

Tweak to get the perfect trace

What makes the Live Trace feature in Adobe® Illustrator® CS2 a joy to use is the ability to make adjustments to the settings while you see the results update on your screen. Aside from the different presets that you can apply, Illustrator CS2 contains a dialog box chock full of settings that you can use to ensure that you get the results you need from the Live Trace feature.

To access these settings, select a Live Trace object and click the Tracing Options dialog button in the Control palette. Alternatively, you can choose Object > Live Trace > Tracing Options. Once the Tracing Options dialog appears on your screen, you'll notice that it's split into several different sections (Figure 1).

Figure 1: The Tracing Options dialog offers a smorgasbord of settings to achieve the perfect trace.

First of all, a Preview check box appears on the far right of the dialog, which allows you to see results update as you make changes to the different settings.

Directly underneath the Preview check box is a list of important details about your traced object. The values for the number of paths, anchor points, colors, distinct closed areas, and image resolution update as you make adjustments to the settings in the dialog. Keeping an eye on these values helps you make decisions as you edit your trace settings. At the top of the dialog is a Preset pop-up menu, similar to what you see in the Control palette when a Live Trace object is selected. Stepping through the different presets in the Tracing Options dialog allows you to see the settings for each of the presets.

The rest of the Tracing Options dialog is separated into three sections called Adjustments, Trace Settings, and View. The View section allows you to specify how the traced object appears on your artboard, as discussed in the earlier section, "Exploring the Live Trace Preview Options."

The following "Modifying the Raster Adjustments" and "Adjusting the Vector Trace Settings" sections will help you clearly understand the two-step process that the Live Trace feature performs when converting raster images into vector form.

Modifying the Raster Adjustments

The Adjustments settings found on the left side of the Tracing Options dialog apply to the raster conditioning that occurs before the image is traced.

- **Mode.** Live Trace converts a bitmap image to either 1-bit black and white, 8-bit grayscale, or 8-bit color, which you can choose from the Mode pop-up menu.
- **Threshold.** The Threshold setting determines the boundaries between pixels when using the Black and White trace setting. For example, in a gray bitmap, a high threshold setting results in more gray pixels becoming black vector objects, and thus a heavier appearance. In that same image, a low Threshold setting results in more gray pixel ignored, making for more white-colored objects and an overall lighter or more delicate appearance (Figure 2). Too low of a Threshold setting may also result in a loss of image detail. The Threshold setting is also available in the Control palette when a Black and White Live Trace object is selected.

Figure 2: Making adjustments to the Threshold setting can have a large impact on the overall appearance of the traced result. Here are examples of an image with a variety of different Threshold settings.

- **Palette.** By default, Illustrator uses the selective color reduction method to choose the best colors to fit the image (based on the Max Colors value). However, you can choose specific colors that Illustrator should use when tracing your image. To do so, you must first load a custom swatch library (refer to Chapter 1 for instruction on how to define a custom swatch library). When a custom swatch library is opened in your document, the Palette pop-up menu displays all of the available palettes (Figure 3). Live Trace then only uses the colors that appear within the custom swatch library that you choose.

Figure 3: Loading several different custom libraries allows you to quickly experiment with a variety of different color schemes.

- **Max Colors.** The Max Colors setting determines the maximum number of colors that can be used in the final traced result. This setting is not available for the Black and White Mode setting. Live Trace uses the selective color reduction method to reduce the number of colors in the raster image to match this setting during the conditioning process. The Threshold setting is also available in the Control palette when a Grayscale or Color Live Trace object is selected.
- **Blur.** The Blur setting applies a Gaussian Blur to the image, which helps remove noise from the raster image. This reduces the number of anchor points in the tracing result, especially when you are tracing photographic images.

Tip: Check the Output to Swatches option to have Illustrator add each

color that is used during the tracing process as a global process color in your Swatches palette.

- Resample. The Resample setting lets you change the resolution of the bitmap image to help obtain a better traced result. Resampling a high-resolution image to a lower resolution greatly enhances the speed performance of Live Trace.

Adjusting the Vector Trace Settings

The Trace Settings found on the right side of the Tracing Options dialog apply to the actual tracing of the image and determine how the final vector paths are drawn.

Fills. When you have Fills selected, Live Trace creates closed and filled vector paths for all resulting vector objects. Fill tracing produces results that more closely match the original image, including variable-width lines that are common in marker or ink renderings (Figure 4). Fill tracing also results in more complex vectors because it needs more anchor points

Figure 4: When you choose the Fills setting, the traced paths appear with thick and thin edges, closely matching the original image.

- Strokes. With the Strokes setting selected, Live Trace creates stroked open paths for all areas that fall within the Max Stroke Weight setting. Areas that exceed this setting result in unfilled areas outlined with a 1-point stroke. Stroke tracing results in paths with fewer anchor points (Figure 5).

Figure 5: When you choose the Strokes setting, the traced paths appear consistent and results in a less complex traced image overall.

- Max Stroke Weight. The Max Stroke Weight setting determines the heaviest stroke weight Live Trace can use when tracing the image. This setting is only available when the Strokes trace setting is used.
- Min Stroke Length. The Min Stroke Length setting determines the shortest path that Live Trace can use when tracing the image. This setting is only available when the Strokes trace setting is used.

- Path Fitting. Path Fitting determines how closely Live Trace

follows the shape of the original raster image. A lower Path Fitting setting results in paths that closely match the original raster image, yet might also reveal imperfections or irregular paths that aren't smooth. A higher setting produces smoother paths with fewer anchor points but might not match the raster image as closely (Figure 6).

- **Minimum Area.** The Minimum Area setting sets a threshold for how large a section of the raster image has to be in order to be traced into a vector object. By setting a minimum area, you can have Live Trace only trace areas of pixels that meet a minimum size. For example, if the Minimum Area is set to 9 pixels, Live Trace ignores regions of pixels that are less than 3 by 3 pixels in size.

- **Corner Angle.** The Corner Angle setting defines the sharpness of the angles used in the resulting vector objects. This setting is measured in degrees, not pixels. If you think of 0 degrees as perfectly flat and 180 degrees as a hard corner (rather than a rounded one), anything sharper than the Corner Angle setting (the default is 20) is converted to a corner anchor point rather than a smooth anchor point.

Figure 6: This figure shows examples of a variety of path fitting settings for the same image. Notice how the paths get smoother as the number is increased but that the result doesn't match the original sketch as much.

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