

# Color Vectorization in KNK Studio<sup>1</sup>

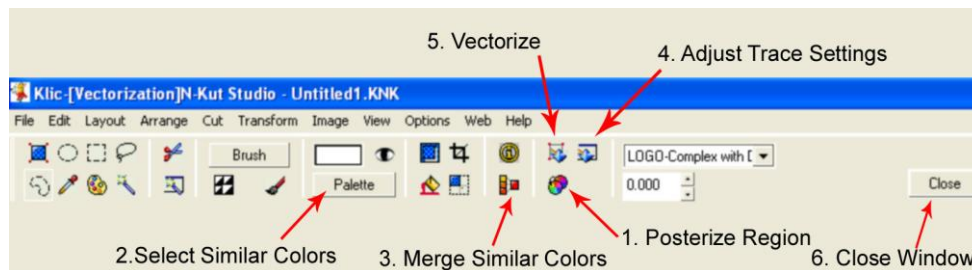
By Sandy McCauley  
June 2, 2008

As of Spring 2008, Klic-N-Kut Studio now contains color vectorization and the tutorials in the printed manual are no longer applicable. Please use the following instructions for tracing your colored images.

- (1) Import the image using **File>Import** and locate the graphic file. Typical examples would be .bmp, .tif, .jpg, or .png images. In this tutorial the following image will be used:



- (2) Double-click the image to activate AccuScan editing mode or click on the **Scan Tools** icon on the **Tools** toolbar and select the first icon: **Accuscan**. The AccuScan controls will appear in the Smart Bar:



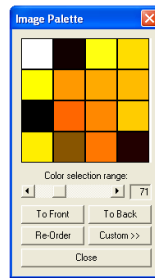
- (3) Click the **Posterize Region** button and choose the maximum number of distinct shades of color that should remain in the image, and then click **OK**. The goal is to simplify the image, such that distinct regions can be easily converted into line art. In the case of the parrot, we will initially pick 16, so as to show you how the various gradients of color along the parrot's wing is handled:



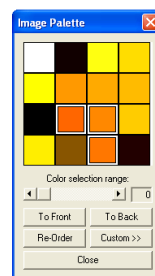
---

<sup>1</sup> © 2008: Sandy McCauley  
All rights reserved

- (4) After posterizing the image, click the **Palette** button to display the complete list of colors that are in the image:



- (5) Typically there will be several colors that have a similar shade, where it would be helpful if they were all the same color. Double click on one of the colors and the color window above the Palette button will turn that particular color. Now click on each color that you wish to merge with that one color. A white box will appear around each one you pick. If you make a mistake, simply click on that color again and it will be de-selected. In the following diagram, one of the orange colors was double clicked and then two others clicked once. Note that you can ALSO select these colors by first double-clicking on a color in the actual image. Then hold down the SHIFT key on your keyboard and select other colors to merge.



- (6) Now click on the Merge Color icon (refer to the diagram back in Step 2) and those three colors will now just appear as the original and the parrot image will also show those colors merged.
- (7) Repeat steps 6 and 7 for each set of shades that must be mapped to a single color then close the small Image Palette window. When completed with this image, note the different layers in the parrot's coloration:

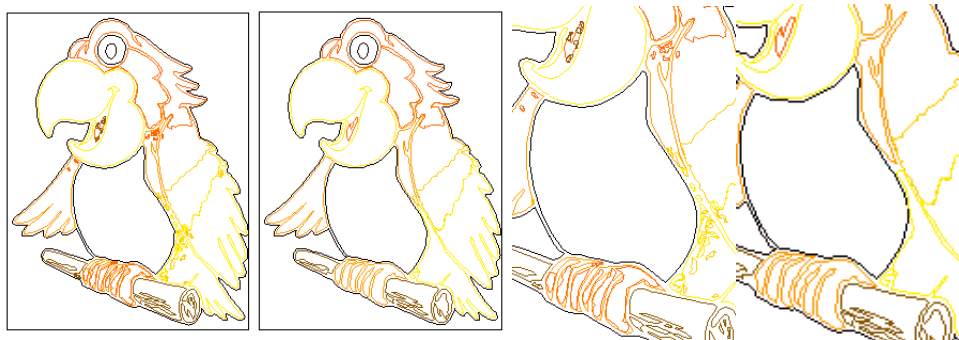


- (8) To the right of the **Trace Setup** button, choose the trace settings from the drop-list. The names are indicative of the type of detail that should be traced from the image. For example, the “complex with detail” setting should be used with an image that has many corners and short contours, whereas the “long lines and curves” setting should be used with images that are composed of long arcs. In the case of the parrot image, we select Complex with Detail.
- (9) To begin tracing the image, click the **Vectorization** button. After the image has been traced, click the **Close** button to exit AccuScan editing mode. The modified bitmap will remain, and the traced line art will be grouped above the bitmap.

- (10) Drag the line art away from the bitmap, such that you can see the tracing results. You may need to turn off Fill (Alt-S) to distinguish which is the tracing and which is the posterized bitmap:



- (11) You may find that you have MORE detail than you wish to cut. In the case of this parrot, there were tiny bits of variant color that was picked up in the vectorization process. A quick way to reduce that is to double click the bitmap again and go to the Trace Settings window. Increase the Speckle Filter and vectorize again and compare the results. Also, the quality of the trace can be improved by tweaking other parameters in the Trace Settings window. Refer to *Appendix D Settings for Auto-Tracing* (in the K&N User Manual) to understand the function of each setting and to get recommended values to use.
- (12) Also, after tracing, use Arrange>Break Path to break the image into individual paths and tiny unwanted trace paths can simply be selected and deleted. Nodes can be extended, deleted, added, etc to perfect your images. Refer to Section 5.2 Editing Vectorized Images for more information.
- (13) After cleanup, our parrot image now appears as this:



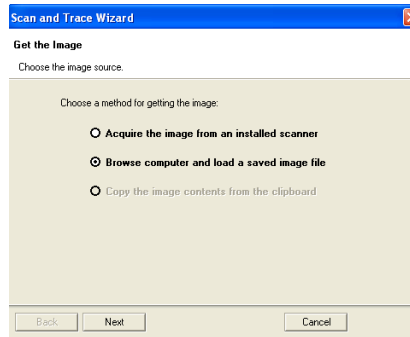
Before and After Retrace and Cleanup

**Scan and Trace Wizard** (note: this also works for existing images; it is not necessary to scan)

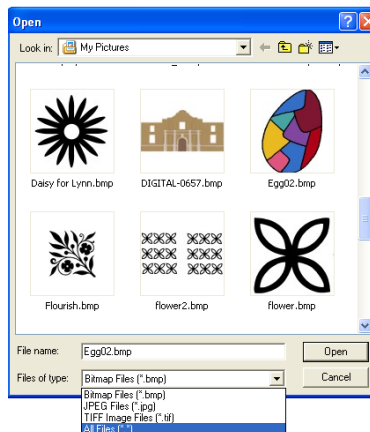
The Scan and Trace Wizard works well for very simple images with flat color. It is not recommended for the type of detailed image as with the parrot in the previous example. For this tutorial, the following image is used:



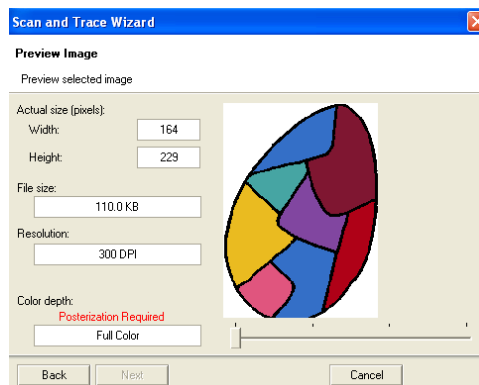
- (1) Select **File>Acquire Image>Scan and Trace Wizard**.
- (2) Click on **Next** and then check one of the following choices: to use your scanner, open an existing image, or paste in an image you've copied to the Windows clipboard from another application. Click on **Next**.



