

4. The Monitor

The monitor window allows you to preview the results of your composite or a specific part of it at any time. There can be as many monitor windows at any time as you need. Multiple monitors can either be used to monitor different layers at the same point in time, or even to preview different time positions of your composition simultaneously.

Whenever a new monitor window is opened from the tool menu, a new monitor cursor appears in the reel. Each new monitor cursor has a new color (cycling through red, green, blue, cyan, magenta...) that is matched by the border color of the associated monitor window.

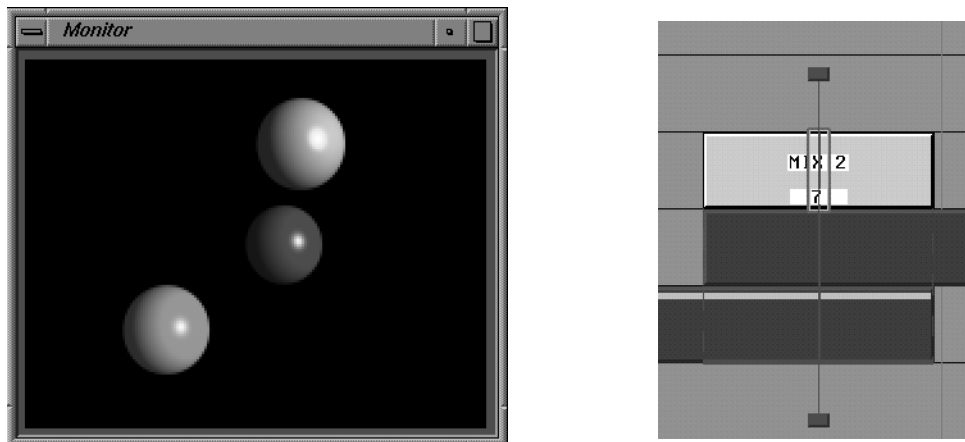


FIGURE 25. The monitor window and the monitor cursor in the reel

The scope of the monitor (or the number of layers monitored) is determined by the monitor cursor (see “Monitor Cursor” on page 83, “Cursors and Markers” on page 43): All layers under the monitor cursor will be evaluated for preview.

The read-out of the reel content under the monitor cursor uses the same hierarchy as always, from the uppermost layer down to the bottom. As usual, if the uppermost layer is an image clip, all layers below are invisible. If it is an effect, all layers contributing to the effect (i.e. all effect input layers captured by the effects scope) will be evaluated as well. The size of the monitor cursor therefore is more important for “easy targeting” than for a difference in operation, as far as image clips are concerned (here, it is only important that the uppermost layer to be viewed is under the monitor cursor).

For sound clips, however, the size of a monitor cursor may make a difference: As sound clips do not normally exist in a hierarchy but are mixed independent of their placement in layers, they will always be monitored provided they are located under the current monitor cursor.

4.1 NTSC Aspect Ratio Correction

The monitor and its full frame render subwindows support NTSC aspect ratio corrected display. Unfortunately, the CCIR 601 standard for NTSC does specify non-square pixels,

while a computer monitor, like for example used on the SGI workstation, has square pixels. It is thus necessary to correct display aspect ratio of images for display on the computer monitor, if the right 4:3 aspect ratio is to be maintained during work sessions.

It is very important to note that the aspect ratio correction is only applied to display functions on the workstation monitor. Original image quality and rendering are not affected by this correction process. Thus even if your images appear stretched on the workstation screen with disabled correction, the result of a rendering, once put on NTSC video equipment, will be absolutely correct, without any correction applied to it. As said above, the correction is only necessary because the SGI monitor has a different pixel aspect ratio than NTSC digital video (720x486 pixel for a 4:3 screen aspect ratio does not yield square pixels. The typical analog NTSC resolution of 640x486 does so).

As Jaleo is designed to be a highly interactive product and any correction process affects preview display speed and quality, NTSC aspect ratio correction is disabled by default.

4.2 Clip Rendering and Playback to the Monitor

New frames are rendered whenever the monitor cursor is dragged around with the mouse. This allows quick and highly interactive evaluation of a composition or any part contained within it. Alternatively, the reel can be played back using shuttle controls. In this case, all monitors are updated.

Sound clips are only played back in shuttle mode.

Reel playback can be activated by:

- using the keyboard (cursor keys for playback and reverse playback, space to stop)
- using the shuttle buttons (use the setup menu to display the shuttle bar in the reel window).

Normally, in shuttle mode playback begins at the current position and proceeds until all monitors have reached the end of all content. This playback behaviour can be modified by activating the play marks from the Setup menu (See “Setup” on page 72).

