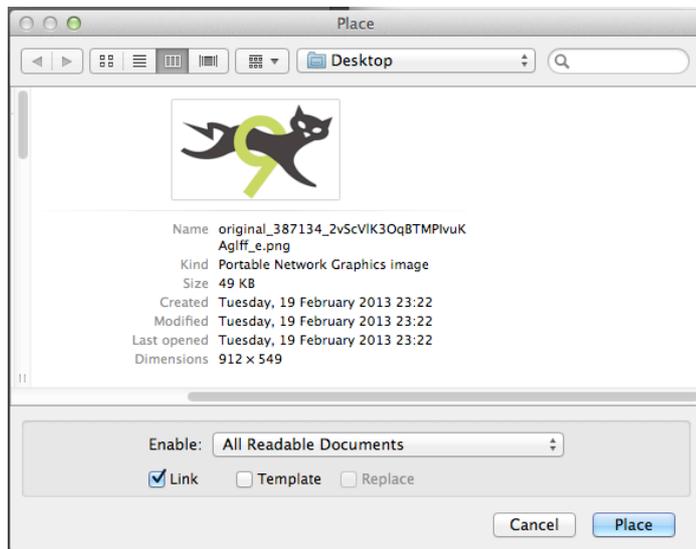


## Live Trace

The first step in the tracing process is to get something to trace. Because *tracing* is the process of converting raster data to vector data, you need a raster image open in Illustrator. For instance, open a .JPG file.

1. Open an Illustrator document and place a raster image into an Illustrator artboard using the **File > Place** command.

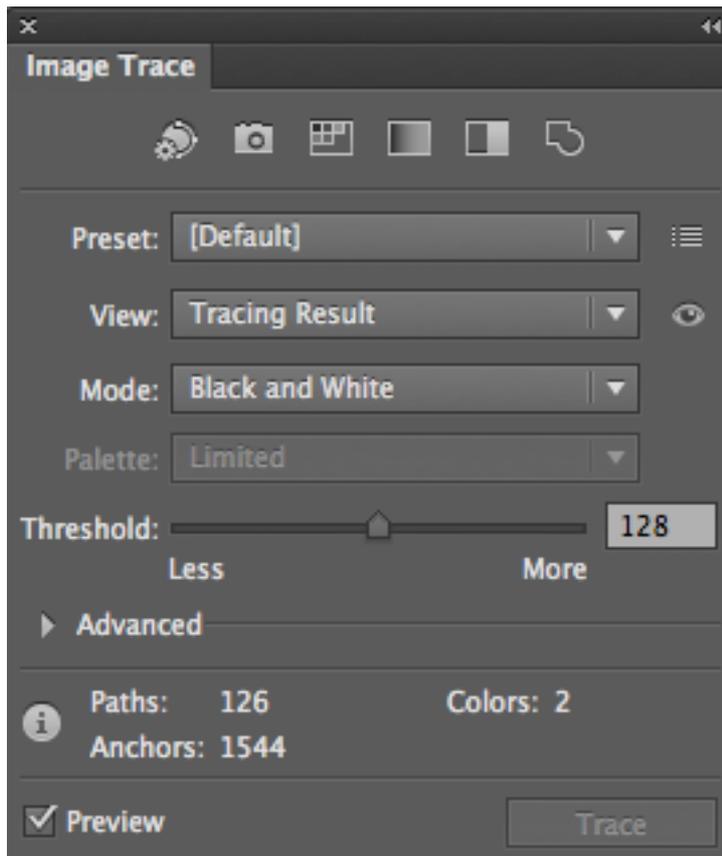


### TIP

*If you place a raster image using the File > Place command, if the Link option is selected in the **Place dialog box**, you can later edit the image in another application and update the image in Illustrator*

