



WebGraphics Optimizer
for Windows 95/NT
Version 1.0, 30-08-97

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The "FlashPix" format uses Microsoft's OLE structured storage.

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How To Register

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How To Register

You can purchase WebGraphics Optimizer in these ways:

1. **Through our homepage.** Look at <http://WebOpt.com/purchase/> for more information about purchasing WebGraphics Optimizer online.
2. **Through Compuserve.** Just type GO SWREG and read the instructions.
3. If you don't have access to compuserve or a convenient web access, the next best way to order WebGraphics Optimizer is **by mail**. Simply print out and complete the WebGraphics Order Form below and mail it to Plenio Software Solutions:

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Therese-Giehse-Allee 48
D-81739 Munich
Germany

Upon receipt of this form, we will process your order and send you a confirmation email. This email will contain your personalized registration key and directions for downloading WebGraphics Optimizer from our FTP site. If you have any questions or trouble with this form or with sending mail to us, send an email to sales@WebOpt.com.

First Name	_____	Last Name	_____
eMail	_____		
	(example: peter.smith@youraddress.com)		
Street	_____		

City	_____	State/Prov	_____
Zip/Post	_____	Country	_____
Phone	_____	Fax	_____

Shipping Method:

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<input type="checkbox"/> Registration Code through E-Mail	
<input type="checkbox"/> On CD (Add Shipping costs rates listed below)	
<input type="checkbox"/> On 3.5'' Disk (Add Shipping costs rates listed below)	
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Shipping costs: \$12

+-----+-----+-----+		
	Quantity	Price
+-----+-----+-----+		
WebGraphics Optimizer Final Version		\$39.00
+-----+-----+-----+		

Shipping costs: _____

Total: _____

Choose a Payment Method:

<input type="checkbox"/> Visa
<input type="checkbox"/> Mastercard
Card No. _____
Expiration Date ___/___/_____ (month/day/year)
<input type="checkbox"/> Euro Check (Europe)
<input type="checkbox"/> Money Orders (US or German currency only)

What's New

What's new in WebGraphics Optimizer 1.0

Changes to Preview Version 3:

- Read and write support of animated and transparent GIF
- Powerful region processing: All image manipulations can be limited to any combination of rectangle, ellipse, rounded rectangle and freehand selection of an image
- Multipage scanning supported
- New filter effect: Oil painting
- New functions: Duplicate image; crop region
- Help file completed
- Improved user interface
- Several bug fixes

Main Purpose

As the name indicates WebGraphics Optimizer is a perfect tool for optimizing and compressing images for online and internet use, mainly World Wide Web pages. Most images can be greatly reduced in size, and it's amazing to see how much you can improve the speed of your Web site and reduce the necessary webspace.

It can also be used for the entire process of image handling: Starting with scanning an image, manipulating it in several ways, and finally saving it in the desired graphics file format.

Have a look at the [Features](#) help page to see what WebGraphics Optimizer can do for you.

Features

Summary of the main features:

- WebGraphics Optimization: Up to 5 variations can be viewed and compared while you change the compression ratio, color depth, dithering, color palette and file format of an image in realtime. That way you can find the best possible quality with high compression. Choose between manual apply and auto-apply.
- Easy comparison of 5 variations: All image variations are displayed along with the file size and memory size of an image and the number of unique colors used by an image or GIF animation.
- Read support of the following 24 graphics file formats:
GIF, JPEG, PNG, BMP, CAL, Cursor (CUR); Icon (ICO), IBM IOCA (ICA), EPS, Microsoft Fax (AWD), Kodak Flashpix (FPX), Kodak Photo CD (PCD), GEM Image (GEM), MacPaint (MAC), Microsoft Paint (MSP), Macintosh Picture (PCT), PCX, Photoshop 3.0 (PSD), Sun Raster (RAS), TGA, TIFF, Winfax, WMF, Word Perfect Raster (WPG)
- Write support of the following 16 graphics file formats:
GIF, JPEG, PNG, BMP, EPS, GEM Image (GEM), MacPaint (MAC), Microsoft Paint (MSP), Macintosh Picture (PCT), PCX, Photoshop 3.0 (PSD), Sun Raster (RAS), TGA, TIFF, WMF, Word Perfect Raster (WPG)
- Support of the following internet graphics file formats:
JPEG, progressive JPEG, grayscale JPEG, GIF in all color depths, including animated, transparent and interlaced GIF, Portable Network Graphics (PNG)
- Unlimited zooming in and out.
- Powerful region processing: All image manipulations can be limited to any combination of rectangle, ellipse, rounded rectangle and freehand selection of an image.
- High quality resizing with resampling (anti-aliasing); picture crop; selected region crop.
- Functions for color manipulation: brightness, gamma correction, contrast, histogram contrast, stretch intensity, invert, hue, saturation, histogram equalize, fill color.
- Filter functions: halftone, blur, sharpen, posterize, mosaic, emboss, soften, oil painting, reduce noise, add noise, intensity detect, edge detect, line detect.
- Exact rotation, parallelogram (shear) with fine tuning, mirror, flip image.
- Color resolution: 1 to 32 bits/pixel color depth, depending on the file format, dithering methods: no, ordered, floyd stein, burkes, stucki, sierra, stevenson arce, jarvis; color limitation for decreased file size, color palettes: fixed, optimized, windows, netscape.
- Screen capture
- Easy to handle image duplication
- Twain support: Single and multipage scanning supported.
- Copy from and paste to clipboard supported

- Undo function
- MDI user interface for working with multiple images
- Easy user-friendly interface

The Image Window

Below is an example of an image window, with the original image on the left side and one visible variation:



Below each image there is the file size displayed that the image will need when saved. As you can see the right picture is greatly reduced in image size (approx. 4 KBytes compared to 77 KBytes). The left image is an uncompressed BMP file while the right image is a JPEG file with medium compression ratio.

