIX

Blend together two portable pixmaps.

PPMNORM
Normalize the contrast in a portable pixmap.

PPMNTSC
Make a portable pixmap look like taken from an American TV.

PPMPAT
Make a pretty pixmap.

PPMQUANT
Quantize the colors in a portable pixmap down to a specified number.

PPMQUANTALL
Run ppmquant on a bunch of files all at once, so they share a common colormap.

PPMQVGA
8 plane quantization.

PPMRELIEF
Run a Laplacian relief filter on a portable pixmap.

PPMSHIFT
Shift lines of a portable pixmap left or right by a random amount.

PPMSPREAD
Displace a portable pixmap's pixels by a random amount.

Convert From PPM

PPMTOACAD
Convert portable pixmap to AutoCAD database or slide.

PPMTOBMP
Convert a portable pixmap into a BMP file.

PPMTOGIF
Convert a portable pixmap into a GIF file.

PPMTOICR
Convert a portable pixmap into NCSA ICR format.

PPMTOILBM
Convert a portable pixmap into an ILBM file.

PPMTOMAP
Extract all colors from a portable pixmap.

PPMTOMITSU
Convert a portable pixmap to a Mitsubishi S340-10 file.

PPMTOPCX
Convert a portable pixmap into a PCX file.

PPMTOPGM
Convert a portable pixmap into a portable graymap.

PPMTOPI1
Convert a portable pixmap into an Atari Degas .pi1 file.

PPMTOPICT
Convert a portable pixmap into a Macintosh PICT file.

PPMTOPJ
Convert a portable pixmap to an HP PaintJet file.

PPMTOPJXL
Convert a portable pixmap into an HP PaintJet XL PCL file.

PPMTOPUZZ
Convert a portable pixmap into an X11 "puzzle" file.

PPMTORGB3
Separate a portable pixmap into three portable graymaps.

PPMTOSIXEL
Convert a portable pixmap into DEC sixel format.

PPMTOTGA
Convert portable pixmap into a TrueVision Targa file.

PPMTOUIL
Convert a portable pixmap into a Motif UIL icon file.

PPMTOXPM
Convert a portable pixmap into an X11 pixmap.

PPMTOYUV
Convert a portable pixmap into an Abekas YUV file.

PPMTOYUVSPLIT
Convert a portable pixmap into 3 subsampled raw YUV files.

Convert To PPM

BMPTOPPM
Convert a BMP file into a portable pixmap.

GOULDTOPPM
Convert Gould scanner file into a portable pixmap.

HPCDTOPPM
Convert a Photo-CD file into a portable pixmap.

ILBMTOPPM

Convert an ILBM file into a portable pixmap.

IMGTOPPM
Convert an Img-whatnot file into a portable pixmap.

MTVTOPPM
Convert output from the MTV or PRT ray tracers into a portable pixmap.

PCXTOPPM
Convert a PCX file into a portable pixmap.

PI1TOPPM
Convert an Atari Degas .pi1 into a portable pixmap.

PICTTOPPM
Convert a Macintosh PICT file into a portable pixmap.

PJTOPPM
Convert an HP PaintJet file to a portable pixmap.

QRTTOPPM
Convert output from the QRT ray tracer into a portable pixmap.

RAWTOPPM
Convert raw RGB bytes into a portable pixmap.

RGB3TOPPM
Combine three portable graymaps into one portable pixmap.

SLDTOPPM
Convert an AutoCAD slide file into a portable pixmap.

SPCTOPPM
Convert an Atari compressed Spectrum file into a portable pixmap.

SPUTOPPM
Convert an Atari uncompressed Spectrum file into a portable pixmap.

TGATOPPM
Convert TrueVision Targa file into a portable pixmap.

XIMTOPPM
Convert an Xim file into a portable pixmap.

XPMTOPPM
Convert an X11 pixmap into a portable pixmap.

XVMINITOPPM
Convert a XV "thumbnail" picture to PPM.

YUVSPLITTOPPM
Convert a Y- an U- and a V-file into a portable pixmap..

YUVTOPPM
Convert Abekas YUV bytes into a portable pixmap.

PGM UTILITIES

PGM
Portable graymap file format. Lowest common ↩ denominator
greyscale format.

PGM General

PGMBENTLEY
bentleyize a portable graymap.

PGMCRATER
Create cratered terrain by fractal forgery.

PGMEDGE
Edge-detect a portable graymap.

PGMENHANCE
Edge-enhance a portable graymap.

PGMHIST
Print a histogram of the values in a portable graymap.

PGMKERNEL
Generate a convolution kernel.

PGMNOISE
Create a graymap made up of white noise.

PGMNORM
Normalize the contrast in a portable graymap.

PGMOIL
Turn a portable graymap into an oil painting.

PGMRAMP
Generate a grayscale ramp.

PGMTEXTURE
Calculate textural features on a portable graymap.

Convert From PGM

PGMTOFS
Convert portable graymap to Usenix FaceSaver(tm) format.

PGMTOLISPM
Convert a portable graymap into Lisp Machine format.

PGMTOPBM
Convert a portable graymap into a portable bitmap.

PGMTOPPM
Colorize a portable graymap into a portable pixmap.

Convert To PGM

ASCIITOPGM
Convert ASCII graphics into a portable graymap.

BIORADTOPGM
Convert a Biorad confocal file into a portable graymap.

FSTOPGM
Convert a Usenix FaceSaver(tm) file into a portable graymap.

HIPSTOPGM
Convert a HIPS file into a portable graymap.

LISPMTOPGM
Convert a Lisp Machine bitmap file into pgm format.

PSIDTOPGM
Convert PostScript "image" data into a portable graymap.

RAWTOPGM
Convert raw grayscale bytes into a portable graymap.

SPOTTOPGM
Convert SPOT satellite images to Portable Greymap format.

PBM UTILITIES

PBM
Portable bitmap file format. Lowest common ↩ denominator monochrome file format.

PBM General

PBMCLEAN
Flip isolated pixels in portable bitmap.

PBMLIFE
Apply Conway's rules of Life to a portable bitmap.

PBMMAKE
Create a blank bitmap of a specified size.

PBMMASK
Create a mask bitmap from a regular bitmap.

PBMPSCALE
Enlarge a portable bitmap with edge smoothing.

PBMREDUCE
Read a portable bitmap and reduce it N times.

PBMTEXT
Render text into a bitmap.

PBMUPC
Create a Universal Product Code bitmap.

Convert From PBM

PBMTO10X
Convert a portable bitmap into Gemini 10X printer graphics.

PBMTO4425
display PBM images on an AT&T 4425 terminal.

PBMTOASCII
Convert a portable bitmap into ASCII graphics.

PBMTOATK
Convert portable bitmap to Andrew Toolkit raster object.

PBMTOBBNBG Convert a portable bitmap into BitGraph graphics.

PBMTOCMUWM
Convert a portable bitmap into a CMU window manager bitmap.

PBMTOEPSI
Convert a portable bitmap into an encapsulated PostScript.

PBMTOEPSON
Convert a portable bitmap into Epson printer graphics.

PBMTOG3
Convert a portable bitmap into a Group 3 fax file.

PBMTOGEM
Convert a portable bitmap into a GEM .img file.

PBMTOGO
Convert a portable bitmap into compressed GraphOn graphics.

PBMTOICON
Convert a portable bitmap into a Sun icon.

PBMTOLJ

Convert a portable bitmap into HP LaserJet format.

PBMTOLN03
Convert protable bitmap to DEC LN03+ Sixel output.

PBMTOLPS
Convert portable bitmap to PostScript.

PBMTOMACP
Convert a portable bitmap into a MacPaint file.

PBMTOMGR
Convert a portable bitmap into a MGR bitmap.

PBMTOPGM
Convert portable bitmap to portable graymap by averaging areas.

PBMTOPI3
Convert a portable bitmap into an Atari Degas .pi3 file.

PBMTOPK
Convert a portable bitmap into a packed (PK) format font.

PBMTOPLOT
Convert a portable bitmap into a Unix plot(5) file.

PBMTOPTX
Convert a portable bitmap into Printronix printer graphics.

PBMTOX10BM
Convert a portable bitmap into an X10 bitmap.

PBMTOXBM
Convert a portable bitmap into an X11 bitmap.

PBMTOYBM
Convert a portable bitmap into a Bennet Yee "face" file.

PBMTOZINC
Convert a portable bitmap into a Zinc bitmap.

Convert To PBM

ATKTOPBM
Convert Andrew Toolkit raster object to portable bitmap.

BRUSHTOPBM
Convert a doodle brush file into a portable bitmap.

CMUWMTOPBM
Convert a CMU window manager bitmap into a portable bitmap.

G3TOPBM
Convert a Group 3 fax file into a portable bitmap.

GEMTOPBM
Convert a GEM .img file into a portable bitmap.

ICONTOPBM
Convert a Sun icon into a portable bitmap.

MACPTOPBM
Convert a MacPaint file into a portable bitmap.

MGRTOPBM
Convert a MGR bitmap into a portable bitmap.

PI3TOPBM
Convert an Atari Degas .pi3 file into a portable bitmap.

PKTOPBM
Convert packed (PK) format font into portable bitmap(s).

XBMTOPBM
Convert an X11 or X10 bitmap into a portable bitmap.

YBMTOPBM
Convert a Bennet Yee "face" file into a portable bitmap.

1.13 Index

ANYTOPNM
Attempt to convert an unknown type of image file to a portable anymap.

ASCIITOPGM
Convert ASCII graphics into a portable graymap.

ATKTOPBM
Convert Andrew Toolkit raster object to portable bitmap.

BIORADTOPGM
Convert a Biorad confocal file into a portable graymap.

BMPTOPPM
Convert a BMP file into a portable pixmap.

BRUSHTOPBM
Convert a doodle brush file into a portable bitmap.

CMUWMTOPBM
Convert a CMU window manager bitmap into a portable bitmap.

FITSTOPNM

Convert a FITS file into a portable anymap.

FSTOPGM
Convert a Usenix FaceSaver(tm) file into a portable graymap.

G3TOPBM
Convert a Group 3 fax file into a portable bitmap.

GEMTOPBM
Convert a GEM .img file into a portable bitmap.

GIFTOPNM
Convert a GIF file into a portable anymap.

GOULDTOPPM
Convert Gould scanner file into a portable pixmap.

HIPSTOPGM
Convert a HIPS file into a portable graymap.

HPCDTOPPM
Convert a Photo-CD file into a portable pixmap.

ICONTOPBM
Convert a Sun icon into a portable bitmap.

ILBMTOPPM
Convert an ILBM file into a portable pixmap.

IMGTOPPM
Convert an Img-whatnot file into a portable pixmap.

LISPMTOPGM
Convert a Lisp Machine bitmap file into pgm format.

MACPTOPBM
Convert a MacPaint file into a portable bitmap.

MGRTOPBM
Convert a MGR bitmap into a portable bitmap.

MTVTOPPM
Convert output from the MTV or PRT ray tracers into a portable pixmap.

PCXTOPPM
Convert a PCX file into a portable pixmap.

PI1TOPPM
Convert an Atari Degas .pi1 into a portable pixmap.

PI3TOPBM
Convert an Atari Degas .pi3 file into a portable bitmap.

PICTTOPPM
Convert a Macintosh PICT file into a portable pixmap.

PJTOPPM
Convert an HP PaintJet file to a portable pixmap.

PKTOPBM
Convert packed (PK) format font into portable bitmap(s).

PBMCLEAN
Flip isolated pixels in portable bitmap.

PBMLIFE
Apply Conway's rules of Life to a portable bitmap.

PBMMAKE
Create a blank bitmap of a specified size.

PBMMASK
Create a mask bitmap from a regular bitmap.

PBMPSCALE
Enlarge a portable bitmap with edge smoothing.

PBMREDUCE
Read a portable bitmap and reduce it N times.

PBMTEXT
Render text into a bitmap.

PBMTO10X
Convert a portable bitmap into Gemini 10X printer graphics.

PBMTO4425
display PBM images on an AT&T 4425 terminal.

PBMTOASCII
Convert a portable bitmap into ASCII graphics.

PBMTOATK
Convert portable bitmap to Andrew Toolkit raster object.

PBMTOBBNBG Convert a portable bitmap into BitGraph graphics.

PBMTOCMUWM
Convert a portable bitmap into a CMU window manager bitmap.

PBMTOEPSI
Convert a portable bitmap into an encapsulated PostScript.

PBMTOEPSON
Convert a portable bitmap into Epson printer graphics.

PBMTOG3
Convert a portable bitmap into a Group 3 fax file.

PBMTOGEM

```
       Convert a portable bitmap into a GEM .img file.

PBMTOGO
        Convert a portable bitmap into compressed GraphOn
   graphics.

PBMTOICON
      Convert a portable bitmap into a Sun icon.

PBMTOLJ
        Convert a portable bitmap into HP LaserJet format.

PBMTOLN03
      Convert protable bitmap to DEC LN03+ Sixel output.

PBMTOLPS
       Convert portable bitmap to PostScript.

PBMTOMACP
      Convert a portable bitmap into a MacPaint file.

PBMTOMGR
       Convert a portable bitmap into a MGR bitmap.

PBMTOPGM
       Convert portable bitmap to portable graymap by
   averaging areas.

PBMTOPI3
       Convert a portable bitmap into an Atari Degas .pi3 file.

PBMTOPK
        Convert a portable bitmap into a packed (PK) format
   font.

PBMTOPLOT
      Convert a portable bitmap into a Unix plot(5) file.

PBMTOPTX
       Convert a portable bitmap into Printronix printer
   graphics.

PBMTOX10BM
     Convert a portable bitmap into an X10 bitmap.

PBMTOXBM
       Convert a portable bitmap into an X11 bitmap.

PBMTOYBM
       Convert a portable bitmap into a Bennet Yee "face" file.

PBMTOZINC
      Convert a portable bitmap into a Zinc bitmap.

PBMUPC
         Create a Universal Product Code bitmap.
```

```
PGM
            Portable graymap file format.  Lowest common  ↩
               denominator
   greyscale format.

PGMBENTLEY
     bentleyize a portable graymap.

PGMCRATER
      Create cratered terrain by fractal forgery.

PGMEDGE
        Edge-detect a portable graymap.

PGMENHANCE
     Edge-enhance a portable graymap.

PGMHIST
        Print a histogram of the values in a portable graymap.

PGMKERNEL
      Generate a convolution kernel.

PGMNOISE
       Create a graymap made up of white noise.

PGMNORM
        Normalize the contrast in a portable graymap.

PGMOIL
         Turn a portable graymap into an oil painting.

PGMRAMP
        Generate a grayscale ramp.

PGMTEXTURE
     Calculate textural features on a portable graymap.

PGMTOFS
        Convert portable graymap to Usenix FaceSaver(tm) format.

PGMTOLISPM
     Convert a portable graymap into Lisp Machine format.

PGMTOPBM
       Convert a portable graymap into a portable bitmap.

PGMTOPPM
       Colorize a portable graymap into a portable pixmap.

PNM
            Portable anymap file format.  No actual file format,
   the pnm programs operate on ppm, pgm and pbm files.

PNMALIAS
       Antialias a portable anymap.
```

PNMARITH
Perform arithmetic on two portable anymaps.

PNMCAT
Concatenate portable anymaps.

PNMCOMP
Composite two portable anymap files together.

PNMCONVOL
General MxN convolution on a portable anymap.

PNMCROP
Crop a portable anymap.

PNMCUT
Cut a rectangle out of a portable anymap.

PNMDEPTH
Change the maxval in a portable anymap.

PNMENLARGE
Read a portable anymap and enlarge it N times.

PNMFILE
Describe a portable anymap.

PNMFLIP
Perform one or more flip operations on a portable anymap.

PNMGAMMA
Perform gamma correction on a portable anymap.

PNMHISTMAP
Draw a histogram for a PGM or PPM file.

PNMINDEX
Build a visual index of a bunch of anymaps.

PNMINVERT
Invert a portable anymap.

PNMMARGIN
Add a border to a portable anymap.

PNMNLFILT
Non-linear filters: smooth, alpha trim mean, optimal.

PNMNORAW
Force a portable anymap into plain format.

PNMPAD
Add borders to portable anymap.

PNMPASTE
Paste a rectangle into a portable anymap.

```
PNMROTATE
      Rotate a portable anymap by some angle.

PNMSCALE
       Scale a portable anymap.

PNMSHEAR
       Shear a portable anymap by some angle.

PNMSMOOTH
      Smooth out an image.

PNMTILE
        Replicate a portable anymap into a specified size.

PNMTODDIF
      convert a portable anymap to DDIF format.

PNMTOFITS
      Convert a portable anymap into FITS format.

PNMTOPS
        Convert portable anymap to PostScript.

PNMTORAST
      Convert a portable pixmap into a Sun rasterfile.

PNMTOSGI
       Convert a portable anymap to a SGI image file.

PNMTOSIR
       Convert a portable anymap into a Solitaire format.

PNMTOTIFF
      Convert a a portable anymap into a TIFF file.

PNMTOXWD
       Convert a portable anymap into an X11 window dump.

PPM
            Portable pixmap file format.  Lowest common  ↩
               denominator
   color image file format.

PPM3D
          Convert two portable pixmap into a red/blue 3d glasses
   pixmap.

PPMBRIGHTEN
    Change an images Saturation and Value from an HSV map.

PPMCHANGE
      Change all pixels of one color to another in a portable
   pixmap.

PPMDIM
```

Dim a portable pixmap down to total blackness.

PPMDIST
Simplistic grayscale assignment for machine generated, color images.

PPMDITHER
Ordered dither for color images.

PPMFLASH
Brighten a picture up to complete white-out.

PPMFORGE
Fractal forgeries of clouds, planets, and starry skies.

PPMHIST
Print a histogram of a portable pixmap.

PPMMAKE
Create a pixmap of a specified size and color.

PPMMIX
Blend together two portable pixmaps.

PPMNORM
Normalize the contrast in a portable pixmap.

PPMNTSC
Make a portable pixmap look like taken from an American TV.

PPMPAT
Make a pretty pixmap.

PPMQUANT
Quantize the colors in a portable pixmap down to a specified number.

PPMQUANTALL
Run ppmquant on a bunch of files all at once, so they share a common colormap.

PPMQVGA
8 plane quantization.

PPMRELIEF
Run a Laplacian relief filter on a portable pixmap.

PPMSHIFT
Shift lines of a portable pixmap left or right by a random amount.

PPMSPREAD
Displace a portable pixmap's pixels by a random amount.

PPMTOACAD
Convert portable pixmap to AutoCAD database or slide.

```
PPMTOBMP
       Convert a portable pixmap into a BMP file.

PPMTOGIF
       Convert a portable pixmap into a GIF file.

PPMTOICR
       Convert a portable pixmap into NCSA ICR format.

PPMTOILBM
      Convert a portable pixmap into an ILBM file.

PPMTOMAP
       Extract all colors from a portable pixmap.

PPMTOMITSU
     Convert a portable pixmap to a Mitsubishi S340-10 file.

PPMTOPCX
       Convert a portable pixmap into a PCX file.

PPMTOPGM
       Convert a portable pixmap into a portable graymap.

PPMTOPI1
       Convert a portable pixmap into an Atari Degas .pi1 file.

PPMTOPICT
      Convert a portable pixmap into a Macintosh PICT file.

PPMTOPJ
        Convert a portable pixmap to an HP PaintJet file.

PPMTOPJXL
      Convert a portable pixmap into an HP PaintJet XL PCL
   file.

PPMTOPUZZ
      Convert a portable pixmap into an X11 "puzzle" file.

PPMTORGB3
      Separate a portable pixmap into three portable graymaps.

PPMTOSIXEL
     Convert a portable pixmap into DEC sixel format.

PPMTOTGA
       Convert portable pixmap into a TrueVision Targa file.

PPMTOUIL
       Convert a portable pixmap into a Motif UIL icon file.

PPMTOXPM
       Convert a portable pixmap into an X11 pixmap.

PPMTOYUV
```

```
       Convert a portable pixmap into an Abekas YUV file.

PPMTOYUVSPLIT
  Convert a portable pixmap into 3 subsampled raw YUV
   files.

PSIDTOPGM
      Convert PostScript "image" data into a portable graymap.

PSTOPNM
        Convert a PostScript file into a portable anymap.

QRTTOPPM
       Convert output from the QRT ray tracer into a portable
   pixmap.

RASTTOPNM
      Convert a Sun rasterfile into a portable anymap.

RAWTOPGM
       Convert raw grayscale bytes into a portable graymap.

RAWTOPPM
       Convert raw RGB bytes into a portable pixmap.

RGB3TOPPM
      Combine three portable graymaps into one portable
   pixmap.

SGITOPNM
       Convert a SGI image file to a portable anymap.

SIRTOPNM
       Convert a Solitaire file into a portable anymap.

SLDTOPPM
       Convert an AutoCAD slide file into a portable pixmap.

SPCTOPPM
       Convert an Atari compressed Spectrum file into a
   portable pixmap.

SPOTTOPGM
      Convert SPOT satellite images to Portable Greymap
   format.

SPUTOPPM
       Convert an Atari uncompressed Spectrum file into a
   portable pixmap.

TGATOPPM
       Convert TrueVision Targa file into a portable pixmap.

TIFFTOPNM
      Convert a TIFF file into a portable anymap.

XBMTOPBM
```

Convert an X11 or X10 bitmap into a portable bitmap.

XIMTOPPM
Convert an Xim file into a portable pixmap.

XPMTOPPM
Convert an X11 pixmap into a portable pixmap.

XVMINITOPPM
Convert a XV "thumbnail" picture to PPM.

XWDTOPNM
Convert a X11 or X10 window dump file into a portable anymap.

YBMTOPBM
Convert a Bennet Yee "face" file into a portable bitmap.

YUVSPLITTOPPM
Convert a Y- an U- and a V-file into a portable pixmap..

YUVTOPPM
Convert Abekas YUV bytes into a portable pixmap.

ZEISSTOPNM
Convert a Zeiss confocal file into a portable anymap.

1.14 anytopnm

anytopnm(1) AMIGA (27 July 1990) ↩
anytopnm(1)

NAME
anytopnm - attempt to convert an unknown type of image file to a portable anymap

SYNOPSIS
anytopnm file

DESCRIPTION
Uses the file program, possibly augmented by the magic numbers file included with PBMPLUS, to try to figure out what type of image file it is. If that fails (very few image formats have magic numbers), looks at the filename extension. If that fails, punts.

The type of the output file depends on the input file.

SEE ALSO

pnmfile
(1),

```
           pnm
           (5), file(1)

BUGS
     It's a script.  Scripts are not portable to non-Unix
     environments.

AUTHOR
     Copyright (C) 1991 by Jef Poskanzer.
```


1.15 asciitopgm

```
                asciitopgm(1)       AMIGA (26 December 1994)        ↩
                   asciitopgm(1)


NAME
     asciitopgm - convert ASCII graphics into a portable graymap

SYNOPSIS
```

```
     asciitopgm [-d divisor] height width [asciifile]

DESCRIPTION
     Reads ASCII data as input.  Produces a portable graymap with
     pixel values which are an approximation of the "brightness"
     of the ASCII characters, assuming black-on-white printing.
     In other words, a capital M is very dark, a period is ver
     light, and a space is white.  Input lines which are fewer
     than width characters are automatically padded with spaces.

     The divisor argument is a floating-point number by which the
     output pixels are divided; the default value is 1.0.  This
     can be used to adjust the brightness of the graymap:  for
     example, if the image is too dim, reduce the divisor.

     In keeping with (I believe) Fortran line-printer
     conventions, input lines beginning with a + (plus) character
     are assumed to "overstrike" the previous line, allowing a
     larger range of gray values.

     This tool contradicts the message in the pbmtoascii manual:
     "Note that there is no asciitopbm tool - this transformation
     is one-way."

BUGS
     The table of ASCII-to-grey values is subject to
     interpretation, and, of course, depends on the typeface
     intended for the input.

SEE ALSO

           pbmtoascii
           (1),
           pgm
           (5)

AUTHOR
     Wilson H. Bent. Jr. (whb@usc.edu)
```

1.16 atktopbm

```
                atktopbm(1)         AMIGA (26 September 1991)          ↩
                   atktopbm(1)


NAME
     atktopbm - convert Andrew Toolkit raster object to portable
     bitmap

SYNOPSIS
     atktopbm [atkfile]

DESCRIPTION
     Reads an Andrew Toolkit raster object as input.  Produces a
     portable bitmap as output.

SEE ALSO

           pbmtoatk
           (1),
           pbm
           (5)

AUTHOR
     Copyright (C) 1991 by Bill Janssen.
```

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1.17 bioradtopgm

bioradtopgm(1) AMIGA (28 June 1993) ↩
bioradtopgm(1)

NAME
bioradtopgm - convert a Biorad confocal file into a portable graymap

SYNOPSIS
bioradtopgm [-image#] [imagedata]

DESCRIPTION
Reads a Biorad confocal file as input. Produces a portable graymap as output. If the resulting image is upside down, run it through pnmflip -tb .

OPTIONS
-image#
A Biorad image file may contain more than one image. With this flag, you can specify which image to extract (only one at a time). The first image in the file has number zero. If no image number is supplied, only information about the image size and the number of images in the input is printed out. No output is produced.

BUGS
A Biorad image may be in word format. If PbmPlus is not compiled with the "BIGGRAYS" flag, word files can not be converted. See the Makefile.

SEE ALSO

```
            pgm
            (5),
            pnmflip
            (1)

AUTHORS
     Copyright (C) 1993 by Oliver Trepte
```

```
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```

1.18 bmptoppm

```
                bmptoppm(1)             AMIGA (26 Oct 1992)             ↩
                   bmptoppm(1)


NAME
     bmptoppm - convert a BMP file into a portable pixmap

SYNOPSIS
     bmptoppm [bmpfile]

DESCRIPTION
     Reads a Microsoft Windows or OS/2 BMP file as input.
     Produces a portable pixmap as output.