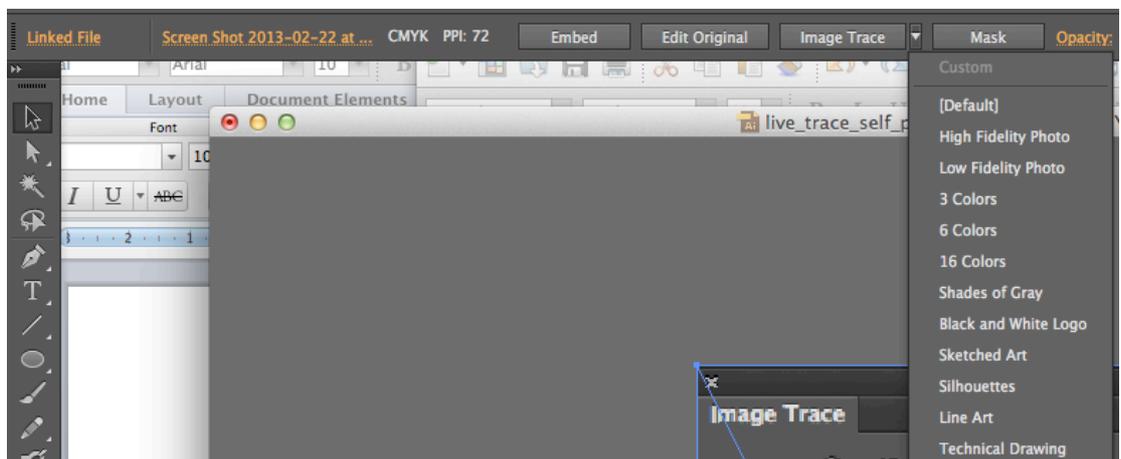
Choose **Window > Image Trace** to open the Image Trace panel. In previous versions of Illustrator, you had to apply the Live Trace command in order to see the tracing options in a separate dialog box.

2. With the Selection tool, select the raster image on the artboard. After selecting raster content, the Image Trace panel will spring to life, and the options will no longer be dimmed!

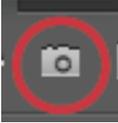


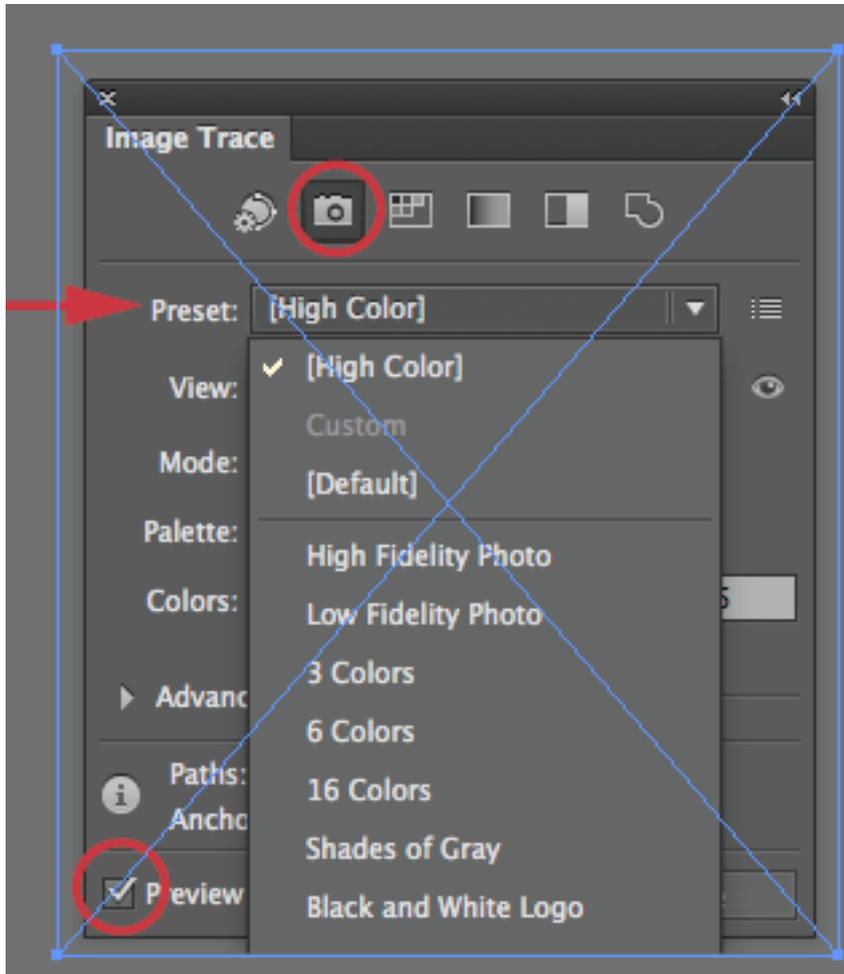
The Image Trace panel in Illustrator CS6

