

Advanced Keyframes

Because Avid's standard effects model displays all keyframes in a single row, there's no way to isolate keyframes for individual parameters. Advanced keyframes work differently, displaying values for each parameter separately. This provides more control, and allows you to do things that were once impossible. For example, it lets you to change the way the system interpolates values between keyframes. The old model simply drew a straight line—if a value moved from 0 to 100 and back to 0, it seemed to bounce harshly at the center keyframe. The new model allows you to create and manipulate curves between keyframes, and thus it helps you make effects that feel smoother and more organic.

A simple resize effect, used for blowing up or repositioning a shot, is shown below, with the Effect Editor positioned over the preview monitor. Each parameter displays a separate row of keyframes. (If you don't see them, click the Show Keyframe icon.)



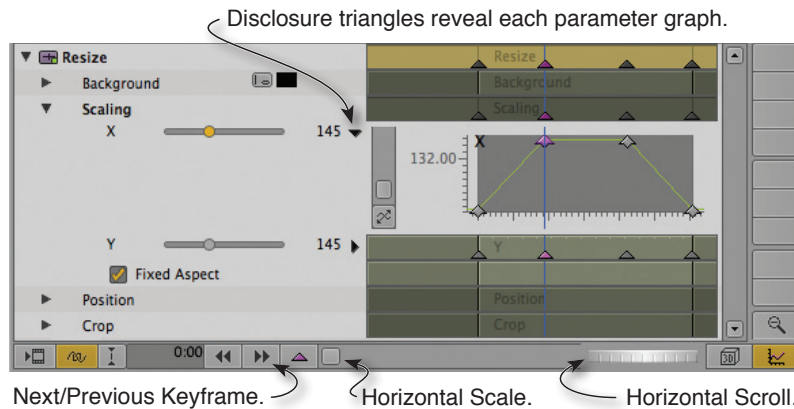
You can move keyframes around in the position bar under the preview monitor or with the unified Effect Track at the top of the Effect Editor, which serves the same purpose. But you can also control each parameter individually. Disclosure triangles are used to cluster parameters into Groups, such as Scaling, Position or Crop. This allows you to manipulate all keyframes in the group, or to set values for individual parameters. For example, in the illustration above, clicking on a keyframe in the Scaling group will select keyframes in the X and Y tracks simultaneously.

Moving Multiple Keyframes in Time

One nice feature of the advanced model is that it allows you to move adjacent keyframes together in time (left/right). Click the first keyframe you want to move and Shift-click the others. Then hold down the Option key and drag any selected keyframe to move all of them at once.

Keyframe Graphs

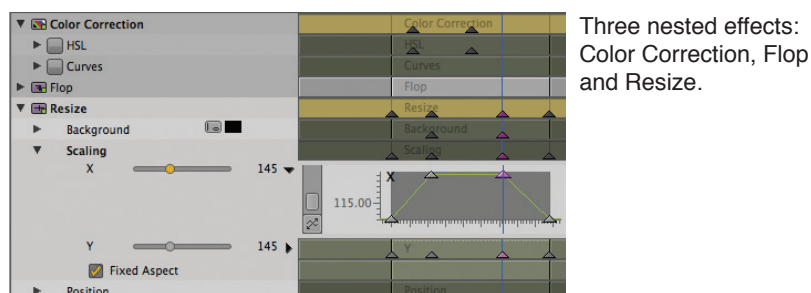
The advanced keyframe interface also allows you to display each keyframe parameter as a graph, making it easy to see how values change between keyframes. You can manipulate one or more keyframes simply by dragging them.



In the graph, keyframe movement is normally constrained to the vertical dimension, changing the parameter value. If you want to move the keyframe position in time (horizontally) hold down the Option key while dragging. To move a keyframe horizontally without moving it vertically, hold down Option and Shift simultaneously.

Nesting Effects with Advanced Keyframes

If all the effects in a nest employ advanced keyframes, you can view and adjust them as a single stack in the Effect Editor. In the illustration below, three effects have been nested and are visible simultaneously.

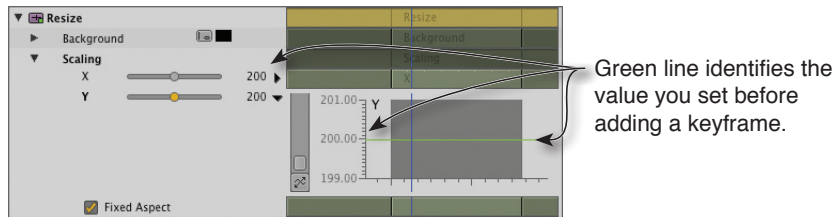


To change the order of the effects in the nest, simply click and drag an effect icon up or down.

