Adobe After Effects 5.0

Effects, part 3

This PDF file contains documentation for effects from the following effect categories: Perspective and Render.

Perspective effects

Use these effects to adjust an image's position in an imaginary 3D space, add depth, or create an adjustable z axis.

Basic 3D

If you are working on a project that was created in an older version of After Effects and this effect is applied to one or more layers, you can continue to use this effect; otherwise, use the 3D layer option instead.

The Basic 3D effect manipulates a layer in an imaginary 3D space. You can rotate your image around horizontal and vertical axes and move it toward or away from you. With Basic 3D, you can also create a specular highlight to give the effect of light reflecting off a rotated surface. The light source for the specular highlight is always above, behind, and to the left of the viewer. Because the light comes from above, the image must be tilted backward to see this reflection. This can enhance the realism of the 3D appearance. The specular highlight can be viewed only at Best quality.

The layer's quality setting affects Basic 3D. Draft quality calculates pixel location to the nearest integer value; Best quality calculates pixel location to the subpixel level.

Adjust the following controls for the Basic 3D effect:

Swivel Controls horizontal rotation (rotation around a vertical axis). You can rotate past 90° to see the back side of the image, which is the mirror image of the front.

Tilt Controls vertical rotation (rotation around a horizontal axis).

Distance to Image Specifies the image's distance from the viewer. As the distance gets larger, the rotated image recedes.

Specular Highlight Adds a glint of light that reflects off the surface of the rotated layer, as if an overhead light were shining on the surface. In Preview mode, the specular highlight is indicated by a red + if it is not visible on the layer (that is, if the center of the highlight does not intersect the layer) and a green + if the highlight is visible.

Preview Draws a wireframe outline of the 3D image. Because manipulating an image in 3D space can be time-consuming, the wireframe renders quickly so you can manipulate the controls to get the rotation you want. Deselect the Preview control when you finish manipulating the wireframe image to see your final results. As a safety precaution, the preview wireframe is drawn only at Draft quality; when you switch to Best quality, the image content is drawn. This way, you won't accidentally render a Best quality movie in Preview mode.

Bevel Alpha

This effect gives a chiseled and lighted appearance to the alpha boundaries of an image, often giving 2D elements a 3D appearance. (If the layer's alpha channel is completely opaque, the effect is applied to the bounding box of the layer.) The edge created in this effect is somewhat softer than that of the Bevel Edges effect. This effect works especially well for elements with text in the alpha channel.

Bevel Edges

This effect gives a chiseled and lighted 3D appearance to the edges of an image. Edge locations are determined by the alpha channel of the source image. Unlike Bevel Alpha, the edges created in this effect are always rectangular, so images with nonrectangular alpha channels do not produce the proper appearance. All edges have the same thickness. Best quality calculates the thickness of the chiseled area; the edge thickness is interpolated with smooth visual results.

Drop Shadow

This effect adds a shadow that appears behind the layer. The shape of the shadow is determined by the layer's alpha channel. Drop Shadow can create a shadow outside the bounds of the layer; however, memory requirements for this effect grow as the distance setting increases. The layer's quality setting affects the subpixel positioning of the shadow and the smoothness of the shadow's soft edges. It works well with 32-bit footage files from 3D rendering programs and drawing programs that support the alpha channel. If you want to render the shadow without the image, select Shadow only.

Note: *To apply a Drop Shadow to a layer that rotates, rotate the layer using the Transform effect and then apply the Drop Shadow effect. You can also use nesting, precomposing, or an adjustment layer to achieve this effect. If you do not use one of these methods, the shadow rotates with the layer.*

Render effects

Use these effects to create elements in a layer such as ellipses or fills, or to render a visual display of an audio file.

Audio Spectrum

This effect displays the spectrum of an audio layer. It displays the magnitude of frequencies in the range you define using Start Frequency and End Frequency. This effect can display the audio spectrum in a number of different ways, including along a Bezier path of a layer. Apply the effect to a layer that contains a solid or an image, and that may contain audio.

Note: *This effect is a visual effect, not an audio effect, and it must be applied to a video layer.*

Adjust the following controls for the Audio Spectrum effect:

Audio Layer Specifies the layer that contains the audio that you want to display as a spectrum.

Note: *The audio represents the source footage of the audio layer. The layer's audio adjustments, such as time-remapping, effects, stretch, and levels, will not be present. To graph this information for the audio layer, precompose the audio before applying this effect.*

Start Point Specifies the position at which the spectrum starts if Path is set to None.

End Point Specifies the position at which the spectrum ends if Path is set to None.

Path If not set to None, the audio spectrum is displayed along the path of the layer.

Use Polar Path If this is selected, the path starts from a single point and is displayed as radial graph.

Start Frequency and End Frequency Specify the first and last frequency, in hertz, of the range of frequencies being displayed.

Frequency bands Specifies the number of frequencies displayed.

Maximum Height Specifies the maximum height, in pixels, of a displayed frequency.

Audio Duration Specifies the duration of audio, in milliseconds, used to calculate the spectrum.

Audio Offset Specifies the time offset in milliseconds used to retrieve the audio.

Thickness Specifies the thickness of the bands.

Softness Specifies how feathered or blurry the bands appear.

Inside Color Specifies the inside color of the bands.

Outside Color Specifies the outside color of the bands.

Blend Overlapping Colors When selected, specifies that overlapping spectrums will be blended.

Hue Interpolation If Hue Interpolation is not set to 0, the frequencies displayed rotate through the hue color space.

Dynamic Hue Phase If this is selected and if Hue Interpolation is not 0, the Start color is shifted to the maximum frequency in the range of displayed frequencies. This allows the hue to follow the fundamental frequency of the spectrum displayed as it changes.

