ProJPEG™ 5.0 Documentation

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Overview

ProJPEG™ has been the ultimate JPEG tool for Web graphics professionals for over five years, providing ease, power, control, superior image qual‐ ity, and the most file size savings to improve the effectiveness of Web sites and ease of authoring. ProJPEG™ is a file‐format* plug‐in for Adobe Photoshop 3.0 or greater providing true seamless integration with Photoshop and open and save simplicity, eliminating the need to use mul‐ tiple applications for Web JPEGs.

Version 5.0 adds the most significant advancements to ProJPEG ever, with improved memory handling to allow ProJPEG to work for Web graphics or hi‐res JPEG images and advanced Photoshop actions support for batch processing and automated work flow, plus a new interface with resizable and zoomable image previews for better compression feedback and er‐ gonomic work flow. Paint Shop Pro is also supported by ProJPEG now on Windows, in addition to Photoshop.

ProJPEG is easier, faster, and more flexible than ever to meet all your JPEG image needs

* Many applications claim to support simply "Adobe Photoshop plug‐ins" but fail to make the distinction of what kind of Adobe Photoshop plug‐ins meant. There are six different kinds of Adobe Photoshop plug‐ins. Most third party application support is limited to Filter, Export, and Acquire plug‐ins.

ProJPEG is certified to work with Photoshop 3.0 or greater and Paint Shop Pro 5.0 or greater. Other host applications supporting Photoshop plug‐ins may, or may not be compatible with ProJPEG.

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About JPEG

JPEG (pronounced 'jaypeg') is the common usage name of one of two graphics file formats historically supported by Web browsers. Note that JPEG is really only a compression method employed by both graphics file formats and not the actual name of either format.

JFIF and Adobe JPEG are the two actual graphics file format standards, which are integrated transparently together in "JPEG" format support so this is not a distinction that generally has to be made when creating or using "JPEGs".

JPEG compression and the JFIF graphics file format were developed by the Joint Photographic Experts Group to provide for efficient compression and storage of full−color and grayscale continuous tone images of natural real−world scenes, i.e. photographs. JPEG, referring to the common name of the format, supports 24−bit color (16.7 million colors) and uses JPEG compression, which is a 'lossy' method, meaning that image data is lost in the compression process, and the uncompressed image will not match the original perfectly, as it would if it were compressed with a 'lossless' method.

JPEG is highly optimized for compressing continuous tone, photographic images and does not perform as well, both in terms of the resulting visual quality and in terms of achievable compression, for other types of images. Generally, you should not use JPEG for images that are not photographic in nature.

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About Progressive JPEG

"Progressive JPEG" was defined by the original JFIF specification. It is not a new graphics file format or even a new extension to the JPEG format. It has always been, but until the advent of the Web there was very little practical need for implementing support for the progressive aspect of JPEG, which is able to provide incremental display during rendering much like interlacing in the GIF format does.

Netscape Navigator version 2.0 was the first Web browser and first common application of any kind to add Progressive JPEG support. Soon after, ProJPEG™ was the first professional production tool available for creating Progressive JPEG files for the Web circa 1995. Since then Progressive JPEG support has become standard in all Web browsers, but still is not commonly supported by other types of applications.

It is common for applications that do not support Progressive JPEG files to simply report that the file is corrupt because no provisions were made for determining if a JPEG file was progressively encoded or not, before reading began. This is not the case.

If any application reports that a file created by ProJPEG™ is corrupt, the most likely reason is the file was saved as progressive, and the application being used does not support Progressive JPEG. This may occur even with popular WYSIWYG HTML editors that still do not support Progressive JPEGs.

The solution is to re-save the file without the Progressive option in ProJPEG and all applications that have any JPEG support will be able to read them.

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Windows System Requirements

1 : Windows 95/98/2000 or Windows NT 4.0 or greater
3: Adobe Photoshop 3.0 or better or Paint Shop Pro 5.0 or better
4: Recommended available memory for your host application

ProJPEG™ is also available for Macintosh and is compatible with Photoshop 3.0 or better for Macintosh.

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Installation in Photoshop

To install ProJPEG in Photoshop, copy the plug-in from its location to your plug-ins directory, taking care not to unintentionally make a Short Cut, instead of copying the plug-in file. The "projpeg5.8bi" file must be copied. A Short Cut to the file will not work.

It is also normal, but not required, to place file format plug-ins, such as ProJPEG, within the File Formats directory inside the Plug-ins directory, but this is optional.

C:\Program Files\Adobe\Photoshop 5.5\Plug-ins\File Formats\projpeg5.8bi

Is a typical file path for ProJPEG installed under Photoshop.

After you have copied ProJPEG into your plug-ins directory, ProJPEG will be available the next time you launch Photoshop as a new format option when saving images using the Save As... or Save a Copy... commands.