You can display up to four more variations and select different file formats or compression ratios to compare the image file sizes.

When you click on the right mouse button on one of the images, a pop-up menu will be displayed containing a context sensitive selection of commands.

Depending on which image you have selected (original or variation, appears with a red title) you can choose between different image operations:

Original Image Tools

- Resize
- Adjust Color / Intensity
- Filters
- Special

Variation Image Tools

- Format
- Color Resolution

Hint: You can only save variations to disk, not the original image.

Original Image Tools

You can assign all image manipulation functions that are described here to the original image.

All image manipulations will immediately be performed for all visible variations when you hit the apply button and you will then see the changes of all variations immediately.

All image manipulations can be limited to any combination of rectangle, ellipse, rounded rectangle and freehand selection of an image.

Find out more about [regions](#).

[Resize](#)

[Adjust Color / Intensity](#)

[Filters](#)

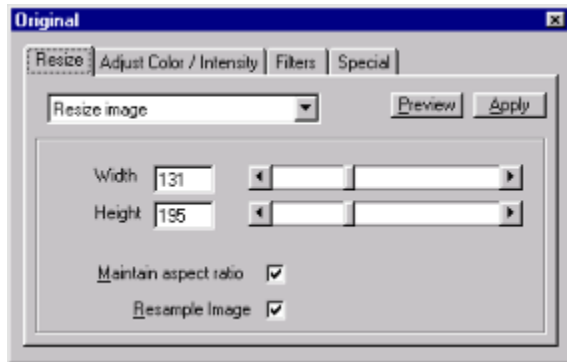
[Special](#)

Original Tools: Resize

Tools for resizing and cropping images:

Resize Image

Changes the width and height of an image.



Width

The new width of the image in pixels. If the maintain aspect ratio box is checked, the height of the image will be changed accordingly.

Height

The new height of the image in pixels. If the maintain aspect ratio box is checked, then the width of the image will be changed accordingly.

Maintain aspect ratio

If checked, the aspect ratio of the image will not be changed when resizing the image

Resample Image

If not checked, the image will be resized using the normal resizing function.

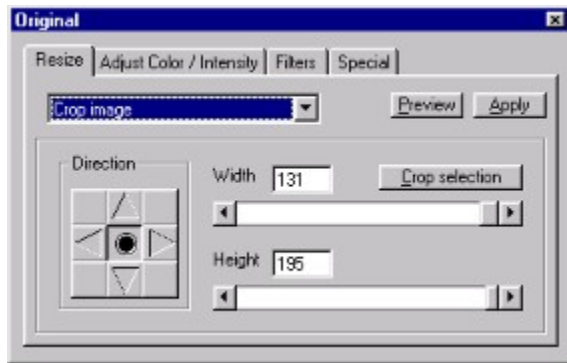
If checked: Resizes the bitmap, using interpolation and averaging to produce a higher-quality image that would be achieved by normal resizing.

Crop image

Trims the image to a specified size.

There are two ways to crop an image:

1. By pressing the Apply button: The image will be cropped using the given settings
2. By pressing the Crop selection button: The selected region is trimmed.



Direction

The direction of trimming the image.

Width

The Width of the image after trimming it.

Height

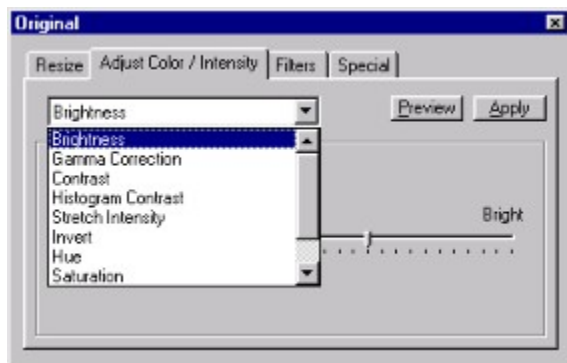
The Height of the image after trimming it.

Crop selection

Trims the selected region. Works only if a region selection is defined.

Original Tools: Adjust Color / Intensity

Contains image manipulation functions that concern the color and intensity of the image.



Brightness

Changes the brightness of the image from -100 to +100 percent.

Gamma Correction

Adjusts the intensity of colors in the bitmap by changing the gamma constant that is used to map the brightness values.

Intensity values ideally follow a logarithmic progression, because the eye perceives changes in intensity as being equal when the ratio of change is equal. For example, we would see a change from 0.1 to 0.2 as being equal to a change from 0.2 to 0.4.

Gamma is a standard constant that is used to calculate the progression. For most screens the gamma constant is in the range of 2.2 to 2.5.

Contrast

Increases or decreases the contrast of the bitmap from -100 to +100 percent.