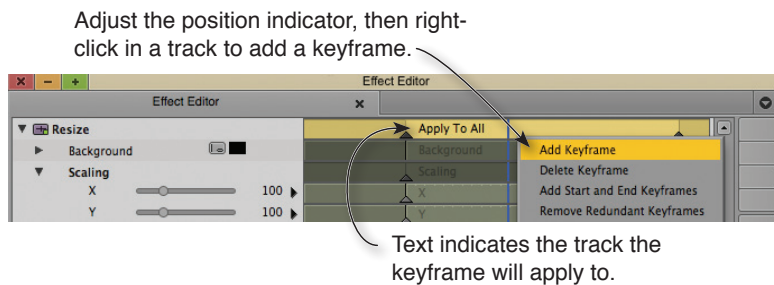


Adding Keyframes

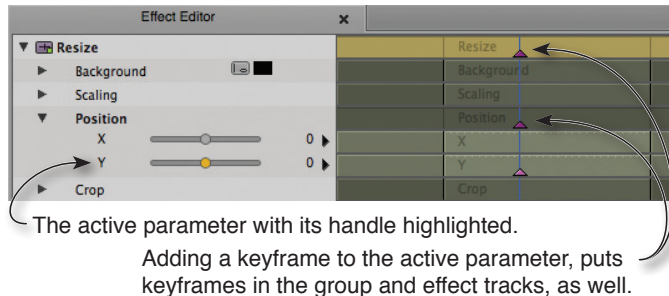
Standard effects require keyframes. But with advanced effects, if you don't plan to vary parameter values, they aren't necessary. For example, if you're simply blowing up a shot, without zooming or moving, you can adjust the scale and position parameters, setting a base value that will be maintained over the duration of the effect. A green line appears in the parameter graph, highlighting the value you've selected. If you then add a keyframe, it will initially be set to that value and will appear on the green line.



But most effects work requires keyframes. Media Composer offers you several ways to add them. With advanced keyframes, the most direct way is to park the position indicator on the appropriate frame, right-click a track or graph and choose Add Keyframe. If you right-click in a parameter track, you'll create a keyframe in that track; if you do it in a group track, you'll create keyframes in all parameters in the group. And if you do it in the effect track, you'll create keyframes in all tracks in the effect. When you right-click in a track, a text message appears identifying the track you've selected.



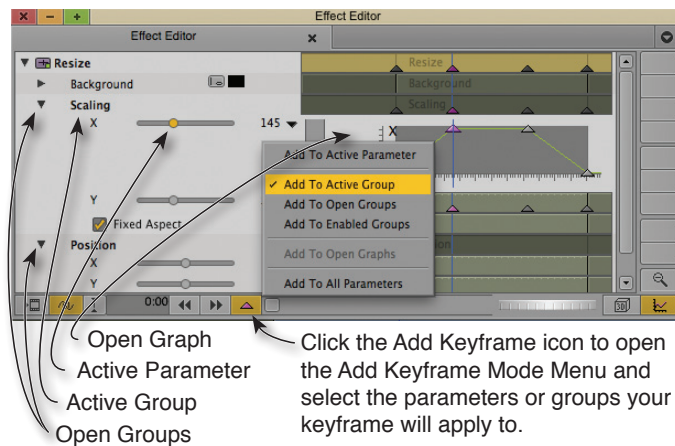
Note that when you add a keyframe to a single parameter, three keyframes are typically created: one in the parameter track, one in the group track containing it and one in the effect track.



Once an initial keyframe is created in an effect, and as long as no keyframes are selected, moving any parameter slider will automatically create a keyframe at the position indicator. To deselect a keyframe, Shift-click it; to deselect all keyframes in a track, right-click in the track and choose Deselect All Keyframes.

You can also add keyframes using the purple Add Keyframe button (the only way to add keyframes to a standard effect). If you click it in the Effect Editor, it opens the Add Keyframe Mode Menu, allowing you to choose tracks for your keyframes.

The menu makes a distinction between Active, Open and Enabled groups and parameters. The Active parameter is the one you're currently working on, identified by a highlighted slider handle, and, if a graph is open and you've clicked in it, a lighter graph background. The Active Group is the group containing that parameter. An Open group is any group in which the disclosure triangle is facing downwards, revealing its parameters.



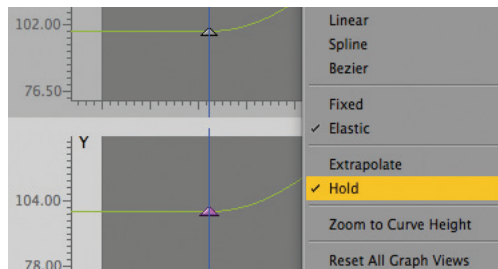
An Enabled effect is the one you're working on, indicated with light gray shading behind its sliders. When two or more effects have been nested, clicking anywhere on an effect's controls will enable it, and selecting Add to Enabled Groups will put a keyframe in all the parameters of that effect. When you're working on a single, un-nested effect, Add to Enabled Groups simply puts keyframes in all parameters.

The menu will only allow you to do things that make sense. If no groups are open, for example, Add to Open Groups will be greyed out. If you add a keyframe from the keyboard, or with the Add Keyframe button under the preview monitor, it will be applied as if you'd used your most recent selection from the menu—the one with the check mark next to it.

