

PIF Format Specification

PIF File Header			
Signature			
File Size			
File Offset to PixelArray			
Image Information Header			
Image Type		Bits per Pixel	
Image Width		Image Height	
Image Size			
Color Table Size		Compression	
Color Table (semi-optional)			
Red 0	Green 0	Blue 0	Red 1
Green 1	Blue 1	Red 2	Green 2
Blue 2	Red 3	Green 3	Blue 3
⋮			
⋮			
⋮			
Red n	Green n	Blue n	{ PAD }
Byte offset:			
0	1	2	3

The Structure of Portable Image File Format (PIF)

Note: The size of the File and Image header are fixed

Note: The presence of the Color Table is mandatory when Bits per Pixel ≤ 8 , unless Image Type states RGB332, RGB16C or B/W

Note: The size of the Color Table Entries is always 3 Bytes. Extra padding is added at the end to keep the Table a multiple of 4 Bytes

Note: Pixel size depending on [Bits per Pixel] field. If Bits per Pixel is ≤ 4 , multiple Pixels are grouped in one Byte but are not allowed to overlap the byte / 8-bit boundary.

Image Data PixelArray [x,y]					
Pixel[0,0]	Pixel[1,0]	Pixel[2,0]	Pixel[3,0]	...	Pixel[w-1,0]
Pixel[0,1]	Pixel[1,1]	Pixel[2,1]	Pixel[3,1]	...	Pixel[w-1,1]
Pixel[0,2]	Pixel[1,2]	Pixel[2,2]	Pixel[3,2]	...	Pixel[w-1,2]
•					
•					
•					
Pixel[0,h-2]	Pixel[1,h-2]	Pixel[2,h-2]	Pixel[3,h-2]	...	Pixel[w-1,h-2]
Pixel[0,h-1]	Pixel[1,h-1]	Pixel[2,h-1]	Pixel[3,h-1]	...	Pixel[w-1,h-1]

Note: Little-Endian is used

Note: Inofficial name of PIF: Pазzy's Image File

PIF Format Specification

PIF File Header	
Signature:	To identify a valid .PIF file. The signature is <PIL> as string, including null character: {'P','I','L','\0'}
File Size:	Total size of the file, from the Signature to the last Pixel
FileOffset to PixelArray:	Offset to the start of the Pixel Array, to directly seek to the image data

Image Information Header	
Image Type:	Defines the Image Data Type together with Bits per Pixel Depending on the code, the image data might be indexed <ul style="list-style-type: none"> • 0x433C = RGB888 Uncompressed / -processed image data • 0xE5C5 = RGB565 16-bit image data with reduced color set • 0x1E53 = RGB332 8-bit image data, further reduced colors • 0xB895 = RGB16C 16 color mode with fixed Windows/IBM Colors • 0x7DAA = B/W Black and White color mode • 0xC091 = Indexed Indexed Colors according to the Color Table
Bits per Pixel:	Bit size that each Pixel occupies. Bit size foran Indexed Image cannot go beyond 8 bits.
Image Width:	Width of the image in Pixel
Image Height:	Height of the image in Pixel
Image Size:	Size of the image in Bytes
Color Table Size:	Index size (R+G+B) of the color table, only used in Indexed mode, otherwise zero.
Compression:	If 0x7DDE, then RLE compression is used on the Image Data. If 0x0000, no compression is applied.

Color Table (semi-optional)
The color data in the table is always 24bit large RGB888. The amount of Indexes has to be same or less than the [Bits per Pixel] allow, otherwise the is invalid. If data refers to a higher index number than the Color Table holds, the image is invalid.

Image Data PixelArray
Raw (uncompressed) Pixel data should be processed as defined by the Image Type, read one by one.
If RLE compression is enabled, the data format looks as following: A negative value defines that the next x-amount of Pixels are individual pixels. A positive value defines that the next Pixel repeats x-times. Zero is a illegal RLE value.
Example: RLE (-2) Pixel (4) Pixel (2) RLE (15) Pixel (7) First two Pixels are individual Pixels, the next Pixel to be drawn 15 times.