Notice in the Control panel the **Image Trace** button >



By clicking the Image Trace button, you apply the default tracing option to the selected raster content. By clicking the arrow to the right of the button, you can choose a tracing preset with which trace the selected content. You can also choose **Object > Image Trace > Make** to trace selected raster with the default tracing options or choose **Object > Image Trace > Make and Expand** to trace and expand the content immediately (I discuss expanding shortly).

3. At the top of the Image Trace panel, click the High Colour button  to trace the image using the default High Colour settings.



At the top of the Illustrator **Image Trace panel** is a series of preset buttons that offer generic tracing options which most of us will use at some point or another, depending on the project. There is also a series of preset options in the **Preset** menu below the buttons. The buttons at the top of the panel (mostly) coincide with an option in the Preset menu. For instance, the High Color button is similar to the High Fidelity Photo option in the Preset menu, and the Low Color button is similar to the 16 Colors option in the Preset menu. The Preset menu offers more options.

#### **TIP**

If you trace a raster image, you can always remove the tracing, returning it to a raster image, by choosing **Object > Image Trace > Release**.

When you trace an image using one of the tracing buttons or a trace preset, the raster image data is converted to an Image Tracing object. This means that you can adjust the tracing options, even trying different presets, but it is not editable vector. As a matter of fact, you will see Image Tracing on the left end of the Control panel with the newly traced content selected



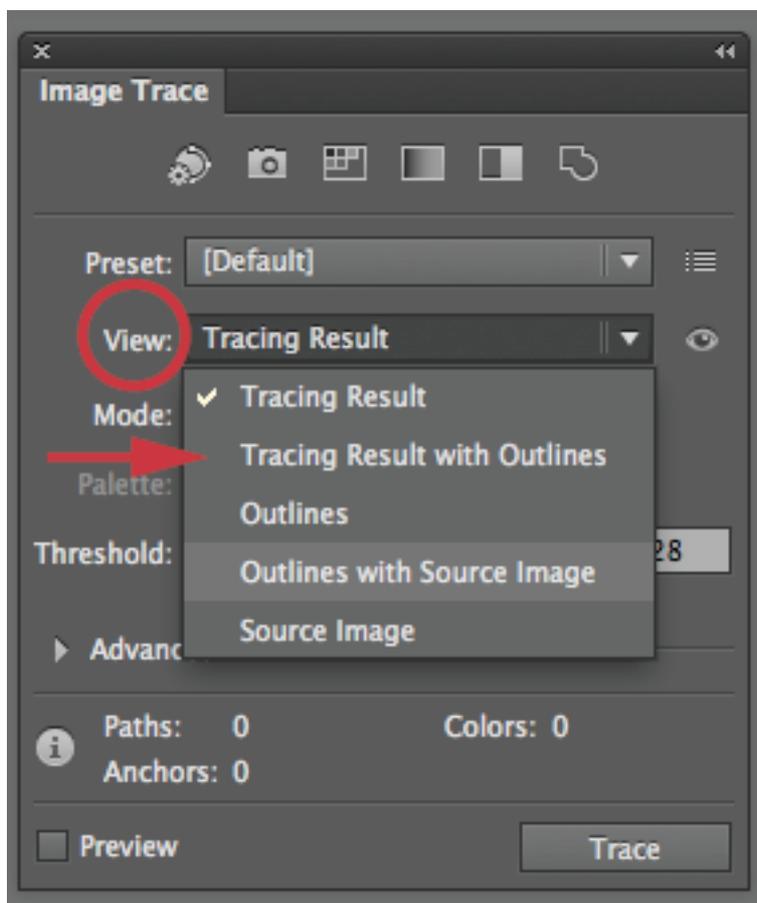
The Control Panel options with the Image Tracing object selected

### Editing the Tracing Options

After choosing a starting preset to trace the image, you can then either accept the tracing results or adjust the tracing options to better suit your tracing needs.