Color Symmetry If this is selected, the start and end colors are the same when Hue Interpolation is not 0. This allows color continuity on closed paths.

Display Options Specifies how to display the frequency spectrum—as Digital, Analog Lines, and Analog Dots.

Side Options Specifies whether to display the spectrum above the path (Side A), below the path (Side B), or both (Side A and B).

Duration Averaging When selected, specifies that the audio frequencies are averaged together to create less randomness.

Composite on Original When selected, composites the effect on the original layer, displaying the original layer. When not selected, the original layer is not visible.

Audio Waveform

This effect displays the waveform amplitude of an audio layer. You can display the audio waveform in a number of different ways, including along a Bezier path created by an open or closed mask of a layer. Apply the effect to a layer that contains a solid or an image, and that may contain audio.

Note: *This effect is a visual effect, not an audio effect, and it must be applied to a video layer.*

Adjust the following controls for the Audio Waveform effect:

Audio Layer Specifies the layer that contains the audio that you want to display as a waveform.

Note: *The audio represents the source footage of the audio layer. The layer's audio adjustments, such as time-remapping, effects, stretch, and levels, will not be present. To graph this information for the audio layer, precompose the audio before applying this effect.*

Start Point and End Point Specify the position at which the waveform starts and ends, if Path is set to None.

Path If set to None, the audio waveform is displayed along the path of the layer.

Displayed Samples Specifies the number of samples to display when graphing the waveform.

Maximum Height Specifies the maximum height, in pixels, of a displayed frequency.

Audio Duration Specifies the duration of audio, in milliseconds, used to calculate the waveform.

Audio Offset Specifies the time offset in milliseconds used to retrieve the audio.

Thickness Specifies the thickness of the waveform.

Softness Specifies how feathered or blurry the waveform appears.

Random Seed (Analog) Specifies a starting point for randomizing the effect. Random Seed starts the randomizing at a different point, changing the appearance of the waveform.

Inside Color Specifies the inside color of the waveform.

Outside Color Specifies the outside color of the waveform.

Waveform Options Specifies how to display the audio waveform—as Mono, Left, or Right. Mono combines the left and right channels of the audio layer. If the audio source is monophonic, the Waveform Options property has no effect.

Display Options Specifies how to display the audio waveform. Choose one of the following options:

> **Digital** Displays each sample as a single vertical line connecting the minimum and maximum source sample. This option simulates the display used on digital equipment.
>
> **Analog Lines** Displays each sample as a line connecting the previous and next sample from either the minimum or maximum audio source sample. This option simulates the retrace seen in the display of an analog oscilloscope.
>
> **Analog Dots** Displays each sample as a dot representing either the minimum or maximum audio source sample.

Beam

This effect animates the movement of a laser beam. You can make the laser shoot, or you can create a wand-like laser with stationary start and end points. This effect uses a 3D perspective based on the change in Starting Thickness and Ending Thickness. The beam looks best when motion blur is enabled and the shutter angle is set to 360.

To make a shooting laser beam, use keyframes to change the start point, end point, and length over time.

The Length option specifies the length of the beam based on a percent of the Time specified. For example, a setting of 100% means that the visible beam length is at its maximum when the Time option is 50%. Time specifies the time of the beam's travel from start to end as a percent. The 3D Perspective option uses 3D perspective when animating Time.

Ellipse

This effect draws an ellipse based on the dimensions you specify in the Effect Controls window. In addition to width and height, you can specify the thickness, softness, and color of the ellipse.

The Width/Height options specify the width and height of the ellipse in pixels. Values range from 0 to 2000 pixels. Thickness specifies the thickness of the arc forming the ellipse. Values range from 0 to 1000 pixels. Softness specifies the softness or degree of blur of the ellipse's arc.

Fill

This effect is used to fill a mask with a specified color. The Fill Mask menu displays the available masks. If you want to add both a stroke and a fill to a closed path, the order in which you apply the stroke and fill effects determines the visible width of the stroke. If the fill is applied before the stroke, the full stroke brush size is visible. If the stroke is applied before the fill, the fill appears on top of the stroke, obscuring the half of the stroke that falls inside the path.

Fractal

This effect renders the Mandelbrot or Julia set, creating colorful textures. When you first apply the effect, the picture you see is the classic sample of the Mandelbrot Set (the "set" is the area that is colored black). Any pixel lying outside of the set is colorized, depending on how close it is to the set. Pixels near the border appear chaotic (noisy), but as you zoom in, a quite startling and beautiful structure is revealed.

Adjust the following controls for the Fractal effect:

Set Choice Specifies the set used. Choose one of the following options:

Mandelbrot Is the typical Mandelbrot set.

Mandelbrot Inverse Is the Mandelbrot set mathematically inverted.

Mandelbrot over Julia Is the same as Mandelbrot, except that it does change when the Julia center point changes.

Mandelbrot Inverse over Julia Is the same as Mandelbrot Inverse, except that it does change when the Julia center point changes.

Julia Always changes depending on the center point from the Mandelbrot set. It can produce the set of all possible Julia sets.

Julia Inverse Is the inverse of the Julia set. To see a Julia set, you may want to set the magnification to a negative value, because these sets tend to fill up the complex plane outside the normal boundary.

Mandelbrot and Julia Specify the settings for the specified set using the following controls:

X (Real) and Y (Imaginary) Specify the pixels at the center of the image for either the Mandelbrot or Julia set.

Magnification Specifies the magnification of the effect.

Escape Limit Specifies how many times the calculation looks for a color for a given pixel. If it doesn't find a color in the specified number of times, it assigns the color black. This is also the maximum number of line segments the arrow tool can use when tracing the path of a point. Higher numbers require longer render times.