SEE ALSO

            ppmtobmp
```

(1),
ppm
(5)

AUTHOR

1.19 brushtopbm

brushtopbm(1) AMIGA (28 August 1988) ↩
brushtopbm(1)

NAME

brushtopbm - convert a doodle brush file into a portable bitmap

SYNOPSIS

brushtopbm [brushfile]

DESCRIPTION

Reads a Xerox doodle brush file as input. Produces a portable bitmap as output.

Note that there is currently no pbmtobrush tool.

SEE ALSO

pbm (5)

AUTHOR

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1.20 cmuwmtopbm

cmuwmtopbm(1) AMIGA (15 April 1989) ↩
cmuwmtopbm(1)

NAME
cmuwmtopbm - convert a CMU window manager bitmap into a portable bitmap

SYNOPSIS
cmuwmtopbm [cmuwmfile]

DESCRIPTION
Reads a CMU window manager bitmap as input. Produces a portable bitmap as output.

SEE ALSO

pbmtocmuwm (1), pbm (5)

AUTHOR

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1.21 fitstopnm

fitstopnm(1) AMIGA (20 September 89) ↩
fitstopnm(1)

NAME
fitstopnm - convert a FITS file into a portable anymap

SYNOPSIS
fitstopnm [-image N] [-noraw] [-scanmax] [-printmax] [-min f] [-max f] [FITSfile]

DESCRIPTION
Reads a FITS file as input. Produces a portable pixmap if the FITS file consists of 3 image planes (NAXIS = 3 and NAXIS3 = 3), a portable graymap if the FITS file consists of 2 image planes (NAXIS = 2), or whenever the -image flag is specified. The results may need to be flipped top for bottom; if so, just pipe the output through pnmflip -tb.

OPTIONS
The -image option is for FITS files with three axes. The assumption is that the third axis is for multiple images, and this option lets you select which one you want.

Flags -min and -max can be used to override the min and max values as read from the FITS header or the image data if no DATAMIN and DATAMAX keywords are found. Flag -scanmax can be used to force the program to scan the data even when

DATAMIN and DATAMAX are found in the header. If -printmax is specified, the program will just print the min and max values and quit. Flag -noraw can be used to force the program to produce an ASCII portable anymap.

The program will tell what kind of anymap is writing. All flags can be abbreviated to their shortest unique prefix.

REFERENCES

FITS stands for Flexible Image Transport System. A full description can be found in Astronomy & Astrophysics Supplement Series 44 (1981), page 363.

SEE ALSO

pnmtofits (1), pgm (5), pnmflip (1)

AUTHOR

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1.22 fstopgm

fstopgm(1) AMIGA (06 April 89) ↩
fstopgm(1)

NAME

fstopgm - convert a Usenix FaceSaver(tm) file into a portable graymap

SYNOPSIS

fstopgm [fsfile]

DESCRIPTION

Reads a Usenix FaceSaver(tm) file as input. Produces a portable graymap as output.

FaceSaver(tm) files sometimes have rectangular pixels. While fstopgm won't re-scale them into square pixels for you, it will give you the precise pnmscale command that will do the job. Because of this, reading a FaceSaver(tm) image is a two-step process. First you do:

```
fstopgm > /dev/null
```

This will tell you whether you need to use pnmscale. Then use one of the following pipelines:

```
fstopgm | pgmnorm
fstopgm | pnmscale -whatever | pgmnorm
```

To go to PBM, you want something more like one of these:

```
fstopgm | pnmenlarge 3 | pgmnorm | pgmtopbm
fstopgm | pnmenlarge 3 | pnmscale <whatever> | pgmnorm | pgmtopbm
```

You want to enlarge when going to a bitmap because otherwise you lose information; but enlarging by more than 3 does not look good.

FaceSaver is a registered trademark of Metron Computerware Ltd. of Oakland, CA.

SEE ALSO

pgmtofs (1), pgm (5), pgmnorm (1), pnmenlarge (1), pnmscale (1),

pgmtopbm (1)

AUTHOR

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1.23 g3topbm

g3topbm(1) AMIGA (02 October 1989) ↩
g3topbm(1)

NAME
g3topbm - convert a Group 3 fax file into a portable bitmap

SYNOPSIS
g3topbm [-kludge] [-reversebits] [-stretch] [g3file]

DESCRIPTION
Reads a Group 3 fax file as input. Produces a portable bitmap as output.

OPTIONS
-kludge
Tells g3topbm to ignore the first few lines of the file; sometimes fax files have some junk at the beginning.

-reversebits
Tells g3topbm to interpret bits least-significant first, instead of the default most-significant first. Apparently some fax modems do it one way and others do it the other way. If you get a whole bunch of "bad code word" messages, try using this flag.

-stretch
Tells g3topbm to stretch the image vertically by duplicating each row. This is for the low-quality transmission mode.

All flags can be abbreviated to their shortest unique prefix.

REFERENCES
The standard for Group 3 fax is defined in CCITT Recommendation T.4.

BUGS
Probably.

SEE ALSO

pbmtog3
(1),
pbm
(5)

AUTHOR
Copyright (C) 1989 by Paul Haeberli <paul@manray.sgi.com>.

1.24 gemtopbm

gemtopbm(1) AMIGA (11 Jul 1992) ↩
gemtopbm(1)

NAME
gemtopbm - convert a GEM .img file into a portable bitmap

SYNOPSIS
gemtopbm [-d] [gemfile]

DESCRIPTION
Reads a GEM .img file as input. Reads from stdin if input file is omitted. Produces a portable bitmap as output.

OPTIONS
-d Produce output describing the contents of the .img file.

BUGS
Does not support files containing more than one plane.

SEE ALSO

pbmtogem
(1),
pbm
(5)

```
AUTHOR
     Copyright (C) 1988 Diomidis D. Spinellis (dds@cc.ic.ac.uk).
```


1.25 giftopnm

```
                giftopnm(1)          AMIGA (29 September 1993)          ↩
                   giftopnm(1)


NAME
     giftopnm - convert a GIF file into a portable anymap

SYNOPSIS
     giftopnm [-verbose] [-comments] [-image N] [GIFfile]

DESCRIPTION
```

Reads a GIF file for input, and outputs portable anymap.

OPTIONS

-verbose
Produces verbose output about the GIF file input.

-comments
Only outputs GIF89 comment fields.

-image
Output the specified gif image from the input gif archive (where N is '1', '2', '20'...). Normally there is only one image per file, so this option is not needed.

All flags can be abbreviated to their shortest unique prefix.

BUGS

This does not correctly handle the Plain Text Extension of the GIF89 standard, since I did not have any example input files containing them.

SEE ALSO

ppmtogif (1), ppm (5)

AUTHOR

1.26 gouldtoppm

```
                gouldtoppm(1)          AMIGA (20 May 1990)          ↩
                   gouldtoppm(1)


NAME
     gouldtoppm - convert Gould scanner file into a portable
     pixmap

SYNOPSIS
     gouldtoppm [gouldfile]

DESCRIPTION
     Reads a file produced by the Gould scanner as input.
     Produces a portable pixmap as output.

SEE ALSO

           ppm
           (5)

AUTHOR
     Copyright(C) 1990 by Stephen Paul Lesniewski
```

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1.27 hipstopgm

hipstopgm(1) AMIGA (24 August 89) ↩
hipstopgm(1)

NAME
hipstopgm - convert a HIPS file into a portable graymap

SYNOPSIS
hipstopgm [hipsfile]

DESCRIPTION
Reads a HIPS file as input. Produces a portable graymap as output.

If the HIPS file contains more than one frame in sequence, hipstopgm will concatenate all the frames vertically.

HIPS is a format developed at the Human Information Processing Laboratory, NYU.

SEE ALSO

pgm
(5)

AUTHOR

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1.28 hpcdtoppm

hpcdtoppm(1) AMIGA (28 November 1992) ↩
hpcdtoppm(1)

NAME
hpcdtoppm v0.3 - convert a Photo-CD file into a portable pixmap

SYNOPSIS
hpcdtoppm [options] pcd-file [ppm-file]

DESCRIPTION
Reads a Photo-CD Image file or Overview file, and outputs portable pixmap. Image files you can find on the Photo-CD in photo_cd/images, they are named as "imgnnnn.pcd", where nnnn is a 4-digit-number. The Overview file is at photo_cd/overview.pcd . If there is no ppm-file-name given, output will be printed to stdout. hpcdtoppm stands for "Hadmut's pcdtoppm" to make it distinguishable in case someone else is building the same thing and calling it pcdtoppm.

OPTIONS
-i Give some information from the fileheader to stderr. It works only for Image files. (It is not working

correctly, just printing some strings.)

-s Apply simple sharpness-operator on the Luma-channel.

-d Do not show the complete image, but only the decompressed difference. It works only on the 4Base and the 16Base resolution. It does not have any deeper sense, but it was simple to implement and it shows what causes different sizes of image files.

-r Rotate the picture clockwise for portraits.

-l Rotate the picture counter-clockwise for portraits.

-a Try to find out the image orientation byself. This doesn't work for overview files yet. It is very experimental and depends on one byte. Please tell me if it doesn't work.

-x Overskip Mode. Works on Base/16, Base/4, Base and 4Base. In Photo-CD images the luma channel is stored in full resolution, the two chroma channels are stored in half resolution only and have to be interpolated. In the Overskip Mode the chroma 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 to generate the difference image of these two images. Call ppmhist for this difference or show it with xv (push the HistEq button in the color editor).

-1 | -Base/16 | -128x192
Extract the Base/16 size picture (size 128x192 pixels). Note that you can only give one size option.

-2 | -Base/4 | -256x384
Extract the Base/4 size picture.

-3 | -Base | -512x768
Extract the Base size picture.

-4 | -4Base | -1024x1536
Extract the 4Base size picture.

-5 | -16Base | -2048x3072
Extract the 16Base size picture.

-0 | -Overview | -O
Extract all pictures from an Overview file. A ppmfilename must be given. If the given name is "foo", the files are named "foonnnn", where nnnn is a 4-digit number. Since they are stored in Base/16 format, they are extracted in this format.

-ycc Suppress the ycc to rgb conversion. This is experimental only. You can use this and apply ppmtorgb3 on the file. Then you will get three pgm-files, one Luma and two Chroma files.

BUGS

I still don't have enough information about the Photo-CD to take care of all data structures. The informations i have are quite vague and this program was developed by starring at the hex-dumps and the famous trial-and-error-method. :-) If anything doesn't work, please send me a report and perhaps you could try to find out, why it doesn't work.

SEE ALSO

ppm (5), ppmquant (1), ppmtopgm (1), ppmhist (1), pnmarith (1),

ppmtorgb3 (1), xv(1)

AUTHOR

1.29 icontopbm

```
                icontopbm(1)          AMIGA (31 August 1988)          ↩
                   icontopbm(1)


NAME
     icontopbm - convert a Sun icon into a portable bitmap

SYNOPSIS
     icontopbm [iconfile]

DESCRIPTION
     Reads a Sun icon as input.  Produces a portable bitmap as
     output.

SEE ALSO

           pbmtoicon
           (1),
           pbm
           (5)

AUTHOR
     Copyright (C) 1988 by Jef Poskanzer.
```

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1.30 ilbmtoppm

ilbmtoppm(1) AMIGA (04 October 1993) ↩
ilbmtoppm(1)

NAME
ilbmtoppm - convert an ILBM file into a portable pixmap

SYNOPSIS
ilbmtoppm [-verbose] [-ignore<chunkID>] [-isham|-isehb] [-adjustcolors] [ILBMfile]

DESCRIPTION
Reads an IFF ILBM file as input. Produces a portable pixmap as output. Supported ILBM types are:

Normal ILBMs with 1-16 planes.

Amiga Extra_Halfbrite (EHB)

Amiga HAM with 3-16 planes.

24 bit.

Multiplatte (normal or HAM) pictures.

Color map (BMHD + CMAP chunk only, nPlanes = 0).

Unofficial direct color.
1-16 planes for each color component.

Chunks used:
BMHD, CMAP, CAMG (only HAM & EHB flags used), PCHG,
BODY unofficial DCOL chunk to identify direct color

```
          ILBM

     Chunks ignored:
          GRAB, DEST, SPRT, CRNG, CCRT, CLUT, DPPV, DRNG, EPSF

     Other chunks (ignored but displayed in verbose mode):
          NAME, AUTH, (c), ANNO, DPI

     Unknown chunks are skipped.

OPTIONS
     -verbose
          Give some information about the ILBM file.

     -ignore <chunkID>
          Skip a chunk.  <chunkID> is the 4-letter IFF chunk
          identifier of the chunk to be skipped.

     -isham | -isehb
          Treat the input file as a HAM or Extra_Halfbrite
          picture, even if these flags or not set in the CAMG
          chunk (or if there is no CAMG chunk).



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ilbmtoppm(1)         AMIGA (04 October 1993)         ilbmtoppm(1)



     -adjustcolors
          If all colors in the CMAP have a value of less then 16,
          ilbmtoppm assumes a 4-bit colormap and gives a warning.
          With this option the colormap is scaled to 8 bits.

BUGS
     The multipalette PCHG BigLineChanges and Huffman
     decompression code is untested.

REFERENCES
     Amiga ROM Kernel Reference Manual - Devices (3rd Ed.)
     Addison Wesley, ISBN 0-201-56775-X

SEE ALSO

           ppm
           (5),
           ppmtoilbm
           (1)
```

```
AUTHORS
     Copyright (C) 1989 by Jef Poskanzer.
     Modified October 1993 by Ingo Wilken
     (Ingo.Wilken@informatik.uni-oldenburg.de)
```


1.31 imgtoppm

```
imgtoppm(1)          AMIGA (05 September 1989)          ↩
   imgtoppm(1)

NAME
     imgtoppm - convert an Img-whatnot file into a portable
     pixmap
```

SYNOPSIS

imgtoppm [imgfile]

DESCRIPTION

Reads an Img-whatnot file as input. Produces a portable pixmap as output. The Img-whatnot toolkit is available for FTP on venera.isi.edu, along with numerous images in this format.

SEE ALSO

ppm
(5)

AUTHOR

Based on a simple conversion program posted to comp.graphics by Ed Falk.

1.32 lispmtopgm

lispmtopgm(1) AMIGA (06 March 1990) ↩
lispmtopgm(1)

NAME
lispmtopgm - convert a Lisp Machine bitmap file into pgm format

SYNOPSIS
lispmtopgm [lispmfile]

DESCRIPTION
Reads a Lisp Machine bitmap as input. Produces a portable graymap as output.

This is the file format written by the tv:write-bit-array-file function on TI Explorer and Symbolics lisp machines.

Multi-plane bitmaps on lisp machines are color; but the lispm image file format does not include a color map, so we must treat it as a graymap instead. This is unfortunate.

SEE ALSO

pgmtolispm (1), pgm (5)

BUGS
The Lispm bitmap file format is a bit quirky; Usually the image in the file has its width rounded up to the next higher multiple of 32, but not always. If the width is not a multiple of 32, we don't deal with it properly, but because of the Lispm microcode, such arrays are probably not image data anyway.

Also, the lispm code for saving bitmaps has a bug, in that if you are writing a bitmap which is not mod32 across, the file may be up to 7 bits too short! They round down instead of up, and we don't handle this bug gracefully.

No color.

AUTHOR

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1.33 macptopbm

macptopbm(1) AMIGA (29 March 1989) ↩
macptopbm(1)

NAME
macptopbm - convert a MacPaint file into a portable bitmap

SYNOPSIS
macptopbm [-extraskip N] [macpfile]

DESCRIPTION
Reads a MacPaint file as input. Produces a portable bitmap as output.

OPTIONS
-extraskip
This flag is to get around a problem with some methods of transferring files from the Mac world to the Unix world. Most of these methods leave the Mac files alone, but a few of them add the "finderinfo" data onto the front of the Unix file. This means an extra 128 bytes to skip over when reading the file. The symptom to watch for is that the resulting PBM file looks shifted to one side. If you get this, try -extraskip 128, and if that still doesn't look right try another value.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

picttoppm
(1),

pbmtomacp
(1),
pbm
(5)

AUTHOR
Copyright (C) 1988 by Jef Poskanzer. The MacPaint-reading code is copyright (c) 1987 by Patrick J. Naughton (naughton@wind.sun.com).

1.34 mgrtopbm

mgrtopbm(1) AMIGA (24 January 1989) ↩
mgrtopbm(1)

NAME
mgrtopbm - convert a MGR bitmap into a portable bitmap

SYNOPSIS
mgrtopbm [mgrfile]

DESCRIPTION
Reads a MGR bitmap as input. Produces a portable bitmap as output.

SEE ALSO

```
            pbmtomgr
            (1),
            pbm
            (5)

AUTHOR
     Copyright (C) 1989 by Jef Poskanzer.
```


1.35 mtvtoppm

mtvtoppm(1) AMIGA (02 February 1989) ↩
mtvtoppm(1)

NAME

mtvtoppm - convert output from the MTV or PRT ray tracers into a portable pixmap

SYNOPSIS

mtvtoppm [mtvfile]

DESCRIPTION

Reads an input file from Mark VanDeWettering's MTV ray tracer. Produces a portable pixmap as output.

The PRT raytracer also produces this format.

SEE ALSO

ppm
(5)

AUTHOR

Page 1 (printed 3/1/94)

1.36 pbm

pbm(5) AMIGA (27 September 1991) ↩
pbm(5)

NAME
pbm - portable bitmap file format

DESCRIPTION
The portable bitmap format is a lowest common denominator monochrome file format. It was originally designed to make it reasonable to mail bitmaps between different types of machines using the typical stupid network mailers we have today. Now it serves as the common language of a large family of bitmap conversion filters. The definition is as follows:

- A "magic number" for identifying the file type. A pbm file's magic number is the two characters "P1".

- Whitespace (blanks, TABs, CRs, LFs).

- A width, formatted as ASCII characters in decimal.

- Whitespace.

- A height, again in ASCII decimal.

- Whitespace.

- Width * height bits, each either '1' or '0', starting at the top-left corner of the bitmap, proceeding in normal English reading order.

- The character '1' means black, '0' means white.

- Whitespace in the bits section is ignored.

- Characters from a "#" to the next end-of-line are ignored (comments).

- No line should be longer than 70 characters.

```
Here is an example of a small bitmap in this format:
P1
# feep.pbm
24 7
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 1 1 1 0 0 1 1 1 1 0 0 1 1 1 1 0 0 1 1 1 1 0
0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 1 0
0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 1 0
0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0
0 1 0 0 0 0 0 1 1 1 1 0 0 1 1 1 1 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Programs that read this format should be as lenient as
possible, accepting anything that looks remotely like a
```



```
bitmap.

There is also a variant on the format, available by setting
the RAWBITS option at compile time.  This variant is
different in the following ways:

- The "magic number" is "P4" instead of "P1".

- The bits are stored eight per byte, high bit first low bit
  last.

- No whitespace is allowed in the bits section, and only a
  single character of whitespace (typically a newline) is
  allowed after the height.

- The files are eight times smaller and many times faster to
  read and write.

SEE ALSO

       atktopbm
       (1),
       brushtopbm
       (1),
       cmuwmtopbm
       (1),
       g3topbm
       (1),
```

gemtopbm
(1),
icontopbm
(1),
macptopbm
(1),
mgrtopbm
(1),

pi3topbm
(1),
xbmtopbm
(1),
ybmtopbm
(1),
pbmto10x
(1),

pbmtoascii
(1),
pbmtoatk
(1),
pbmtobbnbg
(1),
pbmtocmuwm
(1),

pbmtoepson
(1),
pbmtog3
(1),
pbmtogem
(1),
pbmtogo
(1),

pbmtoicon
(1),
pbmtolj
(1),
pbmtomacp
(1),
pbmtomgr
(1),

pbmtopi3
(1),
pbmtoplot
(1),
pbmtoptx
(1),
pbmtox10bm
(1),

pbmtoxbm
(1),
pbmtoybm

(1),
pbmtozinc
(1),
pbmlife
(1),

pbmmake
(1),
pbmmask
(1),
pbmreduce
(1),
pbmtext
(1),
pbmupc
(1),

pnm
(5),
pgm
(5),
ppm
(5)

AUTHOR

1.37 pbmclean

pbmclean(12 Dec 1990) AMIGA pbmclean(12 Dec 1990)

NAME

pbmclean - flip isolated pixels in portable bitmap

SYNOPSIS

pbmclean [-connect] [pbmfile]

DESCRIPTION

Reads a portable bitmap as input. Outputs a portable bitmap with every pixel which has less than connect identical neighbours inverted. Pbmclean can be used to clean up "snow" on bitmap images.

SEE ALSO

pbm (5)

AUTHOR

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1.38 pbmlife

pbmlife(1) AMIGA (21 February 1991) ↩
pbmlife(1)

NAME
pbmlife - apply Conway's rules of Life to a portable bitmap

SYNOPSIS
pbmlife [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Applies the rules of Life to it for one generation, and produces a portable bitmap as output.

A white pixel in the image is interpreted as a live beastie, and a black pixel as an empty space.

SEE ALSO

pbm
(5)

AUTHOR

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1.39 pbmmake

pbmmake(1) AMIGA (22 February 1989) ↩
pbmmake(1)

NAME
pbmmake - create a blank bitmap of a specified size

SYNOPSIS
pbmmake [-white|-black|-gray] width height

DESCRIPTION
Produces a portable bitmap of the specified width and height. The color defaults to white.

OPTIONS
In addition to the usual -white and -black, this program implements -gray. This gives a simple 50% gray pattern with 1's and 0's alternating.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pbm

(5),
ppmmake
(1)

AUTHOR
Copyright (C) 1989 by Jef Poskanzer.

1.40 pbmmask

pbmmask(1) AMIGA (08 August 1989) ↩
pbmmask(1)

NAME
pbmmask - create a mask bitmap from a regular bitmap

SYNOPSIS
pbmmask [-expand] [pbmfile]

DESCRIPTION

Reads a portable bitmap as input. Creates a corresponding mask bitmap and writes it out.

The color to be interpreted as "background" is determined automatically. Regardless of which color is background, the mask will be white where the background is and black where the figure is.

This lets you do a masked paste like this, for objects with a black background:

```
pbmmask obj > objmask
pnmpaste < dest -and objmask <x> <y> | pnmpaste -or obj <x> <y>
```

For objects with a white background, you can either invert them or add a step:

```
pbmmask obj > objmask
pnminvert objmask | pnmpaste -and obj 0 0 > blackback
pnmpaste < dest -and objmask <x> <y> | pnmpaste -or blackback <x> <y ↩
    >
```

Note that this three-step version works for objects with black backgrounds too, if you don't care about the wasted time.

You can also use masks with graymaps and pixmaps, using the pnmarith tool. For instance:

```
ppmtopgm obj.ppm | pgmtopbm -threshold | pbmmask > objmask.pbm
pnmarith -multiply dest.ppm objmask.pbm > t1.ppm
pnminvert objmask.pbm | pnmarith -multiply obj.ppm - > t2.ppm
pnmarith -add t1.ppm t2.ppm
```

An interesting variation on this is to pipe the mask through the pnmsmooth script before using it. This makes the boundary between the two images less sharp.

-expand

Expands the mask by one pixel out from the image. This is useful if you want a little white border around your image. (A better solution might be to turn the pbmlife tool into a general cellular automaton tool...)

SEE ALSO

pnmpaste (1), pnminvert (1), pbm (5), pnmarith (1), pnmsmooth (1)

AUTHOR

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1.41 pbmpscale

pbmpscale(12 Dec 1990) AMIGA pbmpscale(12 Dec 1990)

NAME

pbmpscale - enlarge a portable bitmap with edge smoothing

SYNOPSIS

pbmpscale N [pbmfile]

DESCRIPTION

Reads a portable bitmap as input, and outputs a portable bitmap enlarged N times. Enlargement is done by pixel replication, with some additional smoothing of corners and edges.

SEE ALSO

pnmenlarge (1), pnmscale (1), pbm (5)

AUTHOR

NOTES

pbmpscale works best for enlargements of 2. Enlargements greater than 2 should be done by as many enlargements of 2 as possible, followed by an enlargement by the remaining factor.

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1.42 pbmreduce

pbmreduce(1) AMIGA (02 August 1989) ↩
pbmreduce(1)

NAME
pbmreduce - read a portable bitmap and reduce it N times

SYNOPSIS
pbmreduce [-floyd|-fs|-threshold] [-value val] N [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Reduces it by a factor of N, and produces a portable bitmap as output.

pbmreduce duplicates a lot of the functionality of pgmtopbm; you could do something like pnmscale | pgmtopbm, but pbmreduce is a lot faster.

pbmreduce can be used to "re-halftone" an image. Let's say you have a scanner that only produces black&white, not grayscale, and it does a terrible job of halftoning (most b&w scanners fit this description). One way to fix the halftoning is to scan at the highest possible resolution, say 300 dpi, and then reduce by a factor of three or so using pbmreduce. You can even correct the brightness of an

image, by using the -value flag.

OPTIONS

By default, the halftoning after the reduction is done via boustrophedonic Floyd-Steinberg error diffusion; however, the -threshold flag can be used to specify simple thresholding. This gives better results when reducing line drawings.

The -value flag alters the thresholding value for all quantizations. It should be a real number between 0 and 1. Above 0.5 means darker images; below 0.5 means lighter.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pnmenlarge (1), pnmscale (1), pgmtopbm (1), pbm (5)

AUTHOR

1.43 pbmtext

pbmtext(1) AMIGA (26 October 1993) ↩
pbmtext(1)

NAME

pbmtext - render text into a bitmap

SYNOPSIS

pbmtext [-font fontfile] [-builtin fontname] [text]

DESCRIPTION

Takes the specified text, either a single line from the command line or multiple lines from standard input, and renders it into a bitmap.

OPTIONS

By default, pbmtext uses a built-in font called bdf (about a 10 point Times-Roman font). You can use a fixed width font by specifying -builtin fixed.

You can also specify your own font with the -font flag. The fontfile is either a BDF file from the X window system or a PBM file.

If the fontfile is a PBM file, it is created in a very specific way. In your window system of choice, display the following text in the desired (fixed-width) font:

```
M ",/^_[`jpqy| M

/  !"#$%&'()*+ /
< ,-./01234567 <
> 89:;<=>?@ABC >
@ DEFGHIJKLMNO @
_ PQRSTUVWXYZ[ _
{ \]^_`abcdefg {
} hijklmnopqrs }
~ tuvwxyz{|}~  ~

M ",/^_[`jpqy| M
```

Do a screen grab or window dump of that text, using for instance xwd, xgrabsc, or screendump. Convert the result into a pbm file. If necessary, use pnmcut to remove everything except the text. Finally, run it through pnmcrop to make sure the edges are right up against the text. pbmtext can figure out the sizes and spacings from that.

SEE ALSO

pbm (5), pnmcut (1), pnmcrop (1)

AUTHOR

Page 1 (printed 3/1/94)

1.44 pbmto10x

pbmto10x(1) AMIGA (1 January 1990) ↩
pbmto10x(1)

NAME
pbmto10x - convert a portable bitmap into Gemini 10X printer graphics

SYNOPSIS
pbmto10x [-h] [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces a file of Gemini 10X printer graphics as output. The 10x's printer codes are alleged to be similar to the Epson codes.

Note that there is no 10xtopbm tool - this transformation is one way.

OPTIONS
The resolution is normally 60H by 72V. If the -h flag is specified, resolution is 120H by 144V. You may find it useful to rotate landscape images before printing.

SEE ALSO

pbm
(5)

AUTHOR

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1.45 pbmto4425

PBMTO4425(1) AMIGA PBMTO4425(1)

NAME
pbmto4425 - Display PBM images on an AT&T 4425 terminal

SYNOPSIS
pbmto4425 [pbmfile]

DESCRIPTION
Pbmto4425 displays PBM format images on an AT&T 4425 ASCII terminal using that terminal's mosaic graphics character set. The program should also work with other VT100-like terminals with mosaic graphics character sets such as the C. Itoh CIT-101, but it has not yet been tested on terminals other than the 4425.

Pbmto4425 puts the terminal into 132 column mode to achieve the maximum resolution of the terminal. In this mode the terminal has a resolution of 264 columns by 69 rows. The pixels have an aspect ratio of 1:2.6, therefore an image should be processed before being displayed in a manner such as this:

```
% pnmscale -xscale 2.6 pnmfile \
     | pnmscale -xysize 264 69 \
     | ppmtopgm \
     | pgmtopbm \
     | pbmto4425
```

```
AUTHOR
     Copyright (C) 1993 by Robert Perlberg
```


1.46 pbmtoascii

```
                pbmtoascii(1)         AMIGA (20 March 1992)          ↩
                   pbmtoascii(1)


NAME
     pbmtoascii - convert a portable bitmap into ASCII graphics

SYNOPSIS
     pbmtoascii [-1x2|-2x4] [pbmfile]

DESCRIPTION
     Reads a portable bitmap as input.  Produces a somewhat crude
     ASCII graphic as output.

     Note that there is no asciitopbm tool - this transformation
     is one-way.

OPTIONS
     The -1x2 and -2x4 flags give you two alternate ways for the
     bits to get mapped to characters.  With 1x2, the default,
```

each character represents a group of 1 bit across by 2 bits down. With -2x4, each character represents 2 bits across by 4 bits down. With the 1x2 mode you can see the individual bits, so it's useful for previewing small bitmaps on a non-graphics terminal. The 2x4 mode lets you display larger bitmaps on a standard 80-column display, but it obscures bit-level details. 2x4 mode is also good for displaying graymaps - "pnmscale -width 158 | pgmnorm | pgmtopbm -thresh" should give good results.

SEE ALSO

pbm
(5)

AUTHOR

1.47 pbmtoatk

pbmtoatk(1) AMIGA (26 September 1991) ↩
pbmtoatk(1)

NAME

pbmtoatk - convert portable bitmap to Andrew Toolkit raster

```
     object

SYNOPSIS
     pbmtoatk [pbmfile]

DESCRIPTION
     Reads a portable bitmap as input.  Produces a Andrew Toolkit
     raster object as output.

SEE ALSO

           atktopbm
           (1),
           pbm
           (5)

AUTHOR
     Copyright (C) 1991 by Bill Janssen.
```

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1.48 pbmbbntobg

pbmtobg(1) AMIGA (16 May 1989) ↩
pbmtobg(1)

NAME
pbmtobg - convert a portable bitmap into BitGraph graphics

SYNOPSIS
pbmtobg [rasterop] [x y] < pbmfile

DESCRIPTION
Reads a portable bitmap as input. Produces BBN BitGraph terminal Display Pixel Data (DPD) sequence as output.

The rasterop can be specified on the command line. If this is omitted, 3 (replace) will be used. A position in (x,y) coordinates can also be specified. If both are given, the rasterop comes first. The portable bitmap is always taken from the standard input.

Note that there is no bgtopbm tool.

SEE ALSO

pbm
(5)

AUTHOR

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1.49 pbmtocmuwm

pbmtocmuwm(1) AMIGA (15 April 1989) ↩
pbmtocmuwm(1)

NAME
pbmtocmuwm - convert a portable bitmap into a CMU window manager bitmap

SYNOPSIS
pbmtocmuwm [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces a CMU window manager bitmap as output.

SEE ALSO

cmuwmtopbm (1), pbm (5)

AUTHOR

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1.50 pbmtoepsi

pbmtoepsi(1) AMIGA (1992) ↩
pbmtoepsi(1)

NAME
pbmtoepsi - convert a portable bitmap into an encapsulated PostScript style preview bitmap

SYNOPSIS
pbmtoepsi [-bbonly] [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produce an encapsulated Postscript style bitmap as output. The output is not a stand alone postscript file, it is only a preview bitmap, which can be included in an encapsulated PostScript file. Note that there is no epsitopbm tool - this transformation is one

```
     way.