You can confirm that ProJPEG is installed correctly and has been loaded by Photoshop in the Help->About Plug-in menu. A "BoxTop ProJPEG 5.0" item in this menu indicates ProJPEG has been loaded successfully.

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Installation in Paint Shop Pro

To install ProJPEG in Paint Shop Pro, copy the plug-in to the location of your Paint Shop Pro plug-ins designated under File->Preferences->General Program Preferences->Plug-in Filters. By default this location is:

C:\PROGRAM FILES\PAINT SHOP PRO 6\Plugins

If required, you can add up to three search paths for Paint Shop Pro to locate plug-in files in this dialog, allowing you to use plug-ins in other locations shared with other programs such as Photoshop.

After copying the plug-in to the correct location or setting appropriate plug-in search paths, you must check the "Enable plug-in automatic file format identification" option under:

File->Preferences->General Program Preferences->Plug-in Filters

This is the same dialog as above where plug-in search paths are set for Paint Shop Pro. Make sure that "Enable filters – Allow the use of external image processing filters" is checked, or Paint Shop Pro will load no plug-ins for use, this option is normally on by default, though.

ProJPEG will be available the next time you launch Paint Shop Pro as a new format option when saving images using the Save As... and Save Copy As... commands under the File menu.

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Installation Trouble−shooting

If you have properly installed ProJPEG, and it does not appear in Photoshop's formats menu after relaunching, you should check the follow−ing in order:

1: Confirm that you copied the plug−in to the plug−ins directory and did not make a Short Cut to it. Short Cuts appear as icons with a small arrow in the lower left hand corner.
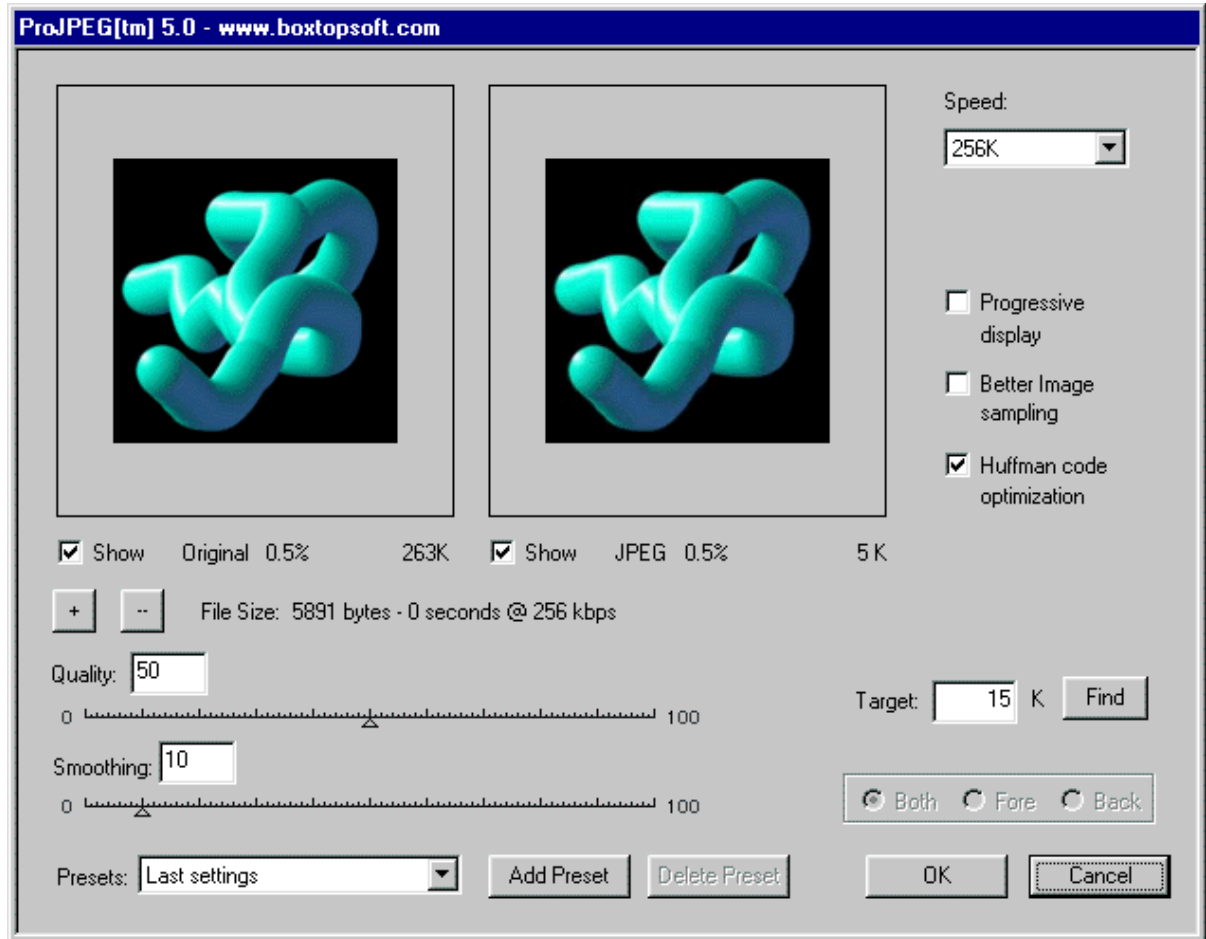
2: Confirm the location that Photoshop or Paint Shop Pro are set to look for plug−ins in their preferences.

