

NAME

PPM-Format (raw) - Portable Pixel Map

DESCRIPTION

The PPM format is a lowest common denominator color image file format.

It should be noted that this format is egregiously inefficient. It is highly redundant, while containing a lot of information that the human eye can't even discern. Furthermore, the format allows very little information about the image besides basic color, which means you may have to couple a file in this format with other independent information to get any decent use out of it. However, it is very easy to write and analyze programs to process this format, and that is the point.

It should also be noted that files often conform to this format in every respect except the precise semantics of the sample values. These files are useful because of the way PPM is used as an intermediary format. They are informally called PPM files, but to be absolutely precise, you should indicate the variation from true PPM. For example, "PPM using the red, green, and blue colors that the scanner in question uses."

The name "PPM" is an acronym derived from "Portable Pixel Map." Images in this format (or a precursor of it) were once also called "portable pixmaps."

The format definition is as follows: A PPM file consists of a sequence of one or more PPM images. There are no data, delimiters, or padding before, after, or between images.

Each PPM image consists of the following:

1. A "magic number" for identifying the file type. A ppm image's magic number is the two characters "**P6**".
2. Whitespace (blanks, TABS, CRs, LFs).
3. A **width**, formatted as ASCII characters in decimal.
4. Whitespace.
5. A **height**, again in ASCII decimal.
6. Whitespace.
7. The **maximum color** value (Maxval), again in ASCII decimal. Must be less than 65536 and more than zero.
8. Newline or other **single** whitespace character.
9. A raster of Height rows, in order from top to bottom. Each row consists of Width pixels, in order from left to right. Each pixel is a **triplet** of red, green, and blue samples, in that order. Each sample is represented in pure **binary** by either 1 or 2 bytes. If the Maxval is less than 256, it is 1 byte. Otherwise, it is 2 bytes. The most significant byte is first.
A row of an image is horizontal. A column is vertical. The pixels in the image are square and contiguous.
10. A value of Maxval for all three samples represents CIE D65 white and the most intense color in the color universe of which the image is part (the color universe is all the colors in all images to which this image might be compared).
11. Characters from a "#" to the next end-of-line, before the maxval line, are **comments** and are ignored.

There is actually another version of the PPM format that is fairly rare: "plain" PPM format. The format above, which generally considered the normal one, is known as the "raw" PPM format. Programs that read this format should be as lenient as possible, accepting anything that looks remotely like a pixmap.