Color Specifies the color of the effect using the following controls:

Overlay Displays a ghosted version of the opposite set. For example, when viewing the Julia set, use this option to display a ghosted version of the Mandelbrot set. When you select Overlay, a white cross hair with a black drop shadow appears so you can see the exact point at the center of the opposite set. This option is useful because the Julia set depends on the center point of the Mandlebrot set.

Transparency Specifies whether or not black pixels are transparent. If you choose Solid Color from the Palette menu, this option specifies whether everything inside or outside the set is transparent.

Palette Specifies the palette to use when drawing the set:

Lightness Gradient Creates a gradient from black, through the hue specified by the Hue control to white. Then it applies the same gradient eight more times, each time using the hue 45° away on the color wheel. The number of colors in the gradient is specified by the Cycle Steps option.

Hue Wheel Uses all the color from the Hue color wheel, with maximum brightness and saturation.

Black and White Uses alternating bands of black and white.

Solid Color Turns everything transparent except the inside of the set, which uses the color specified by the Hue option. Select Transparent to get the opposite effect.

Hue Specifies the hue for solid colors and the starting hue for color gradients. This option works well for creating smooth color changes.

Cycle Steps Specifies the number of bands of different color that appear before the cycle starts over.

Cycle Offset Specifies where, other than the beginning, a cycle starts. This option is useful for cycling the palette, or creating discrete color changes.

Edge Hilight Highlights the edges between color bands. This option requires low-quality mode. If you want to use high-quality edge highlighting, use the Find Edges effect instead.

High Quality Settings Specify the oversampling settings for the effect using the following controls:

Oversample Method Specifies the method used to oversample the effect:

Edge Detect-Fast-May Miss Pixels Performs a simple edge detect and oversamples only those pixels. This is the fastest option, especially in areas with a lot of solid color, such as black, and generally produces results indistinguishable from Brute Force.

Brute Force-Slow-Every Pixel Oversamples every pixel in the image. It is slow but precise.

Oversample Specifies the amount of oversampling to perform. For example, a value of 4 specifies that each pixel is sampled 16 times (4x4=16), and that the average color is used. Higher values produce better quality output but require longer render times.

Using tools with the Fractal effect

When the Fractal effect is selected in the Effect Controls window, you can use After Effects tools in the following way (if you don't want the Fractal tools active, deselect the effect before using tools):

• Drag the arrow tool to see if a point's path lies within the set. If the path leads out of the bounded rectangle (-2, -2, 2, 2), then it has gone into infinity; in such a case, the starting-point color is based on how many line segments it takes to reach infinity. If the path ends within the rectangle, it is colored black.

• Use the magnifying tool to zoom in or out on a particular point, or hold down Command (Windows) or Ctrl (Mac OS), click and hold the magnifying tool over the center of the image, and navigate from the center. For example, to zoom straight in, stay in the center; to move up, drag up just a little and then quickly move back to the center.

• Use the hand tool to pan the image. Hold down Command (Windows) or Control (Mac OS) to pan the opposite fractal. For example, when viewing the Julia set, hold down Command (Windows) or Ctrl (Mac OS) to pan the Mandelbrot set and see how the Julia set depends on the center point of the Mandelbrot set.

• Use the arrow keys to pan the center point by 10 pixels. Press Shift as you press an arrow key to adjust the point by 1 pixel. Press Command (Windows) or Control (Mac OS) as you press an arrow key to adjust the center point of the opposite set.

Note: *When panning or nudging, hold down Command (Windows) or Ctrl (Mac OS) to move the center point of the opposite set. For example, when panning a Julia, hold down Command (Windows) or Ctrl (Mac OS) to change the Mandelbrot center point, causing the Julia to morph.*

Fractal Noise

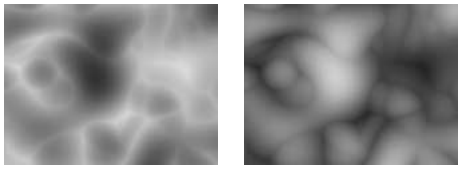
This effect creates textures and objects that cannot be described using simple geometric shapes. You can use this effect to create organic-looking backgrounds, displacement maps, textures, and mattes, or simulate things like clouds, lava, flowing water, or gas.

Adjust the following controls for the Fractal Noise effect:

Fractal Type Specifies the fractal shape you want to use to create the noise.

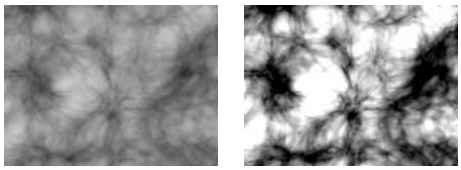
Noise Type Specifies the type of noise.

Invert Inverts the noise. Select this option to create a negative or inverse of the current noise layer. Black areas become white, and white areas become black.



Invert on (left), invert off (right)

Contrast Adjusts the contrast of the noise layer. The default value is 100. Higher values create larger, more sharply defined areas of black and white in the noise, generally revealing less subtle detail. Lower values result in more areas of gray, softening or muting the noise. A layer's contrast is also affected by the Overflow option.



Contrast low (left), contrast high (right)

Brightness Adjusts the brightness of the noise layer.

Overflow Remaps the values that fall outside of the grayscale range of 0–255 using one of the following options:

Clip Remaps values so that any value above 255 is displayed as pure white, and any value below 0 is displayed as pure black. The Contrast value controls how much of the image falls outside of this range. Higher values result in a mostly black and/or white image with less gray area. Therefore, less subtle fractal detail is displayed at higher contrast settings. When used as a luma matte, the layer has sharper, more defined areas of transparency.

Soft Clamp Remaps values on an infinite curve, forcing all values to fall inside of the range. When you select this option, the contrast appears reduced. The fractals appear mostly gray with very few areas of pure black or pure white. When used as a luma matte, the layer contains very subtle areas of transparency.

