

## Raster / Vector Formats

There are two completely different ways of processing an image with a computer. One is pixel by pixel. This is called bitmapping, also known as raster images. The other method works by saving just the information needed to describe a set of lines and shapes - the mathematical formula - and is known as vector graphics.

### Raster Image Formats - PaintShop Pro / Adobe Photoshop/ Corel Paint

A raster format breaks an image into a grid of equally sized pieces, called pixels, and records color information for each pixel. The number of colors that the file can contain is determined by the bits-per-pixel: the more information that is recorded for each pixel, the more shades and hues that the file can contain.

Once you have a design in raster format you can only resample (resize) it up to 120% - anything more than that will distort the resolution (NOTE: see [What is Resolution?](#))

### Anti-aliasing

Anti-aliasing lets you produce smooth-edged type by partially filling the edge pixels. As a result, the edges of the type blend into the background.



Anti-aliased

No anti-aliasing

### Vector Image Formats - Adobe Illustrator / Corel Draw

Vector image formats contain vector data. Vector data is a collection of geometric shapes that combine to make an image, recorded as mathematical formulas. Vector data cannot reproduce photo-realistic images, but for other types of images it has two advantages over raster data: it is scalable without distortion (the "jaggies" that come with re-sizing a bitmap), and it produces smaller files.

The wonderful thing about vector images is that they are "resolution free" this means that you can import any vector image into a raster program like Photoshop and set the image to any size and resolution that you want. An example is if you designed a stamp size vector design in Adobe Illustrator - you could then import it into Photoshop to be a large wall mural design.

This is a comparison of these types of images:



Raster image showing stairstepped pattern of "on - off" pixels along the diagonal.

Vector image showing clean lines that cross the diagonal.