NETPBM 7/12/93

COLLABORATORS

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NETPBM 7/12/93

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        NETPBM Image conversion and processing package
                  Release 7 December 1993

                     Amiga information


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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.
```

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```
        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.
```

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

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
     Copyright (C) 1992 by David W. Sanderson.

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

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
     Copyright (C) 1988 by Jef Poskanzer.

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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
     Copyright (C) 1989 by Jef Poskanzer.

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
     Copyright (C) 1989 by Jef Poskanzer, with modifications by
     Daniel Briggs (dbriggs@nrao.edu) and Alberto Accomazzi
     (alberto@cfa.harvard.edu).

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

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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
     Copyright (c) 1993 by David Koblas (koblas@netcom.com)

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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

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

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).

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

    -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
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    software is not public domain.

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.

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.

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

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
     Copyright (C) 1991 by Jamie Zawinski and Jef Poskanzer.

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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
     Copyright (C) 1989 by Jef Poskanzer.

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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

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

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)

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       Poskanzer.

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       express or implied warranty.

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
     Copyright (C) 1988, 1991 by Jef Poskanzer.

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

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
     Copyright (C) 1988 by Jef Poskanzer.

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)

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     Poskanzer.

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notice and this permission notice appear in supporting
documentation. This software is provided "as is" without
express or implied warranty.

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.

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
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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
      Copyright (C) 1993 by Jef Poskanzer and George Phillips

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
     Copyright (C) 1990 by Ken Yap

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
     Copyright (C) 1988, 1992 by Jef Poskanzer.

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.

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
Copyright 1989 by Mike Parker.

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
     Copyright (C) 1989 by Jef Poskanzer.

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

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

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
     Copyright (C) 1991 by John Tiller
     (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
     Copyright (C) 1989 by Paul Haeberli <paul@manray.sgi.com>.

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
     Copyright (C) 1988 by David Beckemeyer (bdt!david) and Jef
     Poskanzer.

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1.54   pbmtogo

pbmtogo(1)   AMIGA (24 November 1989)   pbmtogo(1)

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.

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

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.

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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
```

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
     Copyright (C) 1989 by Jef Poskanzer.

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
     Copyright (C) 1990 by Angus Duggan Copyright (C) 1989 by Jef
     Poskanzer.

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     express or implied warranty.

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
     Copyright (C) 1988 by David Beckemeyer (bdt!david) and Jef
     Poskanzer.

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

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
     Copyright (C) 1988 by Jef Poskanzer.

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
     Copyright (C) 1988 by Jef Poskanzer.

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
     Copyright (C) 1991 by Jamie Zawinski and Jef Poskanzer.

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
```

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
     Copyright (C) 1989 by Jef Poskanzer.

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.

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

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 $\ast$ 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
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  0
```

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

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

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.

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
     Copyright (C) 1990 by Wilson Bent (whb@hoh-2.att.com)

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

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

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

        Voice: 038/33 76 33

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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 Rucker of the mathematics and algorithms used by each
    program.

pgmcrater(1)   pgmcrater(1)

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
     Copyright (C) 1989 by Jef Poskanzer.

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).

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
     Copyright (C) 1993 by Frank Neumann

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.

     Copyright (C) 1989 by Jef Poskanzer.

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
     Copyright (C) 1990 by Wilson Bent (whb@hoh-2.att.com)

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.

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
               Copyright (C) 1991 by Texas Agricultural Experiment Station,
               employer for hire of James Darrell McCauley.
```

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```

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
    Copyright (C) 1991 by Jef Poskanzer.

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
     Copyright (C) 1991 by Jamie Zawinski and Jef Poskanzer.

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
    Copyright (C) 1989 by Jef Poskanzer.

1.87 pgmtoppm

```
pgmtoppm(1)              AMIGA (11 January 1991)              pgmtoppm(1)
```

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
     Copyright (C) 1991 by Steve Belczyk (seb3@gte.com) and Jef
     Poskanzer.

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.

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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)

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

AUTHOR
    Copyright 1993 George Phillips

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
     Copyright (C) 1991 by Christos Zoulas.

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
     Copyright (C) 1989, 1991 by Jef Poskanzer.

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.

          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.)

          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.

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

        -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
        Copyright (C) 1992 by Alberto Accomazzi, Smithsonian
        Astrophysical Observatory.

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

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
     Copyright (C) 1989 by Jef Poskanzer.

1.97   pnmcomp

pnmcomp(1)   AMIGA (21 February 1989)   pnmcomp(1)

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
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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
     Copyright (C) 1989 by Jef Poskanzer.

