

# Computer graphics vs raster graphics

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A bitmap is technically characterized by the width and height of the image in pixels and by the number of bits per pixel (a color depth, which determines the number of colors it can represent). Meanwhile, vector graphics is the use of geometrical primitives such as points, lines, curves, and shapes or polygon(s), which are all based on mathematical expressions, to represent images in computer graphics. Vector graphics are based on vectors (also called paths, or strokes) which lead through locations called control points. Each of these points has a definite position on the x and y axes of the work plane. Each point, as well, is a variety of database, including the location of the point in the work space and the direction of the vector (which is what defines the direction of the track). Each track can be assigned a color, a shape, a thickness and also a fill. This does not affect the size of the files in a substantial way because all information resides in the structure; it describes how to draw the vector.

Raster graphics are resolution dependent. They cannot scale up to an arbitrary resolution without loss of apparent quality. This reporter contrasts with the capabilities of vector graphics, which easily scale up to the quality of the device rendering them. Raster graphics deal more practically than vector graphics with photographs and photo-realistic images, while vector graphics often serve better for typesetting or for graphic design.

Modern computer-monitors typically display about 72 to 130 pixels per inch (PPI), and some modern consumer printers can resolve 2400 dots per inch (DPI) or more; determining the most appropriate image resolution for a given printer-resolution can pose difficulties, since rented output may have a

greater level of detail than a viewer can discern on a monitor. Typically, a resolution of 150 to 300 pixel per Inch works well for 4-color process (CACM) printing.

However, for printing technologies that perform color ranging through dithering (halftone) rather than through overprinting (virtually all home/office inkjet and laser printers), printer DIP and image PIP have a very different meaning, and this can be misleading. Because, through the dithering process, the printer builds a single image pixel out of several printer dots to increase color depth, the printer's DIP setting must be set far higher than the desired PIP to ensure sufficient color depth without sacrificing Image resolution.

Thus, for Instance, printing an image at 250 PIP may actually require a printer setting of 1200 DIP. Computer graphics vs. raster graphics By Mark-Allen generally rectangular grid of pixels, or points of color, viewable via a monitor, paper, width and height of the image in pixels and by the number of bits per pixel (a color depth, which determines the number of colors it can represent).