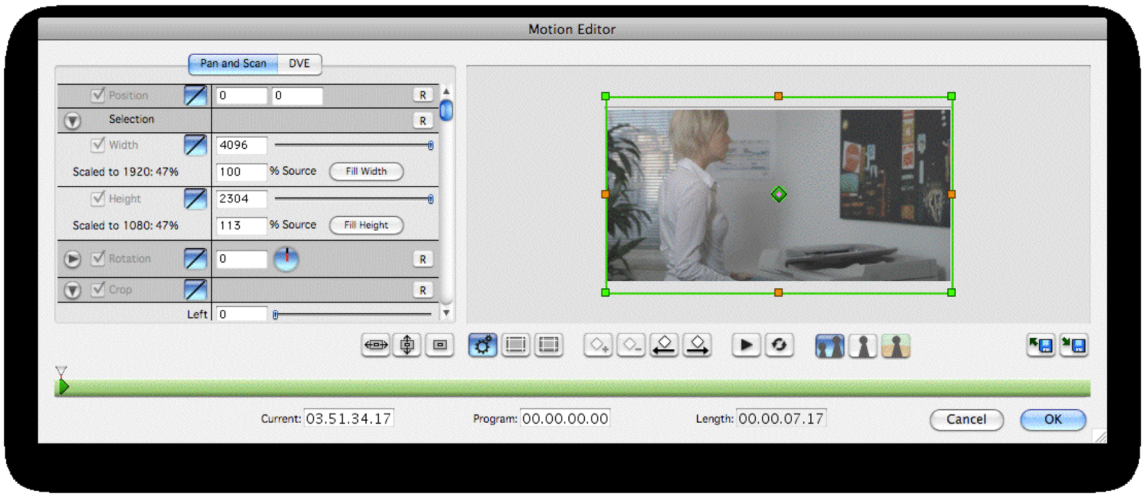
Motion Editor

The Motion Editor allows you to crop, zoom, reposition and rotate a video clip. You can use Motion Editor for picture-in-picture effects, to zoom in on a section of the frame, to compensate for camera tilt, or other special effects.

Use

Motion Editor is available for video clips and still image clips. You can open the Motion Editor window in several ways: by clicking the Motion Editor "Edit" button in the ClipFX section of the Edit Clip window, by right-clicking a clip in a program or bin and selecting "Motion Editor" from the popup menu, or by selecting a clip in a program or bin and selecting "Motion Editor" from the Tools menu. The keyboard equivalent is Command+Shift+O.



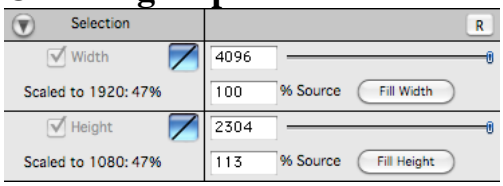
The Motion Editor window has 3 sections. At upper left is a tab containing controls for the many parameters that can be set for each frame of the clip. The preview display is at upper right. Below those two items are a toolbar and a timeline representing the clip.

The tab has settings named "Pan and Scan" and "DVE."

Keyframes

Motion editor allows you to specify how you want to manipulate the image at every frame. When you make an edit decision, e.g., "at time 00:00:30:00 of this clip I want it to be zoomed in to the speaker's face" you create a keyframe at that timecode for one or more of the available settings. Every setting has a default value at frame 0 of the clip; you can change the values there and at any other frame. When a frame does not have a keyframe for a certain setting, the value of that setting is interpolated between the previous keyframe value and the next keyframe value (if any) according to the interpolator that is chosen. Interpolator choices are linear, ease in, ease out, ease in & out, or hold. You can create a keyframe for every frame of the clip (although that would be very unusual) and you can delete any keyframe except the first.

Control groups



The Selection control group

Each tab has several control groups. Some of the control groups have a disclosure button at the left; click that to show or hide related settings. There are some common elements in each setting. The setting itself has a name and a checkbox. If the checkbox is checked, that means there is a keyframe at the CTI for that setting. If you turn the checkbox off, you remove the keyframe value for that setting. You can not turn off the checkboxes for the first keyframe of the clip.
Adjacent to the checkbox is a popup menu that controls the interpolation between adjacent keyframes.
To the right of the interpolator are controls such as sliders and number fields to change the value. The "R" button at the far right resets the values in the control group to defaults.

