



Basic Image Scanning

First ask:

- ✓ Are you scanning this image so you can print it on a printer?
- ✓ Are you scanning this image so you can upload it to a web site, Blackboard course site or view it on a computer?
- ✓ Do you need to do both?

Answering these questions determines what settings you need for scanning and saving your image. The following instructions are based on flat bed scanning but much of it applies to slide scanners as well. Settings determine the quality of the completed scan, as well as the file size. File size is very important if you are planning to use the image for Blackboard or any other web application.

Step-by-Step Instructions for Flatbed Scanning

One: Place your paper on the scanner bed.

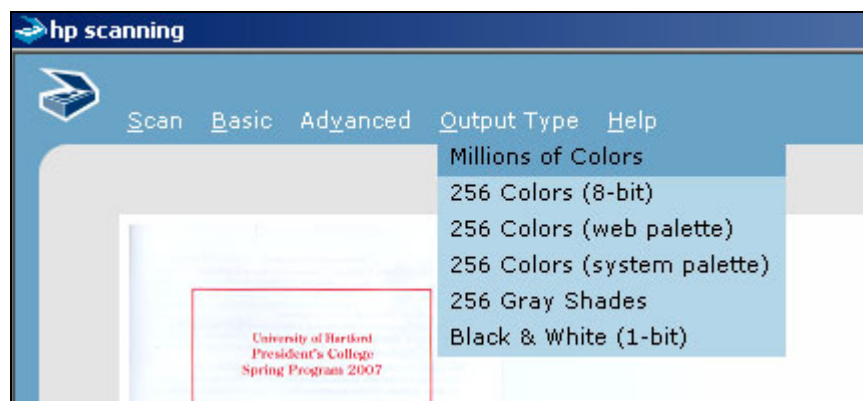
- There should be lines indicating where to place the original – much the same as a copy machine.

Two: Open the scanning software. You have three options.

- Open the scanning software itself by clicking on the software icon.
- Or open up an image editing application like PhotoEditor or Photoshop and selecting twain or import.
- Use the scan image button on the scanner. Buttons have preset scan settings, so if you do this, skip to step four below.

Three: Select the scanning software settings.

- **COLOR:** Choose color, greyscale or black and white.



- **RESOLUTION:** Select 72-100 dpi (dots per inch) if the image is going to be used on a computer, 300 dpi if the image is going to be printed. If you expect to do both, you will have to compromise. The higher the resolution is, the larger the file size. This could spell trouble for someone trying to view your image on a web site or Blackboard as it

might take a long time to download and appear on screen. If you need both, consider making two scanned images available, one at 100 dpi and one at 300 dpi.

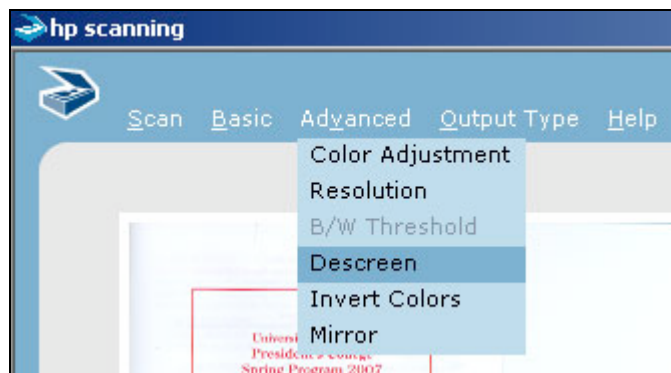
NOTE: If you are using the button on the scanner, you may find these resolution and other options ghosted or not available to you. This is because these have been preset. If you want to adjust these settings, either change the button settings (location varies with scanner) or start by opening the scanner software on the PC and skip the button altogether.

- **SCALE:** If there is an option for scale, set it at 100%. Scale is used to make the resultant scanned image larger and/or smaller. The important thing to remember is that you never want to increase the size of an image by 'stretching' it after has been scanned. It's OK to make an image *smaller* after scanning, but use scale during scanning to increase size. Typically, scale is used for very small images such as slides. Obviously, a slide scanned at 100% will be tiny. For slides, try setting the scale to 300%, and adjust as necessary for your final application. Both Photoshop and/or MS Photoeditor can be used to decrease image size and both are available in the FCLD Faculty Lab.

Four: Preview the scan by pushing the preview (New Scan in HP) button.

Five: Make any adjustments necessary.

- Use the crop tool to cut out any parts you don't want scanned (e.g., borders).
- If necessary, turn on Moire or descreen, a filter used to eliminate herringbone patterns caused by some sources – magazines, for example. This is also referred to as descreening.



Six: Scan the image (Accept in HP).

Seven: Save the image.

Basic image file formats. If you use Photoshop, be sure you don't accidentally save it as Photoshop's proprietary file format, a .psd. Here are the basic choices.