Histogram Contrast

Increases or decreases the contrast of the image, using a histogram to determine the median brightness. This method finds the median brightness of the image; then brightens the pixels with values above the median and darkens the pixels with values below the median. This is more sophisticated (but slower) than the Contrast method, which uses the middle possible value (128) rather than finding the actual median. Possible values: -100 to +100 percent.

Stretch Intensity

Increases the contrast in an image by centering, maximizing, and proportioning the range of intensity values.

Unlike the Contrast method, this method always retains the original number of different intensity values. (Ordinary contrast adjustments can lose values at the high and low ends of the scale.)

Invert

Inverts the colors in the image, making it like a photographic negative.

Hue

Changes the hue of colors in the image by rotating the color wheel.

This method can rotate the color wheel in either direction. A 180-degree rotation in either direction changes each color to its complement. Positive rotation takes red toward green, green toward blue, and blue towards red. Negative rotation has the opposite effect.

Possible values: -180 to +180 degrees.

Saturation

Increases or decreases the saturation of colors in the image.
Negative values decrease the saturation of colors. Set -100 percent to change the colors to grayscale.
Positive values increase the saturation. Specify +100 percent to make the colors as bold as they can be.

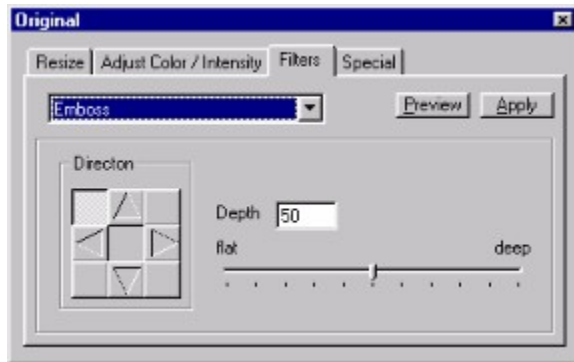
Histogram Equalize

Linearizes the number of pixels per gray level in the image. This can be used to bring out the detail in dark areas of an image.

Fill Color

Fills the image with the specified color.
You can specify a color by pressing the Change button

Original Tools: Filters



Halftone

Converts an image to a halftoned image. A halftoned image is a 1-bit bitmap that has been dithered for black and white printing or display.

If the bitmap is originally 1-bit but is not black and white, this method changes it to black and white.

Blur / Sharpen

Increases or decreases the sharpness of the image.

Negative values blur the image. Specify -100 for maximum blur effect. Positive values increase the sharpness. Specify +100 for maximum sharpness.

Posterize

Imposes a poster effect on the image by quantizing the image's colors to a specified number of color levels per plane. For example, two levels means two of red, two of green, and two of blue.

Possible values: 2 to 64 levels.

Mosaic

Imposes a mosaic effect on the image by dividing the bitmap into tiles of a specified size and changing the color of all pixels in each tile to the average color of pixels within the tile.

Possible values: Tile size from 2 to 100 pixels.

Emboss

Applies an emboss effect to the image, letting you specify the depth and direction of the effect.

Soften

Changes the color of each pixel in the bitmap to the average color of pixels in its neighborhood. This results in a blur effect.

You control the amount of blur by specifying the size of the neighborhood that is used for averaging.

Possible values: Neighborhood size from 2 to 100 pixels.

Oil Painting

Applies an oil-painting effect to the image.

You control the effect by specifying the size of the neighborhood that is used for calculating the pixel value. For example, for 8x8, specify 8 for the pixel parameter. Increase the size of the neighborhood in order to decrease the amount of detail in the resulting image.

Possible values: Neighborhood size from 2 to 100 pixels.

Reduce Noise

Changes the color of each pixel in the image to the median color of pixels in its neighborhood for noise reduction.

You control the effect by specifying the size of the neighborhood that is used for calculating the median value. For 8x8, specify 8 for the pixel parameter.

Possible values: Neighborhood size from 2 to 100 pixels.

Add noise

Adds random pixels to the image, letting you specify the percentage of coverage and the color plane.
Possible values: Coverage from 0 to 100 percent, color plane selection.

Intensity detect

Filters the image to detect colors in a specified intensity range.
Intensity levels range from 0 to 255 for each color plane (red, green, and blue). This method processes each plane separately. If a value falls within the range, it is raised to 255, and if it falls outside the range, it is lowered to 0.

Edge detect

Edge detection:

Sobel: Applies Sobel edge detection in the direction specified.

Prewitt: Applies Prewitt edge detection in the direction specified.

Direction

Horizontal or vertical

Line detect

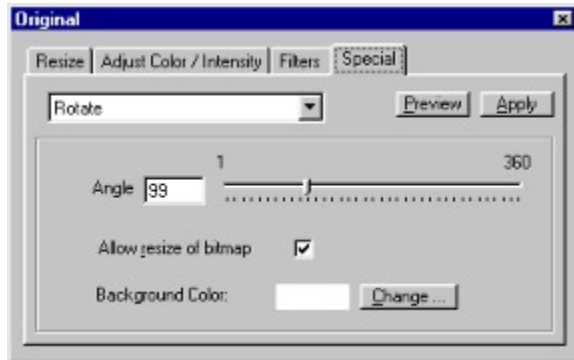
Direction

Horizontal, vertical, left to right or right to left

Original Tools: Special

Rotate

Rotates the image by the specified degrees (0 to +360), and lets you specify the background color to be uncovered. The center of the image is the center of rotation.



