# Chapter 6:
# Supported File Formats/Output Options

This chapter will detail the supported image formats and related

output options.

paste_2.tiff ¬

**BMP**

BMP files are used by Microsoft Windows.

**Reads**

1, 4, 8 bit paletted
24 bit RGB

### Writes

1, 4, 8 bit paletted
24 bit RGB

### Output Options

paste_0.tiff ¬


RLE encoding for 4 and 8 bit (RLE4/RLE8).

paste_1.tiff ¬

### Comments

Use caution when writing RLE files since many applications cannot read RLE files.

### Extensions

.bmp

**paste_17.tiff ¬**

## EPS

An EPS file is a standard Encapsulated PostScript language file                                              with an optional bitmap screen preview included.

### Reads

1, 2, 4, 8, 16 bit gray w/ alpha
3, 4, 6, 8, 12, 16, 24, 32 bit RGB w/ alpha
    plus other valid EPS files

### Writes

8 bit gray
12, 24 bit RGB

### Output Options

None

**Comments**

Can read alpha channel data (a PostScript Level 2 extension).

Pixel Magician has no direct control over the output bit depth used. Display PostScript will always choose a depth sufficient to represent your image without losing information. However, since PostScript is a full-blown interpreted programming language, an unlimited variety of input formats is possible. It is possible to implement custom bit depths up to 8 bit per sample and nearly any compression scheme with appropriate programming. The NeXT can read any such files as long as they are syntactically correct and no more than 10,000 points wide or high (albeit the more complicated the format, the longer it will take to process).

Additionally, both binary and hex input formats are recognized. However, for maximum portability, EPS files generated from raster images will use only hex output format in conjunction with the standard

image, alphaimage, and colorimage operators.

### Extensions

.eps
.epsf
.epsi

**paste_16.tiff** ¬

### GIF

The GIF format was developed by CompuServe (an Online service). This format is widely used and has the same highly efficient compression scheme used in the compress program but limited to 12-bit codes.

### Reads

1±8 bit paletted (GIF87A and GIF89A)

1±8 bit paletted

## Writes

1, 2, 4, 8 bit paletted (GIF87A)

## Output Options

paste_20.tiff ¬

paste_32.tiff ¬

odd
store
television

Interleaving or interlacing separates the data for even and numbered scanlines, which is the way many video boards screen data. (It is also similar to the way in which signals are sent.)

## Comments

None

## Extensions

.gif

paste_15.tiff ¬

### IFF/ILBM

This format is used on the Amiga computer. The IFF (Interchange File Format) can store many type of data including images, sound and text. The ILBM format (Interleaved Bitmap) is a special type of IFF file which has only image data.

### Reads

1±8 bit paletted
24 bit RGB
Ham

### Writes

1, 2, 4, 8 paletted
24 bit RGB

## Output Options

None

## Comments

None

## Extensions

.iff
.ilbm

paste_0_1.tiff ¬

## JPEG

JPEG files use a lossy compression technique good for continuous tone images.

## Reads

8 bit grayscale
24 bit RGB

## Writes

8 bit grayscale
24 bit RGB

## Output Options

paste_1_1.tiff ¬

JPEG is a lossy compression technique, which means that
the          uncompressed image will be different from the original.
The          Q-Factor determines the degree of compression desired in
terms        of the amount of error allowed between the uncompressed
image        and the original. A Q-Factor of 1.0 results in the least error
allowed and the least compression. 255.0 is the maximum
error        and compression allowed. Setting the Q-Factor to 0 is
equivalent                                           to using the default Q-
Factor (~65).
Perform optimization of entropy encoding parameters.
Without      this, default encoding parameters are used.   This option

usually makes the JPEG file a little smaller, but takes somewhat
longer and needs much more memory to perform.   Image quality
and speed of decompression are unaffected by this option.

## Comments

Although the Q-Factor is scaled between 1.0 and 255.0
like the Q-Factor in ªJPEG in TIFFº compression, the scales are
not quite the same. In other words, a Q-Factor of 200 will not
yield the same amount of compression when used for JFIF
JPEG files                                         as when used for JPEG
in TIFF files. The default Q-Factor was                chosen to yield the
same amount of compression as the default        setting of the
popular cjpeg compressor, which is incorporated        into the Pixel
Magician application.

## Extensions

.jpg
.jpeg
.jfif
.jff

**paste_14.tiff ¬**

## MACP

This is a black and white bitmap format used on the MacintoshÐpopular with many painting applications.