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
     Copyright (C) 1989 by Jef Poskanzer.

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
     Copyright (C) 1989, 1991 by Jef Poskanzer.

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
     Copyright (C) 1991 by Jef Poskanzer.

1.104 pnmflip

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
     Copyright (C) 1989 by Jef Poskanzer.

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
     Copyright (C) 1991 by Bill Davidson and Jef Poskanzer.

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

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

        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).

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.

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

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
     Copyright (C) 1991 by Jef Poskanzer.

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

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

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.

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

     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.

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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     express or implied warranty.

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
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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
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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:
         +-------+ +-------+
         | | |\   \
         | OLD | | \ NEW \
         | | |an\   \

```
      +-------+  |gle+-------+
If the angle is negative, it shears the other way:
      +-------+  |-an+-------+
      |       |  |gl/        /
      |  OLD  |  |e/  NEW   /
      |       |  |/        /
      +-------+  +-------+
```
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
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```

## 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.

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
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```
pnmtile(1)                   AMIGA (13 May 1989)                   pnmtile(1)
```

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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        Digital Equipment Corporation, CEC Karlsruhe
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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
            Copyright (C) 1989 by Wilson H. Bent (whb@hoh-2.att.com),
            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

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pnmtops(1)   AMIGA (26 October 1991)   pnmtops(1)

    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
          Copyright (C) 1989, 1991 by Jef Poskanzer.
          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
     Copyright (C) 1994 by Ingo Wilken
     (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.

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)

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).

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
     Copyright (C) 1989, 1991 by Jef Poskanzer.

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

ppm(5)   AMIGA (27 September 1991)   ppm(5)

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
     Copyright (C) 1989, 1991 by Jef Poskanzer.

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.

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
     Copyright (C) 1990 by Brian Moffet Copyright (C) 1989 by Jef
     Poskanzer.

     Permission to use, copy, modify, and distribute this

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:

    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.)

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
     Copyright (C) 1993 by Frank Neumann

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
     Copyright (C) 1993 by Dan Stromberg.

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.

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

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 for-
     geries,'' the term coined by Richard F. Voss of the IBM Tho-
     mas J. Watson Research Center for seemingly realistic pic-
     tures of natural objects generated by simple algorithms em-
     bodying randomness and fractal self-similarity.   The tech-
     niques 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 generat-
     ed 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 prepara-
tion 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 in-
creases as the square of the mesh size. The fractal dimen-
sion, 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 ampli-
tudes. 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 op-
tion. 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

ppmforge(1)   AMIGA (25 October 1991)   ppmforge(1)

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 ap-
proximately 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 modu-
lated 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 ap-
parent colour of each pixel of the planet is cal-
culated 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 pri-
mary 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 gen-
          erate 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 pro-
duces better looking planets. ppmquant tends to create
discrete colour bands, particularly in the oceans, which are
unrealistic and distracting. The number of colours in star-
ry sky pictures generated with the -night option depends on

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ppmforge(1)   AMIGA (25 October 1991)   ppmforge(1)

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 resolu-
               tion 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 ex-
               tent to which terrain elevation causes ice to ap-
               pear at lower latitudes. The default value of
               0.75 makes the polar caps extend toward the equa-
               tor 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

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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 Euro-
           pa.

-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 inclina-
           tion angle can be thought of as specifying, in de-
           grees, the ''season'' the planet is presently ex-
           periencing 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, nega-
           tive 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 re-
           quirements 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 capaci-
           ty, you may have to reduce the mesh size to avoid
           running out of RAM. Increasing the mesh size pro-
           duces better looking pictures; the difference be-
           comes particularly noticeable when generating high
           resolution images with relatively high fractal di-
           mensions (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 ex-
clusively 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 fac-
        tors 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 star-
        ry skies created with the -night option. The de-
        fault value of 125 creates stars which resemble
        the sky as seen by the human eye from Earth's sur-
        face.   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, consequent-
ly there are many reddish stars for every blue gi-
ant.   This relationship is preserved by ppmforge.
You can reverse the proportion, simulating the sky

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ppmforge(1)   AMIGA (25 October 1991)   ppmforge(1)

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 gen-
          erated 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 sur-
          rounding 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 pre-
fix.

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

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ppmforge(1)   AMIGA (25 October 1991)   ppmforge(1)

          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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     software and its documentation for any purpose and without
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     tions.   This software is provided ``as is'' without express
     or implied warranty.

     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 introduc-
tion by James Gleick and detailed explanations by Rudy Ruck-
er of the mathematics and algorithms used by each program.

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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
     Copyright (C) 1989 by Jef Poskanzer.

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:

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.)

SEE ALSO
    ppm(5), pbmmake(1)

AUTHOR
    Copyright (C) 1991 by Jef Poskanzer.

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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
     Copyright (C) 1993 by Frank Neumann
```

1.139 ppmnorm

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

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
     Copyright (C) 1993 by Frank Neumann

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.