Pan and Scan tab

In this tab, you select a source rectangle which will be the source for the final output. The default selection is the entire source frame. The selection is always in the frame aspect ratio of the program, so if the clip's frame aspect differs from the program's, there must either be black bars or cropping. The selection can be further reduced with the Crop control group in this tab.

Sizes and positions in the Pan and Scan tab are displayed as square pixel equivalents. If you are working in HD or larger formats, pixels are always square. NTSC and PAL SD formats have rectangular pixels, but in this tab they are converted to square; for example the PAL frame size 720x576 will display as 768x576 in 4:3 frame aspect ratio, or 1024x576 in 16:9 aspect ratio. This applies to position, selection and crop, for both the source clip and destination program.

Position control group

Specifies the center of the selection rectangle as x,y. 0,0 is the center of the frame, and values increase to the right and down.

Selection control group

Specifies the size of the selection rectangle as width and height. The "scaled to" fields indicate how much the pixels of selected rectangle must be expanded or shrunk to fully fill the output frame of the program. If the value is above 100% the pixels are being expanded; values below 100% indicate compression.

Rotation control group

Specifies the rotation of the selection rectangle in degrees. This value will typically be a small number to compensate for camera tilt. You may specify an anchor point to offset the center of rotation.

Crop control group
Allows you to crop any or all of the four sides of the selection rectangle.

DVE tab

In this tab, you select a destination rectangle which will display the selected result of the Pan and Scan tab. The default selection is the entire destination frame. The selection is always in the frame aspect ratio of the program (but see the Distort control group).

Sizes and positions in the DVE tab are displayed in program frame size pixels. If the program is NTSC or PAL SD format, those pixels are rectangular; all other formats have square pixels.

Position control group
Specifies the center of the destination rectangle as x,y. 0,0 is the center of the frame, and values increase to the right and down.

Scale control group
Specifies the size of the destination rectangle as width and height.

Rotation control group
Specifies the rotation of the destination rectangle in degrees. You may specifiy an anchor point to offset the center of rotation.

Distort control group
The aspect control allows you to distort the destination rectangle by compressing it horizontally or vertically. Positive values compress horiztonally, negative values compress vertically.

Opacity control group
For clips in V1 through V99, specifies the opacity of the destination rectangle. Areas outside the destination rectangle are transparent, as are any black bars that result from the Pan and Scan tab selection. Only linear interpolation is available for this setting.

Border control group
Specifies the width and color of an optional border around the destination rectangle.

Toolbar

The Toolbar

Crawl, scroll, static

The toolbar contains several clusters of related tool groups. The first group of three buttons has controls to create a right-to-left crawl, a bottom-to-top scroll, or reset the Motion Editor to defaults of a single keyframe with a full size, centered image.

Onscreen controls, action-safe, title-safe

The next button toggles the onscreen controls. When the gear button is on, two more buttons appear to its right. Those buttons control an overlay for action-safe and title-safe guidelines. In addition, controls on the preview subsampler are displayed, and you can directly manipulate the selection rectangle by clicking and dragging the control points. The selected rectangle itself is drawn in green for the first keyframe, in red for the last keyframe, and in blue for other keyframes.

Keyframe add, delete, previous, next

The next four buttons manipulate and navigate keyframes. You can add, delete, go to previous, go to next.

Play, loop

The next two buttons are for playback and loop playback.

Source, selected source, composited result

The next three buttons control the image that is displayed in the preview subsampler. If you select the first button, the entire source clip is displayed. The second button displays the selected portion of the source clip as it will be sent to the DVE processing tab. The third button displays the composited final result. Onscreen controls are not applicable to the selected source display so they do not appear. For realtime preview of the clip, turn off onscreen controls and choose the composite view. When you choose the composite view, the DVE tab is automatically selected and vice versa.

Read, save
The final group of two buttons enable you to save and restore a keyframe set to disk.

Below the toolbar is the clip timeline. You can drag the CTI or select and drag keyframes.

Actions in the Motion Editor window are undoable, and all of your changes can be reverted by clicking the Cancel button.