     This utility is a part of the pstoepsi tool by Doug Crabill
     (dgc@cs.purdue.edu).

OPTIONS
     -bbonly
          Only create a boundary box, don't fill it with the
          image.

SEE ALSO

           pbm
           (5),
           pnmtops
           (1),
           psidtopgm
           (1)

AUTHOR
     Copyright (C) 1988 Jef Poskanzer, modified by Doug Crabill
     1992

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```

1.51 pbmtoepson

pbmtoepson(1) AMIGA (4 January 1991) ↩
pbmtoepson(1)

NAME

pbmtoepson - convert a portable bitmap into Epson printer graphics

SYNOPSIS

pbmtoepson [pbmfile]

DESCRIPTION

Reads a portable bitmap as input. Produces a file of Epson printer graphics as output.

Note that there is no epsontopbm tool - this transformation is one way.

SEE ALSO

pbm
(5)

AUTHOR

(tiller@galois.msfc.nasa.gov) and Jef Poskanzer.

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1.52 pbmtog3

pbmtog3(1) AMIGA (02 October 1989) ↩
pbmtog3(1)

NAME
pbmtog3 - convert a portable bitmap into a Group 3 fax file

SYNOPSIS
pbmtog3 [pbmfile]

DESCRIPTION
Reads a portable bitmap as output. Produces a Group 3 fax file as input.

REFERENCES
The standard for Group 3 fax is defined in CCITT Recommendation T.4.

BUGS
Probably.

SEE ALSO

g3topbm (1), pbm (5)

AUTHOR

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1.53 pbmtogem

pbmtogem(1) AMIGA (11 July 1992) ↩
pbmtogem(1)

NAME
pbmtogem - convert a portable bitmap into a GEM .img file

SYNOPSIS
pbmtogem [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces a compressed GEM .img file as output.

BUGS
pbmtogem does not support compression of repeated lines

SEE ALSO

gemtopbm (1), pbm (5)

AUTHOR

1.54 pbmtogo

NAME

pbmtogo - convert a portable bitmap into compressed GraphOn graphics

SYNOPSIS

```
     pbmtogo [pbmfile]

DESCRIPTION
     Reads a portable bitmap as input.  Produces 2D compressed
     GraphOn graphics as output.  Be sure to set up your GraphOn
     with the following modes: 8 bits / no parity; obeys no
     XON/XOFF; NULs are accepted.  These are all on the Comm
     menu.  Also, remember to turn off tty post processing.  Note
     that there is no gotopbm tool.

SEE ALSO

           pbm
           (5)

AUTHOR
     Copyright (C) 1988, 1989 by Jef Poskanzer, Michael Haberler,
     and Bo Thide'.
```

1.55 pbmtoicon

```
                pbmtoicon(1)          AMIGA (31 August 1988)          ↩
                   pbmtoicon(1)


NAME
     pbmtoicon - convert a portable bitmap into a Sun icon

SYNOPSIS
     pbmtoicon [pbmfile]

DESCRIPTION
     Reads a portable bitmap as input.  Produces a Sun icon as
     output.

SEE ALSO

           icontopbm
           (1),
           pbm
           (5)

AUTHOR
     Copyright (C) 1988 by Jef Poskanzer.
```

Page 1 (printed 3/1/94)

1.56 pbmtolj

pbmtolj(1) AMIGA (29 August 1988) ↩
pbmtolj(1)

NAME
pbmtolj - convert a portable bitmap into HP LaserJet format

SYNOPSIS
pbmtolj [-resolution N] [-float] [-noreset] [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces HP LaserJet data as output.

Note that there is no ljtopbm tool.

OPTIONS
-resolution
Specifies the resolution of the output device, in dpi. Typical values are 75, 100, 150, 300. The default is 75.

-float
Suppresses positioning information. The default is to write the sequence ESC & l 0 E to the output file.

-noreset
Prevents pbmtolj from writing the reset sequences to the beginning and end of the output file.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pbm
(5)

```
AUTHOR
     Copyright (C) 1988 by Jef Poskanzer and Michael Haberler.
     -float and -noreset options added by Wim Lewis.
```


1.57 pbmtoln03

```
                pbmtoln03(1)          AMIGA (7 May 1993)          ↩
                   pbmtoln03(1)


NAME
     pbmtoln03 - convert protable bitmap to DEC LN03+ Sixel
     output

SYNOPSIS
     pbmtoln03 [-rltbf] pbmfile

DESCRIPTION
     Reads a portable bitmap as input.  Produces a DEC LN03+
     Sixel output file.

OPTIONS
     -l nn
          Use "nn" as value for left margin (default 0).

     -r nn
          Use "nn" as value for right margin (default 2400).

     -t nn
```

```
          Use "nn" as value for top margin (default 0).

     -b nn
          Use "nn" as value for bottom margin (default 3400).

     -f nn
          Use "nn" as value for form length (default 3400).

SEE ALSO

           pbm
           (5)

AUTHOR
     Tim Cook, 26 Feb 1992

Page 1                                                  (printed 3/1/94)
```

1.58 pbmtolps

```
                pbmtolps(12 Dec 1990)         AMIGA         pbmtolps(12 Dec  ↩
                   1990)


NAME
     pbmtolps - convert portable bitmap to PostScript

SYNOPSIS
     pbmtolps [ -dpi n ] [ pbmfile ]
```

DESCRIPTION

Reads a portable bitmap as input, and outputs PostScript. The output Postscript uses lines instead of the image operator to generate a (device dependent) picture which will be imaged much faster.

The Postscript path length is constrained to be less that 1000 points so that no limits are overrun on the Apple Laserwriter and (presumably) no other printers.

SEE ALSO

pnmtops (1), pnm (5)

AUTHOR

George Phillips <phillips@cs.ubc.ca>

1.59 pbmtomacp

pbmtomacp(1) AMIGA (31 August 1988) ↩
pbmtomacp(1)

NAME
pbmtomacp - convert a portable bitmap into a MacPaint file

SYNOPSIS
pbmtomacp [-l left] [-r right] [-b bottom] [-t top]
[pbmfile]

DESCRIPTION
Reads a portable bitmap as input. If no input-file is given, standard input is assumed. Produces a MacPaint file as output.

The generated file is only the data fork of a picture. You will need a program such as mcvert to generate a Macbinary or a BinHex file that contains the necessary information to identify the file as a PNTG file to MacOS.

OPTIONS
Left, right, bottom & top let you define a square into the pbm file, that must be converted. Default is the whole file. If the file is too large for a MacPaint-file, the bitmap is cut to fit from (left, top).

BUGS
The source code contains comments in a language other than English.

SEE ALSO

ppmtopict
(1),
macptopbm
(1),
pbm
(5), mcvert(1)

AUTHOR
Copyright (C) 1988 by Douwe van der Schaaf
(...!mcvax!uvapsy!vdschaaf).

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1.60 pbmtomgr

pbmtomgr(1) AMIGA (24 January 1989) ↩
pbmtomgr(1)

NAME
pbmtomgr - convert a portable bitmap into a MGR bitmap

SYNOPSIS
pbmtomgr [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces a MGR bitmap as output.

SEE ALSO

mgrtopbm (1), pbm (5)

AUTHOR

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1.61 pbmtopgm

pbmtopgm(12 Dec 1990) AMIGA pbmtopgm(12 Dec 1990)

NAME
pbmtopgm - convert portable bitmap to portable graymap by averaging areas

SYNOPSIS
pbmtopgm <width> <height> [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Outputs a portable graymap created by averaging the number of pixels within a sample area of width by height around each point. Pbmtopgm is similar to a special case of ppmconvol. A ppmsmooth step may

be needed after pbmtopgm.

Pbmtopgm has the effect of anti-aliasing bitmaps which contain distinct line features.

SEE ALSO

pbm
(5)

AUTHOR

NOTES

Pbmtopgm works best with odd sample width and heights.

1.62 pbmtopi3

pbmtopi3(1) AMIGA (11 March 1990) ↩
pbmtopi3(1)

NAME

pbmtopi3 - convert a portable bitmap into an Atari Degas .pi3 file

SYNOPSIS

pbmtopi3 [pbmfile]

DESCRIPTION

Reads a portable bitmap as input. Produces an Atari Degas .pi3 file as output.

SEE ALSO

pi3topbm (1), pbm (5), ppmtopi1 (1), pi1toppm (1)

AUTHOR

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1.63 pbmtopk

pbmtopk(1) AMIGA (6 August 1990) ↩
pbmtopk(1)

NAME
pbmtopk - convert a portable bitmap into a packed (PK) format font

SYNOPSIS
pbmtopk pkfile[.pk] tfmfile[.tfm] resolution [-s designsize] [-p num param...] [-C codingscheme] [-F family] [-f optfile] [-c num] [-W width] [-H height] [-D depth] [-I ital] [-h horiz] [-v vert] [-x xoff] [-y yoff] [pbmfile]...

DESCRIPTION
Reads portable bitmaps as input, and produces a packed (PK) font file and a TFM (TeX font metric) file as output. The resolution parameter indicates the resolution of the font, in dots per inch. If the filename "-" is used for any of the filenames, the standard input stream (or standard output where appropriate) will be used.

OPTIONS
-s designsize
Sets the design size of the font, in TeX's points (72.27pt to the inch). The default design size is 1. The TFM parameters are given as multiples of the design size.

-p num param...
Sets the first num font parameters for the font. The first seven parameters are the slant, interword spacing, interword space stretchability, interword space shrinkability, x-height, quad width, and post-sentence extra space of the font. Math and symbol fonts may have more parameters; see The TeXbook for a list of these. Reasonable default values are chosen for parameters which are not specified.

-C codingscheme
Sets the coding scheme comment in the TFM file.

-F family
Sets the font family comment in the TFM file.

-f optfile
Reads the file optfile, which should contain a lines of the form:

filename xoff yoff horiz vert width height depth ital

The pbm files specified by the filename parameters are inserted consecutively in the font with the specified attributes. If any of the attributes are omitted, or replaced with "*", a default value will be calculated from the size of the bitmap. The settings of the -W,

-H, -D, -I, -h, -v, -x, and -y options do not affected characters created in this way. The character number can be changed by including a line starting with "=", followed by the new number. Lines beginning with "%" or "#" are ignored.

-c num
Sets the character number of the next bitmap encountered to num.

-W width
Sets the TFM width of the next character to width (in design size multiples).

-H height
Sets the TFM height of the next character to height (in design size multiples).

-D depth
Sets the TFM depth of the next character to depth (in design size multiples).

-I ital
Sets the italic correction of the next character to ital (in design size multiples).

-h horiz
Sets the horizontal escapement of the next character to horiz (in pixels).

-v vert
Sets the vertical escapement of the next character to vert (in pixels).

-x xoff
Sets the horizontal offset of the next character to xoff (in pixels).

-y yoff
Sets the vertical offset of the next character to yoff (in pixels, from the top row).

SEE ALSO

pktopbm (1), pbm (5)

AUTHOR
Adapted from Tom Rokicki's pxtopk by Angus Duggan <ajcd@dcs.ed.ac.uk>.

1.64 pbmtoplot

pbmtoplot(1) AMIGA (1 September 1990) ↩
pbmtoplot(1)

NAME
pbmtoplot - convert a portable bitmap into a Unix plot(5) file

SYNOPSIS
pbmtoplot [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces a Unix plot file.

```
     Note that there is no plottopbm tool - this transformation
     is one-way.

SEE ALSO

           pbm
           (5), plot(5)

AUTHOR
     Copyright (C) 1990 by Arthur David Olson.
```


1.65 pbmtoptx

pbmtoptx(1) AMIGA (31 August 1988) ↩
pbmtoptx(1)

NAME

pbmtoptx - convert a portable bitmap into Printronix printer graphics

SYNOPSIS

pbmtoptx [pbmfile]

DESCRIPTION

Reads a portable bitmap as input. Produces a file of Printronix printer graphics as output.

Note that there is no ptxtopbm tool - this transformation is one way.

SEE ALSO

pbm
(5)

AUTHOR

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1.66 pbmtox10bm

pbmtox10bm(1) AMIGA (31 August 1988) ↩
pbmtox10bm(1)

NAME
pbmtox10bm - convert a portable bitmap into an X10 bitmap

SYNOPSIS
pbmtox10bm [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces an X10 bitmap as output. This older format is maintained for compatibility.

Note that there is no x10bmtopbm tool, because xbmtopbm can read both X11 and X10 bitmaps.

SEE ALSO

pbmtoxbm (1), xbmtopbm (1), pbm (5)

AUTHOR

Page 1 (printed 3/1/94)

1.67 pbmtoxbm

pbmtoxbm(1) AMIGA (31 August 1988) ↩
pbmtoxbm(1)

NAME
pbmtoxbm - convert a portable bitmap into an X11 bitmap

SYNOPSIS
pbmtoxbm [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces an X11 bitmap as output.

SEE ALSO

pbmtox10bm (1), xbmtopbm (1), pbm (5)

AUTHOR

1.68 pbmtoybm

pbmtoybm(1) AMIGA (06 March 1990) ↩
pbmtoybm(1)

NAME

pbmtoybm - convert a portable bitmap into a Bennet Yee

"face" file

SYNOPSIS

pbmtoybm [pbmfile]

DESCRIPTION

Reads a portable bitmap as input. Produces as output a file acceptable to the face and xbm programs by Bennet Yee (bsy+@cs.cmu.edu).

SEE ALSO

ybmtopbm (1), pbm (5), face(1), face(5), xbm(1)

AUTHOR

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1.69 pbmtozinc

pbmtozinc(l) AMIGA (02 November 1990) ↩
pbmtozinc(l)

NAME
pbmtozinc - convert a portable bitmap into a Zinc bitmap

SYNOPSIS
pbmtozinc [pbmfile]

DESCRIPTION
Reads a portable bitmap as input. Produces a bitmap in the format used by the Zinc Interface Library (ZIL) Version 1.0 as output.

SEE ALSO

pbm
(5)

AUTHOR

(jdm5548@diamond.tamu.edu) and Jef Poskanzer.

Page 1 (printed 3/1/94)

1.70 pbmupc

pbmupc(1) AMIGA (14 March 1989) ↩
pbmupc(1)

NAME
pbmupc - create a Universal Product Code bitmap

SYNOPSIS
pbmupc [-s1|-s2] type manufac product

DESCRIPTION
Generates a Universal Product Code symbol. The three arguments are: a one digit product type, a five digit manufacturer code, and a five digit product code. For example, "0 72890 00011" is the code for Heineken.

As presently configured, pbmupc produces a bitmap 230 bits wide and 175 bits high. The size can be altered by changing the defines at the beginning of the program, or by running the output through pnmenlarge or pnmscale.

OPTIONS
The -s1 and -s2 flags select the style of UPC to generate. The default, -s1, looks more or less like this:

```
 ||||||||||||||||
 ||||||||||||||||
 ||||||||||||||||
 ||||||||||||||||
0||12345||67890||5
```

The other style, -s2, puts the product type digit higher up, and doesn't display the checksum digit:

```
 ||||||||||||||||
 ||||||||||||||||
```

```
     0|||||||||||||||
      |||||||||||||||
      ||12345||67890||
```

SEE ALSO

pbm
(5)

AUTHOR

1.71 pcxtoppm

pcxtoppm(1) AMIGA (9 April 1990) ↩
pcxtoppm(1)

NAME

pcxtoppm - convert a PCX file into a portable pixmap

SYNOPSIS

pcxtoppm [pcxfile]

DESCRIPTION

Reads a PCX file as input. Produces a portable pixmap as output.

SEE ALSO

ppmtopcx
(1),
ppm

```
            (5)

AUTHOR
     Copyright (C) 1990 by Michael Davidson.

Page 1                                                  (printed 3/1/94)
```

1.72 pgm

```
pgm(5)              AMIGA (12 November 1991)              ↩
   pgm(5)
```

NAME

pgm - portable graymap file format

DESCRIPTION

The portable graymap format is a lowest common denominator grayscale file format. The definition is as follows:

- A "magic number" for identifying the file type. A pgm file's magic number is the two characters "P2".

- Whitespace (blanks, TABs, CRs, LFs).

- A width, formatted as ASCII characters in decimal.

- Whitespace.

- A height, again in ASCII decimal.

- Whitespace.

- The maximum gray value, again in ASCII decimal.

- Whitespace.

- Width * height gray values, each in ASCII decimal, between 0 and the specified maximum value, separated by whitespace, starting at the top-left corner of the graymap, proceeding in normal English reading order. A value of 0 means black, and the maximum value means white.

- Characters from a "#" to the next end-of-line are ignored (comments).

- No line should be longer than 70 characters.

Here is an example of a small graymap in this format:

```
P2
# feep.pgm
24 7
15
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  3  3  3  3  0  0  7  7  7  7  0  0 11 11 11 11  0  0 15 15 15 15  0
0  3  0  0  0  0  0  7  0  0  0  0  0 11  0  0  0  0  0 15  0  0 15  0
0  3  3  3  0  0  0  7  7  7  0  0  0 11 11 11  0  0  0 15 15 15 15  0
0  3  0  0  0  0  0  7  0  0  0  0  0 11  0  0  0  0  0 15  0  0  0  0
0  3  0  0  0  0  0  7  7  7  7  0  0 11 11 11 11  0  0 15  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

Programs that read this format should be as lenient as possible, accepting anything that looks remotely like a graymap.

There is also a variant on the format, available by setting the RAWBITS option at compile time. This variant is different in the following ways:

- The "magic number" is "P5" instead of "P2".

- The gray values are stored as plain bytes, instead of ASCII decimal.

- No whitespace is allowed in the grays section, and only a single character of whitespace (typically a newline) is allowed after the maxval.

- The files are smaller and many times faster to read and write.

Note that this raw format can only be used for maxvals less than or equal to 255. If you use the pgm library and try to write a file with a larger maxval, it will automatically fall back on the slower but more general plain format.

SEE ALSO

fstopgm (1), hipstopgm (1), lispmtopgm (1), psidtopgm (1),

rawtopgm (1), pgmbentley (1), pgmcrater (1), pgmedge (1),

pgmenhance (1), pgmhist (1), pgmnorm (1),

```
            pgmoil
            (1),

            pgmramp
            (1),
            pgmtexture
            (1),
            pgmtofs
            (1),
            pgmtolispm
            (1),

            pgmtopbm
            (1),
            pnm
            (5),
            pbm
            (5),
            ppm
            (5)

AUTHOR
     Copyright (C) 1989, 1991 by Jef Poskanzer.

Page 2                                                  (printed 3/1/94)
```

1.73 pgmbentley

pgmbentley(1) AMIGA (11 January 1991) ↩
pgmbentley(1)

NAME
pgmbentley - Bentleyize a portable graymap

SYNOPSIS
pgmbentley [pgmfile]

DESCRIPTION
Reads a portable graymap as input. Performs The Bentley Effect, and writes a portable graymap as output.

The Bentley Effect is described in "Beyond Photography" by Holzmann, chapter 4, photo 4. It's a vertical smearing based on brightness.

SEE ALSO

pgmoil (1), ppmrelief (1), pgm (5)

AUTHOR

Page 1 (printed 3/1/94)

1.74 pgmcrater

pgmcrater(1) AMIGA (15 October 1991) ↩
pgmcrater(1)

NAME
pgmcrater - create cratered terrain by fractal forgery

SYNOPSIS
pgmcrater [-number n] [-height|-ysize s] [-width|-xsize s]
[-gamma g]

DESCRIPTION
pgmcrater creates a portable graymap which mimics cratered terrain. The graymap is created by simulating the impact of a given number of craters with random position and size, then rendering the resulting terrain elevations based on a light source shining from one side of the screen. The size distribution of the craters is based on a power law which results in many more small craters than large ones. The number of craters of a given size varies as the reciprocal of the area as described on pages 31 and 32 of Peitgen and Saupe[1]; cratered bodies in the Solar System are observed to obey this relationship. The formula used to obtain crater radii governed by this law from a uniformly distributed pseudorandom sequence was developed by Rudy Rucker.

High resolution images with large numbers of craters often benefit from being piped through pnmsmooth. The averaging performed by this process eliminates some of the jagged pixels and lends a mellow ``telescopic image'' feel to the overall picture.

OPTIONS
-number n Causes n craters to be generated. If no -number specification is given, 50000 craters will be generated. Don't expect to see them all! For every large crater there are many, many more tiny

ones which tend simply to erode the landscape. In general, the more craters you specify the more realistic the result; ideally you want the entire terrain to have been extensively turned over again and again by cratering. High resolution images containing five to ten million craters are stunning but take quite a while to create.

-height height
Sets the height of the generated image to height pixels. The default height is 256 pixels.

-width width
Sets the width of the generated image to width pixels. The default width is 256 pixels.

-xsize width
Sets the width of the generated image to width

pixels. The default width is 256 pixels.

-ysize height
Sets the height of the generated image to height pixels. The default height is 256 pixels.

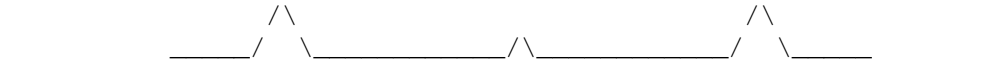
-gamma factor
The specified factor is used to gamma correct the graymap in the same manner as performed by pnmgamma. The default value is 1.0, which results in a medium contrast image. Values larger than 1 lighten the image and reduce contrast, while values less than 1 darken the image, increasing contrast.

All flags can be abbreviated to their shortest unique prefix.

BUGS

The -gamma option isn't really necessary since you can achieve the same effect by piping the output from pgmcrater through pnmgamma. However, pgmcrater performs an internal gamma map anyway in the process of rendering the elevation array into a graymap, so there's no additional overhead in allowing a user-specified gamma.

Real craters have two distinct morphologies. pgmcrater simulates only small craters, which are hemispherical in shape (regardless of the incidence angle of the impacting body, as long as the velocity is sufficiently high). Large craters, such as Copernicus and Tycho on the Moon, have a ``walled plain'' shape with a cross-section more like:



Larger craters should really use this profile, including the central peak, and totally obliterate the pre-existing terrain.

SEE ALSO

pgm (5), pnmgamma (1), pnmsmooth (1)

[1] Peitgen, H.-O., and Saupe, D. eds., The Science Of Fractal Images, New York: Springer Verlag, 1988.

AUTHOR

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for $59.95 from your local software store or directly from Autodesk, Inc., Attn: Science Series, 2320 Marinship Way, Sausalito, CA 94965, USA. Telephone: (800) 688-2344 toll-free or, outside the U.S. (415) 332-2344 Ext 4886. Fax: (415) 289-4718. ''Chaos--The Software'' includes a more comprehensive fractal forgery generator which creates three-dimensional landscapes as well as clouds and planets, plus five more modules which explore other aspects of Chaos. The user guide of more than 200 pages includes an introduction by James Gleick and detailed explanations by Rudy Rucker of the mathematics and algorithms used by each program.

1.75 pgmedge

pgmedge(1) AMIGA (04 February 1990) ↩
pgmedge(1)

NAME

pgmedge - edge-detect a portable graymap

SYNOPSIS

pgmedge [pgmfile]

DESCRIPTION

Reads a portable graymap as input. Outlines the edges, and writes a portable graymap as output. Piping the result through pgmtopbm -threshold and playing with the threshold value will give a bitmap of the edges.

The edge detection technique used is to take the Pythagorean sum of two Sobel gradient operators at 90 degrees to each other. For more details see "Digital Image Processing" by Gonzalez and Wintz, chapter 7.

SEE ALSO

pgmenhance (1), pgmtopbm (1), pgm (5), pbm (5)

AUTHOR

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1.76 pgmenhance

pgmenhance(1) AMIGA (13 January 1989) ↩
pgmenhance(1)

NAME
pgmenhance - edge-enhance a portable graymap

SYNOPSIS
pgmenhance [-N] [pgmfile]

DESCRIPTION
Reads a portable graymap as input. Enhances the edges, and writes a portable graymap as output.

The edge enhancing technique is taken from Philip R. Thompson's "xim" program, which in turn took it from section 6 of "Digital Halftones by Dot Diffusion", D. E. Knuth, ACM Transaction on Graphics Vol. 6, No. 4, October 1987, which in turn got it from two 1976 papers by J. F. Jarvis et. al.

OPTIONS
The optional -N flag should be a digit from 1 to 9. 1 is the lowest level of enhancement, 9 is the highest, The default is 9.

SEE ALSO

pgmedge
(1),
pgm
(5),
pbm
(5)

AUTHOR

Page 1 (printed 3/1/94)

1.77 pgmhist

pgmhist(1) AMIGA (28 February 1989) ↩
pgmhist(1)

NAME
pgmhist - print a histogram of the values in a portable graymap

SYNOPSIS
pgmhist [pgmfile]

DESCRIPTION
Reads a portable graymap as input. Prints a histogram of the gray values.

SEE ALSO

pgmnorm (1), pgm (5),

```
            ppmhist
            (1)

AUTHOR
     Copyright (C) 1989 by Jef Poskanzer.
```


1.78 pgmkernel

```
                pgmkernel(1)        AMIGA (10 December 1992)          ↩
                   pgmkernel(1)
```

NAME

pgmkernel - generate a convolution kernel

SYNOPSIS

pgmkernel [-weight w] width [height]

DESCRIPTION

Generates a portable graymap array of size width x height (or width x width if height is not specified) to be used as a convolution file by pnmconvol. The data in the convolution array K are computed according to the formula:

K(i,j) = 1 / (1 + w * sqrt((i-width/2)^2 + (j-height/2)^2))

where w is a coefficient specified via the -weight flag, and width and height are the X and Y filter sizes.

The output PGM file is always written out in ASCII format.

OPTIONS

The optional -weight flag should be a real number greater than -1. The default value is 6.0.

BUGS

The computation time is proportional to width * height. This increases rapidly with the increase of the kernel size. A better approach could be using a FFT in these cases.

SEE ALSO

pnmconvol (1), pnmsmooth (1)

AUTHOR

Alberto Accomazzi (alberto@cfa.harvard.edu).

Page 1 (printed 3/1/94)

1.79 pgmnoise

pgmnoise(1) AMIGA (16 November 1993) ↩
pgmnoise(1)

NAME
pgmnoise - create a graymap made up of white noise

SYNOPSIS
pgmnoise width height

DESCRIPTION
Creates a portable graymap that is made up of random pixels with gray values in the range of 0 to PGM_MAXMAXVAL (depends on the compilation, either 255 or 65535). The graymap has a size of width * height pixels.

SEE ALSO

pgm
(5)

AUTHOR

Page 1 (printed 3/1/94)

1.80 pgmnorm

pgmnorm(1) AMIGA (28 February 1989) ↩
pgmnorm(1)

NAME
pgmnorm - normalize the contrast in a portable graymap

SYNOPSIS
pgmnorm [-bpercent N | -bvalue N] [-wpercent N | -wvalue N]
[pgmfile]

DESCRIPTION
Reads a portable graymap as input. Normalizes the contrast
by forcing the lightest pixels to white, the darkest pixels
to black, and linearly rescaling the ones in between; and
produces a portable graymap as output.

OPTIONS
By default, the darkest 2 percent of all pixels are mapped
to black, and the lightest 1 percent are mapped to white.
You can override these percentages by using the -bpercent
and -wpercent flags, or you can specify the exact pixel
values to be mapped by using the -bvalue and -wvalue flags.
Appropriate numbers for the flags can be gotten from the
pgmhist tool. If you just want to enhance the contrast,
then choose values at elbows in the histogram; e.g. if value
29 represents 3% of the image but value 30 represents 20%,
choose 30 for bvalue. If you want to lighten the image,
then set bvalue to 0 and just fiddle with wvalue; similarly,
to darken the image, set wvalue to maxval and play with

bvalue.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pgmhist (1), ppmnorm (1), pgm (5)

AUTHOR

Partially based on the fbnorm filter in Michael Mauldin's "Fuzzy Pixmap" package.

1.81 pgmoil

pgmoil(1) AMIGA (11 January 1991) ↩
pgmoil(1)

NAME

pgmoil - turn a portable graymap into an oil painting

SYNOPSIS

pgmoil [-n N] [pgmfile]

DESCRIPTION

Reads a portable graymap as input. Does an "oil transfer",

and writes a portable graymap as output.

The oil transfer is described in "Beyond Photography" by Holzmann, chapter 4, photo 7. It's a sort of localized smearing.

OPTIONS

The optional -n flag controls the size of the area smeared. The default value is 3.

BUGS

Takes a long time to run.

SEE ALSO

pgmbentley (1), ppmrelief (1), pgm (5)

AUTHOR

1.82 pgmramp

```
                pgmramp(1)          AMIGA (24 November 1989)          ↩
                   pgmramp(1)


NAME
     pgmramp - generate a grayscale ramp

SYNOPSIS
     pgmramp -lr|-tb | -rectangle|-ellipse width height

DESCRIPTION
     Generates a graymap of the specified size containing a
     black-to-white ramp.  These ramps are useful for multiplying
     with other images, using the pnmarith tool.