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ppmpat(1)   AMIGA (04 September 1989)   ppmpat(1)

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
     Copyright (C) 1989 by Jef Poskanzer.

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
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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
     Copyright (C) 1991 by Jef Poskanzer.

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
      Copyright 1991,1992 by Bill Davidsen, all rights reserved.
      The program and documentation may be freely distributed by
      anyone in source or binary format. Please clearly note any
      changes.

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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
      Copyright (C) 1990 by Wilson Bent (whb@hoh-2.att.com)

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

ppmtoacad(1)   AMIGA (10 October 1991)   ppmtoacad(1)

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
            John Walker
            Autodesk SA

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    ppmtoacad(1)   AMIGA (10 October 1991)   ppmtoacad(1)

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        Inc.

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
```
      Copyright (C) 1992 by David W. Sanderson.
```

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".

     Copyright (C) 1989 by Jef Poskanzer.

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

ppmtoicr(1)   AMIGA (30 July 1990)   ppmtoicr(1)

     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
     Copyright (C) 1990 by Kanthan Pillay
     (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.
```

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ppmtoilbm(1)   AMIGA (31 October 1993)   ppmtoilbm(1)


```
    -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
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     Modified October 1993 by Ingo Wilken
     (Ingo.Wilken@informatik.uni-oldenburg.de)

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.

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
     Copyright (C) 1992, 93 by S.Petra Zeidler, MPIfR Bonn,
     Germany. (spz@specklec.mpifr-bonn.mpg.de)

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
     Copyright (C) 1990 by Michael Davidson.

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
     Copyright (C) 1989 by Jef Poskanzer.

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
     Copyright (C) 1991 by Steve Belczyk (seb3@gte.com) and Jef
     Poskanzer.

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

ppmtopj(1)   AMIGA (13 July 1991)   ppmtopj(1)

     Most of the options have not been tested because of the
     price of the paper.

AUTHOR
     Copyright (C) 1991 by Christos Zoulas.

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
     Copyright (C) 1991 by Jef Poskanzer.

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.

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
     Copyright (C) 1989, 1991 by Mark Shand and Jef Poskanzer.

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)

ppmtoxpm(1)   AMIGA (Tue Apr 9 1991)   ppmtoxpm(1)

     XPM Manual by Arnaud Le Hors lehors@mirsa.inria.fr

AUTHOR
     Copyright (C) 1990 by Mark W. Snitily.

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     notice and this permission notice appear in supporting
     documentation. This software is provided "as is" without
     express or implied warranty.

     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

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.

     Copyright (C) 1991 by DHD PostImage Inc.

     Copyright (C) 1987 by Abekas Video Systems Inc.

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
     Copyright (C) 1989 by Jef Poskanzer.

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
```

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pstopnm(1)   AMIGA (28 December 92)   pstopnm(1)

```
          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
```

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pstopnm(1)   AMIGA (28 December 92)   pstopnm(1)

```
          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
     Copyright (c) 1992 Smithsonian Astrophysical Observatory
     PostScript is a Trademark of Adobe Systems Incorporated.

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
     Copyright (C) 1989 by Jef Poskanzer.

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.

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

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
     Copyright (C) 1991 by Marvin Landis.

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

sldtoppm(1)   AMIGA (10 October 1991)   sldtoppm(1)

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

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sldtoppm(1)   AMIGA (10 October 1991)   sldtoppm(1)

-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
     Copyright (C) 1991 by Steve Belczyk (seb3@gte.com) and Jef
     Poskanzer.

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

```
SEE ALSO
     The rest of the Pbmplus suite.
```

```
SEE ALSO
     The rest of the Pbmplus suite.
```

1.181 sputoppm

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
     Copyright (C) 1991 by Steve Belczyk (seb3@gte.com) and Jef
     Poskanzer.

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.

     Copyright (C) 1989 by Jef Poskanzer.

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
```

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         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.
```

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
     Copyright (C) 1991 by Jef Poskanzer.

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
     Copyright (C) 1993 by Ingo Wilken

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
     Copyright (C) 1991 by Jamie Zawinski and Jef Poskanzer.

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.

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
     Copyright (C) 1993 by Oliver Trepte