1. In the Image Trace panel, choose **Tracing Result with Outlines** from the **View** menu

Showing the outlines can be helpful for seeing how many vector shapes will be created when you trace.



2. Choose **Tracing Result** from the **View** menu.
3. Press and hold the Eye icon  to the right of the View menu in the Image Trace panel to view the source raster image on the artboard. Release the mouse button to return to the tracing results.
4. Drag the Colour slider to the left to decrease the number of colours in the Image Tracing object.



Decrease the number of colours

If you look at the bottom of the Image Trace panel, you see a listing of the total number of paths, points, and colours. Notice that the number of colours listed there doesn't match the number of colours listed in the Colours value (the slider). The Colours value refers to the colour accuracy in percent of colour. Less accurate means fewer colours (typically) and not depicting the colour of the image as accurately.

#### NOTE

The fewer the number of colours in an Image Tracing object, the fewer the anchor points and paths, typically.

5. From the Palette menu in the Image Trace panel, choose Limited. Change the Colours value to 4 by dragging the slider. After viewing the result, change the number colours to 16 or so.



Limiting the number of colours in the tracing result

You can adjust the Colours value (the slider) or type a number into the field to the right directly to edit the number of colours. This value allows you to choose the actual number of colours in the object, rather than a percentage.

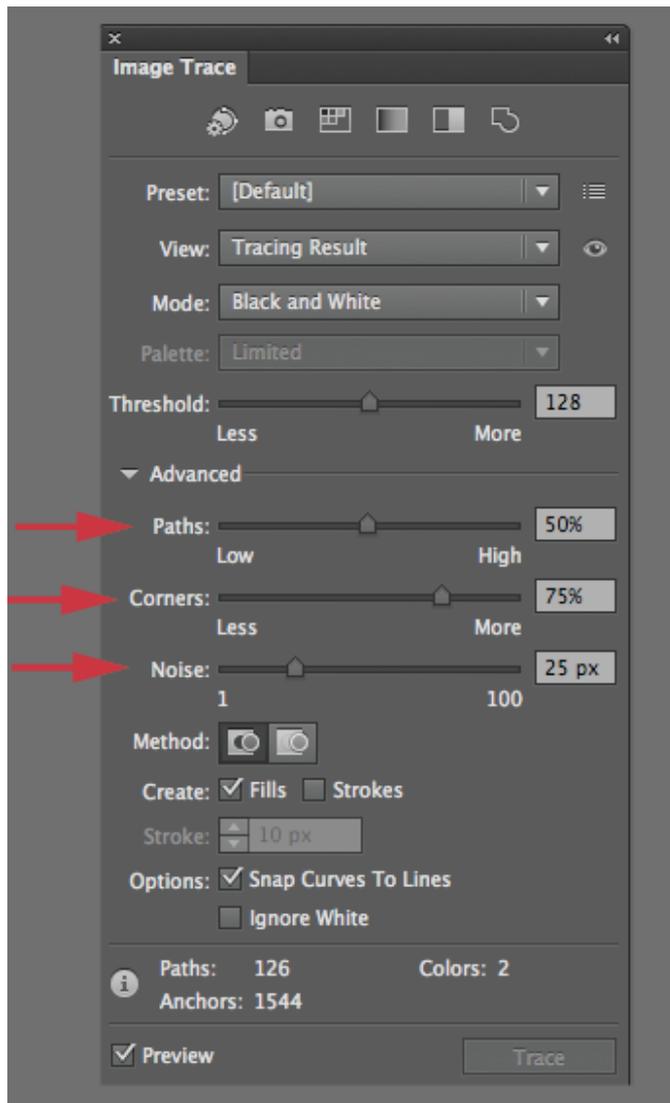
### Advanced Tracing Options

If you find that the tracing results still aren't what you want or expect, you do have the option to edit the advanced settings in the Image Trace panel.

Click the **Advanced** arrow in the Image Trace panel to toggle open the **Advanced** options.