3: Under Photoshop (this is not applicable to Paint Shop Pro) confirm the document being saved is in RGB or greyscale mode, is flattened, and doesn't have more than one alpha channel. Photoshop will remove format options from the format menu when they are not capable of saving the working image document. You can use the Save A Copy... command with the "Flatten Image" and "Discard Alpha Channels" options checked to save an image through Photoshop without changing your working document in this case.

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The ProJPEG Interface

ProJPEG™ has one main options dialog for controlling compression set-tings when saving files.

1 : The original image preview

The original image preview shows the original image quality so you can compare it to the compressed image quality in before–and–after fash-ion. Associated with the original image preview is a check box titled "Show" directly beneath the preview that allows you to turn it on and off. Also, beneath the original image preview, the uncompressed file size is shown. The previews can be zoomed using command +/– and with the +/– buttons to the left of the file size line.

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2: The JPEG image preview

The JPEG image preview shows the exact image quality after lossy JPEG compression, so you can compare it to the original image quality in be-fore-and-after fashion. Associated with the JPEG image preview is a check box titled "Show" directly beneath the preview that allows you to turn it on and off. Also, beneath the JPEG image preview, the exact compressed file size is shown.

3: The speed menu

The speed menu provides a way to see approximate download times for your file at different transmission speeds. The speed menu does not have any real effect on the compression. It is simply a previewing mechanism. However, all figures for download time are only estimated. Under real world conditions on your Web site, they will vary based on many factors such as server load, line noise, and packet latency that cannot be ac-counted for during estimation.

4: The progressive display check box

The progressive display check box allows you to save a progressive JPEG that will display incrementally during download. You should be aware that not all applications, including many common WYSIWYG HTML editors, have support for progressive JPEGs. Refer to the "About progressive JPEG" section for more information on compatibility issues.

5: The better image sampling check box

The better image sampling check box controls the rate of sampling from the original image. Checking it will improve image quality, but will also increase the final file size. Normally, you will not need to use this option, but in cases where image quality is critical such as representing portfolio artwork on the Web, it is available.

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6: The Huffman code optimization check box

The Huffman code optimization check box will improve image compression by generating a custom code table for the final Huffman compression of the image data sampled and transformed by the JPEG process. This option does increase the time required to regenerate previews and save files, but there are no other disadvantages in any case. In general, you should choose to use a custom code table for your files.

7: The zoom controls

The previews in ProJPEG can be zoomed to view close up detail, or to fit larger images entirely within the preview areas. The + zoom button in‐creases the magnification, while the − button decreases the magnification. You can also use Command +/− to zoom the previews.

8: The file size line

The file size line shows the absolute file size of the compressed JPEG file and the estimated download time for that file at the chosen speed. You will note that during the regeneration of previews, the numbers shown in the file size line will change rapidly, becoming more and more accurate until the entire image has been compressed in memory and the final file size determined.

9: The quality text box and slider

The quality text box and slider both allow control over the quality at which your JPEG will be compressed. This is the single most important setting that makes the biggest difference in both file size and image qual‐ity. The quality setting range is from zero to one hundred. It is not advis‐able to save files at settings lower than ten or greater than ninety; less or more is overkill.

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10: The smoothing text box and slider

The smoothing text box and slider allows control over a smoothing process which reduces noise in images (noise that adversely affects the efficiency of the JPEG compression process.) This is the second most important setting and makes a big difference in file size and image quality. Higher smoothing settings will produce smaller files, but begin to degrade image quality in an effect similar to appearing out of focus and fuzzy.

11: The presets menu

The presets menu allows you to quickly select sets of saved settings to speed your work flow. The presets menu defaults to a special case of "Last settings" so that ProJPEG always remembers the last used settings whether they were set manually or by selecting a saved preset. Also, associated with the presets menu are the add preset and delete preset buttons. Hitting "Add Preset" will let you save the current settings in the dialog as a named preset. Hitting "Delete Preset" allows you to delete the preset that is current in the preset menu.

12: The Target text box

The Target text box works in conjunction with the Find button to provide target compression capabilities in ProJPEG, allowing you to automatically create files of a specific known file size by entering the required size in kilobytes in the Target text box and clicking the Find button to the right of it for ProJPEG to calculate the compression parameters needed.

