

VECTOR, RASTER, JPG, EPS, PNG – WHAT’S THE DIFFERENCE?

If you’re confused over the difference between the many image file types, you’re not alone. When starting off a project, one of the first things we request from the client is a vector file of their logo. However, that request is often met with blank stares or responses like “can’t you just pull the logo from my site?”. As a marketer, understanding the importance and role of different image file types is essential to ensuring your brand is properly represented and to better communicate with designers, developers and printers.

WHAT IS A VECTOR? WHAT IS RASTER?

images
use many
colored
pixels or
individual
building
blocks to
form a
complete
image.
JPEGs,
GIFs and
PNGs are
common

Vector		Raster	
WEB USES			
SOURCE files for logos, charts, icons, or any hard-edged graphics		OUTPUT files for most web graphics displayed on the screen	
PRINT USES			
SOURCE files to be sent to the printer		HI-RES files can be printed at 300dpi	
FILE TYPES			
.ai .eps .pdf .svg		.jpg .gif .png .tif	

raster image types. Almost all of the photos found on the web and in print catalogs are raster images.

Because raster images are constructed using a fixed number of colored pixels, they can't be dramatically resized without compromising their resolution. When stretched to fit a space they weren't designed to fill, their pixels become visibly grainy and the image distorts. This is why altered photos may appear pixilated or low resolution. Therefore, it is important that you save raster files at precisely the dimensions needed to eliminate possible complications.

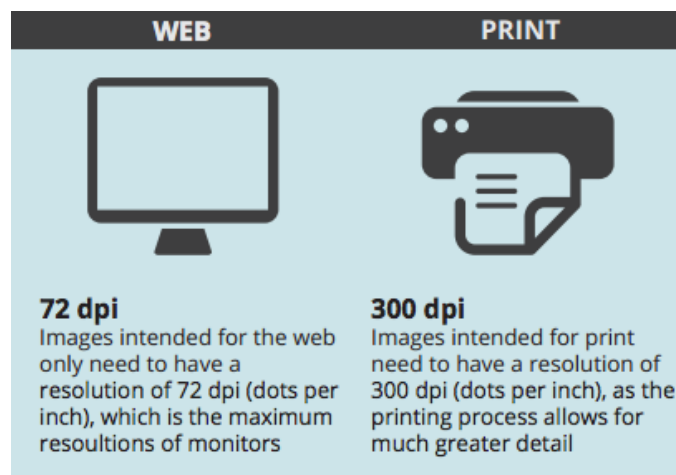
Vector images, alternatively, allow for more flexibility.

Constructed using mathematical formulas rather than individual colored blocks, vector file types such as EPS, AI and PDF* are excellent for creating graphics that frequently require resizing. Your company logo and brand graphics should be created as a vector and saved as a master file so you can use it with smaller items such as your business card and letterhead, but also on larger surfaces, such as your corporate jet. When necessary, always create a JPG or PNG for use on the web from this

file. Whether you opt to flatten the layers of your file or choose to retain each one will determine the image type.

HIGH RESOLUTION OR LOW RESOLUTION?

To determine whether your raster images are a suitable resolution for a specific



application, you need to check their pixel density. Units of measurement such as dots per inch (DPI) or pixels per inch (PPI) refer to the number of pixels in one inch of the image. These measurements become important when you attempt to use raster images in specific places, such as on the web or in print publications.

The web, for instance, displays 72dpi (72 dots or pixels per inch) – a relatively low pixel density. Raster images with a low DPI like 72dpi look nice and crisp on the web. But this same low DPI image may not be suitable for printing on a brochure or packaging. To correctly print an image, it should be at least 300dpi, a much higher pixel density than the web displays. Resizing a low DPI image pulled from the web to fit the dimensions of your print project won't work because the same finite number of pixels only get bigger and begin to distort. For

pixilated. Instead you should use a vector version of your logo (.EPS or .AI) or create a raster (JPG) with the exact dimensions desired and at 300dpi.

DIFFERENT IMAGE FILE EXTENSION TYPES AND THE BEST USE FOR EACH

JPG

JPG (or JPEG) is a raster image that is often used for photographs on the web. JPGs can be optimized, when saving them out of photoshop, to find the perfect balance of small file size and high quality. On the web, you want your images files to be as small as they can be so your site loads quickly, but large enough to still appear crisp and not pixilated. A JPG can't have a transparent background so they are always in the shape of a rectangle or square with a solid background.

Best use = rectangle or square photos and photographs on your website.

PNG

PNG is another raster image type. For the general marketer, the main difference to understand between a PNG and JPG is that a PNG can have a transparent background and is generally larger and higher quality. Therefore a PNG is ideal for saving logo files for websites because they can be placed over a colored background.

256 colors from the RGB colorspace. The fewer colors and shades contained in an image, the smaller the file size. Therefore a GIF is ideal for images that use just a few solid colors and don't have gradients or natural shades. You wouldn't want to use a GIF for a photograph.

Best use = simple web graphics such as web buttons, charts and icons.

TIF

A TIF (or TIFF) is a large raster file. It has no loss in quality and therefore is primarily used for images used in printing. On the web, because of load time, you generally want to use smaller images such as JPG or PNG.

Best use = images and photographs for high quality print.

EPS

An EPS file is a vector file of a graphic, text or illustration. Because it is vector it can easily be resized to any size it needs to be. An EPS file can be reopened and edited.

Best use = master logo files and graphics and print designs.

AI

An AI file is a proprietary, vector file type created by Adobe that can only be created or edited with Adobe Illustrator. It is most commonly used for creating logos, illustrations and print layouts.

Best use = creating logos, graphics, illustrations.

Editing vector files and saving “in outlines”

Vector files such as AI and EPS can remain editable so you can open them back up in Illustrator and edit any text or other elements within the graphic. With images that contain text that

outlines” which is used in production and sent to print.

This is Editable Text **This is in Outlines**