With the play marks present on the reel, playback can be limited to the area between these two marks, with the choice of playing back in single, loop or swing mode. As monitor cursors are located at positions relative to the work area of the window, scrolling the window (and thus the reel content visible in the work area) will also update all visible monitors.

4.2.1 Monitor Playback Speed

If complex layerings are rendered, playback may be slower than real time. To speed up operation, you have some options:

- Use group clip and effect caching. Using the cache, frames once rendered do not need to be recomputed for display. Note that you can cache effects on any level of a compositing, so if you are sufficiently sure that an element, even far down in a composition, is not going to change very often, it may be a good idea to activate the cache for it. All layers above will benefit from it as well.
- Use the Skip Frame Playback option in the setup menu (see Setup > Shuttle > Skip Frame Playback, page 75). Skip frame playback will give you the target frame rate defined in the Jaleo setup files, by dropping frames where necessary to maintain the overall timing. Movement may appear less smooth due to dropped frames. Note that many frames may be dropped when uncached effects or groups need to be rendered inbetween. Skip frame mode is currently not recommended for sound playback.
- Turn on fast draw mode. In the Setup menu, activate the fast draw option that actually disables reel redraws during playback. You will need to click into the reel background to refresh the screen (see “Set Up > Reel > Fast Draw” on page 73). Fast Draw is particularly useful for sound playback.
- Use fewer monitors. Each monitor needs to evaluate images, so closing monitors not required for the moment helps a lot.
- Switch off monitor refresh for faster positioning of the monitor cursors (see “Set Up > Reel > Monitors” on page 73). You can do so temporarily by holding the shift key while dragging the monitor cursor. This disables display evaluation as long as the key is held.
- Use Group Render (see “Clip > Render Group” on page 71) to pre-render important parts of your composition quickly and unobtrusively.
- Set up your system to store image data and caches on raw devices (see “Raw Device Storage” on page 38)

4.3 Process Flow Monitor

The monitor cursor and monitor evaluation mechanism is also used for another display tool: The process flow monitor. This is a graph display attached to the monitor cursor, visualizing the layering under the monitor cursor as a process tree graph. Using the process flow monitor, one can more easily see and understand the hierarchical structure of complex layered effects.

It also is useful for “debugging” effects that do not produce the desired results - in many cases the error comes from a mistake in setting effect scopes, an error immediately visible in the flow monitor.

Furthermore, for each effect the flow monitor displays short-cut information on the possible effect inputs.

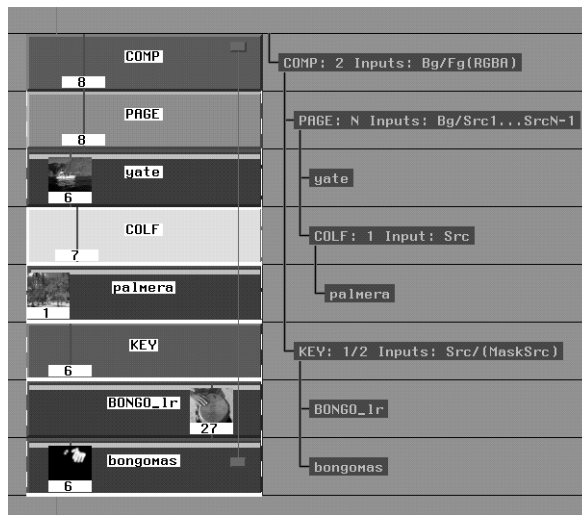


FIGURE 26. FlowMonitor

Flow monitoring can be activated in the Setup menu. The flow monitor graphs will be displayed in the reel window, overlaid over the clip display for easy referencing. The graphs appear directly to the right of each Monitor cursor, analysing the layering under the monitor cursor at its particular frames.

4.4 Monitor Pop Up Menu

The monitor window has a popup menu that appears when pressing mouse button 3 (the right button) with the mouse pointer over the monitor window. This menu contains the following options:

4.4.1 Single Frame

Shows the current frame rendered in full resolution. If any underlying material is recorded as fields, both of its fields will be shown together. The Single Frame display also allows to zoom into a frame, to save the file or to display the file on an external monitor, provided appropriate hardware is connected.

For a description of the Single Frame Window see “Single Field/Single Frame Window” on page 82.

4.4.2 Single Field

Shows the first field of the current frame rendered in full resolution. This allows you to see the results of an effect in clips where a lot of movement is taking place. The Single Frame display also allows zooming into a frame, save of the file or display of the file on an external monitor, provided appropriate hardware is connected.

For a description of the Single Frame Window see “Single Field/Single Frame Window” on page 82.