OPTIONS
     -lr  A left to right ramp.

     -tb  A top to bottom ramp.

     -rectangle
          A rectangular ramp.

     -ellipse
          An elliptical ramp.

     All flags can be abbreviated to their shortest unique
     prefix.

SEE ALSO

           pnmarith
           (1),
           pgm
           (5)

AUTHOR
     Copyright (C) 1989 by Jef Poskanzer.
```

Page 1 (printed 3/1/94)

1.83 pgmtexture

pgmtexture(1) AMIGA (22 Aug 1991) ↩
pgmtexture(1)

NAME
pgmtexture - calculate textural features on a portable graymap

SYNOPSIS
pgmtexture [-d d] [pgmfile]

DESCRIPTION
Reads a portable graymap as input. Calculates textural features based on spatial dependence matrices at 0, 45, 90, and 135 degrees for a distance d (default = 1). Textural features include:

(1) Angular Second Moment,
(2) Contrast,
(3) Correlation,
(4) Variance,
(5) Inverse Difference Moment,
(6) Sum Average,
(7) Sum Variance,
(8) Sum Entropy,
(9) Entropy,
(10) Difference Variance,
(11) Difference Entropy,
(12, 13) Information Measures of Correlation, and
(14) Maximal Correlation Coefficient.

Algorithm taken from:
Haralick, R.M., K. Shanmugam, and I. Dinstein. 1973.
Textural features for image classification. IEEE

Transactions on Systems, Man, and Cybertinetics, SMC-3(6):610-621.

BUGS

The program can run incredibly slow for large images (larger than 64 x 64) and command line options are limited. The method for finding (14) the maximal correlation coefficient, which requires finding the second largest eigenvalue of a matrix Q, does not always converge.

REFERENCES

IEEE Transactions on Systems, Man, and Cybertinetics, SMC-3(6):610-621.

SEE ALSO

pgm (5), pnmcut (1)

AUTHOR

Page 1 (printed 3/1/94)

1.84 pgmtofs

pgmtofs(1) AMIGA (18 May 1990) pgmtofs(1) ↩

NAME

pgmtofs - convert portable graymap to Usenix FaceSaver(tm) format

SYNOPSIS

pgmtofs [pgmfile]

DESCRIPTION

Reads a portable graymap as input. Produces Usenix FaceSaver(tm) format as output.

FaceSaver is a registered trademark of Metron Computerware Ltd. of Oakland, CA.

SEE ALSO

fstopgm
(1),
pgm
(5)

AUTHOR

1.85 pgmtolispm

pgmtolispm(1) AMIGA (06 March 1990) ↩
pgmtolispm(1)

NAME

pgmtolispm - convert a portable graymap into Lisp Machine format

SYNOPSIS

pgmtolispm [pgmfile]

DESCRIPTION

Reads a portable graymap as input. Produces a Lisp Machine bitmap as output.

This is the file format read by the tv:read-bit-array-file function on TI Explorer and Symbolics lisp machines.

Given a pgm (instead of a pbm) a multi-plane image will be output. This is probably not useful unless you have a color lisp machine.

Multi-plane bitmaps on lisp machines are color; but the lispm image file format does not include a color map, so we must treat it as a graymap instead. This is unfortunate.

SEE ALSO

lispmtopgm (1), pgm (5)

BUGS

Output width is always rounded up to the nearest multiple of 32; this might not always be what you want, but it probably is (arrays which are not modulo 32 cannot be passed to the Lispm BITBLT function, and thus cannot easily be displayed on the screen).

No color.

AUTHOR

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1.86 pgmtopbm

pgmtopbm(1) AMIGA (26 July 1988) ↩
pgmtopbm(1)

NAME
pgmtopbm - convert a portable graymap into a portable bitmap

SYNOPSIS
pgmtopbm [-floyd|-fs|-threshold |-hilbert |-dither8|-d8|-cluster3 |-c3|-cluster4|-c4 |-cluster8|-c8] [-value val] [-clump size] [pgmfile]

DESCRIPTION
Reads a portable graymap as input. Produces a portable bitmap as output.

Note that there is no pbmtopgm converter, because any pgm program can read pbm files automagically.

OPTIONS
The default quantization method is boustrophedonic Floyd-Steinberg error diffusion (-floyd or -fs). Also available are simple thresholding (-threshold); Bayer's ordered dither (-dither8) with a 16x16 matrix; and three different sizes of 45-degree clustered-dot dither (-cluster3, -cluster4, -cluster8). A space filling curve halftoning method using the Hilbert curve is also available. (-hilbert);

Floyd-Steinberg will almost always give the best looking results; however, looking good is not always what you want. For instance, thresholding can be used in a pipeline with the pnmconvol tool, for tasks like edge and peak detection. And clustered-dot dithering gives a newspaper-ish look, a useful special effect.

The -value flag alters the thresholding value for Floyd-Steinberg and simple thresholding. It should be a real number between 0 and 1. Above 0.5 means darker images; below 0.5 means lighter.

The Hilbert curve method is useful for processing images before display on devices that do not render individual pixels distinctly (like laser printers). This dithering

method can give better results than the dithering usually done by the laser printers themselves. The -clump flag alters the number of pixels in a clump. This is usually an integer between 2 and 100 (default 5). Smaller clump sizes smear the image less and are less grainy, but seem to loose some grey scale linearity. Typically a PGM image will have to be scaled to fit on a laser printer page (2400 x 3000 pixels for an A4 300 dpi page), and then dithered to a PBM image before being converted to a postscript file. A printing pipeline might look something like: pnmscale -xysize 2400 3000 image.pgm | pgmtopbm -hil | pnmtops -scale 0.25 > image.ps

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pgmtopbm(1) AMIGA (26 July 1988) pgmtopbm(1)

All flags can be abbreviated to their shortest unique prefix.

REFERENCES

The only reference you need for this stuff is "Digital Halftoning" by Robert Ulichney, MIT Press, ISBN 0-262-21009-6.

The Hilbert curve space filling method is taken from "Digital Halftoning with Space Filling Curves" by Luiz Velho, Computer Graphics Volume 25, Number 4, proceedings of SIGRAPH '91, page 81. ISBN 0-89791-436-8

SEE ALSO

pbmreduce (1), pgm (5), pbm (5), pnmconvol (1), pnmscale (1),

pnmtops (1)

AUTHOR

1.87 pgmtoppm

NAME

pgmtoppm - colorize a portable graymap into a portable pixmap

SYNOPSIS

pgmtoppm colorspec [pgmfile]

```
     pgmtoppm colorspec1-colorspec2 [pgmfile]
     pgmtoppm -map mapfile [pgmfile]

DESCRIPTION
     Reads a portable graymap as input.  Colorizes it by
     multiplying the the gray values by specified color or
     colors, and produces a portable pixmap as output.

     If only one color is specified, black in the pgm file stays
     black and white in the pgm file turns into the specified
     color in the ppm file.  If two colors (separated by a dash)
     are specified, then black gets mapped to the first color and
     white gets mapped to the second.

     The color can be specified in five ways:

     o    A name, assuming that a pointer to an X11-style color
          names file was compiled in.

     o    An X11-style hexadecimal specifier: rgb:r/g/b, where r
          g and b are each 1- to 4-digit hexadecimal numbers.

     o    An X11-style decimal specifier: rgbi:r/g/b, where r g
          and b are floating point numbers between 0 and 1.

     o    For backwards compatibility, an old-X11-style
          hexadecimal number: #rgb, #rrggbb, #rrrgggbbb, or
          #rrrrggggbbbb.

     o    For backwards compatibility, a triplet of numbers
          separated by commas: r,g,b, where r g and b are
          floating point numbers between 0 and 1.  (This style
          was added before MIT came up with the similar rgbi
          style.)

     Also, the -map flag lets you specify an entire colormap to
     be used.  The mapfile is just a ppm file; it can be any
     shape, all that matters is the colors in it and their order.
     In this case, black gets mapped into the first color in the
     map file, and white gets mapped to the last.

SEE ALSO

          rgb3toppm
          (1),
          ppmtopgm
          (1),
          ppmtorgb3
          (1),
          ppm
          (5),
          pgm
          (5)

AUTHOR
     Copyright (C) 1991 by Jef Poskanzer.
```

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1.88 pi1toppm

pi1toppm(1) AMIGA (19 July 1990) ↩
pi1toppm(1)

NAME
pi1toppm - convert an Atari Degas .pi1 into a portable pixmap

SYNOPSIS
pi1toppm [pi1file]

DESCRIPTION
Reads an Atari Degas .pi1 file as input. Produces a portable pixmap as output.

SEE ALSO

ppmtopi1 (1), ppm (5), pi3topbm (1), pbmtopi3 (1)

AUTHOR

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1.89 pi3topbm

pi3topbm(1) AMIGA (11 March 1990) ↩
pi3topbm(1)

NAME
pi3topbm - convert an Atari Degas .pi3 file into a portable bitmap

SYNOPSIS
pi3topbm [pi3file]

DESCRIPTION
Reads an Atari Degas .pi3 file as input. Produces a portable bitmap as output.

SEE ALSO

pbmtopi3 (1), pbm (5), pi1toppm (1), ppmtopi1 (1)

```
AUTHOR
     Copyright (C) 1988 by David Beckemeyer (bdt!david) and
     Diomidis D. Spinellis.
```


1.90 picttoppm

```
picttoppm(1)        AMIGA (29 November 1991)        ↩
   picttoppm(1)

NAME
```

picttoppm - convert a Macintosh PICT file into a portable pixmap

SYNOPSIS

picttoppm [-verbose] [-fullres] [-noheader] [-quickdraw] [-fontdirfile] [pictfile]

DESCRIPTION

Reads a PICT file (version 1 or 2) and outputs a portable pixmap. Useful as the first step in converting a scanned image to something that can be displayed on Unix.

OPTIONS

-fontdir file

Make the list of BDF fonts in ``file'' available for use by picttoppm when drawing text. See below for the format of the fontdir file.

-fullres

Force any images in the PICT file to be output with at least their full resolution. A PICT file may indicate that a contained image is to be scaled down before output. This option forces images to retain their sizes and prevent information loss. Use of this option disables all PICT operations except images.

-noheader

Do not skip the 512 byte header that is present on all PICT files. This is useful when you have PICT data that was not stored in the data fork of a PICT file.

-quickdraw

Execute only pure quickdraw operations. In particular, turn off the interpretation of special PostScript printer operations.

-verbose

Turns on verbose mode which prints a a whole bunch of information that only picttoppm hackers really care about.

BUGS

The PICT file format is a general drawing format. picttoppm does not support all the drawing commands, but it does have full support for any image commands and reasonable support for line, rectangle, polgon and text drawing. It is useful for converting scanned images and some drawing conversion.

Memory is used very liberally with at least 6 bytes needed for every pixel. Large bitmap PICT files will likely run your computer out of memory.

picttoppm(1) AMIGA (29 November 1991) picttoppm(1)

FONT DIR FILE FORMAT

picttoppm has a built in default font and your local installer probably provided adequate extra fonts. You can point picttoppm at more fonts which you specify in a font directory file. Each line in the file is either a comment line which must begin with ``#'' or font information. The font information consists of 4 whitespace spearated fields. The first is the font number, the second is the font size in pixels, the third is the font style and the fourth is the name of a BDF file containing the font. The BDF format is defined by the X window system and is not described here.

The font number indicates the type face. Here is a list of known font numbers and their faces.

0	Chicago
1	application font
2	New York
3	Geneva
4	Monaco
5	Venice
6	London
7	Athens
8	San Franciso
9	Toronto
11	Cairo
12	Los Angeles
20	Times Roman
21	Helvetica
22	Courier
23	Symbol
24	Taliesin

The font style indicates a variation on the font. Multiple variations may apply to a font and the font style is the sum of the variation numbers which are:

1	Boldface
2	Italic
4	Underlined
8	Outlined
16	Shadow
32	Condensed
64	Extended

Obviously the font defintions are strongly related to the Macintosh. More font numbers and information about fonts can be found in Macintosh documentation.

SEE ALSO
Inside Macintosh volumes 1 and 5,
ppmtopict
(1),
ppm
(5)

AUTHOR

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1.91 pjtoppm

pjtoppm(1) AMIGA (14 July 1991) ↩
pjtoppm(1)

NAME
pjtoppm - convert an HP PaintJet file to a portable pixmap

SYNOPSIS
pjtoppm [paintjet]

DESCRIPTION
Reads an HP PaintJet file as input and converts it into a portable pixmap. This was a quick hack to save some trees, and it only handles a small subset of the paintjet commands. In particular, it will only handle enough commands to convert most raster image files.

REFERENCES
HP PaintJet XL Color Graphics Printer User's Guide

SEE ALSO

ppmtopj
(1)

AUTHOR

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1.92 pktopbm

pktopbm(1) AMIGA (6 August 1990) ↩
pktopbm(1)

NAME
pktopbm - convert packed (PK) format font into portable bitmap(s)

SYNOPSIS
pktopbm pkfile[.pk] [-c num] pbmfile ...

DESCRIPTION
Reads a packed (PK) font file as input, and produces portable bitmaps as output. If the filename "-" is used for

any of the filenames, the standard input stream (or standard output where appropriate) will be used.

OPTIONS

-c num

Sets the character number of the next bitmap written to num.

SEE ALSO

pbmtopk (1), pbm (5)

AUTHOR

Adapted from Tom Rokicki's pxtopk by Angus Duggan <ajcd@dcs.ed.ac.uk>.

1.93 pnm

```
                pnm(5)              AMIGA (27 September 1991)              ↩
                   pnm(5)


NAME
     pnm - portable anymap file format

DESCRIPTION
     The pnm programs operate on portable bitmaps, graymaps, and
     pixmaps, produced by the pbm, pgm, and ppm segments.  There
     is no file format associated with pnm itself.

SEE ALSO

           anytopnm
           (1),
           fitstopnm
           (1),
           giftopnm
           (1),
           rasttopnm
           (1),

           tifftopnm
           (1),
           xwdtopnm
           (1),
           pnmtops
           (1),
           pnmtorast
           (1),

           pnmtotiff
           (1),
           pnmtoxwd
           (1),
           pnmarith
           (1),
           pnmcat
           (1),

           pnmconvol
           (1),
           pnmcrop
           (1),,
           pnmcut
           (1),
           pnmdepth
           (1),

           pnmenlarge
           (1),
           pnmfile
```

(1),
pnmtofits
(1),
pnmflip
(1),

pnmgamma
(1),
pnmindex
(1),
pnminvert
(1),
pnmmargin
(1),

pnmnoraw
(1),
pnmpaste
(1),
pnmrotate
(1),
pnmscale
(1),

pnmshear
(1),
pnmsmooth
(1),
pnmtile
(1),
ppm
(5),
pgm
(5),

pbm
(5)

AUTHOR

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1.94 pnmalias

pnmalias(1) AMIGA (30 April 1992) ↩
pnmalias(1)

NAME
pnmalias - antialias a portable anyumap.

SYNOPSIS
pnmalias [-bgcolor color] [-fgcolor color] [-bonly] [-fonly]
[-balias] [-falias] [-weight w] [pnmfile]

DESCRIPTION
Reads a portable anymap as input, and applies anti-aliasing to background and foreground pixels. If the input file is a portable bitmap, the output anti-aliased image is promoted to a graymap, and a message is printed informing the user of the change in format.

OPTIONS
-bgcolor colorb, -fgcolor colorf
set the background color to colorb, and the foreground to color to colorf. Pixels with these values will be anti-aliased. by default, the background color is taken to be black, and foreground color is assumed to be white. The colors can be specified in five ways:

o A name, assuming that a pointer to an X11-style color names file was compiled in.

- An X11-style hexadecimal specifier: rgb:r/g/b, where r g and b are each 1- to 4-digit hexadecimal numbers.

- An X11-style decimal specifier: rgbi:r/g/b, where r g and b are floating point numbers between 0 and 1.

- For backwards compatibility, an old-X11-style hexadecimal number: #rgb, #rrggbb, #rrrgggbbb, or #rrrrggggbbbb.

- For backwards compatibility, a triplet of numbers separated by commas: r,g,b, where r g and b are floating point numbers between 0 and 1. (This style was added before MIT came up with the similar rgbi style.)

Note that even when dealing with graymaps, background and foreground colors need to be specified in the fashion described above. In this case, background and foreground pixel values are taken to be the value of the red component for the given color.

-bonly, -fonly
Apply anti-aliasing only to background (-bonly), or foreground (-fonly) pixels.

-balias, -falias
Apply anti-aliasing to all pixels surrounding background (-balias), or foreground (-falias) pixels. By default, anti-aliasing takes place only among neighboring background and foreground pixels.

-weight w
Use w as the central weight for the aliasing filter. W must be a real number in the range 0 < w < 1. The lower the value of w is, the "blurrier" the output image is. The default is w = 1/3.

SEE ALSO

pbmtext (1),

pnmsmooth
(1),
pnm
(5)

AUTHOR

1.95 pnmarith

pnmarith(1) AMIGA (26 August 1993) ↩
pnmarith(1)

NAME

pnmarith - perform arithmetic on two portable anymaps

SYNOPSIS

pnmarith -add|-subtract|-multiply| pnmfile1 pnmfile2

DESCRIPTION

Reads two portable anymaps as input. Performs the specified arithmetic operation, and produces a portable anymap as output. The two input anymaps must be the same width and height.

The arithmetic is performed between corresponding pixels in the two anymaps, as if maxval was 1.0, black was 0.0, and a linear scale in between. Results that fall outside of [0..1) are truncated.

The operator -difference calculates the absolute value of pnmarith -subtract pnmfile1 pnmfile2, i.e. no truncation is done.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pbmmask (1), pnmpaste (1), pnminvert (1), pnm (5)

AUTHOR

 Lightly modified by Marcel Wijkstra <wijkstra@fwi.uva.nl>

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1.96 pnmcat

pnmcat(1) AMIGA (12 March 1989) ↩
pnmcat(1)

NAME
pnmcat - concatenate portable anymaps

SYNOPSIS
pnmcat [-white|-black] -leftright|-lr [-jtop|-jbottom]
pnmfile pnmfile ...
pnmcat [-white|-black] -topbottom|-tb [-jleft|-jright]
pnmfile pnmfile ...

DESCRIPTION
Reads portable anymaps as input. Concatenates them either
left to right or top to bottom, and produces a portable
anymap as output.

OPTIONS
If the anymaps are not all the same height (left-right) or
width (top-bottom), the smaller ones have to be justified
with the largest. By default, they get centered, but you
can specify one side or the other with one of the -j* flags.
So, -topbottom -jleft would stack the anymaps on top of each
other, flush with the left edge.

The -white and -black flags specify what color to use to
fill in the extra space when doing this justification. If
neither is specified, the program makes a guess.

All flags can be abbreviated to their shortest unique
prefix.

SEE ALSO

pnm
(5)

AUTHOR

1.97 pnmcomp

NAME

pnmcomp - composite two portable anymap files together

SYNOPSIS

pnmcomp [-invert] [-xoffN] [-yoffN] [-alphapgmfile] overlay [pnm-input] [pnm-output]

DESCRIPTION

Reads in a portable any map image and put a overlay upon it, with optional alpha mask. The -alpha pgmfile allows you to also add an alpha mask file to the compositing process, the range of max and min can be swapped by using the -invert option. The -xoff and -yoff arguments can be negative, allowing you to shift the overlay off the top corner of the screen.

SEE ALSO

pnm
(5)

```
AUTHOR
     Copyright (C) 1992 by David Koblas (koblas@mips.com).
```


1.98 pnmconvol

```
                pnmconvol(1)          AMIGA (13 January 1991)          ↩
                   pnmconvol(1)


NAME
     pnmconvol - general MxN convolution on a portable anymap

SYNOPSIS
     pnmconvol convolutionfile [pnmfile]

DESCRIPTION
```

Reads two portable anymaps as input. Convolves the second using the first, and writes a portable anymap as output.

Convolution means replacing each pixel with a weighted average of the nearby pixels. The weights and the area to average are determined by the convolution matrix. The unsigned numbers in the convolution file are offset by -maxval/2 to make signed numbers, and then normalized, so the actual values in the convolution file are only relative.

Here is a sample convolution file; it does a simple average of the nine immediate neighbors, resulting in a smoothed image:

```
P2
3 3
18
10 10 10
10 10 10
10 10 10
```

To see how this works, do the above-mentioned offset: 10 - 18/2 gives 1. The possible range of values is from 0 to 18, and after the offset that's -9 to 9. The normalization step makes the range -1 to 1, and the values get scaled correspondingly so they become 1/9 - exactly what you want. The equivalent matrix for 5x5 smoothing would have maxval 50 and be filled with 26.

The convolution file will usually be a graymap, so that the same convolution gets applied to each color component. However, if you want to use a pixmap and do a different convolution to different colors, you can certainly do that.

SEE ALSO

pnmsmooth (1), pnm (5)

AUTHOR

1.99 pnmcrop

pnmcrop(1) AMIGA (25 February 1989) ↩
pnmcrop(1)

NAME
pnmcrop - crop a portable anymap

SYNOPSIS
pnmcrop [-white|-black] [-left] [-right] [-top] [-bottom]
[pnmfile]

DESCRIPTION
Reads a portable anymap as input. Removes edges that are the background color, and produces a portable anymap as output.

OPTIONS
By default, it makes a guess as to what the background color is. You can override the default with the -white and -black flags.

The options -left, -right, -top and -bottom restrict cropping to the sides specified. The default is to crop all sides of the image.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pnmcut
(1),
pnm
(5)

AUTHOR

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1.100 pnmcut

pnmcut(1) AMIGA (21 February 1989) ↩
pnmcut(1)

NAME
pnmcut - cut a rectangle out of a portable anymap

SYNOPSIS
pnmcut x y width height [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Extracts the specified rectangle, and produces a portable anymap as output. The x and y can be negative, in which case they are interpreted relative to the right and bottom of the anymap, respectively.

SEE ALSO

pnm
(5)

AUTHOR

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1.101 pnmdepth

pnmdepth(1) AMIGA (12 January 1991) ↩
pnmdepth(1)

NAME
pnmdepth - change the maxval in a portable anymap

SYNOPSIS
pnmdepth newmaxval [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Scales all the pixel values, and writes out the image with the new maxval. Scaling the colors down to a smaller maxval will result in some loss of information.

Be careful of off-by-one errors when choosing the new maxval. For instance, if you want the color values to be five bits wide, use a maxval of 31, not 32.

SEE ALSO

pnm

(5),
ppmquant
(1),
ppmdither
(1)

AUTHOR

1.102 pnmenlarge

pnmenlarge(1) AMIGA (26 February 1989) ↩
pnmenlarge(1)

NAME

pnmenlarge - read a portable anymap and enlarge it N times

SYNOPSIS

pnmenlarge N [pnmfile]

DESCRIPTION

Reads a portable anymap as input. Replicates its pixels N times, and produces a portable anymap as output.

pnmenlarge can only enlarge by integer factors. The slower but more general pnmscale can enlarge or reduce by arbitrary factors, and pbmreduce can reduce by integer factors, but only for bitmaps.

If you enlarge by a factor of 3 or more, you should probably add a pnmsmooth step; otherwise, you can see the original pixels in the resulting image.

SEE ALSO

pbmreduce (1), pnmscale (1), pnmsmooth (1), pnm (5)

AUTHOR

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1.103 pnmfile

pnmfile(1) AMIGA (9 January 1991) ↩
pnmfile(1)

NAME
pnmfile - describe a portable anymap

SYNOPSIS
pnmfile [pnmfile] ...

DESCRIPTION
Reads one or more portable anymaps as input. Writes out short descriptions of the image type, size, etc. This is mostly for use in shell scripts, so the format is not particularly pretty.

SEE ALSO

pnm
(5), file(1)

AUTHOR

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1.104 pnmflip

pnmflip(1) AMIGA (25 July 1989) ↩
pnmflip(1)

NAME
pnmflip - perform one or more flip operations on a portable anymap

SYNOPSIS
pnmflip [-leftright|-lr] [-topbottom|-tb] [-transpose|-xy] [-rotate90|-r90|-ccw] [-rotate270|-r270|-cw] [-rotate180|-r180] [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Performs one or more flip operations, in the order specified, and writes out a portable anymap.

OPTIONS
The flip operations available are: left for right (-leftright or -lr); top for bottom (-topbottom or -tb); and transposition (-transpose or -xy). In addition, some canned concatenations are available: -rotate90 or -ccw is equivalent to -transpose -topbottom; -rotate270 or -cw is equivalent to -transpose -leftright; and -rotate180 is equivalent to -leftright -topbottom.

All flags can be abbreviated to their shortest unique

prefix.

SEE ALSO

pnmrotate (1), pnm (5)

AUTHOR

1.105 pnmgamma

pnmgamma(1) AMIGA (12 January 1991) pnmgamma(1)

NAME

pnmgamma - perform gamma correction on a portable anymap

SYNOPSIS

```
pnmgamma value [pnmfile]
pnmgamma redvalue greenvalue bluevalue [pnmfile]
```

DESCRIPTION

Reads a portable anymap as input. Performs gamma correction, and produces a portable anymap as output.

The arguments specify what gamma value(s) to use. A value of 1.0 leaves the image alone, less than one darkens it, and greater than one lightens it.

SEE ALSO

pnm
(5)

AUTHOR

1.106 pnmhistmap

```
                pnmhistmap(1)        AMIGA (25 October 1993)        ↩
                   pnmhistmap(1)



NAME
     pnmhistmap - draw a histogram for a PGM or PPM file

SYNOPSIS
     pnmhistmap [-black] [-white] [-max N] [-verbose] [pnmfile]

DESCRIPTION
     Reads a portable anymap as input, although bitmap (PBM)
     input produces an error message and no image.  Produces an
     image showing a histogram of the color (or gray) values in
     the input.  A graymap (PGM) input produces a bitmap output.
     A pixmap (PPM) input produces pixmap output with three
     overlaid histograms:  a red one for the red input, a green
     one for the green input, and a blue one for the blue input.
     The output is fixed in size: 256 pixels wide by 200 pixels
     high.

OPTIONS
     -black
          Ignores the count of black pixels when scaling the
          histogram.

     -white
          Ignores the count of white pixels when scaling the
          histogram.

     The -black and -white options, which can be used seperately
     or together, are useful for images with a large percentage
     of pixels whose value is zero or 255, which can cause the
     remaining histogram data to become unreadbaly small.  Note
     that, for pixmap inputs, these options apply to all colors;
     if, for example, the input has a large number of bright-red
     areas, you will probably want to use the -white option.

     -max N
          Force the scaling of the histogram to use N as the
          largest-count value.  This is useful for inputs with a
          large percentage of single-color pixels which are not
          black or white.

     -verbose
          Report the progress of making the histogram, including
          the largest-count value used to scale the output.

     All flags can be abbreviated to their shortest unique
     prefix.

BUGS
     Assumes maxval is always 255.  Images with a smaller maxval
```

will only use the lower-value side of the histogram. This can be overcome either by piping the input through "pnmdepth 255" or by cutting and scaling the lower-value side of the

histogram. Neither is a particularly elegant solution.

Should allow the output size to be specified.

SEE ALSO

pgmhist (1), ppmhist (1), pgm (5), ppm (5)

AUTHOR

Wilson H. Bent. Jr. (whb@usc.edu).

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1.107 pnmindex

pnmindex(1) AMIGA (9 January 1991) ↩
pnmindex(1)

NAME
pnmindex - build a visual index of a bunch of anymaps

SYNOPSIS
pnmindex [-size N] [-across N] [-colors N] [-black] pnmfile
...

DESCRIPTION
This script makes small versions of a bunch of anymaps, adds labels, and concatenates them together into a collage.

OPTIONS
-size
Controls how big each image becomes; the default is 100x100.

-across
Controls how many images are in each row; the default is 6.

```
     -colors
          Controls how many colors the final index gets quantized
          to, if quantization is necessary; the default is 256.

     -black
          Controls the color of the padding between the images;
          normally it's white and the labels are black lettering
          on white background, but the -black flag reverses this.