Angle

The rotation angle (from -360 to +360). Negative angles let the image rotate counterclockwise, positive angles let the image rotate clockwise.

Allow resize of bitmap

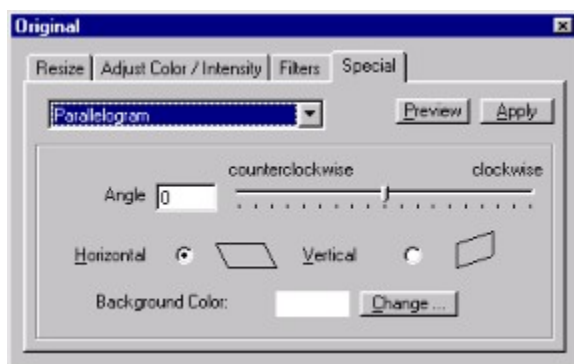
Lets you resize the image to accommodate the rotated height and width, or, when unchecked, it retains the original height and width, cropping the bitmap as necessary.

Background Color

Lets you specify the background color to fill any new area created by the rotation.

Parallelogram

Moves the corners of the image in the fashion of a parallelogram.



Moves the corners of the image in the fashion of a parallelogram.

Angle

The angle of slant (from -45 to +45).

Horizontal

Produces horizontal shear.

Vertical

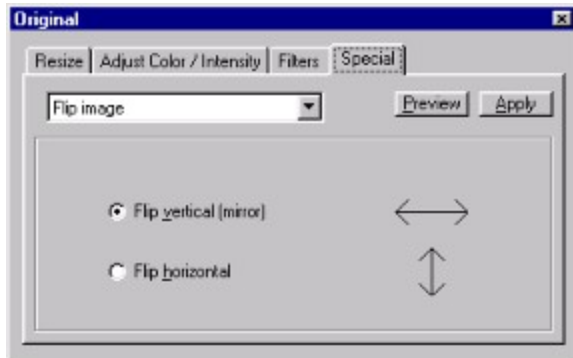
Produces vertical shear.

Background Color

Lets you specify the background color to fill any new area created by the shear.

Flip image

Flips the image from top to bottom or from left to right (mirror).



Flip vertical (mirror)

Flips the image from left to right (mirror).

Flip horizontal

Flips the image from top to bottom.

Variation Image Tools

All image manipulation functions you can assign to a variation image are described here

All image manipulations will immediately be performed when the auto apply option is enabled. Otherwise you have to hit the apply button to perform a change.

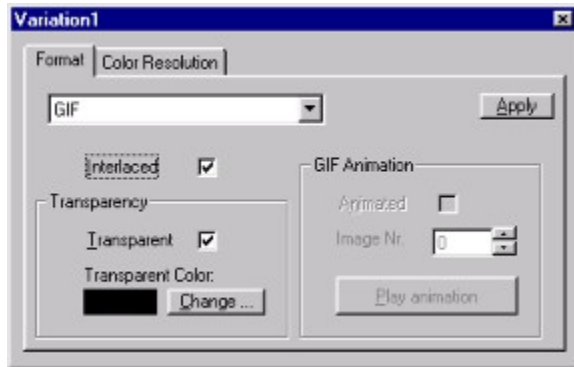
Format

Color Resolution

Variation Tools: Format

When the active image is a variation image then you can select between 16 graphics file formats.

GIF



Select this format to save images for internet use. You can choose between the following options:

Interlaced

If you select this option the image will be displayed in more than one step on a web site, with each step showing more details of the image.

Transparency

If selected the image will be saved with one color of the color palette functioning as a transparent color. Click on the Change... button and then on the desired color for transparency in the selected variation. The new transparent color will be displayed on the left side of the Change... button.

GIF Animation

The Animation Frame will only be enabled when you have opened an animated GIF. Initially the animated GIF file will be played continuously in the original image and not be played in the variation image.

Animated

If checked the GIF will be treated as an animated GIF

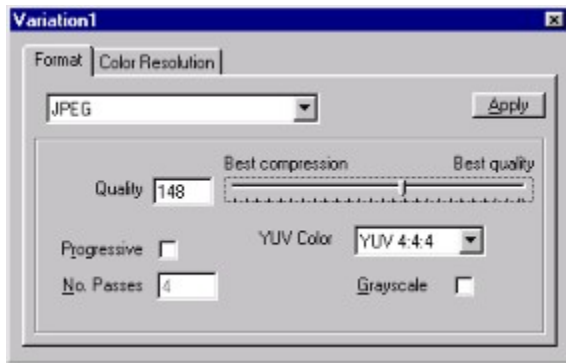
Image Nr.

You can take an entire look at all frames of an animated GIF when the Play animation button is not pressed. With Image Nr. you can choose the image number of the animated GIF to be displayed in the variation image. This field has no effect when an animated GIF is playing.

Play animation

If pressed the animation will be played continuously (if the opened GIF is an animated GIF with infinite looping).

JPEG



Select this format to save photo realistic images for internet use. You can choose between the following options:

Quality

You can select any setting between 2 (best compression, but worst picture quality) and 254 (bad compression, but superb quality).

