image formats

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Introduction

The first thing to know is that all images in a computer system fall into one of two categories:

1. Images made from dots (or pixels).
2. Images made from mathematical descriptions (called vectors).

Pixel (or dot) based images

These are commonly called:

- Bitmapped images
- Raster images
- Paint images

For example, scanning a photograph produces a pixel based image in which the size, position and colour of every pixel (or dot) that makes up that photograph is recorded. Pixel based images often have very large file sizes. If you decide to enlarge a scanned image to 10 times its original size, its file size will increase dramatically as extra pixels are added.

Pixel based images are ideal for "real" looking images. Some effects, such as motion blurring, can only be achieved by manipulating individual pixels.

Vector based images

These are commonly called:

- Vector graphics
- Object-oriented graphics

For example, creating a picture in Adobe Illustrator produces a vector based

image. Vector based images are made up from descriptions, like co-ordinates, and therefore usually have very small file sizes. If you draw a circle and then later decide to enlarge it to 10 times its size, its file size will not change.
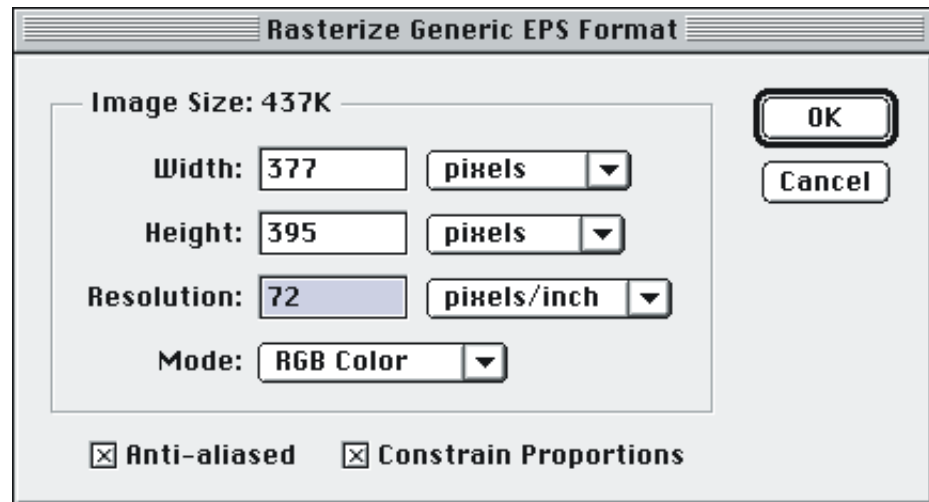
Vector based images are ideal for logos, maps and other flat colour graphical images.

Rasterizing

Rasterizing is the process of converting a vector based image, or font, into a pixel based one. If you open an image created using Adobe Illustrator into Adobe Photoshop it will first have to RIP (Raster Image Processing) before you can continue to work on it. Unsurprisingly, pixel based images cannot

Photoshop's Rasterize dialogue box
Vector images created in Illustrator will be RIP'd
when imported into photoshop.

Rasterize Generic EPS Format

Image Size: 437K

Width: 377 pixels
Height: 395 pixels
Resolution: 72 pixels/inch
Mode: RGB Color

OK

Cancel

☒ Anti-aliased   ☒ Constrain Proportions

easily be converted into vector based images.

Director cannot RIP vector images therefore they cannot be imported. For optimal results images should be RIP'd at 72dpi in a quality image preparation program such as DeBabelizer or Photoshop before being imported.

Native file formats

Every program has a Native File Format. Photoshop saves to its own file format as does Illustrator and one cannot open the others files. As you work on images always save them in the programs native file format as these will hold the most information about your image.

Interchange file formats

It is often necessary to open an image created in one program into another. To do this you will need to save it in a file format familiar to both, in addition to its native file format. It does not matter what image creation and editing applications you use providing they support the interchange file formats required by your authoring application.

Director can import a vast range of file formats. However, many are unsuitable for multimedia work. For optimal results images should be imported in the following formats:

> • BMP is the most widely used interchange file format for RGB pixel based images on the PC. Bit-depth can be determined for each image.
> • PICT is a Mac RGB file format for pixel based images suitable for Director. Bit-depth can be determined for each image and alpha channels are supported.

Both of these formats become embedded Director resources when imported. Avoid importing the following formats into Director:

- TIFFs (Tagged Image File Format - CMYK based). They are 16-bit CMYK and only suitable for repro.
- Native Photoshop files.

EPS (Encapsulated PostScript) is the most widely used interchange file format for vector based images to be used in DTP applications. Use EPS files in the following situations:

- A complete Quark XPress page layout containing TIFFs, EPSs, line art and text can be saved as an EPS file. Photoshop can rasterize an EPS file which may then be exported as a PICT or TIFF.
- If you are authoring using Macromedia's Flash, you can import EPS vector image files created in other applications.

If you are developing a conventional html web site use the following image formats.

- JPEG (Joint Photographic Experts Group) is the most widely used interchange file format for pixel based images to be used in web sites. When created images are compressed and must be decompressed to be viewed. Decompression occurs automatically in most web browsers.
- GIF (Graphics Interchange Format) is the most widely used interchange file format for flat colour graphical images to be used in web sites. Images that combine vector and pixel based elements will usually work better as GIFs. Images are compressed. Also GIFs support interlacing which means the image will display in progressively more detail as it downloads into a browser window.
- The GIF89a format adds several additional features. It uses an adaptive custom palette derived from the image itself and containing only the colours in the image.   You may also specify a transparent background

for the image. You can also create a so called "GIF animation" using layers.

• PNG (Portable Network Graphics) is a version 4 browser compatible image file format (which supports alpha layers and palettes) that works well with both photographic and flat colour based images. It can achieve superior quality to JPEGs or GIFs for comparable file sizes.

Optimising a GIF89a image

Indexed colour images may be optimised and exported from Photoshop in the GIF89a file format.