Wrap Back Remaps triangularly, so that values above 255 or below 0 fold back into the range. This option results in the appearance of more defined subtle detail when Contrast is set above 100. When used as a luma matte, the layer reveals more detailed textured areas of transparency.

Transform Specifies the rotation and size of the noise using the following controls:

Rotation Rotates the fractals in the Composition window.

Uniform Scaling Scales the noise uniformly. When not selected, the Scale Width and Scale Height are active.

Scale Specifies the proportional scale of the fractal shapes. Default is 100.

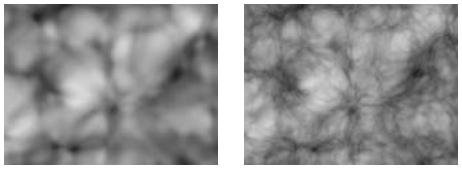
Scale Width and Scale Height Specify the width size and height size individually for the fractal shapes.

Offset Turbulence Specifies the portion of the fractal that is visible in the Composition window. Because the fractal shapes are infinite in all directions, what appears in the Composition window at any given time is only a small portion of the entire fractal. Use this control to reposition the shape within the layer's bounding box.

Perspective Offset When selected, specifies that the perspective is influenced by the Sub Settings control, Sub Scale. This option makes it possible to create a perspective effect when animating the Offset Turbulence.

Complexity Adjusts the visible level of detail in the fractal shapes. Increasing this value increases the definition in the noise pattern. Lower values result in a softer, almost blurred appearance. Higher values display the fractal shapes with sharpness and clarity.

Note: *Increasing Complexity results in longer rendering times. If appropriate, try reducing the Size rather than increasing Complexity to achieve similar results and avoid longer rendering.*



Complexity low (left), complexity high (right)

Sub Settings Fractals are generated by repeating instances of a noise function derived from the Fractal Type and Noise Type controls. In each instance, the following Sub Settings controls affect how each iteration value is calculated. The number of iterations calculated is determined by the Complexity control.

Sub Influence Determines how much each iteration influences the final image. This value also affects any subsequent iterations. At 100%, all iterations have the same amount of influence. At 50%, each iteration has half as much influence as the previous iteration.

Sub Scaling Scales the coordinates on which the iteration is calculated. When this value is set lower than 100%, each iteration adds more refined details. Setting this value at 50% increases the detail by a factor of two for each iteration—the same way detail increases when scaling down an image.

Sub Rotation Rotates each iteration by this degree.

Sub Offset Offsets each iteration by this amount.

Center Subscale Calculates each iteration from the same point as the previous.This can result in the appearance of duplicated layers stacked on top of each other. To avoid this type of repetitive fractal look, don't select this control.

Evolution Creates subtle changes in the shape of the fractal. Animating this results in smooth changes or "evolution" of the noise over time, such as passing clouds, or flowing water.

The Evolution value is set in progressive revolutions. Unlike typical revolutions, which refer to a setting that returns to the same value at the same point on the dial control every 360°, Evolution continues to change the image with each added revolution. The appearance at 0° is different from that at 1 revolution, which is different from that at 2 revolutions, and so on. The Evolution state continues to progress infinitely at each new value. To force the Evolution setting to return gracefully to its original state (for example, to create a seamless loop), use the Cycle Evolution option.

Set keyframes for Evolution to specify how much the fractals evolve over the period of time between keyframes. The more revolutions within a given amount of time, the more rapidly the noise changes. Large changes in Evolution values over a short period of time may result in flashing.

To create a seamless loop, use Cycle Evolution and set Evolution keyframes that use full revolutions only. Do not use degrees—partially completed revolutions may create hiccups in the loop.

Evolution Options Specify evolution cycles that you can use a to render the effect for one short cycle and then loop it to repeat for the duration necessary for your project. If you set keyframes for other Fractal Noise options, you must return them to their initial settings at the point on the timeline where the cycle begins to repeat. Otherwise, the properties won't loop.

Cycle Evolution Creates a cycle of evolution that loops over the set amount of time. It forces the evolution state to return to its starting point, creating a smooth progressive cycle, a nonrepeating cycle, or a loop segment. Rather than animating the Evolution option over a greater number of frames, save rendering time by using this option to create one short seamless evolution cycle (in which the last frame matches up to the first), prerender it, and loop it as a new source layer in a composition, (See the procedure "To Create a Seamless Loop," below.)

Cycle (in Revolutions) Specifies the number of revolutions that the fractal noise cycles through before it repeats. The timing or speed of these Evolution cycles is determined by the amount of time between Evolution keyframes. This option affects only the evolution of the fractal, not geometrics or other controls. For example, if you view two identical states of a fractal with different Size or Offset settings, they do not appear the same.

To ensure that your cycle can complete full revolutions, choose a Cycle value that either matches or is evenly divisible by the number of revolutions set for Evolution.

Note: *Cycle is available only when the Cycle Evolution is selected.*

Random Seed Sets a unique random value from which to generate the noise. Animating the Random Seed results in flashing from one set of fractal shapes to another (within that fractal type). For smooth transition of the fractal shapes use the Evolution option.

You can easily create new fractal noise animations by reusing previously created Evolution cycles and changing only the Random Seed value. Typing a new Random Seed value alters the noise pattern without disturbing the evolution animation.

Opacity Specifies the opacity of the noise layer.

Transfer Mode Specifies an operation between the fractal noise and the original layer. These Transfer Modes are identical to the ones in the After Effects Modes panel, with the following three exceptions:

None Renders the fractal only; does not composite with original layer.

Hue Renders the fractal as hue values instead of grayscale. The Saturation and Lightness of the original layer are maintained. If the original layer contains no saturation, nothing happens.