Progressive

When checked the image will be saved as a progressive JPEG. Use with caution for internet use, because some web browser don't support this file format.

No. Passes

When the Progressive checkbox is checked the JPEG file will be saved as a progressive JPEG with this number of passes.

YUV Color

Choose between different colorspace settings. You can choose between YUV 4:4:4 (better quality, but lower compression), 4:2:2 and 4:1:1 (lower quality, but better compression).

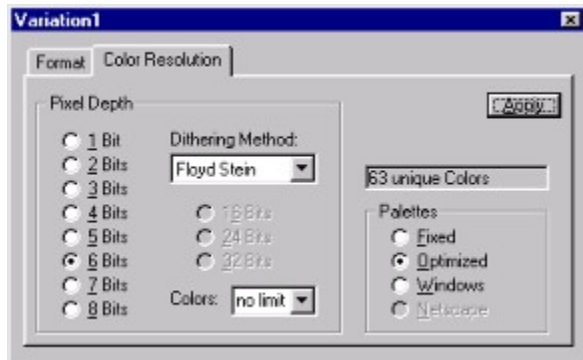
Grayscale

When checked the JPEG image will be saved as an 8 bit grayscale JPEG image (= YUV 4:0:0). Use this option for original grayscale images to achieve more compression.

For more supported file formats like PNG, PSD, TIF, compressed TIFF etc. look at [Supported Graphics File Formats](#)

Variation Tools: Color Resolution

For each displayed variation you can change the color resolution, dithering method and color palette:



Pixel Depth

Depending on the selected graphics file format you can choose between different color resolutions. For example, color JPEG files can only be saved in 24 bit color resolution, while the GIF graphics file format allows 1 (2 colors) to 8 bits (256 colors) per pixel color resolution. Changing the color resolution greatly affects the size of an image.

Dithering Method

When the selected pixel depth is at maximum of 8 bits per pixel you can select a dithering method to improve the appearance of an image. You can choose between different dithering methods. In general we recommend Floyd Stein dithering method because it seems to produce the best results in most cases.

Colors

When you have selected the optimized palette you can reduce the number of unique colors in an image by setting this field to the desired number of colors. This is a good way to fine tune an image for compression.

Example: You have chosen 3 bits per pixel as the color resolution, that is $2^3 = 8$ Colors. If you would set the color resolution to 2 bits per pixel, the maximum number of colors would be $2^2 = 4$ Colors. To select 5, 6, or 7 unique Colors for that image you can leave the color resolution at 3 bits per pixel and fill the Colors field with the desired number.

Palettes

Select between 4 predefined color palettes, where Fixed stands for a fixed standard color palette, Optimized for a dynamically generated palette with only adapted colors which are as close as possible to the original colors. The Windows palette contains the system colors filled up with adapted colors (Often similar to Optimized palette). The Netscape palette is a good choice for Web Site images, because most web browsers like Netscape Navigator and MS Internet Explorer are using this palette on screen displays with only 256 colors.

Option Dialog

There are two options you can change in the Options dialog:



Auto apply variation changes

Indicates whether or not you have to hit the apply button to perform changes you have made to an image variation. This option does not concern changes you make to an image original.

Initial open variations

Indicates how many variations you want to open as default when opening an original animation. Possible numbers are 0 to 5.

Language

Currently there are no international versions of WebGraphics Optimizer available. However we have plans to publish internationalized versions later.

Menu Description: File Menu

Contains functions for managing files and scanning.

New

Creates a new empty image. You can then scan with a twain compatible device or paste clipboard data into the empty image.

Keyboard shortcut: CTRL+N

Open

Loads the selected image if it's one of the supported graphics file formats.

Keyboard shortcut: CTRL+O

Close

Closes the selected image.

Save

Updates the current image by overwriting the last saved version of the image. If no image has been previously saved, this command works like Save As.

Keyboard shortcut: CTRL+S

Save As...

Saves the current image under a different filename.

Keyboard shortcut: CTRL+A

Aquire...

Lets you scan an image with the selected twain compatible device.

Keyboard shortcut: CTRL+Q

Select Source...

You can select your desired twain compatible device from a list of available devices.

Exit

Exits WebGraphics Optimizer.

If you have unsaved work, you'll be asked if you want to save it.

Keyboard shortcut: CTRL+X

Menu Description: Edit Menu

Contains functions for copying and pasting images and undoing the last action.

Undo

Cancels the last action. The command has 1 level of undo. When you change the image selection, the last action can't be undone.

Keyboard shortcut: CTRL+Z

Copy

Copies the current image to the clipboard.

Keyboard shortcut: CTRL+C

Paste

Pastes the current clipboard data to the selected image, when it contains valid image data.

Keyboard shortcut: CTRL+V

Duplicate Image

Duplicates the current selected image into a new image window.

Keyboard shortcut: CTRL+I

Select Region

Selects the shape of the creation of a region selection. The creation of a rectangle, rounded rectangle, ellipse, or freehand region is supported. After you have selected a region of an original bitmap, all further image processing is only performed on the selected region.

Keyboard shortcut:

CTRL+R (Rectangle)

CTRL+E (Ellipse)

CTRL+D (Rounded rectangle)

CTRL+F (Freehand)

Menu Description: View Menu

Contains functions for tools to display.

Toolbar

Displays / Hides the icon toolbar.