## Reads

black and white

## Writes

black and white

## Output Options

None

## Comments

All MacPaint images are 576 $\times$ 720. Small images will be

placed          upon a white background.

                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.

### Extensions

.macp
.mac
.macpaint

paste_13.tiff ¬

### MTV

MTV is a ray tracer format generated by public domain ray
tracers available for many workstations.

### Reads

24 bit RGB

## Writes

Not supported

## Output Options

None

## Comments

None

## Extensions

.mtv

**paste_12.tiff ¬**

## PCX

PCX files are widely used on DOS based PCs.

## Reads

1, 2, 4, 8 bit paletted
24 bit RGB

## Writes

1, 2, 4, 8 bit paletted
24 bit RGB

## Output Options

None

## Comments

Since the 24 bit RGB format is relatively new, some IBM software may not be able to read this format. If this is the case,        use 8 bit paletted   instead.

### Extensions

.pcx

**paste_11.tiff ¬**

## PICT

PICT files are native to Macintosh computers. Most
painting/ drawing applications on the Mac can read and write this
format.

### Reads

1, 2, 4, 8 bit paletted
15, 24, 32 bit RGB w/ alpha

### Writes

1, 2, 4, 8 bit paletted
15, 24, 32 bit RGB w/ alpha

## Output Options

paste_21.tiff ¬

paste_33.tiff ¬

Any alpha data can be removed, if desired.

## Comments

Pixel Magician only handles image data (pixmaps) within a PICT file. All other information is ignored.

**Note:** PICT *does* support DPI fields.

## Extensions

.pict
.pic

## PNM

PNM (Portable Anymap) format comes from a toolkit for converting images called PBMPLUS (see ªAcknowledgmentsº section at the end of this manual). The toolkit supports black and white, grayscale and color images.

### Reads

black and white
1±8 bit grayscale
3±24 bit RGB (Binary and ASCII)

### Writes

black and white
2, 4, 8 bit grayscale
12, 15, 24 bit RGB (Binary)

### Output Options

None

## Comments

**.pnm**   When saving a PNM file, Pixel Magician will append a extension regardless of the image content unless you have specified otherwise.

See ªAliases Preference,º Chapter 3.

## Extensions

.pnm Ð Portable Anymap (alias for all types)
.pbm Ð Portable Bitmap (black & white)
.pgm Ð Portable Graymap (grayscale)
.ppm Ð Portable Pixelmap (RGB)

**paste_9.tiff ¬**

**PS**

A PS file is a standard PostScript language file.

## Reads

1, 2, 4, 8, 16 bit gray w/ alpha
3, 4, 6, 8, 12, 16, 24, 32 bit RGB w/ alpha
    plus other valid PS files

## Writes

8 bit gray
12, 24 bit RGB (see EPS comment above)

## Output Options

None

## Comments

Can read alpha channel data (a PostScript Level 2 extension).

Pixel Magician has no direct control over the output bit depth used. Display PostScript will always choose a depth

sufficient to represent your image without losing information. However, since PostScript is a full-blown interpreted programming language, an unlimited variety of input formats is possible. It is possible to implement custom bit depths up to 8 bit per sample and nearly any compression scheme with appropriate programming. The NeXT can read any such files as long as they are syntactically correct and no more than 10,000 points wide or high (albeit the more complicated the format, the longer it will take to process).

Additionally, both binary and hex input formats are recognized. However, for maximum portability, PS files generated from raster images will use only hex output format in conjunction with the standard image, alphaimage and colorimage operators.

**Extensions**

.ps

**paste_18.tiff ¬**

**PXM**

The PXM file format (a derivative of the PBM formats) was created at BÙcchus. PXM is used as an intermediate format for most file format conversions.

**Reads**

0±8 bit paletted
1±16 bit gray w/ alpha
3±32 bit RGB w/ alpha

**Writes**

1, 2, 4, 8 bit paletted
1, 2, 4, 8, 16 bit gray
12, 15, 16, 20, 24, 32 bit RGB

**Output Options**

paste_22.tiff ¬

paste_34.tiff ¬

Any alpha data can be removed, if desired.

### Comments

See Appendix C for a complete description of the PXM format.

### Extensions

.pxm

**paste_5.tiff ¬**

### SUN RAST

Sun raster images are primarily used on Sun Workstations.

**Note:** Only 24 bits of the 32 bit formats are significant.

## Reads

black and white
8 bit paletted
24, 32 bit RGB and BGR files

## Writes

8 bit paletted
24 bit RGB files

## Output Options

paste_23.tiff ¬


paste_35.tiff ¬

Standard or RLE

## Comments

None

**Extensions**

.rast
.ras
.im
.im1
.im8
.im24
.im32

**paste_4.tiff ¬**

## TARGA

TARGA is a high resolution image format created by
Truevision                                    Corp. These files are very
often produced using Truevision                    TARGA video
equipment, various scanners and imaging        applications.