The top three options (**Paths**, **Corners**, and **Noise**) are where you can fine-tune the tracing. Here's what each of these options mean:

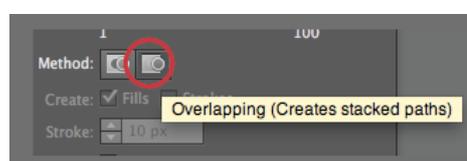


Three of the advanced options in the Image Trace panel

- **Paths:** Dragging the Paths slider to the right makes the paths fit tighter to the original “shape” (more anchor points), whereas dragging to the left makes the paths fit looser (less anchor points).
- **Corners:** Dragging the slider to the right makes more corner points, and dragging the slider to the less makes more smooth points.
- **Noise:** Suppose that the background of an image you were tracing contained some unwanted content such as artifacting or dust/spots. By increasing the Noise value (dragging the slider to the right), you can exclude some of that content from the tracing result. The pixel value of Noise refers to the smallest pixel area (not just width or height) that will be traced, and not ignored.

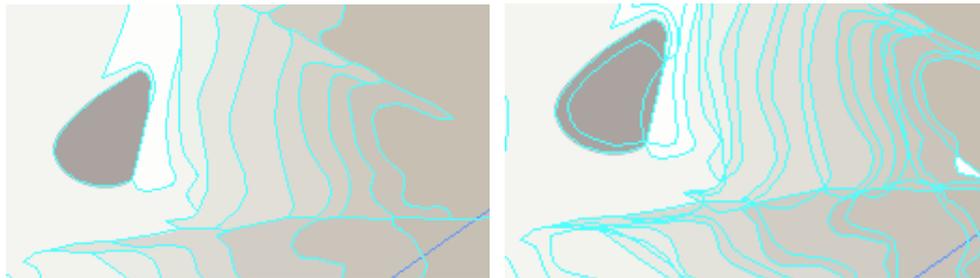
And yes, even understanding what each of these is intended to do, some of us (me) will sometimes just drag the sliders back and forth to see what happens.

The Method option has two options: **Abutting** and **Overlapping**.



These options can be very important, depending on the result you are looking for. This is a new option in CS6.

- **Abutting:** The vector shapes that are created when an image is traced butt up against each other with no gaps between (typically).
- **Overlapping:** The vector shapes that are created overlap each other just a bit. This can sometimes result in small “gaps” between the vector shapes.



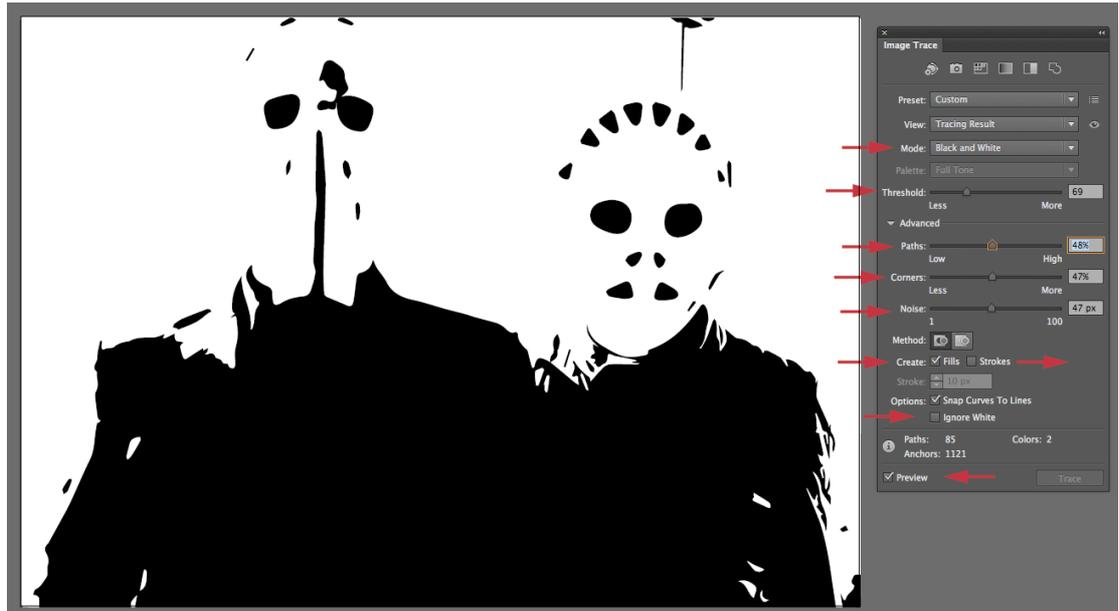
Abutting (left) Overlapping (right) to the same area

1. With the Image Tracing object still selected, choose Black And White from the Mode menu. The Create option will become available when you choose Black And White from the Mode menu



Apply Black And White to the tracing image

2. Experiment with options area:



Selecting just Fills creates filled shapes when the image is traced. Selecting just Strokes will create stroked paths from content that falls with the range in the Stroke option beneath the Create options. Selecting Fills and Strokes together will create stroked paths for content up to the size of the Stroke value and filled paths for everything over that size.