Status Bar

Displays / Hides the status bar at the bottom.

Toolbox

Displays / Hides the toolbox with all image manipulating functions and compression options.

Variation

Displays / Hides the selected variation.

Keyboard shortcut: CTRL+F1 .. F5

Options...

Displays a dialog box with preferences to configure WebGraphics Optimizer to your individual needs.

Keyboard shortcut: CTRL+P

Menu Description: Window Menu

Contains functions for displaying modes of windows and icons.

Cascade

Arranges open windows diagonally like a series of index cards, so that the title of each window is visible.

Tile Horizontal

Stacks the open windows horizontally so that each title bar is visible and the active window is fully visible.

Tile Vertical

Stacks the open windows vertically so that each title bar is visible and the active window is fully visible.

Arrange Icons

Evenly arranges icons in WebGraphics Optimizers main window.

Menu Description: Help Menu

Contains help information about WebGraphics Optimizer, how to use it and how to register it.

Contents

Displays this help file.

Keyboard shortcut: F1

Ordering WebGraphics Optimizer

Information about getting the full registered version of WebGraphics Optimizer.

Readme

Main information and release notes about WebGraphics Optimizer.

Legal Agreement

You must agree to this legal agreement if you want to use WebGraphics Optimizer.

About WebGraphics Optimizer...

Shows an Info Screen and a button to open the registration dialog.

The Toolbar

Some menu entries can be reached through the toolbar:



Description of the toolbar buttons (from left to right):



New

Creates a new empty image. You can then scan with a twain compatible device or paste clipboard data into the empty image.



Open

Loads the selected image if it's one of the supported graphics file formats.



Save

Updates the current image by overwriting the last saved version of the image. If no image has been previously saved, this command works like Save As.



Undo

Cancels the last action. The command has 1 level of undo. If you change the image selection, the last action can't be undone.



Copy

Copies the current image to the clipboard.



Paste

Copies the current clipboard data to the selected image, if it contains valid image data.



Capture Screen

Captures the whole Screen into the selected image.



Zoom

Changes the zoom level of the selected image.



Toolbox

Displays / Hides the toolbox with all image manipulating functions and compression options.



Variation

Displays / Hides the selected variation (from 1 to 5).

Scanning

You can scan images directly into WebGraphics Optimizer with any Twain compatible scanning device.

1. Click on “Select Source...” from the “File” Menu to choose the desired Twain compatible device. Your scanner driver must support 32 bit scanning.
2. Click on “Acquire” to start the scanning process. WebGraphics Optimizer will automatically create a new image window for each of your scanned images. WebGraphics Optimizer supports both single and multipage scanning.



1. You can now adjust your image with the build in image manipulation tools or select the best compression ratio / file format for internet use (see [Optimizing Compression For Internet Use](#))

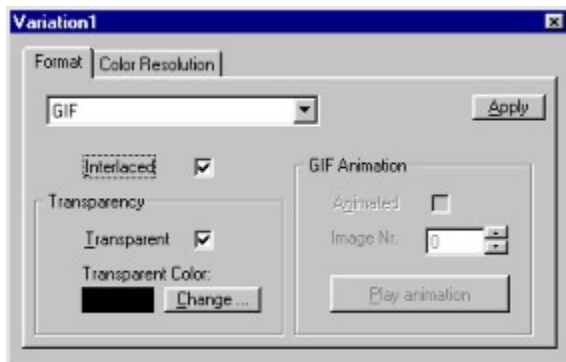
Optimizing Image Compression For Internet Use

Here you will find some hints on how to achieve the best compression ratio with WebGraphics Optimizer for your internet graphics files:

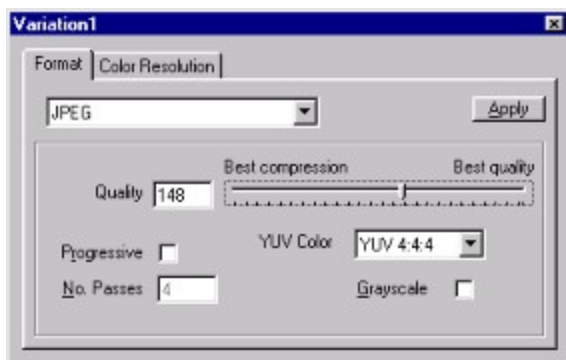
There are 3 graphic file formats mainly used for internet images: GIF (standard, interlaced, transparent, animated), JPEG, and the new PNG. Most internet browsers currently support only GIF and JPG images, so we don't recommend using the PNG graphics file format at this time. Be careful with progressive JPG too, because there are also some browsers that don't support this file format.

What is the best internet graphics file format for a given image?

That depends on what the characteristics are of that specific file: The LZW compression algorithm used by GIF files is best for images with less colors and wide plain areas with one color. It's a lossless format, that means you can change and save GIF files without losing some image information every time you're saving. The greatest advantage of GIF is that you can choose a transparent color and create animated sequences. If you want to use these features you can only choose GIF as your internet graphics file format.



GIF files support up to 256 colors, so it's not the best choice for photo realistic images. For that kind of images you should use JPEG file format. It produces much smaller images and always saves an image in 24 bit (for color images) or 8 bit (for grayscale images). With JPEG, there are some less or more obvious flickers and hisses visible, depending on the compression ratio you've selected. WebGraphics Optimizer assists you perfect in choosing the best compromise in image quality and file size.

