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Windows bitmap

Windows bitmap (.BMP) is a bitmap image format , specific to the Microsoft Windows operating system.

It can save 24-bit (16.7 million colors), 8-bit (256 shades of gray), and smaller images. These files can be compressed without loss of quality using Run-length Encoding (RLE) compression.

Bitmap files are made up of addresses associated with color codes, one for each frame in a pixel array, just as a small "color the frames" drawing would be drawn.

for children

They are typically characterized by being very inefficient in their use of disk space, but they can display a good level of quality. Unlike vector graphics, when rescaled to a larger size, they lose quality. BMP files are not used in web pages due to their large size relative to their resolution.

Depending on the image's color depth, each pixel can occupy one or several bytes. They are generally transformed into other formats, such as JPEG (photographs), GIF (animations), or PNG (drawings and diagrams), which use other algorithms to achieve greater compression (smaller file size).

Files begin (header) with the letters BM (0x42 0x4D), which identifies the file to the viewing or editing program. The header also indicates the image size and the number of bytes used to represent the color of each pixel.

The bytes are organized using the system little-endian.

The structure of the header of a .BMP file is detailed below.

Windows bitmap

Developer

Microsoft in 1986

General information

Extension of archive .bmp or .dib

MIME Type image/x-ms-bmp (unofficial)

Uniform Type Identifier com.microsoft.bmp

Magic number BM

Format type Raster graphic

Format open ?

Bytes	Information
0, 1	File type "BM"
2, 3, 4, 5	File size
6, 7	Reserved
8, 9	Reserved
10, 11, 12, 13	Start of the data of the image
14, 15, 16, 17	Header size bitmap
18, 19, 20, 21	Width (pixels)
22, 23, 24, 25	Height (pixels)
26, 27	Number of planes
28, 29	Size of each point
30, 31, 32, 33	Compression (0=no compressed)
34, 35, 36, 37	Image size
38, 39, 40, 41	Horizontal resolution
42, 43, 44, 45	Vertical resolution
46, 47, 48, 49	Color table size
50, 51, 52, 53	Important of colors counter

The bitmap of a .BMP image starts reading from bottom to top, that is:
A 24-bit image, the first 3 bytes correspond to the first lower pixel left.

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