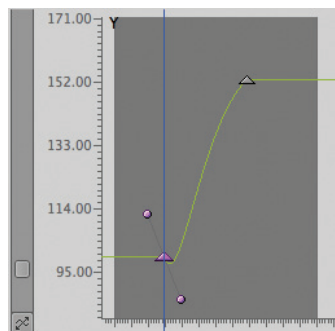
To select all keyframes within a track or graph, right-click the track or graph and choose Select All Keyframes. To remove unnecessary keyframes, where parameter values don't change, Right-click in a track or graph where you want to remove keyframes and select Remove Redundant Keyframes.

First and Last Keyframes

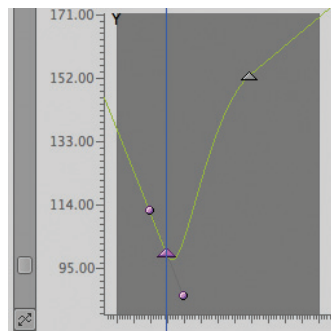
Standard effects require keyframes on the first and last frame. But advanced effects don't. Instead, the system lets you control the way parameter values change before the first, and after the last, keyframe you create, wherever they are. Right-click in a track or graph to reveal its contextual menu.



You have two choices: Hold and Extrapolate. Hold makes values at the first and last keyframe persist until the end of the effect, creating a horizontal line in the graph. Extrapolate extends the curve. Hold is the default.

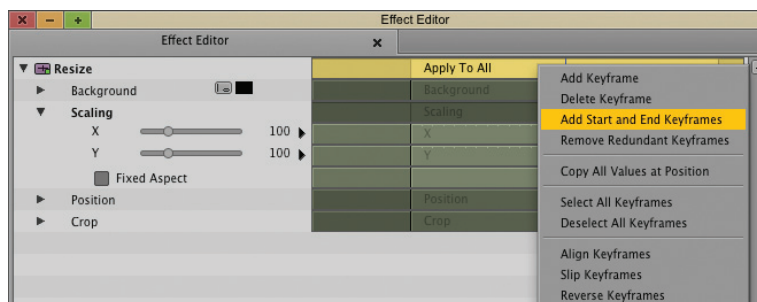


Hold preserves the values at the first and last keyframe.



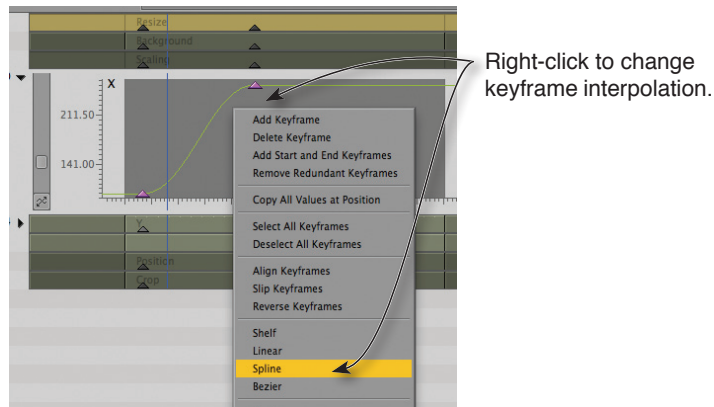
Extrapolate extends the curve.

If you prefer to use first and last keyframes, you can add them with a quick contextual menu pick. Right-click in the track or graph where you want the keyframes created and choose Add Start and End Keyframes.

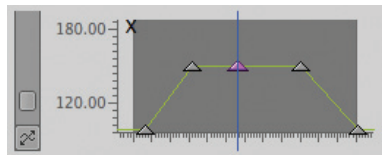


Keyframe Interpolation

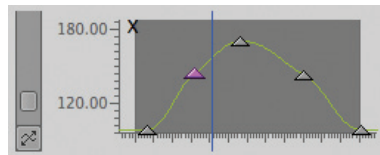
Using the same contextual menu, you can change the way the system interpolates values between keyframes.



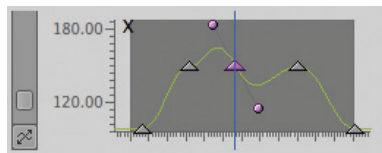
You have four options: Linear, Spline, Bézier and Shelf. The resulting curves are shown below. The choice you make will apply to all keyframes in a track.



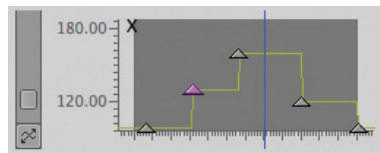
Linear Keyframes



Spline Keyframes



Bézier Keyframes



Shelf Keyframes

Linear is now the default and represents the way interpolation worked with standard keyframes, connecting them with a straight line. To smooth out keyframe transitions, select Spline, instead. Shelf keyframes hold values until the next keyframe, creating sharp transitions. Bézier keyframes offer the most control. When you click on one, handles appear, allowing you to precisely adjust the way interpolated values change at the keyframe. Click and drag the handles to alter the shape of the curve.

You can adjust Bézier handles in three ways: symmetrically, asymmetrically or independently. When you drag a handle symmetrically, both handles move in equal and opposite directions. When you do it asymmetrically they move in opposite directions, but you can control the *distance* of each handle separately. Independent adjustments allow you to freely change the angles and positions. Option-click and drag the handles repeatedly to