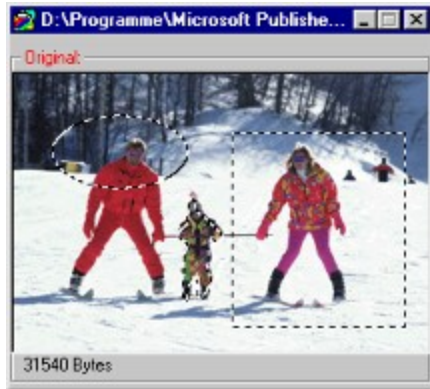


If you are not sure which graphics file format to choose, GIF or JPEG, then we suggest you to open two variations, one with GIF and one with JPEG. Then you can play with the color and compression settings to find out which format to choose.

Regions

What is a region?

A region is any combination of rectangle, ellipse, rounded rectangle and freehand selection of an image. All image manipulations can be limited to a region.



How can I create a region?

Just click at the upper left corner to define the beginning of the region and then move the mouse while the left mouse button is hold down.

To add a new area to a region, just press the shift key and start a new selection as described above. To remove parts of an already selected area, press the control key and start a new selection.

To change the shape of a region select Edit / Select Region from the menu bar.

What can I do with a region?

- A region limits all image manipulations to the specified region.
- Move the mouse while holding down the left mouse button moves the content of the region.
- Pressing the left mouse button outside the region makes the changes permanent.
- Pressing the Delete key fills the region of an image with white color.
- Pressing the Escape key removes the region without making the changes permanent.

Supported Graphics File Formats

Internet File Formats:

JPEG (Joint Photographic Experts Group)

This format is commonly used to display photographs and other continuous-tone images on World Wide Web sites. Unlike the GIF format, JPEG retains all the color information in an RGB image. JPEG also uses a compression scheme that effectively reduces file size by identifying and discarding extra data not essential to the display of the image. The JPEG compression scheme is a lossy compression. This means that once an image has been compressed and then decompressed, it will not be identical to the original image. A higher level of compression results in lower image quality, while a lower level of compression results in better image quality. In most cases, compressing an image using the Maximum quality option produces a result that is indistinguishable from the original.

Progressive JPEG

This is a JPEG format that is useful for transmitting images, because the first part of the file contains the full dimensions of the image. Therefore, the whole image is displayed and then progressively clarified as the rest of the file loads.

Image Options	Read	Write
Bits Per Pixel	8, 24	8, 24
YUV Color Spacing	4:4:4, 4:2:2, 4:1:1 and grayscale	4:4:4, 4:2:2, 4:1:1 and grayscale
Progressive JPEG	yes	yes
Image Quality	-	2 (lowest) - 256 (highest)

GIF (CompuServe Graphics Interchange Format)

GIF is the file format commonly used to display indexed-color graphics and images in World Wide Web sites. GIF is a compressed format that is designed to minimize file transfer time over phone lines.

When saving an image as GIF, you can specify how the image appears as it is downloaded. Select Interlaced to display the image gradually in increasing detail as it is downloaded.

Select a transparent color in the image and save it.

Image Options	Read	Write
Bits Per Pixel	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8
Interlaced	yes	yes
Transparent	yes	yes
Animated	yes	yes

PNG (Portable Network Graphics)

PNG is a replacement for the GIF format. It is a full-featured (non-LZW) compressed format intended for widespread use without legal restraints. It is a lossless format like GIF but usually with better compression and no limitation to 256 colors.

Image Options	Read	Write
Bits Per Pixel	1, 4, 8, 16, 24, 32	1, 4, 8, 24
Interlaced	yes	no

Other Color Graphics Formats:

BMP

BMP is the standard Windows bitmap image format on DOS and Windows-compatible computers. When saving an image in this format, you can specify either Microsoft Windows or OS/2 format and a 1-bit to 24-bit depth for the image. For 4-bit and 8-bit images, you can also choose to use Run-Length-Encoding (RLE) compression; this compression scheme is lossless, that is, it does not discard detail from the image.

Image Options	Read	Write
Bits Per Pixel In Windows Format	1, 4, 8, 16, 24, 32	1, 4, 8, 16, 24, 32
Bits Per Pixel In Windows Format (RLE Compressed)	4, 8	4, 8
Bits Per Pixel In OS/2 Format	1, 4, 8, 24	1, 4, 8, 24
Bits Per Pixel In OS/2 Format (RLE Compressed)	4, 8	4, 8

EPS (Encapsulated PostScript)

These files are used primarily on PostScript printers. These printers usually offer more variety of fonts and higher resolution than standard laser printers. EPS files will work on any PostScript compatible printer and any end-user application that supports placement of EPS files in its work space.

The image that you read from an EPS file can be either a PostScript raster image or an embedded TIFF image. The image that you write to an EPS file is always a PostScript raster image.

Image Options	Read	Write
Bits Per Pixel (PostScript Raster Image)	1, 8	8 (greyscale)
Bits Per Pixel (Embedded TIFF Image)	1, 4, 8, 16, 24, 32	-

Exif Formats

Exif is a standard for image files created with digital cameras and other input devices. The standard is set by the Japan Electronic Industry Development Association, and formally it is called the Digital Still Camera Image File Format Standard.