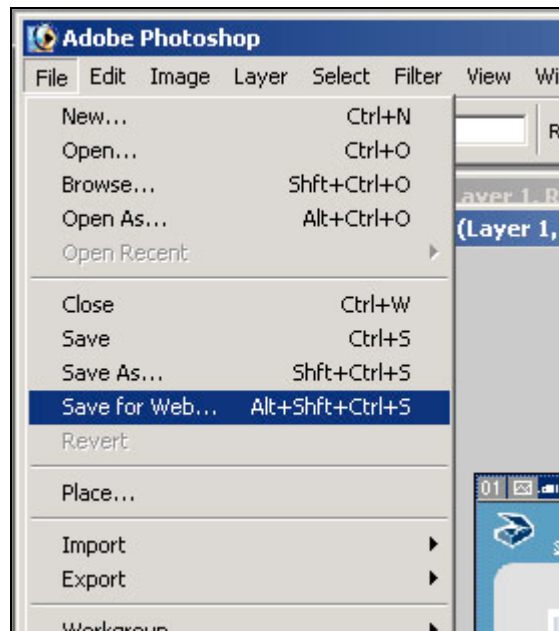
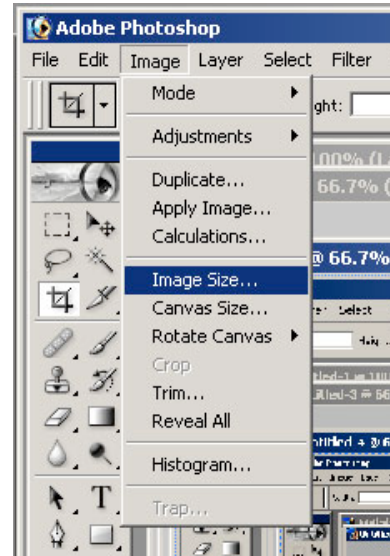
- bmp – the default setting for HP if you used the button.
- tiff – for printing (can't be used on a web site)
- jpeg – for digital photographs and web sites
- gif – for line art or art that has large, flat areas of color (not gradients) and web sites

Eight: Modify the image.

- Open the newly saved image in Photoshop or some other image editing software and make adjustments. You can brighten it, sharpen it, and do all sorts of fancy effects. You probably do want to sharpen it but don't get too carried away with all the other effects...

Note: *In Photoshop, some editing features may be limited or disabled (i.e. Filters, Layers) if scanned in any color setting except "Millions of Colors".*

- Be sure that you check the image size. Image editors often show you an image at 25% or so the image fits in your screen, but this isn't the actual size. To see the actual size on your computer monitor, make sure you are viewing the image at 100%. If it is too large, resize it to make it smaller. Never increase the size of the image this way however. If the image is too small and you need it larger, rescan it and use scale settings to increase the size.
- When you are done with all of the picture adjustments, use the "save for web" option in the file menu. This will create a jpg with a small size, but with good quality.



NOTE: If you are planning to use it in PowerPoint, you can start slightly larger than you need and resize it once you have inserted into PowerPoint. If you are planning to upload it to Blackboard, you need to resize it before you upload it. Never resize up – it won't look good. In the words of a colleague, "pretty small pixels become big, ugly ones". Adobe Photoshop is your best bet for resizing it as some image software will not resample (resize) without affecting image quality.

Nine: Save the modified image.

That's the quick and easy way to scan. Overall, try to aim for:

- Small file size, especially for web images (look for 45k not 4500k).
- Good quality but only as good as you need. Computer monitors only view 72dpi so why scan at 1400dpi?
- An image screen size that doesn't require scrollbars.

Advanced Scanning

For those of you who like complicate things, here's the hard stuff. It is possible to calculate and change image size using just the scanner itself and some math. There is a mathematical equation based on the original image size and the dpi. Note: You are going to scan your image for a specific computer screen size/resolution (e.g., 800x600 pixels). Note: You can't scan to scan for 800x600 screen resolution, then view it at 1024x768 pixels and get the same results. Here's the equation applied to a scanned slide (and here you would be using a slide scanner rather than a flatbed scanner).

(image width x dpi) x (image height x dpi) x scale = w x h in pixels

For a one inch slide, scan at 300 dpi resolution and 100% scaling.

$(1 \times 300 \text{ dpi}) \times (1 \times 300 \text{ dpi}) \times 100\% = 300 \times 300 \text{ pixels}$

If you want it larger, adjust the scaling to increase image size...
If quality is poor, raise the resolution.

$(1 \times 300 \text{ dpi}) \times (1 \times 300 \text{ dpi}) \times 150\% = 450 \times 450 \text{ pixels (fills more of the screen)}$

Again, if you hate math, you can avoid all this by scanning the slide at 100 dpi, bringing it into Photoshop and resizing to your liking.

Recommended Blackboard Size

For Blackboard users, aim for an output of 700 x 525 or thereabouts for a 1024 x 768 screen resolution. This leaves room for the main navigation buttons on the left (they take up about 150 pixels w) and some margins around the image but essentially 'fills the space'. If you are planning for an 800 x 600 screen, aim for 450 x 335. Since slides are square, you need to plan accordingly to get them to fit into these same recommendations. If you are uploading a picture of yourself to the "Faculty Information" area, Blackboard recommends 150x150 pixels for the image size. Most image editing software has an option to show you the image size in either inches or pixels.

Output Calculators

Some scanning software includes an Output Calculator that will help you figure out the output size. Remember to set the output to pixels before calculating.

Input x Scaling = Output in pixels

RELATED WEB SITES

<http://www.scantips.com> – A Few Scanning Tips by Wayne Fulton (commercial site)

http://graphicssoft.about.com/od/scanning/Scanning_Software_Tips_and_Help.htm

Scanning tips and tutorials from About.com