

Multiple monitors, bitmaps, Vector drawing, lossy graphic compression

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**Multiple monitors:** Multi-monitor, also called multi-display and multi-head, is the use of multiple physical display devices, such as monitors, televisions, and projectors, in order to increase the area available for computer programs running on a single computer system. Research studies show that, depending on the type of work, multi-head may increase the productivity by up to 50-70%. Uses.

- **In the office:** In many professions, including graphic design, architecture, communications, accounting, engineering and video editing, the idea of two or more monitors being driven from one machine is not a new one. While in the past, it has meant multiple graphics adapters and specialized software, it was common for engineers to have at least two, if not more, displays to enhance productivity.
- **In video gaming:** Multi-monitor gaming/simulation is also becoming more common; however, the hardware expense can be a limiting factor.

**Bitmaps:** Bitmap (BMP) is an image file format that can be used to create and store computer graphics. A bitmap file displays a small dots in a pattern that, when viewed from a far, creates an overall image. A bitmap image is a grid made of rows and columns where a specific cell is given a value that fills it in or leaves it blank, thus creating an image out of the data. To create a bitmap, an image is broken into the smallest possible units (pixels) and then the color information of each pixel (color depth) is stored in bits that are mapped out in rows and columns. The complexity of a bitmap image can be increased by varying the color intensity of each dot or by increasing the number of rows and columns used to create the image. However, when a user magnifies a bitmap image enough, it eventually becomes pixelated as the dots resolve into tiny squares of color on a grid.

**Vector drawing or Vector graphics:** A vector graphic is a type of image. Vector images are graphical representations of mathematical objects such as lines, curves, polygons and its like. These graphics are generated by computer and they follow x and y axis as their reference definition.

One characteristic of vector graphics is a very high resolution. Such images can be altered easily and their resolution per square pixel remains intact at any level. Common image formats like GIFs and JPEGs are the opposite -- these bitmap images are pixel-based and so can't be resized without losing quality. Once a vector image is rasterized to a .gif or .jpeg, they lose their original resolution.

**Lossy graphic compression:** Lossy is a data encoding and compression technique that deliberately discards some data in the compression process. The lossy compression method filters and discards needless and redundant data to reduce the amount of data being compressed and later being executed on a computer.

## **Graphics: Use Lossy Compression for Smaller GIFs and PNGs**

Summary: Lossy compression lets you squeeze more bytes out of your GIFs and PNGs. Lossy compression increases identical pixel patterns to improve compression in indexed-color images.

Lossy compression is a good way to squeeze extra bytes out of your GIFs and PNGs. Lossy compression changes pixel patterns to match other pixel patterns to allow more efficient compression. You can apply lossy compression to the entire image, or selectively using weighted optimization with alpha masks for less important areas of your images (see Figure 1). Although the term sounds catchy, it should not be confused with the lossy compression used in JPEG compression.

### **What Is Lossy Compression?**

Lossy compression is actually a misnomer for GIFs and PNGs. The compression algorithms used in GIFs and PNGs (LZW and Deflate) are lossless, so there is no loss of data when compressing these palette-based formats. The lossiness comes in when a graphics program automatically prefilters or alters the image to compress more efficiently. The loss of data occurs in the prefiltering phase by increasing redundant patterns along scan lines to improve compression (see Figure 2). Lossy compression has become a shorthand, yet somewhat misleading, phrase for this process.