

Understanding Gray Scale Images

A gray scale TIFF (Tagged Image File Format) file is an example of a file that contains a gray scale image. TIFF files are graphic files that contain formatting information for digital images. Digital images can be color, black and white, or they can be different shades of gray.

TIFF files can be created by software that comes with a scanner. Ami Pro does not control the scanning process or the creation of the files.

Some printers and many video displays are unable to print or show different shades of gray. They are limited to black and white. The printer can print either a black dot or a white dot (no dot).

To help you understand gray scale images, first think of a black and white photograph that is printed in a newspaper. Although the photograph may appear to have shades of gray, it is merely a collection of black dots on white paper. These black dots are of different sizes and at different locations to give the appearance of gray in the photograph.

In a gray scale TIFF file, however, there is formatting information that produces dots which, instead of being black, are different shades of gray. This enables the TIFF file to more accurately describe colors, because it is using a real color (gray). The more gray levels that are available, the more realistic the image appears.

Ami Pro takes the levels of gray in the TIFF file and maps them into a pattern of black and white dots (pixels). When Ami Pro maps these dots, it tries to match the shade of gray with a pattern of black and white dots that approximates the original shade of gray. This process creates a halftone pattern. Ami Pro can then instruct the screen and printer how to represent the image.

Gray scale digital images usually contain either 16, 64 or 256 different shades of gray. They are referred to as 4, 6, or 8 bit gray scale files, respectively. These numbers represent the number of bits per pixel of data. The more gray shades there are in a file, the larger the file will be.

See also:

[Using Image Processing](#)

[Using Preferences](#)

[Using Halftones](#)

[Reverting to the Original TIFF File](#)

Using Image Processing

You can use Image Processing to modify the gray scales in any 4, 6, or 8-bit TIFF file that has been imported into a frame.

To enhance a gray scale picture

1. Select the frame that contains the gray scale TIFF file.

Shortcut: Double-click the frame and go to step 3.

2. Choose Tools/Image Processing.
3. Choose Image/Processing.
4. Select the desired settings.

Keyboard: Press TAB to move to the desired scroll bar. The scroll box blinks. Press → or ← to move the scroll box.

Brightness

Determines the mix of black and white pixels in the picture. Increasing the brightness results in more white and less black. The black begins to look gray and the light gray begins to look white. Decreasing the brightness results in more black and less white. The white begins to look gray and the dark gray begins to look black.

Edge Enhancement

Determines the contrast between the picture and any edges within the picture. Edge Enhancement lets you further define a picture by making its edges crisp and distinct. Increasing the edge enhancement brings out details within the picture.

Contrast

Determines the relative difference between light and dark areas in the picture. Increasing the contrast increases the difference between white and black, resulting in a picture that contains fewer gray areas. With less gray values between white and black, the picture appears sharper. Decreasing the contrast blends the blacks and whites together, resulting in a picture that contains more gray areas. Items in the picture blend together and appear less distinct.

Smoothing

Blends areas in the picture that have harsh or jagged edges or stray pixels, producing a softer looking picture. Use smoothing to eliminate unwanted ripples or lines, or to remove irregularities that appear as the result of a poor scan.

5. Select Invert Image to reverse black and white in the picture and make it appear similar to a negative.
6. Choose Apply.
Ami Pro changes the picture in the frame to show the effects of your selections. The Image Processing dialog box remains on the screen so you can make additional changes.
7. Choose OK to close the Image Processing dialog box.

To remove Image from the menu bar, choose Image/Leave Image.

See also:

[Selecting One or More Frames](#)

[Importing a Picture](#)

[Understanding Gray Scale Images](#)

[Using Preferences](#)

[Using Halftones](#)

[Reverting to the Original TIFF File](#)

Using Preferences

You can specify whether you want Ami Pro to adjust the brightness and contrast of any TIFF image when it is imported.

To specify auto contrast

1. Select the frame that contains the gray scale TIFF file.
Shortcut: Double-click the frame and go to step 3.
2. Choose Tools/Image Processing.
3. Choose Image/Preferences.
4. Select AutoContrast Images When Loaded if you want Ami Pro to adjust the brightness and contrast of any TIFF file you import.

Deselect AutoContrast Images When Loaded if you want to prevent Ami Pro from modifying the brightness and contrast of any TIFF file you import.

5. Choose OK.

Ami Pro uses the setting for any future TIFF images you import.

If you want the TIFF file in this frame to use the AutoContrast setting you selected, delete the image and then reimport it.

See also:

[Understanding Gray Scale Images](#)

[Using Image Processing](#)

[Using Halftones](#)

[Reverting to the Original TIFF File](#)

Using Halftones

You can specify the desired quality and speed of printing for the TIFF image. You can also specify whether Ami Pro or the printer should process the halftone.

These options do not affect how the picture displays on the screen.

To use halftones

1. Select the frame that contains the gray scale TIFF file.

Shortcut: Double-click the frame and go to step 3.

2. Choose Tools/Image Processing.
3. Choose Image/Halftone.
3. Choose the desired option.

Fastest Printing

Choose Fastest Printing if you want the picture to print quickly.

If the picture is at or below its original size, some print quality is sacrificed to achieve the increase in speed.

Best Picture Quality

Choose Best Picture Quality if you want the best quality picture, even it takes longer to print.

The difference in quality and speed depends upon the scaling done to the picture. If the picture is at or below its original size, the quality is significantly improved and the decrease in speed is not very noticeable. If the picture is above its original size, the quality is not significantly improved and the decrease in speed is more noticeable.

Automatically Selected

Choose Automatically Selected if you scaled the picture and you want a high quality picture without significantly increasing the time it takes to print.

Printer Driver

Choose Printer Driver if you are using a printer that provides advanced options for printing graphics (such as a PostScript printer) and you want to let the printer process the halftone instead of Ami Pro.

For information about whether a printer can process a halftone, check the printer setup.

You must specify that you want to use the printer driver for each individual frame that contains a gray scale TIFF file.

Posterize

Choose Posterize if you want to create a poster effect. This option is a special effect rather than a true halftone, as it does not simulate gray scale. The darker grays are converted to black and all other groups are converted to white.

You can use the Brightness and Contrast options in the Image Processing dialog box to control the amount of black and white in the printed picture. Set the Contrast to 100 and adjust the Brightness to obtain the desired effect.

See also:

[Understanding Gray Scale Images](#)

[Using Image Processing](#)

[Using Preferences](#)

[Reverting to the Original TIFF File](#)

[Printing the Current Document](#)

[Printing Pictures](#)

Reverting to the Original TIFF File

Choose Image/Revert to restore the picture in the selected frame to the original TIFF file image.

See also:

[Importing a Picture](#)

[Understanding Gray Scale Images](#)

[Using Image Processing](#)

[Using Preferences](#)

[Using Halftones](#)

Using the Image Menu

Processing

Use Image Processing to enhance the gray scales in a scanned image.

Revert

Restore the picture in the selected frame to the original TIFF file image.

Halftone

Specify the desired quality and speed of printing for the picture.

Preferences

Specify whether you want Ami Pro to adjust the brightness and contrast of a TIFF image when it is imported.

Leave Image

Remove Image from the menu bar.