Saturation Renders the fractal as saturation values instead of grayscale. The Hue and Lightness of the original layer are maintained. If the original layer contains no saturation, nothing happens.

To create a seamless Loop:

1 Select a layer in the Timeline window and choose Effect > Render > Fractal Noise.

2 Set two keyframes for Evolution.

3 Adjust the time between keyframes and the number of Evolution revolutions until you are satisfied with the animation of the noise.

4 Select Cycle Evolution.

5 Set a value for Cycle.

The evolution cycles the number of revolutions you specified for Cycle. This cycle takes place within the time allowed for that number of revolutions between the Evolution keyframes.

6 Determine the Cycle value by considering how much of this cycle you need to render before it repeats. The length of the project and use of the cell pattern created determine this. Choose the shortest length appropriate for your project to save rendering time. A cycle is created.

7 Initially, the last frame of a cycle is identical to the first frame. To create a seamless loop, skip the last frame by setting the Out point of the layer one frame before the last frame of the cycle.

8 Move the current-time marker to the point on the Timeline where the cycle completes. For example, if the Cycle is set to 2, locate the frame on the timeline where the Evolution value is 2.

9 Move the current-time marker back one frame.

10 Trim the layer's Out point at this frame.

11 Prerender this layer and import it into your project.

12 Select the file in the Project window and choose File > Interpret Footage; then set Loop to the number of loops required for the duration of the layer in the project.

Lightning

The Lightning effect creates lightning bolts and other electrical effects, including a "Jacob's Ladder" effect (as seen in old horror movies) between two specified points in a layer. This effect is automatically animated without keyframes across the time range. Use the Wiggler to add randomness to the lightning bolt.

Adjust the following controls for the Lightning effect:

Start Point Specifies where the lightning begins.

End Point Specifies where the lightning ends.

Segments Specifies the number of segments that form the main lightning bolt. Higher values produce more detail but reduce the smoothness of motion.

Amplitude Specifies the size of undulations in the lightning bolt as a percentage of the layer width.

Detail Level and Detail Amplitude Specify how much detail is added to the lightning bolt and any branches. For Detail Level, typical values are between 2 and 3. For Detail Amplitude, a typical value is 0.3. Higher values for either option are best for still images but tend to obscure animation.

Branching Specifies the amount of branching (or forking) that occurs from the main lightning bolt. Branches appear at the ends of segments. A value of 0 produces no branching, and a value of 1.0 produces branching at every segment.

Rebranching Specifies the amount of branching from branches. Higher values produce tree-like lightning bolts.

Branch Angle Specifies the size of the angle between a branch and the main lightning bolt.

Branch Seg. Length Specifies the length of each branch segment as a fraction of the average length of the segments in the lightning bolt.

Branch Segments Specifies the maximum number of segments for each branch. To produce long branches, specify higher values for both the branch segment length and the branch segments.

Branch Width Specifies the average width of each branch as a fraction of the width of the lightning bolt.

Speed Specifies how fast the lightning bolt undulates.

Stability Determines how closely the lightning undulates along the line defined by the start and end points. Lower values keep the lightning bolt close to the line; higher values create significant bouncing.

Stability and Pull Force Simulate a "Jacob's Ladder" effect. When used together, these controls cause the lightning bolt to snap back to a position along the start line after it has been pulled in a direction specified in Pull Force. You may need to adjust values before you find the required effect. A Stability value that is too low does not allow the lightning to be stretched into an arc before it snaps back; a value that is too high lets the lightning bolt bounce around.

Fixed Endpoint Determines whether the end point of the lightning bolt remains fixed in place. If this option is not selected, the end of the bolt undulates around the end point.

Width Specifies the width of the main lightning bolt.

Width Variation Specifies how much the width of different segments of the lightning bolt can vary. Width changes are randomized. A value of 0 produces no width changes; a value of 1 produces the maximum width changes.

Core Width Specifies the width of the inner glow, as specified by the Inside Color value. The Core Width is relative to the total width of the lightning bolt.

Outside Color and Inside Color Specify the colors used for the lightning bolt's outer and inner glows. Because the Lightning effect adds these colors on top of existing colors in the composition, primary colors often produce the best results. Bright colors often become much lighter, sometimes becoming white, depending on the brightness of colors beneath.

Pull Force Specifies the strength of a force that pulls the lightning bolt in the direction specified by the Pull Direction value. Use the Pull Force value with the Stability value to create a "Jacob's Ladder" effect.

Pull Direction Specifies the direction of the Pull Force. The lightning bolt is pulled in this direction.

Random Seed Specifies a starting point for randomizing the lightning effects you have specified. Because random movement of the lightning may interfere with another image or layer, typing another value for the Random Seed starts the randomizing at a different point, changing the movement of the lightning bolt.

Blending Mode Specifies how the lightning is added to the layer.

Normal Simply overlays the lightning on the layer. To render lightning by itself, use Normal on a transparent layer.

Add Adds the color values, producing lighter colors.

Screen Multiplies the inverse brightness levels of the layer and the lightning and uses the resulting colors, which are always lighter.

Rerun at Each Frame Controls the frame-by-frame generation of the lightning. Selecting this option regenerates the lightning at each frame. To make the lightning behave the same way at the same frame every time you run it, do not select this option. Selecting this option may increase rendering time.

PS+Lens Flare (PB only)

See the Adobe Photoshop online Help for information on using this effect.

Radio Waves

This effect creates radiating waves from a stationary or animated effect point. You can use this effect to generate pond ripples, sound waves, or intricate geometric patterns. You can control the emitted waves' shape, width, color, speed, rotation, life span, fade rate, and other properties. Use the Reflection option to make the shapes bounce off the sides of the layer. You can also use Radio Waves to create realistic wave displacement maps that work well with the Caustics effect.