### Reads

1±8 bit paletted, 8 bit gray
15, 16, 24, 32 bit RGB w/ alpha

**Writes**

1, 2, 4, 8 bit paletted, 8 bit gray
15, 16, 24, 32 bit RGB w/ alpha

**Output Options**

**paste_24.tiff ¬**

**paste_30.tiff ¬**

Pixel Magician can read and write compressed files using a Run-length encoding (RLE) algorithm, as well as uncompressed files.

**paste_29_1.tiff ¬**

The data in most TARGA files is arranged from bottom to top, left to right. The TARGA format specification also allows the data to be arranged top to bottom and left to right, bottom to top and right to left, and top to bottom and right to left. However, many readers only understand one of the first two orientations. Pixel Magician can read and write TARGA files in all orientations for maximum flexibility and portability.

**paste_31.tiff ¬**

The TARGA footer contains offsets to various other fields and data areas, including aspect ratio. It is recommended that a footer be included in TARGA files, although some older readers may not extract all information included.

**paste_36.tiff ¬**

Any alpha data can be removed, if desired.

## Comments

Flexible output options are provided since many TARGA

readers can't read TARGA files written with non-standard orientations.

## Extensions

.tga
.targa

**paste_3.tiff ¬**

### TIFF

TIFF is a cross platform image format. This format was designed to handle many different color models, bit depths and compression schemes.

### Reads

class B (black and white)
1, 2, 4, 8 bit class P (paletted)
class G (grayscale) and 1, 2, 4, 8, 16 bit non-class G

grayscale

           w/ alpha

         class R (RGB) and 3, 4, 6, 8, 12, 16, 24, 32 bit non-class R

RGB

           w/ alpha

## Writes

black and white and class B
1, 2, 4, 8 bit paletted and 1, 2, 4, 8 bit class P
1, 2, 4, 8, 16 bit grayscale w/ alpha and class G
3, 4, 6, 8, 12, 16, 20, 24, 32 bit RGB w/ alpha and class R

## Output Options

**paste_25.tiff ¬**

**paste_37.tiff ¬**

option      If selected, Pixel Magician will write a standard NeXT TIFF file, ignoring incompatible options if necessary. Use this to ensure that other NeXT applications can read TIFF files produced.

**paste_27.tiff ¬**

None, 12 bit LZW, JPEG, Packbits, Group III and IV Fax

Group III Options:

Two dimensional encoding and zero fill can be used
with group III encoded TIFFs. Some Group III readers
require zero-filled bits to ensure that EOL always ends on a
byte boundary.

LZW Predictor:

Predictor if set, forces differencing before LZW
compression. Currently, this is
only implemented for images with 8 bits per sample.

**paste_26.tiff ¬**

JPEG is a *lossy* compression technique, which means that
the uncompressed image will be different from the original.

The Q-Factor determines the degree of compression desired in terms of the amount of error allowed between the uncompressed image and the original. A Q-Factor of 1.0 results in the least error allowed and the least compression. 255.0 is the maximum error and compression allowed. Setting the Q-Factor to 0 is equivalent to using the default Q-Factor of 10.0.

**paste_28.tiff ¬**

Most/Least Significant Bit First

Most applications and machines use Most Significant Bit first (msb).

**paste_38.tiff ¬**

Any alpha data can be removed, if desired.

### Comments

Handles alpha channel information in black and white, grayscale

under and RGB files. Alpha channel support for paletted files is under development.

and Pixel Magician can read all NeXT compatible TIFF files and most class X compliant TIFF files as well as many others.

### Extensions

.tif
.tiff

**paste_7.tiff ¬**

### XBM

XBM is a 1 bit format used in the X Window System environment.

### Reads

1 bit foreground and background

**Writes**

1 bit foreground and background

**Output Options**

None

**Comments**

Pixel Magician displays XBM files as black and white. X applications will show XBM files with the appropriate foreground and background colors.

**Extensions**

.xbm
.bm

**paste_6.tiff ¬**

## XWD

XWD is used in the X Window System environment.

**Note:**   Only 24 bits of the 32 bit format are significant.

## Reads

1, 8 bit paletted
32 bit RGB

## Writes

1, 8 bit paletted
32 bit RGB

## Output Options

None

## Comments

None

**Extensions**

.xwd