4.4.3 Center Cursor

Lines up the monitor cursor with the Reel Cursor.

4.4.4 Area & Grid

A dialogue window pops up where you can activate safety margin and grid displays to appear in the monitors window. Size values are given in percentages of image size.

- Safe Area X: Horizontal safety margin
- Safe Area Y: Vertical safety margin
- Grid X: Horizontal grid interval
- Grid Y: Vertical grid interval

4.4.5 Timecode

Shows or hides a time code centered on the lower section of the window, indicating the current position of the Monitor Cursor in the Reel.

4.4.6 Frame Rate

Shows or hides display of the frame rate being played back in the monitor window in shuttle mode. Display will be centered at the upper border of the image. Depending on your environment, display frame rate can be less than real time. As described above (see “Clip Rendering and Playback to the Monitor” on page 78), you have several options to optimize playback (using caches or group render, switching off monitors, using fast draw, configuring raw mode storage, etc.)

4.4.7 Show Alpha

Shows the mask (alpha channel) of the image or layering being evaluated.

4.4.8 Follow Editor

If follow editor is activated for a given monitor, the monitor cursor will follow the time slider in the time editor. That is, if the time editor time slider is moved to a new time position, the monitor will follow the movement. Whenever the time slider is moved, the monitor cursor will reposition itself to the appropriate time position, provided the time position of the time slider refers to a position of the clip currently visible in the reel. If this position is not visible in the reel, the monitor cursor will move to the edge of the reel window that is closest to the desired position.

Follow Editor does not change the vertical position of the monitor cursor. This allows you to monitor a different layer than the one currently selected.

Multiple monitors can have Follow Editor selected at the same time.

4.4.9 High Res

Switches the monitor to full resolution operation. In high resolution mode, the original source images are displayed in full resolution instead of as preview images. Unless running on a multiprocessor machine (Jaleo Plus only) and depending on the machine and the layer setup currently monitored, this may lead to very low interactivity.

Typically, on Jaleo Composite systems this option would only be used while fine-tuning parameters of keys or other complex effects.

4.4.10 Live Video

Redirects the output of the current monitor to an external monitor using Silicon Graphics video boards. For Jaleo Composite, this option requires a Galileo Video or Indy Video card built into your System. Jaleo Plus configurations must have a Sirius board.

If the current monitor shows a preview image, the preview will be zoomed to fill the entire external video image. In high resolution mode, the image is sent out as is.

Only one monitor at a time can be in live video mode.

4.4.11 NTSC Aspect Ratio

This option corrects the displayed aspect ratio for digital video NTSC images. Unfortunately, the CCIR 601 standard for NTSC does specify non-square pixels, while a computer monitor, like for example used on the SGI workstation, has square pixels. It is thus necessary to correct display aspect ratio of images for display on the computer monitor. This is not activated by default, as the process consumes both time and reduces quality of the displayed image. Note that the distortion visible on the computer screen will automatically vanish if the image is output onto NTSC video equipment. *Any correction applied is for display correction only, and does not alter your image's quality for the final output.*

4.5 Single Field/Single Frame Window

The Single Frame/Single Field window opened by the corresponding menu options can be used to view a frame or field rendered in full resolution. It provides zoom, display of the alpha channel and the ability to redirect the output to connected video hardware.

The functions are controlled by the following menu entries:

File > Save File

Opens a standard file selector box in which you can select a path and filename where you want to store the image. The file format is compressed targa/vista.

Zoom > Zoom Box

Allows you to zoom in on an image for better control over details. A dialogue window opens, equipped with a slider to select zoom factor and a draggable rectangle to position the zoom display on the source image.

Show > Show Key

Toggles between display of image and mask channel of the image clip currently being processed.

Show > Show Live

Redirects the window content to external video equipment. Use of this option requires that you have either a Galileo, Indy or Sirius Video, or a DDR connected to your system. The target for the Show Live function is configured in a configuration file. See the setup and installation manual for more information.

Show > NTSC Aspect Ratio

This option corrects the displayed aspect ratio for digital video NTSC images, as described above. *Any correction applied is a pure display correction that does not alter image quality in the final output.*

4.6 Monitor Cursor

For each monitor opened from the Tool menu, a monitor cursor appears in the reel. The monitor cursor is a vertical line with two control boxes at the upper and lower end which delimit the scope (or number of layers) to be previewed in the associated the monitor window.

You can position the monitor cursor by dragging the upper control box with the mouse. The monitor display will “follow” the cursor by showing an evaluation of the layer(s) under the cursor. By dragging the lower control box, the monitor cursor can be resized.