Adjust the following controls with the Radio Waves effect:

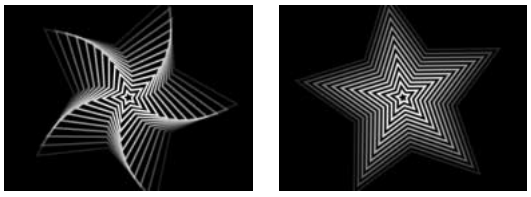
Producer Point Specifies the point from which the waves appear.

Parameters are Set At Specifies whether or not the various parameters are animatable for each individual wave. Choose one of the following options:

Birth Specifies that each wave is formed and lives out its life keeping the same parameter settings with which it started.

Each Frame Specifies that the waves change as the parameters change.

For example, if you create a star wave that has an animated rotation parameter, you can select Birth to offset each star a little from the previous one, creating a twisting tunnel effect; or you can select Each Frame to make all the stars rotate in unison at as the Rotation parameter changes.



Star wave with Birth selected from the Parameters are Set At menu (left); Star wave with Each Frame selected from the Parameters are Set At menu (right)

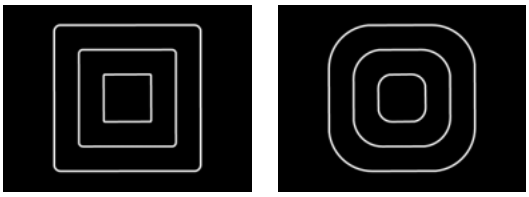
Render Quality Controls the quality of the output. Radio Waves renders a smooth, anti-aliased shape by first rendering a high-resolution version of the shape, and then scaling it down in a process called oversampling. For example, to create a 100-x-100-pixel image, it may first generate a 400-x-400-pixel image and then scale it down using 4x oversampling. Oversampling provides high-quality results, but the higher the oversampling value, the longer it takes to render, and oversamples occur for every shape generated. Consequently, when the wave frequency gets very high, you may want to lower the Render Quality to speed up rendering (at the expense of edge quality). This option works only when in Best quality mode.

Wave Type Specifies the type of wave you want to create. You can use a multisided polygon, a custom mask, or the contours of a layer in your composition.

Polygon Specifies the appearance of the polygon shape used for the wave. Use the following controls to create a wave:

Sides Specifies the type of polygonal shape you want to produce. Three sides create a triangle, four create a square, and so on. Size values above 64 result in a smooth circle. You can also create a circle by setting Sides to 3, Curve Size to 1, and Curvyness to about .62.

Curve Size Specifies how much of each side is curved at each point. When Star is selected, this option rounds off the points of the star.



Curvyness set to 0.5 for both, and Curve Size set to 0.1 (left) and 0.6 (right)

Curvyness Specifies how extreme the curve is at each point of the wave. When Star is selected, this option determines how extreme the curve is at each point of the star.

Curve Size set to 1 for both, and Curvyness set to 1 (left) and 0.5 (right)

Star Specifies that the polygon is shaped like a star. To change the number of points on the star, change the number of sides.

Star Depth Specifies the star's angles. A star is composed of lines connecting an identical number of outer points and inner points. Star Depth controls the relative distance between the inner points and the center of the star.

Image Contour Specifies the image you want to use as the wave and controls how the image appears using the following controls:

Source Layer Specifies the layer you want to use as the shape of the wave. Select an animated layer to emit moving shapes. A well-defined outline, high-contrast grayscale layer, or alpha channel works well as a source. The Radio Waves effect detects edges and converts sources into outlines, so you can create effective waves by using simple white shapes on a black background, or by sampling an alpha channel.

Source Center Specifies the center point of the shape, relative to the source layer. For example, if you isolate a shape that is positioned in the left half of the frame, you can leave the source center alone, in which case the shape radiates off to the left, or you can move the source center to the center of the shape and force the shape to emit in a radial fashion.

Value Channel Specifies the channel or property of the source layer that defines the wave shape.

Invert Input Inverts the selected value channel option.

Value Threshold Specifies the threshold for the selected value channel property. It determines the percentage value at which everything below it or above it is mapped to either white or black. This option can make a big difference in the shape of the wave.

Pre-Blur Smooths out the value channel before the value threshold is sampled. If you have a high-contrast image, such as white on black, and you want the wave to follow the edges very closely, set this to 0.

Tolerance Defines how tightly the wave conforms to the source layer. An extremely high setting results in sharp corners; an extremely low value can make the wave shape more sensitive to noise.

Contour Specifies the shape in the source layer that you want to use as the emitted wave. Contour numbers the shapes by their order in the frame from top to bottom, left to right. The shape in the top left corner is number 1.

Mask Specifies the mask you want to use as the wave shape. Select a wave from the wave menu. Only closed masks can be used as wave shapes.

Wave Motion Specifies how the wave emits from the center point using the following controls:

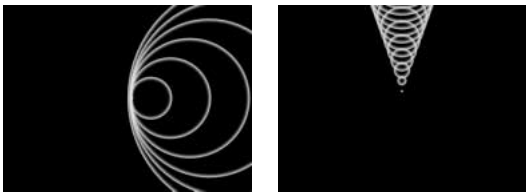
Frequency Specifies the number of waves per second flowing out of the producer point.

Expansion Specifies the speed at which the wave travels from the producer point once it is born. This doe not affect the number of waves per second.

Orientation Specifies the rotation of the shape at birth around its center point. To animate the rotation, use the Spin control.

Direction Specifies the initial direction of the waves when Velocity is set to any value other than 0. By default, particles are emitted in an expanding radial pattern centered on the producer point. However, you can shoot them off in a particular direction.