Exif files contain either uncompressed TIFF images or compressed JPEG images. WebGraphics Optimizer reads the following Exif formats:

TIFF: This is a tag-based file format designed to promote universal interchanges of digital image data.

JPG: This is the JPEG format with YUV 4:2:2 sampling.

Image Options	Read	Write
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Bits Per Pixel	24	-
TIFF	yes	-
JPG	yes	-

ICO, CUR (Icons and Cursors)

WebGraphics Optimizer allows you to read Icons and Cursors for conversion purposes.

Image Options	Read	Write
Bits Per Pixel (Icons)	1, 4, 8	-
Bits Per Pixel (Cursors)	yes	-

Kodak Formats (PCD and FPX)

WebGraphics Optimizer supports the following Kodak formats:

PCD (PhotoCD)

This is a common high-resolution format for images on CD-ROM.

FPX (FlashPix)

This Kodak format is newer than PhotoCD.

Image Options	Read	Write
PCD	8, 24	-
FPX with no compression	8, 24	-
FPX with compression (Single Color)	8, 24	-
FPX with compression (JPEG)	8, 24	-

PCT (Macintosh Picture)

Macintosh Pict files are produced using Macintosh QuickDraw, and are used in desktop publishing and imaging applications.

Image Options	Read	Write
Bits Per Pixel	1, 4, 8, 24	1, 4, 8, 24

PCX

PCX format by Zsoft is commonly used by IBM PC-compatible computers.

Image Options	Read	Write
Bits Per Pixel	1, 4, 8, 24	1, 4, 8, 24

PSD (Adobe Photoshop File Format)

PSD is the native file format used by Adobe Photoshop.

Image Options	Read	Write
Bits Per Pixel	1, 8, 24	1, 8, 24

RAS (Sun Raster)

SUN Raster (RAS) is a format native to Sun UNIX platforms.

Image Options	Read	Write
Bits Per Pixel	1, 4, 8, 24, 32	1, 4, 8, 24, 32

TGA (Targa)

The TGA format is designed for use on systems that use the Truevision video board and is commonly supported by MS-DOS color applications.

Image Options	Read	Write
Bits Per Pixel	8, 16, 24, 32	8, 16, 24, 32

TIFF (Tagged Image File Format)

TIFF is used to exchange files between applications and computer platforms. The TIFF format supports LZW compression, a lossless compression method that does not discard detail from the image.

When saving a TIFF Image, you can also choose to compress the file to a smaller size automatically by clicking the compression check box.

Image Options	Read	Write
Bits Per Pixel	1, 2, 3, 4, 5, 6, 7, 8, 16, 24, 32	1, 2, 3, 4, 5, 6, 7, 8, 16, 24, 32
LZW Compression	yes	yes

WMF (Windows Meta File)

The Windows Metafile format is a vectored format that may or may not also contain a raster image. When reading a WMF file, WebGraphics Optimizer converts all of the image data to a raster image. When writing a WMF file, WebGraphics Optimizer saves all of the image data as a raster image within the WMF file. Therefore, if you load and save a WMF file, you convert any vectored image data that the original contained.

Image Options	Read	Write
Bits Per Pixel	8, 24	8, 24

WPG (Word Perfect Graphics)

The WordPerfect format can contain vectored or raster images. WebGraphics Optimizer handles only the raster images.

Image Options	Read	Write
Bits Per Pixel (Raster)	1, 4, 8	1, 4, 8

1-Bit FAX Formats

WebGraphics Optimizer reads the following 1-Bit FAX Formats that are commonly used in FAX transmissions:

TIFF CCITT

These are compressed TIFF files that are commonly used for FAX transmission and document imaging.

TIFF CCITT Group 3

These are TIFF CCITT files in a format that is more advanced and more compressed than TIFF CCITT. WebGraphics Optimizer supports both 1-dimension and 2-dimension variations of this format.

TIFF CCITT Group 4

These are TIFF CCITT files in a format that is more advanced and more compressed than TIFF CCITT Group 3.

CALS Raster

These are CCITT Group 4 CALS raster files. CALS is a United States government standard.

IOCA (ICA)

This is the Image Object Content Architecture developed by IBM. WebGraphics Optimizer supports these files in an MO:DCA wrapper with embedded 1-bit CCITT Group 3 or Group 4 images. WebGraphics Optimizer also supports IOCA files without an MO:DCA wrapper.

WinFax Group 3

This is a FAX format created by Delrina for Group 3 support.

WinFax Group 4

This is a FAX format created by Delrina for Group 4 support.

FAX Group 3

This is a raw FAX format (without a header) for Group 3 support. WebGraphics Optimizer supports both 1-dimension and 2-dimension variations of this format.

FAX Group 4

This is a raw FAX format (without a header) for Group 4 support.

AWD

This is a Microsoft FAX format.

Other 1-Bit Formats

WebGraphics Optimizer supports reading and writing of the following 1-bit formats:

MAC (MacPaint)

These Macintosh Paint files are commonly used for monochrome clip art.

IMG (GEM Image)

These files are native to the Graphical Environment Manager developed by Digital Research.

MSP (Microsoft Paint)

These files from early versions of Windows are used for black-and-white drawings and clip art.