SEE ALSO

           pnmscale
           (1),
           pnmcat
           (1),
           pbmtext
           (1),
           ppmquant
           (1),
           pnm
           (5)

BUGS
     It's very slow.

     It's a csh script.  Csh scripts are not portable to System
     V.  Scripts in general are not portable to non-Unix
     environments.

AUTHOR
     Copyright (C) 1991 by Jef Poskanzer.

Page 1                                              (printed 3/1/94)
```

1.108 pnminvert

```
                pnminvert(1)          AMIGA (08 August 1989)          ↩
                   pnminvert(1)
```

NAME

pnminvert - invert a portable anymap

SYNOPSIS

pnminvert [pnmfile]

DESCRIPTION

Reads a portable anymap as input. Inverts it black for white and produces a portable anymap as output.

SEE ALSO

pnm (5)

AUTHOR

Page 1 (printed 3/1/94)

1.109 pnmmargin

pnmmargin(1) AMIGA (9 January 1991) ↩
pnmmargin(1)

NAME
pnmmargin - add a border to a portable anymap

SYNOPSIS
pnmmargin [-white|-black|-color colorspec] size [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Adds a border of the specified number of pixels, and produces a portable anymap as output.

OPTIONS
You can specify the border color with the -white, -black, and -color flags. If no color is specified, the program makes a guess.

SEE ALSO

pnm
(5)

BUGS
It's a script. Scripts are not portable to non-Unix environments.

AUTHOR

Page 1 (printed 3/1/94)

1.110 pnmnlfilt

pnmnlfilt(1) AMIGA (5 February 1993) ↩
pnmnlfilt(1)

NAME
pnmnlfilt - non-linear filters: smooth, alpha trim mean, optimal estimation smoothing, edge enhancement.

SYNOPSIS
pnmnlfilt alpha radius [pnmfile]

DESCRIPTION
This is something of a swiss army knife filter. It has 3 distinct operating modes. In all of the modes each pixel in the image is examined and processed according to it and its surrounding pixels values. Rather than using the 9 pixels in a 3x3 block, 7 hexagonal area samples are taken, the size of the hexagons being controlled by the radius parameter. A radius value of 0.3333 means that the 7 hexagons exactly fit into the center pixel (ie. there will be no filtering effect). A radius value of 1.0 means that the 7 hexagons exactly fit a 3x3 pixel array.

Alpha trimmed mean filter. (0.0 <= alpha
The value of the center pixel will be replaced by the mean of the 7 hexagon values, but the 7 values are sorted by size and the top and bottom alpha portion of the 7 are excluded from the mean. This implies that an alpha value of 0.0 gives the same sort of output as a normal convolution (ie. averaging or smoothing filter), where radius will determine the "strength" of the filter. A good value to start from for

subtle filtering is alpha = 0.0, radius = 0.55 For a more blatant effect, try alpha 0.0 and radius 1.0

An alpha value of 0.5 will cause the median value of the 7 hexagons to be used to replace the center pixel value. This sort of filter is good for eliminating "pop" or single pixel noise from an image without spreading the noise out or smudging features on the image. Judicious use of the radius parameter will fine tune the filtering. Intermediate values of alpha give effects somewhere between smoothing and "pop" noise reduction. For subtle filtering try starting with values of alpha = 0.4, radius = 0.6 For a more blatant effect try alpha = 0.5, radius = 1.0

Optimal estimation smoothing. (1.0 <= alpha

This type of filter applies a smoothing filter adaptively over the image. For each pixel the variance of the surrounding hexagon values is calculated, and the amount of smoothing is made inversely proportional to it. The idea is that if the variance is small then it is due to noise in the image, while if the variance is large, it is because of "wanted" image features. As usual the radius parameter controls the effective radius, but it probably advisable to leave the radius between 0.8 and 1.0 for the variance calculation to be meaningful. The alpha parameter sets the

noise threshold, over which less smoothing will be done. This means that small values of alpha will give the most subtle filtering effect, while large values will tend to smooth all parts of the image. You could start with values like alpha = 1.2, radius = 1.0 and try increasing or decreasing the alpha parameter to get the desired effect. This type of filter is best for filtering out dithering noise in both bitmap and color images.

Edge enhancement. (-0.1 >= alpha >=

This is the opposite type of filter to the smoothing filter. It enhances edges. The alpha parameter controls the amount of edge enhancement, from subtle (-0.1) to blatant (-0.9). The radius parameter controls the effective radius as usual, but useful values are between 0.5 and 0.9. Try starting with values of alpha = 0.3, radius = 0.8

Combination use.

The various modes of pnmnlfilt can be used one after the other to get the desired result. For instance to turn a monochrome dithered image into a grayscale image you could try one or two passes of the smoothing filter, followed by a pass of the optimal estimation filter, then some subtle edge enhancement. Note that using edge enhancement is only likely to be useful after one of the non-linear filters (alpha trimmed mean or optimal estimation filter), as edge enhancement is the direct opposite of smoothing.

For reducing color quantization noise in images (ie. turning .gif files back into 24 bit files) you could try a pass of the optimal estimation filter (alpha 1.2, radius 1.0), a pass of the median filter (alpha 0.5, radius 0.55), and possibly a pass of the edge enhancement filter. Several passes of the optimal estimation filter with declining alpha values are more effective than a single pass with a large alpha value. As usual, there is a tradeoff between filtering effectiveness and loosing detail. Experimentation is encouraged.

References:

The alpha-trimmed mean filter is based on the description in IEEE CG&A May 1990 Page 23 by Mark E. Lee and Richard A. Redner, and has been enhanced to allow continuous alpha adjustment.

The optimal estimation filter is taken from an article "Converting Dithered Images Back to Gray Scale" by Allen Stenger, Dr Dobb's Journal, November 1992, and this article references "Digital Image Enhancement and Noise Filtering by Use of Local Statistics", Jong-Sen Lee, IEEE Transactions on Pattern Analysis and Machine Intelligence, March 1980.

The edge enhancement details are from pgmenhance(1), which is taken from Philip R. Thompson's "xim" program, which in turn took it from section 6 of "Digital Halftones by Dot Diffusion", D. E. Knuth, ACM Transaction on Graphics Vol. 6, No. 4, October 1987, which in turn got it from two 1976 papers by J. F. Jarvis et. al.

SEE ALSO

pgmenhance
(1),
pnmconvol
(1),
pnm
(5)

BUGS

Integers and tables may overflow if PPM_MAXMAXVAL is greater than 255.

AUTHOR

Graeme W. Gill graeme@labtam.oz.au

1.111 pnmnoraw

```
                pnmnoraw(1)          AMIGA (8 January 1991)          ↩
                   pnmnoraw(1)


NAME
     pnmnoraw - force a portable anymap into plain format

SYNOPSIS
     pnmnoraw [pnmfile]

DESCRIPTION
     Reads a portable anymap as input.  Writes it out in plain
     (non-raw) format.  This is fairly useless if you haven't
     defined the PBMPLUS_RAWBITS compile-time option.

SEE ALSO

           pnm
           (5)

AUTHOR
     Copyright (C) 1991 by Jef Poskanzer.
```

Page 1 (printed 3/1/94)

1.112 pnmpad

pnmpad(12 Dec 1990) AMIGA pnmpad(12 Dec 1990)

NAME

pnmpad - add borders to portable anymap

SYNOPSIS

pnmpad [-white|-black] [-l#] [-r#] [-t#] [-b#] [pnmfile]

DESCRIPTION

Reads a portable anymap as input. Outputs a portable anymap with extra borders of the sizes specified. The colour of the borders can be set to black or white (default black).

SEE ALSO

pbmmake (1), pnmpaste (1), pbm (5)

AUTHOR

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1.113 pnmpaste

pnmpaste(1) AMIGA (21 February 1991) ↩
pnmpaste(1)

NAME
pnmpaste - paste a rectangle into a portable anymap

SYNOPSIS
pnmpaste [-replace|-or|-and |-xor] frompnmfile x y
[intopnmfile]

DESCRIPTION
Reads two portable anymaps as input. Inserts the first anymap into the second at the specified location, and produces a portable anymap the same size as the second as output. If the second anymap is not specified, it is read from stdin. The x and y can be negative, in which case they are interpreted relative to the right and bottom of the anymap, respectively.

This tool is most useful in combination with pnmcut. For

instance, if you want to edit a small segment of a large image, and your image editor cannot edit the large image, you can cut out the segment you are interested in, edit it, and then paste it back in.

Another useful companion tool is pbmmask.

The optional flag specifies the operation to use when doing the paste. The default is -replace. The other, logical operations are only allowed if both input images are bitmaps. These operations act as if white is TRUE and black is FALSE.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pnmcut (1), pnminvert (1), pnmarith (1), pnm (5), pbmmask (1)

AUTHOR

1.114 pnmrotate

pnmrotate(1) AMIGA (12 January 1991) ↩
pnmrotate(1)

NAME

pnmrotate - rotate a portable anymap by some angle

SYNOPSIS

pnmrotate [-noantialias] angle [pnmfile]

DESCRIPTION

Reads a portable anymap as input. Rotates it by the specified angle and produces a portable anymap as output. If the input file is in color, the output will be too, otherwise it will be grayscale. The angle is in degrees (floating point), measured counter-clockwise. It can be negative, but it should be between -90 and 90. Also, for rotations greater than 45 degrees you may get better results if you first use pnmflip to do a 90 degree rotation and then pnmrotate less than 45 degrees back the other direction

The rotation algorithm is Alan Paeth's three-shear method. Each shear is implemented by looping over the source pixels and distributing fractions to each of the destination pixels. This has an "anti-aliasing" effect - it avoids jagged edges and similar artifacts. However, it also means that the original colors or gray levels in the image are modified. If you need to keep precisely the same set of colors, you can use the -noantialias flag. This does the shearing by moving pixels without changing their values. If you want anti-aliasing and don't care about the precise colors, but still need a limited *number* of colors, you can run the result through ppmquant.

All flags can be abbreviated to their shortest unique prefix.

REFERENCES

"A Fast Algorithm for General Raster Rotation" by Alan Paeth, Graphics Interface '86, pp. 77-81.

SEE ALSO

pnmshear (1), pnmflip (1), pnm (5), ppmquant (1)

AUTHOR

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1.115 pnmscale

```
                pnmscale(1)          AMIGA (12 January 1991)          ↩
                   pnmscale(1)


NAME
     pnmscale - scale a portable anymap

SYNOPSIS
     pnmscale s [pnmfile]
     pnmscale -xsize|-width|-ysize| -height s [pnmfile]
     pnmscale -xscale|-yscale s [pnmfile]
     pnmscale -xscale|-xsize|-width s -yscale|-ysize|-height s
     [pnmfile]
     pnmscale -xysize x y [pnmfile]
     pnmscale -pixels n [pnmfile]

DESCRIPTION
     Reads a portable anymap as input.  Scales it by the
     specified factor or factors and produces a portable anymap
     as output.  If the input file is in color, the output will
     be too, otherwise it will be grayscale.  You can both
     enlarge (scale factor > 1) and reduce (scale factor < 1).

     You can specify one dimension as a pixel size, and the other
     dimension will be scaled correspondingly.

     You can specify one dimension as a scale, and the other
     dimension will not be scaled.

     You can specify different sizes or scales for each axis.

     You can use the special -xysize flag, which fits the image
     into the specified size without changing the aspect ratio.

     Or, you can use the -pixels flag, which fits the image into
```

the specified number of pixels without changing the aspect ratio.

All flags can be abbreviated to their shortest unique prefix.

If you enlarge by a factor of 3 or more, you should probably add a pnmsmooth step; otherwise, you can see the original pixels in the resulting image.

SEE ALSO

pbmreduce (1), pnmenlarge (1), pnmsmooth (1), pnm (5)

AUTHOR

1.116 pnmshear

pnmshear(1) AMIGA (12 January 1991) ↩ pnmshear(1)

NAME

pnmshear - shear a portable anymap by some angle

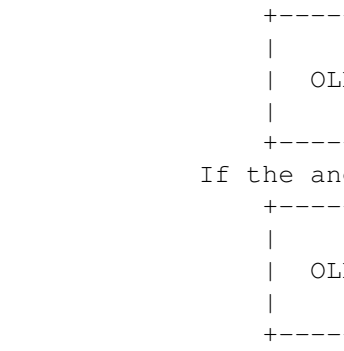
SYNOPSIS

pnmshear [-noantialias] angle [pnmfile]

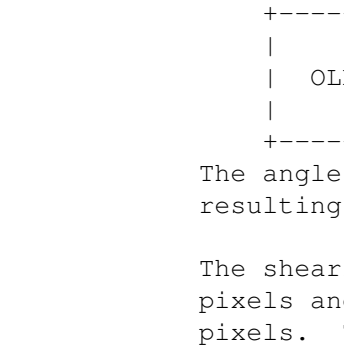
DESCRIPTION

Reads a portable anymap as input. Shears it by the specified angle and produces a portable anymap as output. If the input file is in color, the output will be too, otherwise it will be grayscale. The angle is in degrees

(floating point), and measures this:



If the angle is negative, it shears the other way:



The angle should not get too close to 90 or -90, or the resulting anymap will be unreasonably wide.

The shearing is implemented by looping over the source pixels and distributing fractions to each of the destination pixels. This has an "anti-aliasing" effect - it avoids jagged edges and similar artifacts. However, it also means that the original colors or gray levels in the image are modified. If you need to keep precisely the same set of colors, you can use the -noantialias flag. This does the shearing by moving pixels without changing their values. If you want anti-aliasing and don't care about the precise colors, but still need a limited *number* of colors, you can run the result through ppmquant.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pnmrotate (1), pnmflip (1), pnm (5), ppmquant (1)

AUTHOR

1.117 pnmsmooth

```
                pnmsmooth(1)          AMIGA (13 January 1991)          ↩
                   pnmsmooth(1)


NAME
     pnmsmooth - smooth out an image

SYNOPSIS
     pnmsmooth [pnmfile]

DESCRIPTION
     Smooths out an image by replacing each pixel with the
     average of its nine immediate neighbors.  It is implemented
     as a simple script using pnmconvol.

SEE ALSO

           pnmconvol
           (1),
           pnm
           (5)

BUGS
     It's a script.  Scripts are not portable to non-Unix
     environments.

AUTHOR
     Copyright (C) 1989, 1991 by Jef Poskanzer.
```

Page 1 (printed 3/1/94)

1.118 pnmtile

pnmtile(1) AMIGA (13 May 1989) ↩
pnmtile(1)

NAME
pnmtile - replicate a portable anymap into a specified size

SYNOPSIS
pnmtile width height [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Replicates it until it is the specified size, and produces a portable anymap as output.

SEE ALSO

pnm
(5)

AUTHOR

Page 1 (printed 3/1/94)

1.119 pnmtoddif

pnmtoddif(1) AMIGA pnmtoddif(1)

Name

pnmtoddif - Convert a portable anymap to DDIF format

Syntax

pnmtoddif pnmtoddif [-resolution x y] [pnmfile [ddiffile]]

OPTIONS

resolution x y The horizontal and vertical resolution of the output image in dots per inch. Defaults to 78 dpi.

pnmfile The filename for the image file in pnm format. If this argument is omitted, input is read from stdin.

ddiffile The filename for the image file to be created in DDIF format. If this argument is omitted, the ddiffile is written to standard output. It can only specified if a pnmfile is also specified.

DESCRIPTION
pnmtoddif takes a portable anymap from standard input and converts it into a DDIF image file on standard output or the specified DDIF file.

pbm format (bitmap) data is written as 1 bit DDIF, pgm format data (greyscale) as 8 bit greyscale DDIF, and ppm format data is written as 8,8,8 bit color DDIF. All DDIF image files are written as uncompressed. The data plane organization is interleaved by pixel.

In addition to the number of pixels in the width and height dimension, DDIF images also carry information about the size that the image should have, that is, the physical space that a pixel occupies. PBMPLUS images do not carry this information, hence it has to be externally supplied. The default of 78 dpi has the beneficial property of not causing a resize on most Digital Equipment Corporation color monitors.

AUTHOR
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neideck@nestvx.enet.dec.com

1.120 pnmtofits

pnmtofits(1) AMIGA (5 Dec 1992) ↩
pnmtofits(1)

NAME
pnmtofits - convert a portable anymap into FITS format

SYNOPSIS
pnmtofits [-max f] [-min f] [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Produces a FITS (Flexible Image Transport System) file as output. The resolution of

the output file is either 8 bits/pixel, or 16 bits/pixel, depending on the value of maxval in the input file. If the input file is a portable bitmap or a portable graymap, the output file consists of a single plane image (NAXIS = 2). If instead the input file is a portable pixmap, the output file will consist of a three-plane image (NAXIS = 3, NAXIS3 = 3). A full description of the FITS format can be found in Astronomy & Astrophysics Supplement Series 44 (1981), page 363.

OPTIONS

Flags -min and -max can be used to set DATAMAX, DATAMIN, BSCALE and BZERO in the FITS header, but do not cause the data to be rescaled.

SEE ALSO

fitstopnm (1), pgm (5)

AUTHOR

 with modifications by Alberto Accomazzi (alberto@cfa.harvard.edu).

1.121 pnmtops

pnmtops(1) AMIGA (26 October 1991) ↩
pnmtops(1)

NAME
pnmtops - convert portable anymap to PostScript

SYNOPSIS
pnmtops [-scale s] [-turn|-noturn] [-rle|-runlength] [-dpi n] [-width n] [-height n] [-center|-nocenter] [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Produces Encapsulated PostScript as output.

If the input file is in color (PPM), a color PostScript file gets written. Some PostScript interpreters can't handle color PostScript. If you have one of these you will need to run your image through ppmtopgm first.

Note that there is no pstopnm tool - this transformation is one-way, because a pstopnm tool would be a full-fledged PostScript interpreter, which is beyond the scope of this package. However, see the psidtopgm tool, which can read grayscale non-runlength PostScript image data. Also, if you're willing to install the fairly large GhostScript package, it comes with a pstoppm script.

OPTIONS
The -scale flag controls the scale of the result. The default scale is 1, which on a 300 dpi printer such as the Apple LaserWriter makes the output look about the same size as the input would if it was displayed on a typical 72 dpi screen. To get one PNM pixel per 300 dpi printer pixel, use "-scale 0.25".

The -turn and -noturn flags control whether the image gets turned 90 degrees. Normally, if an image is wider than it is tall, it gets turned automatically to better fit the page. If the -turn flag is specified, it will be turned no matter what its shape; and if the -noturn flag is specified, it will not be turned no matter what its shape.

The -rle or -runlength flag specifies run-length compression. This may save time if the host-to-printer link is slow; but normally the printer's processing time dominates, so -rle makes things slower.

The -dpi flag lets you specify the dots per inch of your output device. The default is 300 dpi. In theory PostScript is device-independent and you don't have to worry about this, but in practice its raster rendering can have unsightly bands if the device pixels and the image pixels

aren't in sync.

The -width and -height flags let you specify the size of the

page. The default is 8.5 inches by 11 inches.

With the -nocenter flag, the output is not centered on the page, i.e. it appears in the upper left corner. This is useful for programs which can include PostScript files, but can't cope with pictures which are not positioned in the upper left corner. The default is -center i.e. the image is centered on the page.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pnm
(5),
psidtopgm
(1)

AUTHOR

Modified November 1993 by Wolfgang Stuerzlinger,
wrzl@gup.uni-linz.ac.at

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1.122 pnmtorast

pnmtorast(1) AMIGA (12 January 1991) ↩
pnmtorast(1)

NAME
pnmtorast - convert a portable pixmap into a Sun rasterfile

SYNOPSIS
pnmtorast [-standard|-rle] [pnmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a Sun rasterfile as output.

Color values in Sun rasterfiles are eight bits wide, so pnmtorast will automatically scale colors to have a maxval of 255. An extra pnmdepth step is not necessary.

OPTIONS
The -standard flag forces the result to be in RT_STANDARD form; the -rle flag, RT_BYTE_ENCODED, which is smaller but, well, less standard. The default is -rle.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

rasttopnm
(1),
pnm
(5)

AUTHOR
Copyright (C) 1989, 1991 by Jef Poskanzer.

1.123 pnmtosgi

pnmtosgi(1) AMIGA (29 Januar 1994) ↩
pnmtosgi(1)

NAME
pnmtosgi - convert a portable anymap to a SGI image file

SYNOPSIS
pnmtosgi [-verbatim|-rle] [-imagename Name] [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Produces an SGI image file

as output. The SGI image will be 2-dimensional (1 channel) for PBM and PGM input, and 3-dimensional (3 channels) for PPM.

OPTIONS

-verbatim
Write an uncompressed file.

-rle (default)
Write a compressed (run length encoded) file.

-imagename name
Write the string "name" into the imagename field of the header. The name string is limited to 79 characters. If no name is given, pnmtosgi writes "no name" into this field.

BUGS

Probably.

REFERENCES

SGI Image File Format documentation (draft v0.95) by Paul Haeberli (paul@sgi.com). Available via ftp at sgi.com:graphics/SGIIMAGESPEC.

SEE ALSO

pnm (5), sgitopnm (1)

AUTHOR

(Ingo.Wilken@informatik.uni-oldenburg.de)

1.124 pnmtosir

```
                pnmtosir(1)           AMIGA (20 March 1991)           ↩
                   pnmtosir(1)


NAME
     pnmtosir - convert a portable anymap into a Solitaire format

SYNOPSIS
     pnmtosir [pnmfile]

DESCRIPTION
     Reads a portable anymap as input.  Produces a Solitaire
     Image Recorder format.

     pnmtosir produces an MGI TYPE 17 file for pbm and pgm files.
     For ppm, it writes a MGI TYPE 11 file.

SEE ALSO

           sirtopnm
           (1),
           pnm
           (5)

BUGS
AUTHOR
     Copyright (C) 1991 by Marvin Landis.
```

Page 1 (printed 3/1/94)

1.125 pnmtotiff

pnmtotiff(1) AMIGA (13 January 1991) ↩
pnmtotiff(1)

NAME
pnmtotiff - convert a a portable anymap into a TIFF file

SYNOPSIS
pnmtotiff [-none|-packbits| -lzw|-g3|-g4] [-2d] [-fill] [-predictor n] [-msb2lsb|-lsb2msb] [-rowsperstrip n] [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Produces a TIFF file as output.

OPTIONS
By default, pnmtotiff creates a TIFF file with LZW compression. This is your best bet most of the time. However, some TIFF readers can't deal with it. If you want to try another compression scheme or tweak some of the other even more obscure output options, there are a number of flags to play with.

The -none, -packbits, -lzw, -g3, and -g4 options are used to override the default and set the compression scheme used in creating the output file. The CCITT Group 3 and Group 4 compression algorithms can only be used with bilevel data. The -2d and -fill options are meaningful only with Group 3 compression: -2d requests 2-dimensional encoding, while -fill requests that each encoded scanline be zero-filled to a byte boundry. The -predictor option is only meaningful with LZW compression: a predictor value of 2 causes each scanline of the output image to undergo horizontal differencing before it is encoded; a value of 1 forces each scanline to be encoded without differencing.

By default, pnmtotiff creates a TIFF file with msb-to-lsb

fill order. The -msb2lsb and -lsb2msb options are used to override the default and set the fill order used in creating the file.

The -rowsperstrip option can be used to set the number of rows (scanlines) in each strip of data in the output file. By default, the output file has the number of rows per strip set to a value that will ensure each strip is no more than 8 kilobytes long.

BUGS

This program is not self-contained. To use it you must fetch the TIFF Software package listed in the OTHER.SYSTEMS file and configure PBMPLUS to use libtiff. See PBMPLUS's Makefile for details on this configuration.

SEE ALSO

tifftopnm (1), pnm (5)

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pnmtotiff(1) AMIGA (13 January 1991) pnmtotiff(1)

AUTHOR

Derived by Jef Poskanzer from ras2tiff.c, which is Copyright (c) 1990 by Sun Microsystems, Inc. Author: Patrick J. Naughton (naughton@wind.sun.com).

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1.126 pnmtoxwd

pnmtoxwd(1) AMIGA (24 September 1991) ↩
pnmtoxwd(1)

NAME
pnmtoxwd - convert a portable anymap into an X11 window dump

SYNOPSIS
pnmtoxwd [-pseudodepth n] [-directcolor] [pnmfile]

DESCRIPTION
Reads a portable anymap as input. Produces an X11 window

dump as output. This window dump can be displayed using the xwud tool.

Normally, pnmtoxwd produces a StaticGray dump file for pbm and pgm files. For ppm, it writes a PseudoColor dump file if there are up to 256 colors in the input, and a DirectColor dump file otherwise. The -directcolor flag can be used to force a DirectColor dump. And the -pseudodepth flag can be used to change the depth of PseudoColor dumps from the default of 8 bits / 256 colors.

SEE ALSO

xwdtopnm (1), pnm (5), xwud(1)

AUTHOR

1.127 ppm

```
                ppm(5)              AMIGA (27 September 1991)              ↩
                   ppm(5)


NAME
     ppm - portable pixmap file format

DESCRIPTION
     The portable pixmap format is a lowest common denominator
     color image file format.  The definition is as follows:

     - A "magic number" for identifying the file type.  A ppm
       file's magic number is the two characters "P3".

     - Whitespace (blanks, TABs, CRs, LFs).

     - A width, formatted as ASCII characters in decimal.

     - Whitespace.

     - A height, again in ASCII decimal.

     - Whitespace.

     - The maximum color-component value, again in ASCII decimal.

     - Whitespace.

     - Width * height pixels, each three ASCII decimal values
       between 0 and the specified maximum value, starting at the
       top-left corner of the pixmap, proceeding in normal
       English reading order.  The three values for each pixel
       represent red, green, and blue, respectively; a value of 0
       means that color is off, and the maximum value means that
       color is maxxed out.

     - Characters from a "#" to the next end-of-line are ignored
       (comments).

     - No line should be longer than 70 characters.

     Here is an example of a small pixmap in this format:
     P3
     # feep.ppm
     4 4
     15
      0  0  0    0  0  0    0  0  0   15  0 15
      0  0  0    0 15  7    0  0  0    0  0  0
      0  0  0    0  0  0    0 15  7    0  0  0
     15  0 15    0  0  0    0  0  0    0  0  0

     Programs that read this format should be as lenient as
     possible, accepting anything that looks remotely like a
```

pixmap.

There is also a variant on the format, available by setting

the RAWBITS option at compile time. This variant is different in the following ways:

- The "magic number" is "P6" instead of "P3".
- The pixel values are stored as plain bytes, instead of ASCII decimal.
- Whitespace is not allowed in the pixels area, and only a single character of whitespace (typically a newline) is allowed after the maxval.
- The files are smaller and many times faster to read and write.

Note that this raw format can only be used for maxvals less than or equal to 255. If you use the ppm library and try to write a file with a larger maxval, it will automatically fall back on the slower but more general plain format.

SEE ALSO

gouldtoppm (1), ilbmtoppm (1), imgtoppm (1), mtvtoppm (1),

pcxtoppm (1), pgmtoppm (1), pi1toppm (1), picttoppm (1),

pjtoppm
(1),
qrttoppm
(1),
rawtoppm
(1),
rgb3toppm
(1),

sldtoppm
(1),
spctoppm
(1),
sputoppm
(1),
tgatoppm
(1),

ximtoppm
(1),
xpmtoppm
(1),
yuvtoppm
(1),
ppmtoacad
(1),

ppmtoicr
(1),
ppmtoilbm
(1),
ppmtogif
(1),
ppmtopcx
(1),

ppmtopgm
(1),
ppmtopi1
(1),
ppmtopict
(1),
ppmtopj
(1),

ppmtopuzz
(1),
ppmtorgb3
(1),
ppmtosixel
(1),
ppmtotga
(1),

ppmtouil
(1),
ppmtoxpm

(1),
ppmtoyuv
(1),
ppmdither
(1),

ppmforge
(1),
ppmhist
(1),
ppmmake
(1),
ppmpat
(1),

ppmquant
(1),
ppmquantall
(1),
ppmrelief
(1),
pnm
(5),

pgm
(5),
pbm
(5)

AUTHOR

1.128 ppm3d

```
ppm3d(1)              AMIGA (2 November 1993)              ↩
    ppm3d(1)


NAME
     ppm3d - convert two portable pixmap into a red/blue 3d
     glasses pixmap

SYNOPSIS
     ppm3d leftppmfile rightppmfile [horizontal_offset]

DESCRIPTION
     Reads two portable pixmaps as input.  Produces a portable
     pixmap as output, with the images overlapping by
     horizontal_offset

     pixels in blue/red format.

     horizontal_offset defaults to 30 pixels.  Pixmaps MUST be
     the same size.