Velocity Specifies the speed at which the wave moves in the specified direction. The higher the Velocity value, the faster the object moves in the direction defined with the Direction control.



Expansion is set to 5, Frequency to 3, Direction to 90˚, and Velocity to 5 (left). Expansion is set to 3, Frequency to 10, Direction to 0˚, and Velocity to 9 (right).

Spin Controls the continued rotation of a shape after it is born.

Lifespan (sec) Specifies the time, in seconds (including the fade-in and fade-out times), that the wave exists.

To prevent waves from abruptly disappearing when their lifetime ends, use the Fade Out Time control.

Reflection Specifies whether or not the waves bounce off of the edges of the layer and back into the scene. This is effective for generating displacement maps for use as water ripples.

Stroke Specifies the appearance of the wave's stroke using the following controls:

Profile Controls the appearance of the stroke that defines the shape. The outline of the shape is animated in the wave that emanates from the effect point. The quality of the stroke is defined as a 3D wave type.

Color Specifies the color of the stroke.

Opacity Specifies the maximum possible opacity of the stroke. The actual opacity of the stroke takes into account this setting in conjunction with the Fade-in Time and Fade-out Time options.

Fade-in Time Specifies the amount of time it takes the wave to fade into view. It is measured in seconds and begins with 0 opacity at birth. For example, if the Lifespan is 3 seconds and Fade-in Time is 1 second, the stroke is born completely transparent and fades smoothly in to full opacity at 1 second.

Fade-out Time Specifies the amount of time it takes the wave to fade out of view. It is measured backward in time from the end of the Lifespan. If the Lifespan is 3 seconds and Fade-out Time is 1 second, the wave begins to fade out at 2 seconds.

Three seconds into the effect: Lifespan at 10 seconds, Fade-out Time at 0 seconds, and Fade-in Time at 3 seconds (left); Lifespan at 3 seconds, Fade-in Time at 0 seconds, and Fade-out Time at 3 seconds (right)

Ideally, when the Fade-in Time and the Fade-out Time are added together, the sum is not greater than the Lifespan of the shapes. If the sum is greater, the intersection point of the two fades is calculated so that the wave does not reach full transparency.

If either the Fade-in Time or Fade-out Time is longer than the Lifespan, the amount is truncated to equal the Lifespan. For example, when Lifespan is at 5 seconds and Fade-in Time is at 10 seconds, the Fade-in time is automatically calculated as if it is 5 seconds.

Start Width Specifies the width of the shape at its birth.

End Width Specifies the width of the shape at the end of its lifespan.

Ramp

This effect creates a color gradient, blending it with the original image contents. Create linear or radial ramps and vary the position and colors of the ramp over time. Use the Start and End of Ramp options to specify the start and end positions. Use the Ramp Scatter control to disperse the ramp colors and eliminate banding, or use Ramp in 16-bit mode.

Note: *Traditionally, ramps do not broadcast well; serious banding occurs because the broadcast chrominance signal does not contain sufficient resolution to reproduce the ramp smoothly. The Ramp Scatter control disperses the ramp colors, eliminating the banding apparent to the human eye.*

Stroke

This effect creates a stroke or border around a mask or along a Bezier path. You can also specify stroke color, opacity, and spacing, as well as brush characteristics. Specify whether the stroke appears on top of the image, on a transparent image, or if it reveals the original alpha channel. To use a path created in Illustrator, copy the path and paste it into a layer in After Effects.

The Brush Hardness option specifies the edge quality of the stroke, between hard and soft. Spacing specifies the spacing between stroke segments. Paint On specifies whether the stroke is applied to the original layer or to a transparent layer.

Vegas

This effect generates running lights and other path-based pulse animations around an object. You can outline just about anything, surround it with a number of lights or longer pulses, and then animate it to create the effect of lights chasing around the object.

Adjust the following controls for the Vegas effect:

Stroke Specifies what you want to use to create your stroke:

Image Contours Outlines an area in the layer to which the lights are applied.

Mask/Path Specifies the mask or path to which the lights are applied.

Image Contours Specifies the area where the lights will appear. Vegas sets thresholds for the image and then creates contours around the edges of the resulting shapes. Use the following controls to control this process:

Input Layer Specifies where the strokes appear. Grayscale layers and alpha channels work well and are easy to work with. You can achieve good results using high-contrast images such as white shapes on a black background.

Invert Input Inverts the input layer prior to creating the stroke.

If Layer Sizes Differ Determines what happens if the size of the input layer differs from the size of the layer to which Vegas is applied.

Center Centers the input layer in the composition at its original size.

Stretch to Fit Scales the input layer to the size of the layer to which Vegas is applied. If the two layers have different aspect ratios, the resulting stroke will look stretched from side to side.

Channel Specifies the channel or property of the input layer used to define the contours.

Threshold Sets the threshold for the selected channel. The threshold is the percentage value at which everything below or above is mapped to either white or black. For example, think of a grayscale file as an altitude map with white high and black low; the Threshold value moves the contour up or down the terrain. This is an important factor in determining the location of the edges that Vegas strokes.

Pre-Blur Smooths out the input layer before the threshold is sampled. If you have a high-contrast image, such as white on black, and you want the stroke to follow the edges very closely, set this to 0.

Tolerance Defines how tightly the stroke conforms to the input layer. An extremely high setting results in sharp corners, while extremely low values can make the stroking more sensitive to noise.

Render Specifies whether you want to apply Vegas to all the contours in the layer, or to the selected contour.

Selected Contours Specifies the contour to use when Selected Contour is selected in the Render menu. Vegas determines which contour is number 1 and which is number 2 the same way it looks for the starting point on a contour: from left top to bottom right, the contour with the highest point is number 1, the second highest point is number 2, and so on.

By default, the first contour is affected when Render is set to Selected Contour.