- (3) In the next window, click on the button with the three dots to browse your hard drive and note that KNK Studio will default to .bmp images. To see other files types, change the Files of Type: to All Files.

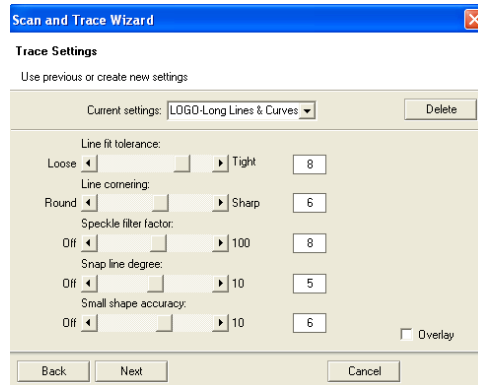


- (4) Locate the clipart image you wish to trace and click on Open. The colored image will appear and show the size of the image, file size, and the resolution.

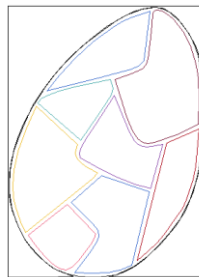


- (5) Below the image is a scroll bar. You'll note that the default position of this bar (to the far left), there is a message stating "Posterization Required." Thus, slide the bar one position to the right and then click on Next.
- (6) In the Trace Settings window, the first option is in the Current Settings window. Click on the down arrow to view built-in settings to use as a starting point based on the nature of your image. In this example, we will

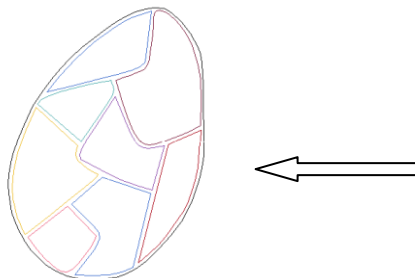
pick **LOGO: Long Lines and Curves**<sup>2</sup> as it seems the best description amongst the choices. Normally, just leave the settings for the other tolerances alone. You can change them later, as needed, in Step (8). Click on **Next**. Then click on **Apply**.



- (7) A tracing will appear in the main document window. Note that you may need to use **Alt-S** to go into outline mode to see the image as a tracing. Examine the tracing closely and make sure you are satisfied with the results. If not, in the upper left corner of the screen, you will see a small window has opened where you can click on **Retrace** and return to the window with the settings. Changing the **Trace Settings** can greatly improve the accuracy of your tracing. Refer to *Appendix D Settings for Auto-Tracing* to understand the function of each setting and to get recommended values to use.
- (8) Below is the tracing we received from the egg image. Note the bounding box around the outside. This will be deleted and the rest of the tracing edited, as necessary:

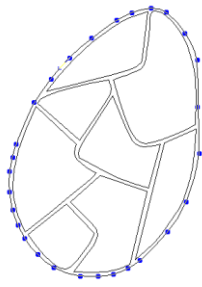


- (9) Select the image and go to **Arrange>Break Path**. Click on the outside edges and delete. Then notice that the outside edge on the right side could use some editing:

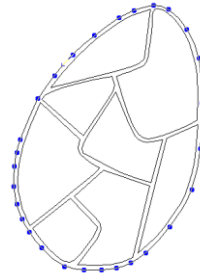


- (10) Double click on the outside edge to bring up the nodes and then drag the appropriate nodes to the left to give a more even border on the right side:

<sup>2</sup> Note: there are other choices from that dropdown menu which may better describe the image you are tracing.

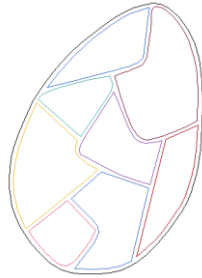


Before Editing



After Editing

(11) Once satisfied with the tracing, click on **Finish** and the tracing is ready to cut:



Finished Egg: with fill turned off



with fill turn on

(12) More information on editing vectorized images can be found in the Klic-N-Kut User Manual.