SEE ALSO

           ppm
           (5)

AUTHOR
     Copyright (C) 1993 by David K. Drum.
```

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1.129 ppmbrighten

ppmbrighten(1) AMIGA (20 Nov 1990) ↩
ppmbrighten(1)

NAME
ppmbrighten - change an images Saturation and Value from an HSV map

SYNOPSIS
ppmbrighten [-n] [-s <+- saturation>] [-v <+- value>] <ppmfile>

DESCRIPTION
Reads a portable pixmap as input. Converts the image from RGB space to HSV space and changes the Value by <+- value> as a percentage. Likewise with the Saturation. Doubling the Value would involve

ppmbrighten -v 100

to add 100 percent to the Value.

The 'n' option normalizes the Value to exist between 0 and 1 (normalized).

SEE ALSO

pgmnorm (1), ppm (5)

AUTHOR

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NOTES

This program does not change the number of colors.

1.130 ppmchange

ppmchange(1) AMIGA (3 December 1993) ↩
ppmchange(1)

NAME

ppmchange - change all pixels of one color to another in a portable pixmap

SYNOPSIS

ppmchange oldcolor newcolor [...] [ppmfile]

DESCRIPTION

Reads a portable pixmap as input. Changes all pixels of oldcolor to newcolor, leaving all others unchanged. Up to 256 colors may be replaced by specifying couples of colors on the command line.

The colors can be specified in five ways:

- A name, assuming that a pointer to an X11-style color names file was compiled in.
- An X11-style hexadecimal specifier: rgb:r/g/b, where r

g and b are each 1- to 4-digit hexadecimal numbers.

- An X11-style decimal specifier: rgbi:r/g/b, where r g and b are floating point numbers between 0 and 1.

- For backwards compatibility, an old-X11-style hexadecimal number: #rgb, #rrggbb, #rrrgggbbb, or #rrrrggggbbbb.

- For backwards compatibility, a triplet of numbers separated by commas: r,g,b, where r g and b are floating point numbers between 0 and 1. (This style was added before MIT came up with the similar rgbi style.)

SEE ALSO

pgmtoppm (1), ppm (5)

AUTHOR

Wilson H. Bent. Jr. (whb@usc.edu) with modifications by Alberto Accomazzi (alberto@cfa.harvard.edu)

1.131 ppmdim

ppmdim(1) AMIGA (16 November 1993) ↩
ppmdim(1)

NAME

ppmdim - dim a portable pixmap down to total blackness

SYNOPSIS

ppmdim dimfactor [ppmfile]

DESCRIPTION

Reads a portable pixmap as input. Diminishes its brightness by the specified dimfactor down to total blackness. The dimfactor may be in the range from 0.0 (total blackness, deep night, nada, null, nothing) to 1.0 (original picture's brightness).

As pnmgamma does not do the brightness correction in the way I wanted it, this small program was written.

ppmdim is similar to ppmbrighten , but not exactly the same.

SEE ALSO

ppm (5), ppmflash (1), pnmgamma (1), ppmbrighten (1)

AUTHOR

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1.132 ppmdist

ppmdist(1) AMIGA (22 July 1992) ↩
ppmdist(1)

NAME
ppmdist - simplistic grayscale assignment for machine generated, color images

SYNOPSIS
ppmdist [-intensity|-frequency] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input, performs a simplistic grayscale assignment intended for use with grayscale or bitmap printers.

Often conversion from ppm to pgm will yield an image with contrast too low for good printer output. The program maximizes contrast between the gray levels output.

A ppm input of n colors is read, and a pgm of n gray levels is written. The gray levels take on the values 0..n-1, while maxval takes on n-1.

The mapping from color to stepped grayscale can be performed in order of input pixel intensity, or input pixel frequency (number of repetitions).

OPTIONS
Helpful only for images with a very small number of colors. Perhaps should have been an option to ppmtopgm(1).

SEE ALSO

ppmtopgm
(1),
ppmhist
(1),
ppm
(5)

AUTHOR

Page 1 (printed 3/1/94)

1.133 ppmdither

ppmdither(1) AMIGA (14 July 1991) ↩
ppmdither(1)

NAME
ppmdither - ordered dither for color images

SYNOPSIS
ppmdither [-dim dimension] [-red shades] [-green shades] [-blue shades] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input, and applies dithering to it to reduce the number of colors used down to the specified number of shades for each primary. The default number of shades is red=5, green=9, blue=5, for a total of 225 colors. To convert the image to a binary rgb format suitable for color printers, use -red 2 -green 2 -blue 2. The maximum number of colors that can be used is 256 and can be computed as the product of the number of red, green and blue shades.

OPTIONS
-dim dimension
The size of the dithering matrix. Must be a power of 2.

```
     -red shades   The number of red shades to be used; minimum
                   of 2.

     -green shades The number of green shades to be used; minimum
                   of 2.

     -blue shades  The number of blue shades to be used; minimum
                   of 2.

SEE ALSO

           pnmdepth
           (1),
           ppmquant
           (1),
           ppm
           (5)

AUTHOR
     Copyright (C) 1991 by Christos Zoulas.

Page 1                                                (printed 3/1/94)
```

1.134 ppmflash

```
                ppmflash(1)          AMIGA (16 November 1993)          ↩
                   ppmflash(1)


NAME
     ppmflash - brighten a picture up to complete white-out

SYNOPSIS
```

```
     ppmflash flashfactor [ppmfile]

DESCRIPTION
     Reads a portable pixmap as input. Increases its brightness
     by the specified flashfactor up to a total white-out image.
     The flashfactor may be in the range from 0.0 (original
     picture's brightness) to 1.0 (full white-out, The Second
     After).

     As pnmgamma does not do the brightness correction in the way
     I wanted it, this small program was written.

     This program is similar to ppmbrighten , but not exactly the
     same.

SEE ALSO

           ppm
           (5),
           ppmdim
           (1),
           pnmgamma
           (1),
           ppmbrighten
           (1)

AUTHOR
     Copyright (C) 1993 by Frank Neumann
```

Page 1 (printed 3/1/94)

1.135 ppmforge

ppmforge(1) AMIGA (25 October 1991) ↩
ppmforge(1)

NAME

ppmforge - fractal forgeries of clouds, planets, and starry skies

SYNOPSIS

ppmforge [-clouds] [-night] [-dimension dimen] [-hour hour] [-inclination|-tilt angle] [-mesh size] [-power factor] [-glaciers level] [-ice level] [-saturation sat] [-seed seed] [-stars fraction] [-xsize|-width width] [-ysize|-height height]

DESCRIPTION

ppmforge generates three kinds of ``random fractal forgeries,'' the term coined by Richard F. Voss of the IBM Thomas J. Watson Research Center for seemingly realistic pictures of natural objects generated by simple algorithms embodying randomness and fractal self-similarity. The techniques used by ppmforge are essentially those given by Voss[1], particularly the technique of spectral synthesis explained in more detail by Dietmar Saupe[2].

The program generates two varieties of pictures: planets and clouds, which are just different renderings of data generated in an identical manner, illustrating the unity of the fractal structure of these very different objects. A third type of picture, a starry sky, is synthesised directly from pseudorandom numbers.

The generation of planets or clouds begins with the preparation of an array of random data in the frequency domain. The size of this array, the ``mesh size,'' can be set with the -mesh option; the larger the mesh the more realistic the pictures but the calculation time and memory requirement increases as the square of the mesh size. The fractal dimension, which you can specify with the -dimension option, determines the roughness of the terrain on the planet or the scale of detail in the clouds. As the fractal dimension is increased, more high frequency components are added into the random mesh.

Once the mesh is generated, an inverse two dimensional

Fourier transform is performed upon it. This converts the original random frequency domain data into spatial amplitudes. We scale the real components that result from the Fourier transform into numbers from 0 to 1 associated with each point on the mesh. You can further modify this number by applying a ‘‘power law scale’’ to it with the -power option. Unity scale leaves the numbers unmodified; a power scale of 0.5 takes the square root of the numbers in the mesh, while a power scale of 3 replaces the numbers in the mesh with their cubes. Power law scaling is best envisioned by thinking of the data as representing the elevation of

terrain; powers less than 1 yield landscapes with vertical scarps that look like glacially-carved valleys; powers greater than one make fairy-castle spires (which require large mesh sizes and high resolution for best results).

After these calculations, we have a array of the specified size containing numbers that range from 0 to 1. The pixmaps are generated as follows:

Clouds A colour map is created that ranges from pure blue to white by increasing admixture (desaturation) of blue with white. Numbers less than 0.5 are coloured blue, numbers between 0.5 and 1.0 are coloured with corresponding levels of white, with 1.0 being pure white.

Planet The mesh is projected onto a sphere. Values less than 0.5 are treated as water and values between 0.5 and 1.0 as land. The water areas are coloured based upon the water depth, and land based on its elevation. The random depth data are used to create clouds over the oceans. An atmosphere approximately like the Earth’s is simulated; its light absorption is calculated to create a blue cast around the limb of the planet. A function that rises from 0 to 1 based on latitude is modulated by the local elevation to generate polar ice caps--high altitude terrain carries glaciers farther from the pole. Based on the position of the star with respect to the observer, the apparent colour of each pixel of the planet is calculated by ray-tracing from the star to the planet

to the observer and applying a lighting model that sums ambient light and diffuse reflection (for most planets ambient light is zero, as their primary star is the only source of illumination). Additional random data are used to generate stars around the planet.

Night A sequence of pseudorandom numbers is used to generate stars with a user specified density.

Cloud pictures always contain 256 or fewer colours and may be displayed on most colour mapped devices without further processing. Planet pictures often contain tens of thousands of colours which must be compressed with ppmquant or ppmdither before encoding in a colour mapped format. If the display resolution is high enough, ppmdither generally produces better looking planets. ppmquant tends to create discrete colour bands, particularly in the oceans, which are unrealistic and distracting. The number of colours in starry sky pictures generated with the -night option depends on

the value specified for -saturation. Small values limit the colour temperature distribution of the stars and reduce the number of colours in the image. If the -saturation is set to 0, none of the stars will be coloured and the resulting image will never contain more than 256 colours. Night sky pictures with many different star colours often look best when colour compressed by pnmdepth rather than ppmquant or ppmdither. Try newmaxval settings of 63, 31, or 15 with pnmdepth to reduce the number of colours in the picture to 256 or fewer.

OPTIONS

-clouds Generate clouds. A pixmap of fractal clouds is generated. Selecting clouds sets the default for fractal dimension to 2.15 and power scale factor to 0.75.

-dimension dimen
Sets the fractal dimension to the specified dimen, which may be any floating point value between 0 and 3. Higher fractal dimensions create more ''chaotic'' images, which require higher resolution output and a larger FFT mesh size to look

good. If no dimension is specified, 2.4 is used when generating planets and 2.15 for clouds.

-glaciers level
The floating point level setting controls the extent to which terrain elevation causes ice to appear at lower latitudes. The default value of 0.75 makes the polar caps extend toward the equator across high terrain and forms glaciers in the highest mountains, as on Earth. Higher values make ice sheets that cover more and more of the land surface, simulating planets in the midst of an ice age. Lower values tend to be boring, resulting in unrealistic geometrically-precise ice cap boundaries.

-hour hour
When generating a planet, hour is used as the ''hour angle at the central meridian.'' If you specify -hour 12, for example, the planet will be fully illuminated, corresponding to high noon at the longitude at the centre of the screen. You can specify any floating point value between 0 and 24 for hour, but values which place most of the planet in darkness (0 to 4 and 20 to 24) result in crescents which, while pretty, don't give you many illuminated pixels for the amount of computing that's required. If no -hour option is specified, a random hour angle is chosen, biased so that only

25% of the images generated will be crescents.

-ice level
Sets the extent of the polar ice caps to the given floating point level. The default level of 0.4 produces ice caps similar to those of the Earth. Smaller values reduce the amount of ice, while larger -ice settings create more prominent ice caps. Sufficiently large values, such as 100 or more, in conjunction with small settings for -glaciers (try 0.1) create ''ice balls'' like Europa.

-inclination|-tilt angle

The inclination angle of the planet with regard to its primary star is set to angle, which can be any floating point value from -90 to 90. The inclination angle can be thought of as specifying, in degrees, the ``season'' the planet is presently experiencing or, more precisely, the latitude at which the star transits the zenith at local noon. If 0, the planet is at equinox; the star is directly overhead at the equator. Positive values represent summer in the northern hemisphere, negative values summer in the southern hemisphere. The Earth's inclination angle, for example, is about 23.5 at the June solstice, 0 at the equinoxes in March and September, and -23.5 at the December solstice. If no inclination angle is specified, a random value between -21.6 and 21.6 degrees is chosen.

-mesh size
A mesh of size by size will be used for the fast Fourier transform (FFT). Note that memory requirements and computation speed increase as the square of size; if you double the mesh size, the program will use four times the memory and run four times as long. The default mesh is 256x256, which produces reasonably good looking pictures while using half a megabyte for the 256x256 array of single precision complex numbers required by the FFT. On machines with limited memory capacity, you may have to reduce the mesh size to avoid running out of RAM. Increasing the mesh size produces better looking pictures; the difference becomes particularly noticeable when generating high resolution images with relatively high fractal dimensions (between 2.2 and 3).

-night A starry sky is generated. The stars are created by the same algorithm used for the stars that sur-

round planet pictures, but the output consists exclusively of stars.

-power factor
Sets the ``power factor'' used to scale elevations

synthesised from the FFT to factor, which can be any floating point number greater than zero. If no factor is specified a default of 1.2 is used if a planet is being generated, or 0.75 if clouds are selected by the -clouds option. The result of the FFT image synthesis is an array of elevation values between 0 and 1. A non-unity power factor exponentiates each of these elevations to the specified power. For example, a power factor of 2 squares each value, while a power factor of 0.5 replaces each with its square root. (Note that exponentiating values between 0 and 1 yields values that remain within that range.) Power factors less than 1 emphasise large-scale elevation changes at the expense of small variations. Power factors greater than 1 increase the roughness of the terrain and, like high fractal dimensions, may require a larger FFT mesh size and/or higher screen resolution to look good.

-saturation sat

Controls the degree of colour saturation of the stars that surround planet pictures and fill starry skies created with the -night option. The default value of 125 creates stars which resemble the sky as seen by the human eye from Earth's surface. Stars are dim; only the brightest activate the cones in the human retina, causing colour to be perceived. Higher values of sat approximate the appearance of stars from Earth orbit, where better dark adaptation, absence of skyglow, and the concentration of light from a given star onto a smaller area of the retina thanks to the lack of atmospheric turbulence enhances the perception of colour. Values greater than 250 create ''science fiction'' skies that, while pretty, don't occur in this universe.

Thanks to the inverse square law combined with Nature's love of mediocrity, there are many, many dim stars for every bright one. This population relationship is accurately reflected in the skies created by ppmforge. Dim, low mass stars live much longer than bright massive stars, consequently there are many reddish stars for every blue giant. This relationship is preserved by ppmforge. You can reverse the proportion, simulating the sky

as seen in a starburst galaxy, by specifying a negative sat value.

-seed num Sets the seed for the random number generator to the integer num. The seed used to create each picture is displayed on standard output (unless suppressed with the -quiet option). Pictures generated with the same seed will be identical. If no -seed is specified, a random seed derived from the date and time will be chosen. Specifying an explicit seed allows you to re-render a picture you particularly like at a higher resolution or with different viewing parameters.

-stars fraction
Specifies the percentage of pixels, in tenths of a percent, which will appear as stars, either surrounding a planet or filling the entire frame if -night is specified. The default fraction is 100.

-xsize|-width width
Sets the width of the generated image to width pixels. The default width is 256 pixels. Images must be at least as wide as they are high; if a width less than the height is specified, it will be increased to equal the height. If you must have a long skinny pixmap, make a square one with ppmforge, then use pnmcut to extract a portion of the shape and size you require.

-ysize|-height height
Sets the height of the generated image to height pixels. The default height is 256 pixels. If the height specified exceeds the width, the width will be increased to equal the height.

All flags can be abbreviated to their shortest unique prefix.

BUGS

The algorithms require the output pixmap to be at least as wide as it is high, and the width to be an even number of pixels. These constraints are enforced by increasing the size of the requested pixmap if necessary.

You may have to reduce the FFT mesh size on machines with 16 bit integers and segmented pointer architectures.

SEE ALSO

pnmcut
(1),
pnmdepth

(1),
ppmdither
(1),
ppmquant
(1),
ppm
(5)

[1] Voss, Richard F., ''Random Fractal Forgeries,'' in

Earnshaw et. al., Fundamental Algorithms for Computer Graphics, Berlin: Springer-Verlag, 1985.

[2] Peitgen, H.-O., and Saupe, D. eds., The Science Of Fractal Images, New York: Springer Verlag, 1988.

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PLUGWARE! If you like this kind of stuff, you may also enjoy ''James Gleick's Chaos--The Software'' for MS-DOS, available for $59.95 from your local software store or directly from Autodesk, Inc., Attn: Science Series, 2320 Marinship Way, Sausalito, CA 94965, USA. Telephone: (800) 688-2344 toll-free or, outside the U.S. (415) 332-2344 Ext 4886. Fax: (415) 289-4718. ''Chaos--The Software'' includes a more comprehensive fractal forgery generator which creates three-dimensional landscapes as well as clouds and planets, plus five more modules which explore other aspects of Chaos. The user guide of more than 200 pages includes an introduction by James Gleick and detailed explanations by Rudy Ruck-

er of the mathematics and algorithms used by each program.

1.136 ppmhist

ppmhist(1) AMIGA (03 April 1989) ↩
ppmhist(1)

NAME
ppmhist - print a histogram of a portable pixmap

SYNOPSIS
ppmhist [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Generates a histogram of the colors in the pixmap.

SEE ALSO

ppm (5), pgmhist (1)

AUTHOR

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1.137 ppmmake

ppmmake(1) AMIGA (24 September 1991) ↩
ppmmake(1)

NAME
ppmmake - create a pixmap of a specified size and color

SYNOPSIS
ppmmake color width height

DESCRIPTION

Produces a portable pixmap of the specified color, width, and height.

The color can be specified in five ways:

- A name, assuming that a pointer to an X11-style color names file was compiled in.
- An X11-style hexadecimal specifier: rgb:r/g/b, where r g and b are each 1- to 4-digit hexadecimal numbers.
- An X11-style decimal specifier: rgbi:r/g/b, where r g and b are floating point numbers between 0 and 1.
- For backwards compatibility, an old-X11-style hexadecimal number: #rgb, #rrggbb, #rrrgggbbb, or #rrrrggggbbbb.
- For backwards compatibility, a triplet of numbers separated by commas: r,g,b, where r g and b are floating point numbers between 0 and 1. (This style was added before MIT came up with the similar rgbi style.)

SEE ALSO

ppm (5), pbmmake (1)

AUTHOR

1.138 ppmmix

```
ppmmix(1)           AMIGA (16 November 1993)           ↩
    ppmmix(1)


NAME
     ppmmix - blend together two portable pixmaps

SYNOPSIS
     ppmmix fadefactor ppmfile1 ppmfile2

DESCRIPTION
     Reads two portable pixmaps as input. Mixes them together
     using the specified fade factor. The fade factor may be in
     the range from 0.0 (only ppmfile1's image data) to 1.0 (only
     ppmfile2's image data).  Anything in between gains a smooth
     blend between the two images.

     The two pixmaps must have the same size.

SEE ALSO

           ppm
           (5)

AUTHOR
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```

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1.139 ppmnorm

ppmnorm(1) AMIGA (7 October 1993) ↩
ppmnorm(1)

NAME
ppmnorm - normalize the contrast in a portable pixmap

SYNOPSIS
ppmnorm [-bpercent N | -bvalue N] [-wpercent N | -wvalue N]
[ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Normalizes the contrast by forcing the lightest pixels to white, the darkest pixels to black, and linearly rescaling the ones in between; and produces a portable pixmap as output.

Works by computing the realtive grey-level of each pixel a'la ppmtopgm, and uses those values to scale the RGB levels. Note that this is different from using pgmnorm on the individual red, green, and blue greymaps (as produced by ppmtorgb3) and recombining them.

OPTIONS
By default, the darkest 2 percent of all pixels are mapped to black, and the lightest 1 percent are mapped to white. You can override these percentages by using the -bpercent and -wpercent flags, or you can specify the exact pixel values to be mapped by using the -bvalue and -wvalue flags. Appropriate numbers for the flags can be gotten from the ppmhist tool. If you just want to enhance the contrast, then choose values at elbows in the histogram; e.g. if value 29 represents 3% of the image but value 30 represents 20%, choose 30 for bvalue. If you want to lighten the image, then set bvalue to 0 and just fiddle with wvalue; similarly, to darken the image, set wvalue to maxval and play with

bvalue.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pgmnorm (1), ppmhist (1), ppm (5)

AUTHOR

Wilson H. Bent. Jr. (whb@usc.edu), heavily based on the pgmnorm filter by Jef Poskanzer.

1.140 ppmntsc

ppmntsc(1) AMIGA (16 November 1993) ↩ ppmntsc(1)

NAME

ppmntsc - make a portable pixmap look like taken from an American TV

SYNOPSIS

ppmntsc dimfactor [ppmfile]

DESCRIPTION

Reads a portable pixmap as input. Dims every other row of image data down by the specified dim factor. This factor may be in the range of 0.0 (the alternate lines are totally black) to 1.0 (original image).

This creates an effect similar to what I've once seen in the

```
     video clip 'You could be mine' by Guns'n'Roses. In the scene
     I'm talking about you can see John Connor on his motorbike,
     looking up from the water trench (?) he's standing in. While
     the camera pulls back, the image gets 'normal' by
     brightening up the alternate rows of it. I thought this
     would be an interesting effect to try in MPEG. I did not yet
     check this out, however. Try for yourself.

SEE ALSO

           ppm
           (5),
           ppmdim
           (1)

AUTHOR
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```

1.141 ppmpat

```
                ppmpat(1)          AMIGA (04 September 1989)          ↩
                   ppmpat(1)
```

NAME

ppmpat - make a pretty pixmap

SYNOPSIS

ppmpat -gingham2|-g2|-gingham3| -g3|-madras|-tartan| -poles|-squig|-camo| -anticamo width height

DESCRIPTION

Produces a portable pixmap of the specified width and height, with a pattern in it.

This program is mainly to demonstrate use of the ppmdraw routines, a simple but powerful drawing library. See the ppmdraw.h include file for more info on using these routines. Still, some of the patterns can be rather pretty. If you have a color workstation, something like ppmpat -squig 300 300 | ppmquant 128 should generate a nice background.

OPTIONS

The different flags specify various different pattern types:

-gingham2

A gingham check pattern. Can be tiled.

-gingham3

A slightly more complicated gingham. Can be tiled.

-madras

A madras plaid. Can be tiled.

-tartan

A tartan plaid. Can be tiled.

-poles

Color gradients centered on randomly-placed poles. May need to be run through ppmquant.

-squig

Squiggley tubular pattern. Can be tiled. May need to be run through ppmquant.

-camo

Camouflage pattern. May need to be run through ppmquant.

-anticamo

Anti-camouflage pattern - like -camo, but ultra-bright colors. May need to be run through ppmquant.

All flags can be abbreviated to their shortest unique prefix.

REFERENCES

Some of the patterns are from "Designer's Guide to Color 3" by Jeanne Allen.

SEE ALSO

pnmtile (1), ppmquant (1), ppm (5)

AUTHOR

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1.142 ppmquant

ppmquant(1) AMIGA (12 January 1991) ↩
ppmquant(1)

NAME
ppmquant - quantize the colors in a portable pixmap down to a specified number

SYNOPSIS
ppmquant [-floyd|-fs] ncolors [ppmfile]
ppmquant [-floyd|-fs] -map mapfile [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Chooses ncolors colors to best represent the image, maps the existing colors to the new ones, and writes a portable pixmap as output.

The quantization method is Heckbert's "median cut".

Alternately, you can skip the color-choosing step by specifying your own set of colors with the -map flag. The mapfile is just a ppm file; it can be any shape, all that matters is the colors in it. For instance, to quantize down to the 8-color IBM TTL color set, you might use:

```
P3
8 1
255
  0   0   0
255   0   0
  0 255   0
  0   0 255
255 255   0
```

```
    255   0 255
      0 255 255
    255 255 255
```

If you want to quantize one pixmap to use the colors in another one, just use the second one as the mapfile. You don't have to reduce it down to only one pixel of each color, just use it as is.

The -floyd/-fs flag enables a Floyd-Steinberg error diffusion step. Floyd-Steinberg gives vastly better results on images where the unmodified quantization has banding or other artifacts, especially when going to a small number of colors such as the above IBM set. However, it does take substantially more CPU time, so the default is off.

All flags can be abbreviated to their shortest unique prefix.

REFERENCES

"Color Image Quantization for Frame Buffer Display" by Paul Heckbert, SIGGRAPH '82 Proceedings, page 297.

SEE ALSO

ppmquantall (1), pnmdepth (1), ppmdither (1), ppm (5)

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ppmquant(1) AMIGA (12 January 1991) ppmquant(1)

AUTHOR

1.143 ppmquantall

ppmquantall(1) AMIGA (27 July 1990) ↩
ppmquantall(1)

NAME

ppmquantall - run ppmquant on a bunch of files all at once, so they share a common colormap

SYNOPSIS

ppmquantall ncolors ppmfile ...

DESCRIPTION

Takes a bunch of portable pixmap as input. Chooses ncolors colors to best represent all of the images, maps the existing colors to the new ones, and overwrites the input files with the new quantized versions.

Verbose explanation: Let's say you've got a dozen pixmaps that you want to display on the screen all at the same time. Your screen can only display 256 different colors, but the pixmaps have a total of a thousand or so different colors. For a single pixmap you solve this problem with ppmquant; this script solves it for multiple pixmaps. All it does is concatenate them together into one big pixmap, run ppmquant on that, and then split it up into little pixmaps again.

(Note that another way to solve this problem is to pre-select a set of colors and then use ppmquant's -map option to separately quantize each pixmap to that set.)

SEE ALSO

ppmquant (1), ppm (5)

BUGS

It's a csh script. Csh scripts are not portable to System V. Scripts in general are not portable to non-Unix environments.

AUTHOR

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1.144 ppmqvga

PPMQVGA(1) AMIGA (local) ↩
PPMQVGA(1)

NAME
ppmqvga - 8 plane quantization

SYNOPSIS
ppmqvga [options] [input file]

DESCRIPTION
ppmqvga quantizes PPM files to 8 planes, with optional Floyd-Steinberg dithering. Input is a PPM file from the file named, or standard input of no file is provided.

Options
-d dither. Apply Floyd-Steinberg dithering to the data

-q quiet. Produces no progress reporting, and no terminal output unless and error occurs.

-v verbose. Produces additional output describing the number of colors found, and some information on the resulting mapping. May be repeated to generate loads of internal table output, but generally only useful once.

EXAMPLES
ppmqvga -d my_image.ppm | ppmtogif >my_image.gif

tgatoppm zombie.tga | ppmqvga | ppmtotif > zombie.tif

SEE ALSO

ppmquant
(1)

DIAGNOSTICS
Error messages if problems, various levels of optional progress reporting.

LIMITATIONS
none known.

AUTHOR

Original by Lyle Rains (lrains@netcom.com) as ppmq256 and ppmq256fs combined, documented, and enhanced by Bill Davidsen (davidsen@crd.ge.com)

Copyright

1.145 ppmrelief

ppmrelief(1) AMIGA (11 January 1991) ↩
ppmrelief(1)

NAME

ppmrelief - run a Laplacian relief filter on a portable pixmap

SYNOPSIS

ppmrelief [ppmfile]

DESCRIPTION

Reads a portable pixmap as input. Does a Laplacian relief filter, and writes a portable pixmap as output.

The Laplacian relief filter is described in "Beyond Photography" by Holzmann, equation 3.19. It's a sort of edge-detection.

SEE ALSO

pgmbentley (1), pgmoil (1), ppm (5)

AUTHOR

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1.146 ppmshift

ppmshift(1) AMIGA (16 November 1993) ↩
ppmshift(1)

NAME
ppmshift - shift lines of a portable pixmap left or right by
a random amount

SYNOPSIS
ppmshift shift [ppmfile]

DESCRIPTION

Reads a portable pixmap as input. Shifts every row of image data to the left or right by a certain amount. The 'shift' parameter determines by how many pixels a row is to be shifted at most.

Another one of those effects I intended to use for MPEG tests. Unfortunately, this program will not help me here - it creates too random patterns to be used for animations. Still, it might give interesting results on still images.

EXAMPLE

Check this out: Save your favourite model's picture from something like alt.binaries.pictures.supermodels (ok, or from any other picture source), convert it to ppm, and process it e.g. like this, assuming the picture is 800x600 pixels:

```
# take the upper half, and leave it like it is
pnmcut 0 0 800 300 cs.ppm >upper.ppm

# take the lower half, flip it upside down, dim it and distort it a little
pnmcut 0 300 800 300 cs.ppm | pnmflip -tb | ppmdim 0.7 |
   ppmshift 10 >lower.ppm

# and concatenate the two pieces
pnmcat -tb upper.ppm lower.ppm >newpic.ppm
```

The resulting picture looks like the image being reflected on a water surface with slight ripples.

SEE ALSO

ppm (5), pnmcut (1), pnmflip (1), ppmdim (1), pnmcat (1)

AUTHOR

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1.147 ppmspread

ppmspread(1) AMIGA (16 November 1993) ↩
ppmspread(1)

NAME
ppmspread - displace a portable pixmap's pixels by a random amount

SYNOPSIS
ppmspread amount [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Moves every pixel around a bit relative to its original position. amount determines by how many pixels a pixel is to be moved around at most.

Pictures processed with this filter will seem to be somewhat dissolved or unfocussed (although they appear more coarse than images processed by something like pnmconvol).

SEE ALSO

ppm
(5),
pnmconvol
(1)

AUTHOR

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1.148 ppmtoacad

ppmtoacad(1) AMIGA (10 October 1991) ↩
ppmtoacad(1)

NAME
ppmtoacad - convert portable pixmap to AutoCAD database or slide

SYNOPSIS
ppmtoacad [-dxb] [-poly] [-background colour] [-white] [-aspect ratio] [-8] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces an AutoCAD(Reg.) slide file or binary database import (.dxb) file as output. If no ppmfile is specified, input is read from standard input.

OPTIONS
-dxb An AutoCAD binary database import (.dxb) file is written. This file is read with the DXBIN command and, once loaded, becomes part of the AutoCAD geometrical database and can be viewed and edited like any other object. Each sequence of identical pixels becomes a separate object in the database; this can result in very large AutoCAD drawing files. However, if you want to trace over a bitmap, it lets you zoom and pan around the bitmap as you wish.

-poly
If the -dxb option is not specified, the output of

ppmtoacad is an AutoCAD slide file. Normally each row of pixels is represented by an AutoCAD line entity. If -poly is selected, the pixels are rendered as filled polygons. If the slide is viewed on a display with higher resolution than the source pixmap, this will cause the pixels to expand instead of appearing as discrete lines against the screen background colour. Regrettably, this representation yields slide files which occupy more disc space and take longer to display.

-background colour
Most AutoCAD display drivers can be configured to use any available colour as the screen background. Some users perfer a black screen background, others white, while splinter groups advocate burnt ocher, tawny puce, and shocking grey. Discarding pixels whose closest AutoCAD colour representation is equal to the background colour can substantially reduce the size of the AutoCAD database or slide file needed to represent a bitmap. If no -background colour is specified, the screen background colour is assumed to be black. Any AutoCAD colour number may be specified as the screen background; colour numbers are assumed to specify the hues defined in the standard AutoCAD 256 colour

palette.

-white
Since many AutoCAD users choose a white screen background, this option is provided as a short-cut. Specifying -white is identical in effect to -background 7.

-aspect ratio
If the source pixmap had non-square pixels, the ratio of the pixel width to pixel height should be specified as ratio. The resulting slide or .dxb file will be corrected so that pixels on the AutoCAD screen will be square. For example, to correct an image made for a 320x200 VGA/MCGA screen, specify -aspect 0.8333.

-8 Restricts the colours in the output file to the 8 RGB shades.

All flags can be abbreviated to their shortest unique prefix.

BUGS

AutoCAD has a fixed palette of 256 colours, distributed along the hue, lightness, and saturation axes. Pixmaps which contain many nearly-identical colours, or colours not closely approximated by AutoCAD's palette, may be poorly rendered.

ppmtoacad works best if the system displaying its output supports the full 256 colour AutoCAD palette. Monochrome, 8 colour, and 16 colour configurations will produce less than optimal results.

When creating a .dxb file or a slide file with the -poly option, ppmtoacad finds both vertical and horizontal runs of identical pixels and consolidates them into rectangular regions to reduce the size of the output file. This is effective for images with large areas of constant colour but it's no substitute for true raster to vector conversion. In particular, thin diagonal lines are not optimised at all by this process.

Output files can be huge.

SEE ALSO

AutoCAD Reference Manual: Slide File Format and Binary Drawing Interchange (DXB) Files,
ppm
(5)

AUTHOR

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1.149 ppmtobmp

ppmtobmp(1) AMIGA (26 Oct 1992) ↩
ppmtobmp(1)

NAME
ppmtobmp - convert a portable pixmap into a BMP file

SYNOPSIS
ppmtobmp [-windows] [-os2] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a Microsoft Windows or OS/2 BMP file as output.

OPTIONS
-windows
Tells the program to produce a Microsoft Windows BMP file.

-os2 Tells the program to produce an OS/2 BMP file. (This is the default.)

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

bmptoppm (1), ppm (5)

AUTHOR

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1.150 ppmtogif

ppmtogif(1) AMIGA (30 June 1993) ↩
ppmtogif(1)

NAME
ppmtogif - convert a portable pixmap into a GIF file

SYNOPSIS
ppmtogif [-interlace] [-sort] [-map mapfile] [-transparent color] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a GIF file as output.

OPTIONS
-interlace
Tells the program to produce an interlaced GIF file.

-sort
Produces a GIF file with a sorted color map.

-map mapfile

Uses the colors found in the mapfile to create the colormap in the GIF file, instead of the colors from ppmfile. The mapfile can be any ppm file; all that matters is the colors in it. If the colors in ppmfile do not match those in mapfile , they are matched to a "best match". A (much) better result can be obtained by using the following filter in advance:

ppmquant -floyd -map mapfile

-transparent color
Mark the given color as transparent in the GIF file. The color is specified as in ppmmake(1). Note that this option outputs a GIF89a format file which might not be understood by your software.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

giftopnm (1), ppmquant (1), ppm (5)

AUTHOR

Based on GIFENCOD by David Rowley <mgardi@watdcsu.waterloo.edu>. Lempel-Ziv compression based on "compress".

1.151 ppmtoicr

ppmtoicr(1) AMIGA (30 July 1990) ↩
ppmtoicr(1)

NAME

ppmtoicr - convert a portable pixmap into NCSA ICR format

SYNOPSIS

ppmtoicr [-windowname name] [-expand expand] [-display display] [-rle] [ppmfile]

DESCRIPTION

Reads a portable pixmap file as input. Produces an NCSA Telnet Interactive Color Raster graphic file as output. If ppmfile is not supplied, ppmtoicr will read from standard input.

Interactive Color Raster (ICR) is a protocol for displaying raster graphics on workstation screens. The protocol is implemented in NCSA Telnet for the Macintosh version 2.3. The ICR protocol shares characteristics of the Tektronix

graphics terminal emulation protocol. For example, escape sequences are used to control the display.

ppmtoicr will output the appropriate sequences to create a window of the dimensions of the input pixmap, create a colormap of up to 256 colors on the display, then load the picture data into the window.

Note that there is no icrtoppm tool - this transformation is one way.

OPTIONS

-windownamename
Output will be displayed in name (Default is to use ppmfile or "untitled" if standard input is read.)

-expandexpand Output will be expanded on display by factor expand (For example, a value of 2 will cause four pixels to be displayed for every input pixel.)

-displaydisplay
Output will be displayed on screen numbered display

-rle Use run-length encoded format for display. (This will nearly always result in a quicker display, but may skew the colormap.)

EXAMPLES

To display a ppm file using the protocol:

```
ppmtoicr ppmfile
```

This will create a window named ppmfile on the display with the correct dimensions for ppmfile, create and download a

colormap of up to 256 colors, and download the picture into the window. The same effect may be achieved by the following sequence:

```
ppmtoicr ppmfile > filename
cat filename
```

To display a GIF file using the protocol in a window titled after the input file, zoom the displayed image by a factor of 2, and run-length encode the data:

```
giftopnm giffile | ppmtoicr -w giffile -r -e 2
```

BUGS

The protocol uses frequent fflush calls to speed up display. If the output is saved to a file for later display via cat, drawing will be much slower. In either case, increasing the Blocksize limit on the display will speed up transmission substantially.

SEE ALSO

ppm
(5)

NCSA Telnet for the Macintosh, University of Illinois at Urbana-Champaign (1989)

AUTHOR

(svpillay@Princeton.EDU), Princeton University Computing and Information Technology.

1.152 ppmtoilbm

```
                ppmtoilbm(1)         AMIGA (31 October 1993)          ↩
                   ppmtoilbm(1)


NAME
     ppmtoilbm - convert a portable pixmap into an ILBM file

SYNOPSIS
     ppmtoilbm [-maxplanes|-mp N] [-fixplanes|-fp N] [-ham6|-
     ham8] [-dcbits|-dcplanesrg [-normal|-hamif|-hamforce -
     dcif|-dcforce|-cmaponly] [-ecs|-aga] [-compress|-nocompress]
     [-cmethod type] [-mapppmfile] [-savemem] [ppmfile]

DESCRIPTION
     Reads a portable pixmap as input.  Produces an ILBM file as
     output.  Supported ILBM types are:

     Normal ILBMs with 1-16 planes.

     Amiga HAM with 3-16 planes.

     24 bit.

     Color map (BMHD + CMAP chunk only, nPlanes = 0).

     Unofficial direct color.
          1-16 planes for each color component.

     Chunks written:
          BMHD, CMAP, CAMG (only for HAM), BODY (not for colormap
          files) unofficial DCOL chunk for direct color ILBM

OPTIONS
     Options marked with (*) can be prefixed with a "no", e.g.
     "-nohamif". All options can be abbreviated to their shortest
     unique prefix.

     -maxplanes | -mp n
          (default 5, minimum 1, maximum 16) Maximum planes to
          write in a normal ILBM.  If the pixmap does not fit
          into <n> planes, ppmtoilbm writes a HAM file (if -hamif
          is used), a 24bit file (if -24if is used) or a direct
          color file (if -dcif is used) or aborts with an error.

     -fixplanes | -fp n
          (min 1, max 16) If a normal ILBM is written, it will
          have exactly <n> planes.

     -hambits | -hamplanes n
          (default 6, min 3, max 16) Select number of planes for
          HAM picture.  The current Amiga hardware supports 6 and
          8 planes, so for now you should only use this values.
```

-normal (default)
Turns off -hamif/-24if/-dcif, -hamforce/-24force/-
dcforce and -cmaponly. Also sets compression type to

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ppmtoilbm(1) AMIGA (31 October 1993) ppmtoilbm(1)

byterun1.

-hamif (*)

-24if (*)

-dcif (*)
Write a HAM/24bit/direct color file if the pixmap does
not fit into <maxplanes> planes.

-hamforce (*)

-24force (*)

-dcforce (*)
Write a HAM/24bit/direct color file.

-dcbits | -dcplanes r g b
(default 5, min 1, max 16). Select number of bits for
red, green & blue in a direct color ILBM.

-ecs (default)
Shortcut for: -hamplanes 6 -maxplanes 5

-aga

Shortcut for: -hamplanes 8 -maxplanes 8

-ham6

Shortcut for: -hamplanes 6 -hamforce

-ham8
Shortcut for: -hamplanes 8 -hamforce

-compress (*) (default)

-cmethod none|byterun1
Compress the BODY chunk. The default compression
method is byterun1. Compression requires building the

ILBM image in memory; turning compression off allows stream-writing of the image, but the resulting file will usually be 30% to 50% larger. Another alternative is the -savemem option, this will keep memory requirements for compression at a minimum, but is very slow.

-map ppmfile
Write a normal ILBM using the colors in <ppmfile> as the colormap. The colormap file also determines the number of planes, a -maxplanes or -fixplanes option is ignored.

-cmaponly
Write a colormap file: only BMHD and CMAP chunks, no BODY chunk, nPlanes = 0.

-savemem
See the -compress option.

BUGS

HAM pictures will always get a grayscale colormap; a real color selection algorithm might give better results. On the other hand, this allows row-by-row operation on HAM images, and all HAM images of the same depth (no. of planes) share a common colormap, which is useful for building HAM animations.

REFERENCES

Amiga ROM Kernel Reference Manual - Devices (3rd Ed.)
Addison Wesley, ISBN 0-201-56775-X

SEE ALSO

ppm (5), ilbmtoppm (1)

AUTHORS

Modified October 1993 by Ingo Wilken
(Ingo.Wilken@informatik.uni-oldenburg.de)

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1.153 ppmtomap

ppmtomap(1) AMIGA (11 August 1993) ↩
ppmtomap(1)

NAME
ppmtomap - extract all colors from a portable pixmap

SYNOPSIS
ppmtomap [-sort] [-square] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a portable pixmap as output, representing a color map of the input file. All N different colors found are put in an Nx1 portable pixmap. This color map file can be used as a mapfile for ppmquant or ppmtogif.

OPTIONS
-sort

```
          Produces a portable pixmap with the colors in some
          sorted order.

     -square
          Produces a (more or less) square output file, instead
          of putting all colors on the top row.

     All flags can be abbreviated to their shortest unique
     prefix.

WARNING
     If you want to use the output file as a mapfile for
     ppmtogif, you first have to do a ppmquant 256, since
     ppmtomap is not limited to 256 colors (but to 65536).

SEE ALSO

           ppmtogif
           (1),
           ppmquant
           (1),
           ppm
           (5)

AUTHOR
     Marcel Wijkstra (wijkstra@fwi.uva.nl).

     Copyright (C) 1989 by Jef Poskanzer.
```


1.154 ppmtomitsu

```
ppmtomitsu(1)          AMIGA (29 Jan 1992)          ↩
   ppmtomitsu(1)
```

NAME

ppmtomitsu - convert a portable pixmap to a Mitsubishi S340-10 file

SYNOPSIS

ppmtomitsu [-sharpness val] [-enlarge val] [-media string] [-copy val] [-dpi300] [-tiny] [ppmfile]

DESCRIPTION

Reads a portable pixmap as input and converts it into a format suitable to be printed by a Mitsubishi S340-10 printer, or any other Mitsubishi color sublimation printer.

The Mitsubishi S340-10 Color Sublimation printer supports 24bit color. Images of the available sizes take so long to transfer that there is a fast method, employing a lookuptable, that ppmtomitsu will use if there is a maximum of 256 colors in the pixmap. ppmtomitsu will try to position your image to the center of the paper, and will rotate your image for you if xsize is larger than ysize. If your image is larger than the media allows, ppmtomitsu will quit with an error message. (We decided that the media were too expensive to have careless users produce misprints.) Once data transmission has started, the job can't be stopped in a sane way without resetting the printer. The printer understands putting together images in the printers memory; ppmtomitsu doesn't utilize this as pnmcat etc provide the same functionality and let you view the result on-screen, too. The S340-10 is the lowest common denominator printer; for higher resolution printers there's the dpi300 option. The other printers also support higher values for enlarge eg, but I don't think that's essential enough to warrant a change in the program.

-sharpness 1-4

'sharpness' designation. Default is to use the current sharpness.

-enlarge 1-3

Enlarge by a factor; Default is 1 (no enlarge)

-media A, A4, AS, A4S

Designate the media you're using. Default is 1184 x 1350, which will fit on any media. A is 1216 x 1350, A4 is 1184 x 1452, AS is 1216 x 1650 and A4S is 1184 x 1754. A warning: If you specify a different media than the printer currently has, the printer will wait until you put in the correct media or switch it off.

-copy 1-9

The number of copies to produce. Default is 1.

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ppmtomitsu(1) AMIGA (29 Jan 1992) ppmtomitsu(1)

-dpi300
Double the number of allowed pixels for a S3600-30 Printer in S340-10 compatibility mode. (The S3600-30 has 300 dpi).

-tiny
Memory-safing, but always slow. The printer will get the data line-by-line in 24bit. It's probably a good idea to use this if your machine starts paging a lot without this option.

REFERENCES
Mitsubishi Sublimation Full Color Printer S340-10 Specifications of Parallel Interface LSP-F0232F

SEE ALSO

ppmquant (1), pnmscale (1), ppm (5)

BUGS
We didn't find any - yet. (Besides, they're called features anyway :-) If you should find one, my email-adress is below.

AUTHOR
 (spz@specklec.mpifr-bonn.mpg.de)

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1.155 ppmtopcx

ppmtopcx(1) AMIGA (09 April 1990) ↩
ppmtopcx(1)

NAME
ppmtopcx - convert a portable pixmap into a PCX file

SYNOPSIS
ppmtopcx [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a PCX file as output.

SEE ALSO

pcxtoppm (1), ppm (5)

AUTHOR

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1.156 ppmtopgm

ppmtopgm(1) AMIGA (23 December 1988) ↩
ppmtopgm(1)

NAME
ppmtopgm - convert a portable pixmap into a portable graymap

SYNOPSIS
ppmtopgm [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a portable graymap as output. The quantization formula used is .299 r + .587 g + .114 b.

Note that although there is a pgmtoppm program, it is not necessary for simple conversions from pgm to ppm, because any ppm program can read pgm (and pbm) files automagically. pgmtoppm is for colorizing a pgm file. Also, see ppmtorgb3 for a different way of converting color to gray.

QUOTE

Cold-hearted orb that rules the night
Removes the colors from our sight
Red is gray, and yellow white
But we decide which is right
And which is a quantization error.

SEE ALSO

pgmtoppm (1), ppmtorgb3 (1), rgb3toppm (1), ppm (5), pgm (5)

AUTHOR

1.157 ppmtopi1

ppmtopi1(1) AMIGA (19 July 1990) ↩
ppmtopi1(1)

NAME
ppmtopi1 - convert a portable pixmap into an Atari Degas .pi1 file

SYNOPSIS
ppmtopi1 [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces an Atari Degas .pi1 file as output.

SEE ALSO

pi1toppm (1), ppm (5), pbmtopi3 (1), pi3topbm (1)

AUTHOR

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1.158 ppmtopict

ppmtopict(1) AMIGA (15 April 1990) ↩
ppmtopict(1)

NAME
ppmtopict - convert a portable pixmap into a Macintosh PICT file

SYNOPSIS
ppmtopict [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a Macintosh PICT file as output.

The generated file is only the data fork of a picture. You will need a program such as mcvert to generate a Macbinary or a BinHex file that contains the necessary information to identify the file as a PICT file to MacOS.

Even though PICT supports 2 and 4 bits per pixel, ppmtopict always generates an 8 bits per pixel file.

BUGS
The picture size field is only correct if the output is to a file since writing into this field requires seeking backwards on a file. However the PICT documentation seems to suggest that this field is not critical anyway since it is only the lower 16 bits of the picture size.

```
SEE ALSO

           picttoppm
           (1),
           ppm
           (5), mcvert(1)

AUTHOR
     Copyright (C) 1990 by Ken Yap <ken@cs.rocester.edu>.
```


1.159 ppmtopj

```
                ppmtopj(1)            AMIGA (13 July 1991)              ↩
                   ppmtopj(1)


NAME
     ppmtopj - convert a portable pixmap to an HP PaintJet file

SYNOPSIS
     ppmtopj [-gamma val] [-xpos val] [-ypos val] [-back
     dark|lite] [-rle] [-center] [-render
     none|snap|bw|dither|diffuse|monodither|monodiffuse|clusterdither| ↩
        monoclusterdither]
     [ppmfile]
```

DESCRIPTION

Reads a portable pixmap as input and converts it into a format suitable to be printed by an HP PaintJet printer.

For best results, the input file should be in 8-color RGB form; i.e. it should have only the 8 binary combinations of full-on and full-off primaries. You could get this by sending the input file through ppmquant -map with a map file such as:

```
P3
8 1
255
0 0 0      255 0 0    0 255 0    0 0 255
255 255 0  255 0 255  0 255 255  255 255 255
```

Or else you could use use ppmdither -red 2 -green 2 -blue

OPTIONS

-rle	Run length encode the image. (This can result in larger images)
-back	Enhance the foreground by indicating if the background is light or dark compated to the foreground.
-render alg	Use an internal rendering algorithm (default dither).
-gamma int	Gamma correct the image using the integet parameter as a gamma (default 0).
-center	Center the image to an 8.5 by 11 page
-xpos pos	Move by pos pixels in the x direction.
-ypos pos	Move by pos pixels in the y direction.

REFERENCES

HP PaintJet XL Color Graphics Printer User's Guide

SEE ALSO

pnmdepth (1), ppmquant (1), ppmdither (1), ppm (5)

BUGS

Most of the options have not been tested because of the price of the paper.

AUTHOR

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1.160 ppmtopjxl

PPMTOPJXL(1) AMIGA (14 March 1991) ↩
PPMTOPJXL(1)

NAME
ppmtopjxl - convert a portable pixmap into an HP PaintJet XL PCL file

SYNOPSIS
ppmtopjxl [-nopack] [-gamma <n>] [-presentation] [-dark] [-diffuse] [-cluster] [-dither] [-xshift <s>] [-yshift <s>] [-xshift <s>] [-yshift <s>] [-xsize|-width|-xscale <s>] [-ysize|-height|-yscale <s>] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces a PCL file suitable for printing on an HP PaintJet XL printer as output.

The generated file is not suitable for printing on a normal PrintJet printer. The -nopack option generates a file which does not use the normal TIFF 4.0 compression method. This file might be printable on a normal PaintJet printer (not an XL).

The -gamma option sets the gamma correction for the image. The useful range for the PaintJet XL is approximately 0.6 to 1.5.

The rendering algorithm used for images can be altered with the -dither, -cluster, and -diffuse options. These options select ordered dithering, clustered ordered dithering, or error diffusion respectively. The -dark option can be used to enhance images with a dark background when they are reduced in size. The -presentation option turns on presentation mode, in which two passes are made over the paper to increase ink density. This should be used only for images where quality is critical.

The image can be resized by setting the -xsize and -ysize options. The parameter to either of these options is interpreted as the number of dots to set the width or height to, but an optional dimension of 'pt' (points), 'dp' (decipoints), 'in' (inches), or 'cm' (centimetres) may be appended. If only one dimension is specified, the other will be scaled appropriately.

The options -width and -height are synonyms of -xsize and -ysize.

The -xscale and -yscale options can alternatively be used to scale the image by a simple factor.

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PPMTOPJXL(1) AMIGA (14 March 1991) PPMTOPJXL(1)

The image can be shifted on the page by using the -xshift and -yshift options. These move the image the specified dimensions right and down.

SEE ALSO

ppm
(5)

AUTHOR

Angus Duggan

1.161 ppmtopuzz

```
ppmtopuzz(1)          AMIGA (22 August 1990)          ↩
   ppmtopuzz(1)


NAME
     ppmtopuzz - convert a portable pixmap into an X11 "puzzle"
     file

SYNOPSIS
     ppmtopuzz [ppmfile]

DESCRIPTION
     Reads a portable pixmap as input.  Produces an X11 "puzzle"
     file as output.  A "puzzle" file is for use with the puzzle
     program included with the X11 distribution - puzzle's -
     picture flag lets you specify an image file.

SEE ALSO
```

```
            ppm
            (5), puzzle(1)

AUTHOR
     Copyright (C) 1991 by Jef Poskanzer.
```


1.162 ppmtorgb3

```
                ppmtorgb3(1)          AMIGA (10 January 1991)          ↩
                   ppmtorgb3(1)
```

NAME

ppmtorgb3 - separate a portable pixmap into three portable graymaps

SYNOPSIS

ppmtorgb3 [ppmfile]

DESCRIPTION

Reads a portable pixmap as input. Writes three portable graymaps as output, one each for red, green, and blue.

The output filenames are constructed by taking the input filename, stripping off any extension, and appending ".red", ".grn", and ".blu". For example, separating lenna.ppm would result in lenna.red, lenna.grn, and lenna.blu. If the input comes from stdin, the names are noname.red, noname.grn, and noname.blu.

SEE ALSO

rgb3toppm (1), ppmtopgm (1), pgmtoppm (1), ppm (5), pgm (5)

AUTHOR

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1.163 ppmtosixel

ppmtosixel(1) AMIGA (26 April 1991) ↩
ppmtosixel(1)

NAME
ppmtosixel - convert a portable pixmap into DEC sixel format

SYNOPSIS
ppmtosixel [-raw] [-margin] [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces sixel commands (SIX) as output. The output is formatted for color printing, e.g. for a DEC LJ250 color inkjet printer.

If RGB values from the PPM file do not have maxval=100, the RGB values are rescaled. A printer control header and a color assignment table begin the SIX file. Image data is written in a compressed format by default. A printer control footer ends the image file.

OPTIONS
-raw If specified, each pixel will be explicitly described in the image file. If -raw is not specified, output will default to compressed format in which identical adjacent pixels are replaced by "repeat pixel" commands. A raw file is often an order of magnitude larger than a compressed file and prints much slower.

-margin
If -margin is not specified, the image will be start at the left margin (of the window, paper, or whatever). If -margin is specified, a 1.5 inch left margin will offset the image.

PRINTING
Generally, sixel files must reach the printer unfiltered. Use the lpr -x option or cat filename > /dev/tty0?.

```
BUGS
     Upon rescaling, truncation of the least significant bits of
     RGB values may result in poor color conversion.  If the
     original PPM maxval was greater than 100, rescaling also
     reduces the image depth.  While the actual RGB values from
     the ppm file are more or less retained, the color palette of
     the LJ250 may not match the colors on your screen.  This
     seems to be a printer limitation.

SEE ALSO

           ppm
           (5)

AUTHOR
     Copyright (C) 1991 by Rick Vinci.




Page 1                                                (printed 3/1/94)
```

1.164 ppmtotga

```
                ppmtotga(1)          AMIGA (28 October 1991)          ↩
                   ppmtotga(1)



NAME
     ppmtotga - convert portable pixmap into a TrueVision Targa
     file

SYNOPSIS
     ppmtotga [-mono|-cmap|-rgb] [-norle] [ppmfile]

DESCRIPTION
     Reads a portable pixmap as input.  Produces a TrueVision
     Targa file as output.

OPTIONS
     -mono
          Forces Targa file to be of type 8 bit monochrome.
          Input must be a portable bitmap or a portable graymap.

     -cmap
          Forces Targa file to be of type 24 bit colormapped.
          Input must be a portable bitmap, a portable graymap or
          a portable pixmap containing no more than 256 distinct
          colors.
```

-rgb Forces Targa file to be of type 24 bit unmapped color.

-norle
Disables run-length encoding, in case you have a Targa reader which can't read run-length encoded files.

All flags can be abbreviated to their shortest unique prefix. If no file type is specified the most highly constained compatible type is used, where monochrome is more constained than colormapped which is in turn more constained than unmapped.

BUGS
Does not support all possible Targa file types. Should really be in PNM, not PPM.

SEE ALSO

tgatoppm
(1),
ppm
(5)

AUTHOR

1.165 ppmtouil

ppmtouil(1) AMIGA (31 August 1990) ↩
ppmtouil(1)

NAME
ppmtouil - convert a portable pixmap into a Motif UIL icon file

SYNOPSIS

```
     ppmtouil [-name uilname] [ppmfile]

DESCRIPTION
     Reads a portable pixmap as input.  Produces a Motif UIL icon
     file as output.

     If the program was compiled with an rgb database specified,
     and a RGB value from the ppm input matches a RGB value from
     the database, then the corresponding color name mnemonic is
     printed in the UIL's colormap.  If no rgb database was
     compiled in, or if the RGB values don't match, then the
     color will be printed with the #RGB, #RRGGBB, #RRRGGGBBB, or
     #RRRRGGGGBBBB hexadecimal format.

OPTIONS
     -name
          Allows you to specify the prefix string which is
          printed in the resulting UIL output.  If not specified,
          will default to the filename (without extension) of the
          ppmfile argument.  If -name is not specified and no
          ppmfile is specified (i.e. piped input), the prefix
          string will default to the string "noname".

     All flags can be abbreviated to their shortest unique
     prefix.