Shorter Contours Have Specifies whether or not shorter contours have fewer segments. This is useful when working with images such as letters. By default, Vegas breaks each contour into the same number of segments. For example, if you apply Vegas to the letter R, the outside contour of the R may look fine with 32 segments, but the inside contour may seem almost solid. To resolve this, select Fewer Segments from the Shorter Contours Have menu.

The small inside shapes of the letters (as well as the dot on the "i") have four segments; the large outside shapes of the letters have 20 segments.

Mask/Path Specifies the path to use for the stroke. Select the mask from the Path menu. You can use either closed or open masks.

Segments Specifies the number and appearance of the contours' segments using the following controls:

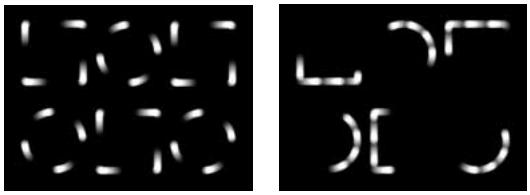
Segments Specifies the number of segments that make each complete contour that is stroked. For example, if Vegas is applied to the word "Vegas" and Segments is set to 10, the outline of each of the five letters, plus the inner contours of the letters e, g, and a, are broken into 10 segments.

Length Determines the length of a segment's stroke in relation to its maximum possible length. For example, if Segments is set to 1, the maximum length of a stroke is one complete trip around the object outline. If Segments is set to 3, the maximum length of a segment is 1/3 of the total outline, and so on.

Segment Distribution Determines the spacing of the segments in one of the following ways:

Bunched Puts the segments together like boxcars in a train; the shorter the segment length, the shorter the overall length of the train.

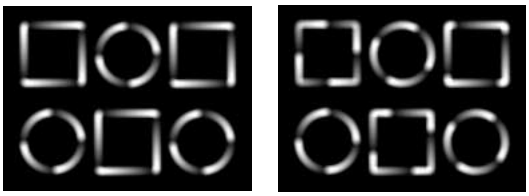
Even Evenly spaces the segments around the contour.



Segments set to 4 with Even (left) and Bunched selected (right)

Rotation Animates the segments around the contour. For example, to create the effect of running lights, start with a large number of segments set to 50% of their length, and then animate Rotation to move the lights around the shapes.

Random Phase Specifies that the stroke starting point is different for each contour. By default, Vegas strokes a contour beginning at its highest point on the screen. In the event of a tie, it starts at the leftmost highest point.



Stroke Origin set to Normal, with the segments starting at the top left of each square and the top center of each circle (left); Random Stroke Origin selected, randomizing the origins of the stroke segments (right)

Random Seed Gives different stroke origins to two identical contours with identical settings on a layer. A random seed is a number that is inserted into the calculation to generate a unique result. By using a different Random Seed setting, you can make things appear different, while still using the same settings.

Rendering Specifies how Vegas renders the strokes using the following controls:

Blend Mode Determines how the stroke is applied to the layer. Choose from the following controls:

Transparent Eliminates the original layer, so only the effect of Vegas is visible on a transparent background.

Over Places the stroke on top of the existing layer.

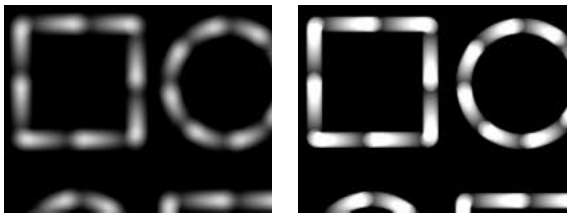
Under Places the stroke behind the existing layer. This is useful only when the layer with Vegas applied has an alpha channel. It is useful for putting unobtrusive outlines around things.

Stencil Uses the stroke as an alpha channel mask on the layer to which it is applied. The stroke is filled with the pixels of the original layer.

Color Specifies the color of the stroke, unless Stencil is selected for Blend Mode.

Width Specifies the width of the stroke in pixels. Fractional values are supported and anti-aliased with subpixel precision.

Hardness Determines how sharp or blurry the edges of the stroke are. At a value of 1, there is only a slight blur, similar to normal anti-aliasing. At 0.0, the line blurs to the point where there are barely any solid areas of color left.



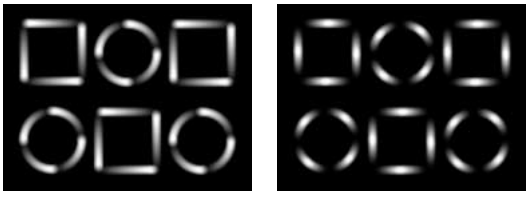
Hardness set to 0 (left) and 1 (right)

Start Opacity Specifies the opacity at the beginning of the stroke. A high Start Opacity and a low End Opacity setting create a paintbrush appearance on the stroke. You can use it to make the strokes look like little flying comets.

Mid-point Opacity Specifies the opacity of the midpoint of the stroke. This works in terms of relative opacity, not absolute opacity. Setting this to 0 makes the change in opacity smooth from the start point to the end point, as if there were no midpoint at all.

Mid-point Position Specifies the exact location (within a segment) of the midpoint. Lower values move the midpoint closer to the beginning of the segment, while higher values move the midpoint closer to the end of the segment. Use this option to make midpoint opacity occur somewhere other than in the exact middle of the stroke.

End Opacity Specifies the opacity at the end of the stroke.



Start Opacity set to 0 and End Opacity set to 1 (left) reverses the look of the default settings. Start and End Opacity set to 0, and Mid-point Opacity set to 1 (right) creates a soft fade in to white and fade out to black.

Adobe Systems Incorporated
345 Park Avenue
San Jose, CA 95110-2704 USA
World Wide Web
www.adobe.com