Subject: Re: Pixels per Inch
Posted by William Thompson on Fri, 19 Dec 2003 18:46:35 GMT
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JD Smith wrote:
> On Mon, 15 Dec 2003 04:45:50 -0700, Pepe wrote:
>
>
>> Good morning,
>>
>> I have created a PNG image using the "write_png" routine. I have
>> subsequently been asked to increase the resolution of this image from 96
>> pixels per inch to 300 pixels per inch, how can I do this ?
>>
>> I would be very grateful if someone could point our to me how to
>> determine the resolution of a PNG image, and how to vary it (if
>> possible) ?
>>
>> Thanks in advance for the help.

I've come to the conclusion that when people ask for a 300 dpi version of an image, they don't really mean a specific size or header information. All they're asking for is an image with a lot more pixels in it, so that when the image is printed at 300 dpi, it won't be the size of a postage stamp. In other words, "300 dpi" is shorthand for a high resolution (i.e. big!) image.

Bill Thompson

>
>
> It depends on how many "inches" you intend to output the image to.
> This is a basic and common mis-understanding of how image resolution
> works. A bitmap image like a PNG file has a specific size in pixels,
> nxm say, but does not have an associated "physical size". The
> physical size of this image depends on the device used to show it: on
> my monitor, for instance, it would be around n/100 x m/100 inches,
> since I display around 100dpi. On a 1200dpi printer, it would be 12
> times smaller. So what about that nice 1200x800 digital picture you
> printed on a 1200dpi printer: it certainly wasn't 1 inch x 2/3 inch!
> This is the main source of confusion: the printer or printer driver
> resized your image to 1200dpi by interpolating or rebinning it. Just
> because it was printed on 4x6" photo stock doesn't mean it actually
> contains 4800 x 7200 pixels of information: most of it was
> manufactured by the printer (another semi-relevant complication is
> that color printers use patterns of solid "dots" of color to build up
> images: much different from a monitor pixel which can display any
> color by varying the RGB intensity, so 100dpi on screen != 100ppi on a

> printer).
>
> Further complicating the issue is the insistence of many people to
> refer to, e.g., 300dpi JPG images: this usually means they've assumed
> some "natural" size of the image in inches, and scaled the pixel size
> to that. And indeed many bitmap formats, including JPG and PNG, add
> to the confusion by supporting an image header which specifies the DPI
> resolution: but this does not do *anything* to the actual pixels or
> the amount of detail in the image, it just makes a "suggestion" to
> programs using the image regarding how large to display or print it
> (i.e. how much interpolation/rebinning should be done). Many programs
> ignore this information altogether.
>
> On the other hand, vector data like postscript files *do* have a
> physical size, but they don't have a pixel size. This is mostly
> relevant for printers, and the printer resolution enters in
> determining how fine accurately-printed postscript features are (think
> of two thin lines quite close to each other). To display or print
> postscript, the program or device needs to have at least an
> approximate understanding of the resolution of the display or printer.
>
> In short, I suspect what they really meant is triple the pixel size of
> the image, and they will print it at the same physical size. If they
> really just want you to change the header value "96" to "300", I think
> PhotoShop will do this for you, but remember that this does nothing to
> the actual information and resolution present in the image.
>
> JD