SEE ALSO

           ppm
           (5)

AUTHOR
     Converted by Jef Poskanzer from ppmtoxpm.c, which is
     Copyright (C) 1990 by Mark W. Snitily
```

1.166 ppmtoxpm

```
                ppmtoxpm(1)          AMIGA (Tue Apr 9 1991)          ↩
                   ppmtoxpm(1)
```

NAME

ppmtoxpm - convert a portable pixmap into an X11 pixmap

SYNOPSIS

ppmtoxpm [-name <xpmname>] [-rgb <rgb-textfile>] [<ppmfile>]

DESCRIPTION

Reads a portable pixmap as input. Produces X11 pixmap (version 3) as output which can be loaded directly by the XPM library.

The -name option allows one to specify the prefix string which is printed in the resulting XPM output. If not specified, will default to the filename (without extension) of the <ppmfile> argument. If -name is not specified and <ppmfile> is not specified (i.e. piped input), the prefix string will default to the string "noname".

The -rgb option allows one to specify an X11 rgb text file for the lookup of color name mnemonics. This rgb text file is typically the /usr/lib/X11/rgb.txt of the MIT X11 distribution, but any file using the same format may be used. When specified and a RGB value from the ppm input matches a RGB value from the <rgb-textfile>, then the corresponding color name mnemonic is printed in the XPM's colormap. If -rgb is not specified, or if the RGB values don't match, then the color will be printed with the #RGB, #RRGGBB, #RRRGGGBBB, or #RRRRGGGGBBBB hexadecimal format.

All flags can be abbreviated to their shortest unique prefix.

For example, to convert the file "dot" (found in /usr/include/X11/bitmaps), from xbm to xpm one could specify

```
xbmtopbm dot | ppmtoxpm -name dot
```

or, with a rgb text file (in the local directory)

```
xbmtopbm dot | ppmtoxpm -name dot -rgb rgb.txt
```

BUGS

An option to match the closest (rather than exact) color name mnemonic from the rgb text would be a desirable enhancement.

Truncation of the least significant bits of a RGB value may result in nonexact matches when performing color name mnemonic lookups.

SEE ALSO

ppm
(5)

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ppmtoxpm(1) AMIGA (Tue Apr 9 1991) ppmtoxpm(1)

XPM Manual by Arnaud Le Hors lehors@mirsa.inria.fr

AUTHOR

This tool was developed for Schlumberger Technologies, ATE Division, and with their permission is being made available to the public with the above copyright notice and permission notice.

Upgraded to XPM2 by
Paul Breslaw, Mecasoft SA, Zurich, Switzerland
(paul@mecazh.uu.ch)
Thu Nov 8 16:01:17 1990

Upgraded to XPM version 3 by
Arnaud Le Hors (lehors@mirsa.inria.fr)
Tue Apr 9 1991

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1.167 ppmtoyuv

ppmtoyuv(1) AMIGA (25 March 91) ↩
ppmtoyuv(1)

NAME
ppmtoyuv - convert a portable pixmap into an Abekas YUV file

SYNOPSIS
ppmtoyuv [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces an Abekas YUV file as output.

SEE ALSO

yuvtoppm (1), ppm (5)

AUTHOR
Marc Boucher <marc@PostImage.COM>, based on Example Conversion Program, A60/A64 Digital Video Interface Manual, page 69.

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1.168 ppmtoyuvsplit

ppmtoyuvsplit(1) AMIGA (9 September 1993) ↩
ppmtoyuvsplit(1)

NAME
ppmtoyuvsplit - convert a portable pixmap into 3 subsampled raw YUV files

SYNOPSIS
ppmtoyuvsplit basename [ppmfile]

DESCRIPTION
Reads a portable pixmap as input. Produces 3 raw files basename.Y, basename.U and basename.V as output. These

```
     files are the subsampled raw YUV representation of the input
     pixmap, as required by the Stanford MPEG codec. The
     subsampling is done by arithmetic mean of 4 pixels colors
     into one. The YUV values are scaled according to CCIR.601,
     as assumed by MPEG.

SEE ALSO
     mpeg(1),
           ppm
           (5)

AUTHOR
     Copyright (C) 1993 by Andre Beck. (Andre_Beck@IRS.Inf.TU-
     Dresden.de)

     Based on ppmtoyuv.c
```


1.169 psidtopgm

psidtopgm(1) AMIGA (02 August 89) ↩
psidtopgm(1)

NAME

psidtopgm - convert PostScript "image" data into a portable graymap

SYNOPSIS

psidtopgm width height bits/sample [imagedata]

DESCRIPTION

Reads the "image" data from a PostScript file as input. Produces a portable graymap as output.

This is a very simple and limited program, and is here only because so many people have asked for it. To use it you have to manually extract the readhexstring data portion from your PostScript file, and then give the width, height, and bits/sample on the command line. Before you attempt this, you should at least read the description of the "image" operator in the PostScript Language Reference Manual.

It would probably not be too hard to write a script that uses this filter to read a specific variety of PostScript image, but the variation is too great to make a general-purpose reader. Unless, of course, you want to write a full-fledged PostScript interpreter...

SEE ALSO

pnmtops (1), pgm (5)

AUTHOR

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1.170 pstopnm

pstopnm(1) AMIGA (28 December 92) pstopnm(1)

NAME

pstopnm - convert a PostScript file into a portable anymap

SYNOPSIS

pstopnm [-forceplain] [-help] [-llx s] [-lly s] [-landscape] [-portrait] [-nocrop] [-pbm |-pgm |-ppm] [-urx s] [-ury s] [-verbose] [-xborder n] [-xmax n] [-xsize f] [-yborder f] [-ymax n] [-ysize n] psfile[.ps]

DESCRIPTION

Reads a PostScript file as input. Produces portable anymap files as output. This program is just a useful shell script that runs GhostScript to render a PostScript into one or more pnm files. Pstopnm will create as many files as the number of pages in the Postscript document. If the input file is named psfile.ps, the name of the files will be psfile001.ppm, psfile002.ppm, etc.

The program maps a rectangular portion of the PostScript document into an image file according to the command line options. The selected area will always be centered in the output file, and may have borders around it. The image area to be extracted from the PostScript file and rendered into a portable anymap is defined by four numbers, the lower left corner and the upper right corner x and y coordinates. These coordinates are usually specified by the BoundingBox comment in the PostScript file header, but they can be overridden by the user by specifying one or more of the following flags: -llx, -lly, -urx, and -ury. The presence and thickness of a border to be left around the image area is controlled by the use of the flags -xborder and -yborder. If BoundingBox parameters are not found, and image area coordinates are not specified on the command line, default values are used. Unless both output file width and height are specified via the -xsize and -ysize flags, the program will map the document into the output image by preserving its aspect ratio.

OPTIONS

-forceplain
forces the output file to be a plain (i.e. not "raw") portable anymap.

-help
prints the command syntax.

-llx bx
selects bx as the lower left corner x coordinate (in inches).

-lly by
selects by as the lower left corner y coordinate (in

inches).

-landscape
renders the image in landscape mode.

-portrait
renders the image in portrait mode.

-nocrop
does not crop the output image dimensions to match the PostScript image area dimensions.

-pbm -pgm -ppm
selects the format of the output file. By default, all files are rendered as portable pixmaps (ppm format).

-urx tx
selects tx as the upper right corner x coordinate (in inches).

-ury ty
selects ty as the upper right corner y coordinate (in inches).

-verbose
prints processing information to stdout.

-xborder frac

specifies that the border width along the Y axis should be frac times the document width as specified by the bounding box comment in the PostScript file header. The default value is 0.1.

-xmax xs
specifies that the maximum output image width should have a size less or equal to xs pixels (default: 612).

-xsize xs
specifies that the output image width must be exactly xs pixels.

-yborder frac
specifies that the border width along the X axis should be frac times the document width as specified by the bounding box comment in the PostScript file header. The default value is 0.1.

-ymax ys
specifies that the maximum output image height should have a size less or equal to ys pixels (default: 792).

-ysize ys

specifies that the output image height must be exactly ys pixels.

BUGS

The program will produce incorrect results with PostScript files that initialize the current transformation matrix. In these cases, page translation and rotation will not have any effect. To render these files, probably the best bet is to use the following flags:

```
pstopnm -xborder 0 -yborder 0 -portrait -nocrop file.ps
```

Additional flags may be needed if the document is supposed to be rendered on a medium different from letter-size paper.

SEE ALSO

gs(l), pstofits(l)

COPYRIGHT

AUTHOR
Alberto Accomazzi, WIPL, Center for Astrophysics.

1.171 qrttoppm

qrttoppm(1) AMIGA (25 August 1989) ↩
qrttoppm(1)

NAME
qrttoppm - convert output from the QRT ray tracer into a portable pixmap

SYNOPSIS
qrttoppm [qrtfile]

DESCRIPTION

Reads a QRT file as input. Produces a portable pixmap as output.

SEE ALSO

ppm
(5)

AUTHOR

1.172 rasttopnm

```
                rasttopnm(1)         AMIGA (13 January 1991)          ↩
                   rasttopnm(1)



NAME
     rasttopnm - convert a Sun rasterfile into a portable anymap

SYNOPSIS
     rasttopnm [rastfile]

DESCRIPTION
     Reads a Sun rasterfile as input.  Produces a portable anymap
     as output.  The type of the output file depends on the input
     file - if it's black & white, a pbm file is written, else if
     it's grayscale a pgm file, else a ppm file.  The program
     tells you which type it is writing.

SEE ALSO

           pnmtorast
           (1),
           pnm
           (5)

AUTHOR
     Copyright (C) 1989, 1991 by Jef Poskanzer.
```

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1.173 rawtopgm

```
                rawtopgm(1)           AMIGA (15 June 1993)           ↩
                   rawtopgm(1)


NAME
     rawtopgm - convert raw grayscale bytes into a portable
     graymap

SYNOPSIS
     rawtopgm [-headerskip N] [-rowskip N] [-tb|-topbottom]
     [width height] [imagedata]

DESCRIPTION
     Reads raw grayscale bytes as input.  Produces a portable
     graymap as output.  The input file is just grayscale bytes.
     If you don't specify the width and height on the command
     line, the program will check the size of the image and try
     to make a quadratic image of it. It is an error to supply a
     non quadratic image without specifying width and height.
     The maxval is assumed to be 255.

OPTIONS
     -headerskip
          If the file has a header, you can use this flag to skip
          over it.

     -rowskip
          If there is padding at the ends of the rows, you can
          skip it with this flag.  Note that rowskip can be a
          real number.  Amazingly, I once had an image with 0.376
          bytes of padding per row.  This turned out to be due to
          a file-transfer problem, but I was still able to read
          the image.

     -tb -topbottom
          Flips the image upside down.  The first pixel in a pgm
          file is in the lower left corner of the image.  For
```

conversion from images with the first pixel in the upper left corner (e.g. the Molecular Dynamics and Leica confocal formats) this flips the image right. This is equivalent to rawtopgm [file] | pnmflip -tb .

BUGS

If you don't specify the image width and height, the program will try to read the entire image to a memory buffer. If you get a message that states that you are out of memory, try to specify the width and height on the command line. Also, the -tb option consumes much memory.

SEE ALSO

pgm (5), rawtoppm (1), pnmflip (1)

AUTHORS

Modified June 1993 by Oliver Trepte, oliver@fysik4.kth.se

1.174 rawtoppm

rawtoppm(1) AMIGA (06 February 1991) rawtoppm(1)

NAME

rawtoppm - convert raw RGB bytes into a portable pixmap

SYNOPSIS

rawtoppm [-headerskip N] [-rowskip N] [-rgb|-rbg|-grb |-gbr|-brg|-bgr] [-interpixel|-interrow] width height [imagedata]

DESCRIPTION

Reads raw RGB bytes as input. Produces a portable pixmap as output. The input file is just RGB bytes. You have to specify the width and height on the command line, since the program obviously can't get them from the file. The maxval is assumed to be 255. If the resulting image is upside down, run it through pnmflip -tb .

```
OPTIONS
     -headerskip
          If the file has a header, you can use this flag to skip
          over it.

     -rowskip
          If there is padding at the ends of the rows, you can
          skip it with this flag.

     -rgb -rbg -grb -gbr -brg -bgr
          These flags let you specify alternate color orders.
          The default is -rgb.

     -interpixel -interrow
          These flags let you specify how the colors are
          interleaved.  The default is -interpixel, meaning
          interleaved by pixel.  A byte of red, a byte of green,
          and a byte of blue, or whatever color order you
          specified.  -interrow means interleaved by row - a row
          of red, a row of green, a row of blue, assuming
          standard rgb color order.  An -interplane flag  - all
          the red pixels, then all the green, then all the blue -
          would be an obvious extension, but is not implemented.
          You could get the same effect by splitting the file
          into three parts (perhaps using dd), turning each part
          into a PGM file with rawtopgm, and then combining them
          with rgb3toppm.

SEE ALSO

           ppm
           (5),
           rawtopgm
           (1),
           rgb3toppm
           (1),
           pnmflip
           (1)

AUTHOR
     Copyright (C) 1991 by Jef Poskanzer.




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```

1.175 rgb3toppm

rgb3toppm(1) AMIGA (15 February 1990) ↩
rgb3toppm(1)

NAME

rgb3toppm - combine three portable graymaps into one portable pixmap

SYNOPSIS

rgb3toppm redpgmfile greenpgmfile bluepgmfile

DESCRIPTION

Reads three portable graymaps as input. Combines them and produces one portable pixmap as output.

SEE ALSO

ppmtorgb3 (1), pgmtoppm (1), ppmtopgm (1), ppm (5), pgm (5)

AUTHOR

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1.176 sgitopnm

```
                sgitopnm(1)          AMIGA (29 Januar 1994)          ↩
                   sgitopnm(1)


NAME
     sgitopnm - convert a SGI image file to a portable anymap

SYNOPSIS
     sgitopnm [-verbose] [SGIfile]

DESCRIPTION
     Reads an SGI image file as input.  Produces a PGM image for
     a 2-dimensional (1 channel) input file, and a PPM image for
     a 3-dimensional (3 or more channels) input file.

OPTIONS
     -verbose
          Give some information about the SGI image file.

BUGS
     Probably.

REFERENCES
     SGI Image File Format documentation (draft v0.95) by Paul
     Haeberli (paul@sgi.com).  Available via ftp at
     sgi.com:graphics/SGIIMAGESPEC.

SEE ALSO

           pnm
           (5),
           pnmtosgi
           (1)
```

```
AUTHOR
     Copyright (C) 1994 by Ingo Wilken
     (Ingo.Wilken@informatik.uni-oldenburg.de)
```


1.177 sirtopnm

```
                sirtopnm(1)          AMIGA (20 March 1991)          ↩
                   sirtopnm(1)


NAME
     sirtopnm - convert a Solitaire file into a portable anymap

SYNOPSIS
     sirtopnm [sirfile]

DESCRIPTION
     Reads a Solitaire Image Recorder file as input.  Produces a
     portable anymap as output.  The type of the output file
     depends on the input file - if it's an MGI TYPE 17 file, a
     pgm file is written. If it's an MGI TYPE 11 file, a ppm file
     is written.  The program tells you which type it is writing.
```

BUGS
SEE ALSO

pnmtosir
(1),
pnm
(5)

AUTHOR

1.178 sldtoppm

sldtoppm(1) AMIGA (10 October 1991) ↩
sldtoppm(1)

NAME

sldtoppm - convert an AutoCAD slide file into a portable pixmap

SYNOPSIS

sldtoppm [-adjust] [-dir] [-height|-ysize s] [-info] [-lib|-Lib name] [-scale s] [-verbose] [-width|-xsize s] [slidefile]

DESCRIPTION

Reads an AutoCAD(Reg.) slide file and outputs a portable pixmap. If no slidefile is specified, input is read from standard input. The ppmdraw library is used to convert the vector and polygon information in the slide file to a pixmap; see the file ppmdraw.h for details on this package.

OPTIONS

-adjust

If the display on which the slide file was created had non-square pixels, when the slide is processed with sldtoppm and the -adjust option is not present, the following warning will appear:

Warning - pixels on source screen were non-square.
Specifying -adjust will correct image width to compensate.

Specifying the -adjust option causes sldtoppm to scale the width of the image so that pixels in the resulting portable pixmap are square (and hence circles appear as true circles, not ellipses). The scaling is performed in the vector domain, before scan converting the objects. The results are, therefore, superior in appearance to what you'd obtain were you to perform the equivalent scaling with pnmscale after the bitmap had been created.

-dir The input is assumed to be an AutoCAD slide library file. A directory listing each slide in the library is printed on standard error.

-height size

Scales the image in the vector domain so it is size pixels in height. If no -width or -xsize option is specified, the width will be adjusted to preserve the pixel aspect ratio.

-info

Dump the slide file header on standard error, displaying the original screen size and aspect ratio among other information.

-lib name

Extracts the slide with the given name from the slide

library given as input. The specified name is converted to upper case.

-Lib name
Extracts the slide with the given name from the slide library given as input. The name is used exactly as specified; it is not converted to upper case.

-scale s
Scales the image by factor s, which may be any floating point value greater than zero. Scaling is done after aspect ratio adjustment, if any. Since scaling is performed in the vector domain, before rasterisation, the results look much better than running the output of sldtoppm through pnmscale.

-verbose
Dumps the slide file header and lists every vector and polygon in the file on standard error.

-width size
Scales the image in the vector domain so it is size pixels wide. If no -height or -ysize option is specified, the height will be adjusted to preserve the pixel aspect ratio.

-xsize size
Scales the image in the vector domain so it is size pixels wide. If no -height or -ysize option is specified, the height will be adjusted to preserve the pixel aspect ratio.

-ysize size
Scales the image in the vector domain so it is size pixels in height. If no -width or -xsize option is specified, the width will be adjusted to preserve the pixel aspect ratio.

All flags can be abbreviated to their shortest unique prefix.

BUGS
Only Level 2 slides are converted. Level 1 format has been obsolete since the advent of AutoCAD Release 9 in 1987, and was not portable across machine architectures.

Slide library items with names containing 8 bit (such as ISO) or 16 bit (Kanji, for example) characters may not be found when chosen with the -lib option unless sldtoppm has been built with character set conversion functions appropriate to the locale. You can always retrieve slides from libraries regardless of the character set by using the

-Lib option and specifying the precise name of library member. Use the -dir option to list the slides in a library if you're unsure of the exact name.

SEE ALSO

AutoCAD Reference Manual: Slide File Format,
pnmscale
(1),

ppm
(5)

AUTHOR

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1.179 spctoppm

spctoppm(1) AMIGA (19 July 1990) ↩
spctoppm(1)

NAME
spctoppm - convert an Atari compressed Spectrum file into a portable pixmap

SYNOPSIS
spctoppm [spcfile]

DESCRIPTION
Reads an Atari compressed Spectrum file as input. Produces a portable pixmap as output.

SEE ALSO

sputoppm
(1),
ppm
(5)

AUTHOR

Poskanzer.

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1.180 spottopgm

spottopgm(1L) AMIGA spottopgm(1L)

NAME

spottopgm - convert SPOT satellite images to Portable Greymap format

SYNTAX

```
     spottopgm [-1|2|3] [Firstcol Firstline Lastcol Lastline]
     inputfile

OPTIONS
     -1|2|3  Extract the given colour from the SPOT image. The
             colours are infra-red, visible light and ultra-
             violet, although I don't know which corresponds to
             which number. If the image is in colour, this will
             be announced on standard error. The default colour
             is 1.

     Firstcol Firstline Lastcol Lastline
             Extract the specified rectangle from the SPOT image.
             Most SPOT images are 3000 lines long and 3000 or
             more columns wide. Unfortunately the SPOT format
             only gives the width and not the length. The width
             is printed on standard error. The default rectangle
             is the width of the input image by 3000 lines.

DESCRIPTION
     Spottopgm converts the named inputfile into Portable Greymap
     format, defaulting to the first color and the whole SPOT
     image unless specified by the options.

INSTALLATION
     You must edit the source program and either define
     BIG_ENDIAN or LITTLE_ENDIAN, and fix the typedefs for
     uint32_t, uint16_t and uint8_t appropriately.

BUGS
     Currently spottopgm doesn't determine the length of the
     input file; this would involve two passes over the input
     file. It defaults to 3000 lines instead.

     Spottopgm could extract a three-color image (ppm), but I
     didn't feel like making the program more complicated than it
     is now. Besides, there is no one-to-one correspondence
     between red, green, blue and infra-red, visible and ultra-
     violet.

     I've only had a limited number of SPOT images to play with,
     and therefore wouldn't guarantee that this will work on any
     other images.

AUTHOR
     Warren Toomey  wkt@csadfa.cs.adfa.oz.au

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```

SEE ALSO

The rest of the Pbmplus suite.

1.181 sputoppm

sputoppm(1) AMIGA (19 July 1990) ↩
sputoppm(1)

NAME
sputoppm - convert an Atari uncompressed Spectrum file into a portable pixmap

SYNOPSIS
sputoppm [spufile]

DESCRIPTION
Reads an Atari uncompressed Spectrum file as input.
Produces a portable pixmap as output.

SEE ALSO

spctoppm (1), ppm (5)

AUTHOR

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1.182 tgatoppm

```
                tgatoppm(1)          AMIGA (26 August 1989)          ↩
                   tgatoppm(1)


NAME
     tgatoppm - convert TrueVision Targa file into a portable
     pixmap

SYNOPSIS
     tgatoppm [-debug] [tgafile]

DESCRIPTION
     Reads a TrueVision Targa file as input.  Produces a portable
     pixmap as output.

OPTIONS
     -debug
          Causes the header information to be dumped to stderr.

     All flags can be abbreviated to their shortest unique
     prefix.  Should really be in PNM, not PPM.

SEE ALSO

           ppmtotga
           (1),
           ppm
           (5)

AUTHOR
```

Partially based on tga2rast, version 1.0, by Ian J. MacPhedran.

1.183 tifftopnm

tifftopnm(1) AMIGA (13 January 1991) ↩
tifftopnm(1)

NAME
tifftopnm - convert a TIFF file into a portable anymap

SYNOPSIS
tifftopnm [-headerdump] tifffile

DESCRIPTION
Reads a TIFF file as input. Produces a portable anymap as output. The type of the output file depends on the input file - if it's black & white, a pbm file is written, else if

it's grayscale a pgm file, else a ppm file. The program tells you which type it is writing.

OPTIONS

-headerdump

Dump TIFF file information to stderr. This information may be useful in debugging TIFF file conversion problems.

All flags can be abbreviated to their shortest unique prefix.

SEE ALSO

pnmtotiff (1), pnm (5)

BUGS

This program is not self-contained. To use it you must fetch the TIFF Software package listed in the OTHER.SYSTEMS file and configure PBMPLUS to use libtiff. See PBMPLUS's Makefile for details on this configuration.

AUTHOR

Derived by Jef Poskanzer from tif2ras.c, which is Copyright (c) 1990 by Sun Microsystems, Inc. Author: Patrick J. Naughton (naughton@wind.sun.com).

1.184 xbmtopbm

```
                xbmtopbm(1)          AMIGA (31 August 1988)          ↩
                   xbmtopbm(1)


NAME
     xbmtopbm - convert an X11 or X10 bitmap into a portable
     bitmap

SYNOPSIS
     xbmtopbm [bitmapfile]

DESCRIPTION
     Reads an X11 or X10 bitmap as input.  Produces a portable
     bitmap as output.

SEE ALSO

           pbmtoxbm
           (1),
           pbmtox10bm
           (1),
           pbm
           (5)

AUTHOR
     Copyright (C) 1988 by Jef Poskanzer.
```

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1.185 ximtoppm

ximtoppm(1) AMIGA (25 March 1990) ↩
ximtoppm(1)

NAME
ximtoppm - convert an Xim file into a portable pixmap

SYNOPSIS
ximtoppm [ximfile]

DESCRIPTION
Reads an Xim file as input. Produces a portable pixmap as output. The Xim toolkit is included in the contrib tree of the X.V11R4 release.

SEE ALSO

ppm
(5)

AUTHOR

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1.186 xpmtoppm

xpmtoppm(1) AMIGA (16 August 1990) ↩
xpmtoppm(1)

NAME
xpmtoppm - convert an X11 pixmap into a portable pixmap

SYNOPSIS
xpmtoppm [xpmfile]

DESCRIPTION
Reads an X11 pixmap (XPM version 1 or 3) as input. Produces a portable pixmap as output.

KNOWN BUGS
The support to XPM version 3 is limited. Comments can only be single lines and there must be for every pixel a default colorname for a color type visual.

SEE ALSO

```
            ppmtoxpm
            (1),
            ppm
            (5)
      XPM Manual by Arnaud Le Hors lehors@mirsa.inria.fr

AUTHOR
      Copyright (C) 1991 by Jef Poskanzer.

      Upgraded to support XPM version 3 by
          Arnaud Le Hors (lehors@mirsa.inria.fr)
          Tue Apr 9 1991
```


1.187 xvminitoppm

```
                  xvminitoppm(1)      AMIGA (14 December 1993)        ↩
                     xvminitoppm(1)


NAME
```

xvminitoppm - convert a XV "thumbnail" picture to PPM

SYNOPSIS

xvminitoppm [xvminipic]

DESCRIPTION

Reads a XV "thumbnail" picture (a miniature picture generated by the "VisualSchnauzer" browser) as input. Produces a portable pixmap as output.

SEE ALSO

ppm (5), xv(1)

AUTHOR

1.188 xwdtopnm

```
                xwdtopnm(1)          AMIGA (11 January 1991)          ↩
                   xwdtopnm(1)


NAME
     xwdtopnm - convert a X11 or X10 window dump file into a
     portable anymap

SYNOPSIS
     xwdtopnm [xwdfile]

DESCRIPTION
     Reads a X11 or X10 window dump file as input.  Produces a
     portable anymap as output.  The type of the output file
     depends on the input file - if it's black & white, a pbm
     file is written, else if it's grayscale a pgm file, else a
     ppm file.  The program tells you which type it is writing.

     Using this program, you can convert anything on an X
     workstation's screen into an anymap.  Just display whatever
     you're interested in, do an xwd, run it through xwdtopnm,
     and then use pnmcut to select the part you want.

BUGS
     I haven't tested this tool with very many configurations, so
     there are probably bugs.  Please let me know if you find
     any.

SEE ALSO

           pnmtoxwd
           (1),
           pnm
           (5), xwd(1)

AUTHOR
     Copyright (C) 1989, 1991 by Jef Poskanzer.
```

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1.189 ybmtopbm

ybmtopbm(1) AMIGA (06 March 1990) ↩
ybmtopbm(1)

NAME
ybmtopbm - convert a Bennet Yee "face" file into a portable bitmap

SYNOPSIS
ybmtopbm [facefile]

DESCRIPTION
Reads a file acceptable to the face and xbm programs by Bennet Yee (bsy+@cs.cmu.edu). Writes a portable bitmap as output.

SEE ALSO

pbmtoybm (1), pbm (5), face(1), face(5), xbm(1)

AUTHOR

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```

1.190 yuvsplittoppm

```
                yuvsplittoppm(1)      AMIGA (26 August 93)        ↩
                   yuvsplittoppm(1)


NAME
     yuvsplittoppm - convert a Y- an U- and a V-file into a
     portable pixmap.

SYNOPSIS
     yuvsplittoppm basename width height [-ccir601]

DESCRIPTION
     Reads three files, containing the YUV components, as input.
     These files are basename.Y, basename.U and basename.V .
     Produces a portable pixmap on stdout.
```

Since the YUV files are raw files, the dimensions width and height must be specified on the command line.

OPTIONS

-ccir601

Assumes that the YUV triplets are scaled into the smaller range of the CCIR 601 (MPEG) standard. Else, the JFIF (JPEG) standard is assumed.

SEE ALSO

ppmtoyuvsplit (1), yuvtoppm (1), ppm (5)

AUTHOR

Marcel Wijkstra <wijkstra@fwi.uva.nl>, based on ppmtoyuvsplit.

1.191 yuvtoppm

```
                yuvtoppm(1)            AMIGA (25 March 91)            ↩
                   yuvtoppm(1)


NAME
     yuvtoppm - convert Abekas YUV bytes into a portable pixmap

SYNOPSIS
     yuvtoppm width height [imagedata]

DESCRIPTION
     Reads raw Abekas YUV bytes as input.  Produces a portable
     pixmap as output.  The input file is just YUV bytes.  You
     have to specify the width and height on the command line,
     since the program obviously can't get them from the file.
     The maxval is assumed to be 255.

SEE ALSO

           ppmtoyuv
           (1),
           ppm
           (5)

AUTHOR
     Marc Boucher <marc@PostImage.COM>, based on Example
     Conversion Program, A60/A64 Digital Video Interface Manual,
     page 69.

     Copyright (C) 1991 by DHD PostImage Inc.

     Copyright (C) 1987 by Abekas Video Systems Inc.
```

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1.192 zeisstopnm

zeisstopnm(1) AMIGA (15 June 1993) ↩
zeisstopnm(1)

NAME
zeisstopnm - convert a Zeiss confocal file into a portable anymap

SYNOPSIS
zeisstopnm [-pgm | -ppm] [zeissfile]

DESCRIPTION
Reads a Zeiss confocal file as input. Produces a portable anymap as output. The type of the output file depends on the input file - if it's grayscale a pgm file, else a ppm file will be produced. The program tells you which type it is writing.

OPTIONS
-pgm Force the output to be a pgm file.

-ppm Force the output to be a ppm file.

SEE ALSO

pnm
(5)

AUTHOR

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