#### TIP

The Stroke selection in the Create options can be very useful for hand-drawn sketches, architectural drawings, line art, and more.

3. Select Snap Curves To Lines towards the bottom of the Image Trace panel. In my opinion, this can be one of the best options for tracing type. With this option selected, any line segments in the tracing that are “slightly” curved will become straight. Check out the example in the figure when applied to a logo I’ve traced.



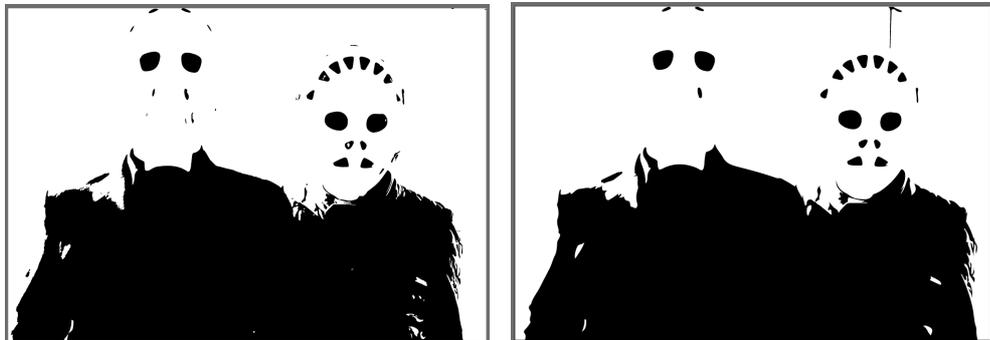
A logo without **Snap Curves To Lines** selected (left), and with **Snap Curves To Lines** selected (right)

Lastly, the Ignore White selection towards the bottom of the Image Trace panel can save you some time. Any pixel data that is white in the resulting vector data will not be included. In other words, the white background will not be a shape and will be transparent.

After you finish tracing, you can either choose to leave the vector content as an Image Tracing object, which means you can't directly edit the vector shapes, or you can expand the tracing results and turn the Image Tracing object into a group of vector objects (shapes and/or paths—depending on the options set). You can click the **Expand** button in the **Control panel** or choose **Object > Image Trace > Expand** to expand to shapes.

Here are a few things to consider:

- If you place an image and link to it (when placing), trace it, then expand it, the raster image that is traced is no longer linked to the original and cannot be updated directly.
- Expanding an Image Tracing object commits you to the tracing settings. In other words, you can't edit the option in the Image Trace panel for that content after expanding.
- An Image Tracing object that has been expanded will, more often than not, be smaller in file size than the non-expanded Image Tracing object.
- You can “clean up” an image in a program such as Photoshop before tracing. Sometimes I will increase the contrast in an image to be traced, almost to the point of not looking right (too much contrast). In some cases, this can make it easier for Illustrator to determine what is what (where edges are, etc.). Also, you can use the touch-up tools in Photoshop to remove unwanted content before tracing.
- In CS5, when tracing a web-optimized image, such as a JPEG that is 72ppi, it traced the “stairstepped” edge. In CS6, that's usually not the case.
- Tracing an image that is a higher resolution will usually result in a more detailed trace.



Tracing results using the High Colour option on a 300ppi image (left) and 72ppi image (right)

- After expanding the Image Tracing object, you can clean up the resulting vector content a bit by choosing **Object > Path > Simplify**, or attacking the resulting paths and shapes with the drawing tools.
- You can save your tracing options in the Image Trace panel by clicking the **Manage Presets** button to the right of the **Preset menu** and choosing **Save As New Preset**. Saved presets appear in the **Preset menu**.