13: The Find button

The Find button becomes active when a target file size has been entered into the Target text box to the left of the Find button, and will calculate the needed compression parameters to produce a file of the desired size.

14: The Both, Fore, and Back radio button group

This radio button group controls the variable compression capabilities in ProJPEG. By default, only the Both button is activated and selected, which means that a uniform smoothing setting will be applied to the entire image.

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To use the variable compression capability in ProJPEG, you must first save a selection (create an aplha channel mask) in Photoshop before saving your file. The saved selection is used to differentiate foreground and back‒ground areas of the image. The area within your saved selection (white areas of the alpha channel) is the foreground. The area outside of your saved selection (black areas of the alpha channel) is the background.

When an alpha channel is present, all three of these radio buttons become active and selectable. Selecting the Both radio button applies smoothing settings to both the foreground and background areas of the image uni‒formly. Selecting the Fore button allows you to make individual smoothing settings for the foreground area of the image only. Selecting the Back button allows you to make individual smoothing settings for the back‒ground area of the image only.

Smoothing can apply only to one area of the image in ProJPEG, it is an either or ‒ not a both. If you toggle between fore and back radio buttons, you make new settings, smoothing either fore or back areas.

Masking off foreground areas of the image and applying very aggressive smoothing settings to the background areas is desirable for best image quality and compression.

15: The window grow box

The ProJPEG interface is resizable, and can be adjusted as small or as large as you like by dragging the window's grow box.

16: The cancel and OK buttons

The cancel and OK buttons both do the usual thing. No special explanation is required for them.

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Saving Files with ProJPEG

There are two means of saving files using ProJPEG™. The first is using the "Save as..." command in Photoshop and the second is the "Save" command. You should be very familiar with save and save as from within Photoshop, and using ProJPEG™ is no different from using any other format module to save files from Photoshop.

If you perform a "Save as..." you first see Photoshop's file dialog where you select the destination and supply a name for the new file. Once you have done so and hit the OK button to proceed, ProJPEG™'s options dialog will be shown.

In ProJPEG™'s options dialog, you need to set compression parameters. This process is very simple and fully interactive. The main setting you need to make is the quality setting. A good starting point for setting quality is 50. From there the quality setting can be increased or decreased as needed to achieve the desired image quality and file size.

You should review the previous section of this manual on the use of other controls in ProJPEG™'s options dialog, and spend time experimenting with various settings to get a feel for ProJPEG™.

Remember that ProJPEG™ is absolutely WYSIWYG (what you see is what you get,) and the image quality shown in the JPEG preview is exact as is the file size displayed. Because of this it is very easy to use ProJPEG™.

After you have initially saved an open working file with ProJPEG™ once, you can simply use the save command to save updated versions of the file with the settings previously made. Normal saving in this manner will not show ProJPEG™'s options dialog.

As long as your document is open, ProJPEG™ will have the original RGB data to create the JPEG file. Multiple saves with ProJPEG™ on an open document won't degrade image quality. However, if you open existing JPEG files and re–save them, each compression process in that manner will degrade the image data slightly more.

It isn't advisable to use JPEG as a working document format because of the lossiness inherent in JPEG compression.

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Optimizing Files

Optimizing JPEG files with ProJPEG™ is a process of interactivity. The way you optimize a file is simply by finding the best ratio between image qual–ity and file size that is best for the particular image and its intended use. Because of the interactive nature of ProJPEG™, this is a quick and easy process, whereas another tool would require you to save multiple copies of the file using many settings, then tediously comparing the results to see which one was the best to use. In ProJPEG™, the same process can be achieved on the fly in one easy step.

You should limit your use of the JPEG for Web graphics to continuous tone, full color, or greyscale images of a photographic nature. These are the types of images that excel as JPEG. Also, you should never save images that have been color reduced to 256 or fewer colors as JPEG files, and doing so can be very detrimental to image quality without improving file size. JPEG depends on continuous tone to achieve its results.

Besides those rules of thumb, there are no practical manual optimizations that can be performed on your images prior to saving as JPEG to improve compression or quality. The final outcome will be largely dependent on the settings used to create the JPEG file.

One thing to remember when you create graphics for the Web is that fast download times are often more critical than superb image quality. The goal is to find a mid–point between both extremes that allows for the smallest possible file while maintaining acceptable image quality, with what is acceptable image quality varying by the specific use of the image. For example a photographer's portfolio online would require much higher quality images than thumbnail images for an online catalog to achieve the desired effectiveness.

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Batch Processing and Actions

ProJPEG fully supports Photoshop actions in Photoshop 4.0 or greater for automating tasks and batch processing of files. See the Photoshop documentation for more information on actions and batch processing.