emagic

Logic |6
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1 General

1.1 New Way to Set the Dialog Language

The Mac OS X version of Logic 6 features a new, Mac OS X compliant, way to set the dialog language (the "Display" Preference that was previously used has been removed):

- Select the Logic 6 application in the Finder.
- Press ⌘ i (to open the Information dialog).
- Select/Flip open the "Languages" section.
- Choose the preferred language, and uncheck all other languages.

2 Mixer

2.1 Channel EQ

The Channel EQ of Logic 6 replaces the track EQ which you know from older versions of Logic. The new equalizer offers a couple of advantages:

- improved, extremely high sound quality
- eight (rather than four) bands
- expanded range for gain and Q, and a higher frequency resolution (even when compared with the Fat EQ)
- needs less space on the surface of mixer channels
- better clarity (via thumbnails) for EQ curves
- variable position in the signal flow (i. e. can also be placed between plug-ins)
- integrated FFT analyzer (pre/post EQ)
- large graphic display with complete, and intuitive, parameter editing

The integrated precision analyzer (based on Fast Fourier Transformation algorithms—FFT) shows the energy (amplitude) of all frequency components of the signal. The central display of the Channel EQ fulfills multiple display functions: it shows both the curve of the FFT analyzer and the EQ curve. An identically scaled frequency axis is shown for both. This allows you to easily recognize unwanted frequencies in the analyzer curve, while using the EQ to edit them accordingly.

You can switch the analyzer pre or post EQ in order to compare the original signal with your edits. You can, of course, also judge the excellent quality of the Channel EQ with your ears. We are sure you will be as excited with the results as we are!

Using the Channel EQ as the Default

In order to be backwards-compatible with songs created in Logic version 5 or earlier, the old track EQ is still available. All songs that don't make use of the old track EQ are automatically switched to use the new Channel EQ.

If your existing Autoload song uses pre-set track EQs, you should modify it: Remove the track EQs from all channels. Open Options > Song Settings and switch to the Old Songs page. Deactivate the *Use pre-Logic 6 track EQ* checkbox and resave your Autoload song (i. e. replace it). You can now use the Channel EQ in all new songs created with Logic 6.

ℹ Please note that the track EQs of older songs are lost by activating this option. If you don't want this to occur, you can use the Channel EQ of Logic 6 as a plug-in in older songs. Doing so will, however, be at the expense of the Thumbnail view and editing via the EQ page of the Logic Control.

ℹ️ Please note that the Channel EQ has four bands in the Audio version of Logic and eight bands in the Gold and Platinum versions. If songs with an 8-band EQ from those versions are opened in the Audio version, the settings for the additional bands are ignored, but preserved. Hence, after being edited in the Audio version, the songs can be reopened in the Gold and Platinum versions without any loss of information.

2.1.1 Inserting a Channel EQ

The Channel EQ is inserted into the first available insert slot by double-clicking the *EQ* area on the upper portion of mixer channel strips. This area will change to a thumbnail view of the Channel EQ display. The thumbnails provide an overview of the EQ settings used in each individual channel.

⌥-double-clicking will insert the EQ as the first plug-in and move all existing plug-ins of this channel one slot down (and redirecting their automation data accordingly, if necessary).

Alternatively, you can insert the Channel EQ in any desired slot as per other plug-ins. You'll find it in the EQ section of the plug-in list. This is the only way to insert multiple Channel EQs. (Remember that only the first Channel EQ can be displayed as a thumbnail).

2.1.2 Setting EQ Parameters

The *Band Type* buttons above the display switch individual bands on or off.

You can set/adjust the band parameters either directly in the central EQ display, or in the parameter area below it. As you move the mouse horizontally over the display, pivot marks for individual bands appear on the frequency axis, while the parameter area of the same band is highlighted. The following possibilities are available for changing the parameters of a band:

- Move the mouse horizontally over the display until the desired band is highlighted. Now click-hold the mouse button on the display background (not directly on a pivot point): vertical mouse movements change the *Gain*, horizontal movements change the *Frequency* of this band.

- Click-hold directly on the (illuminated) pivot point of the desired band: vertical movements (up/down) change the *Q* value. The direction required to increase or decrease the *Q* value depends on whether you are above or below the zero line (this ensures that "up" increases, and "down" decreases the volume in this band—you will find this intuitively "correct"). Again, horizontal movements (left/right) change the *Frequency* of the band.

- Click-hold on the desired parameter in the parameter area below the graphic display (*Frequency*, *Gain/Slope* or *Q*): Moving up increases, and down decreases, the value. In order to prevent accidental changes, this is the only way to change the *Slope* value of the high and lowpass filters (bands 1 & 8).

As long as your mouse arrow is in the access area of a band, its individual curve will be graphically inserted over the resulting curve of the entire equalizer.

ℹ️ You can also edit Channel EQs via the Logic Control—by pushing the EQ button: this will open the first Channel EQ of the selected channel. If no Channel EQ is active/available, it will automatically be inserted in the first free insert slot.

Parameter Description

The maximum *Gain* per channel is ±*24dB* (exception: bands 1 & 8, see below), the *Frequency* ranges from *20Hz* to *20.000Hz*. The range of *Q* values depends on the band. The individual bands are defined as follows:

- Band 1 is a highpass filter and band 8 is a lowpass filter. The *Slope* parameter can either be *6*, *12*, *18*, *24*, *36* or *48 dB/Oct*(ave) and *Q* ranges from *0.10* to *100*. *Q* doesn't affect filters with a *6 dB/Oct* slope. The maximum *Q* value without a resonant peak is *0.71*.

- Bands 2 and 7 are shelving equalizers. Their values for *Q* (steepness of their curves) range from *0.10* to *2.00*.

- Bands 3—6 are so called "bell" or "peaking" equalizers. *Q* can range from *0.10* to *100*. When set to *100*, the equalizers only apply to a very narrow band, and can work in a similar fashion to notch filters.

- ℹ️ If *Show EQs* is activated in the parameter box of a channel, it is possible to see a thumbnail view of the Channel EQ displayed in the upper corner of a channel strip.

- ℹ️ You can reset all settings of the highlighted EQ band (except frequency) by alt-clicking in the display area.

- ℹ️ You can reset individual parameters by alt-clicking in the parameter area.

Master Gain
This fader adjusts the output level of a Channel EQ. This allows you to compensate for level changes introduced by your EQ settings. *Master Gain* has a range of ±*24 dB*.

Analyzer On/Off
This button allows you to activate/deactivate the FFT analyzer.

- ℹ️ Please note that the FFT analyzer needs additional CPU resources. In fact, resource consumption increases significantly at higher resolutions (see below)! We recommend that you disable the analyzer or close the Channel EQ window after setting the desired EQ parameters. This will free up CPU resources for other tasks.

Analyzer Mode
This flip menu determines the location of the analyzer, either in the Input (pre EQ) or Output (post EQ) of the equalizer section.

- ℹ️ The *Analyzer pre EQ* and *Analyzer post EQ* options allow you to visually compare the original and EQ'ed signals.

Analyzer Resolution

This flip menu defines the resolution of the FFT analyzer—or more accurately, the number of frequency bands. This determines not only the precision of measurements, but also the amount of CPU power needed. The options are as follows:

- *Resolution low (1024 points)*
- *Resolution medium (2048 points)*
- *Resolution high (4096 points)*

ℹ️ Higher resolutions are necessary whenever you need reliable results in the area of very low bass frequencies. (The bands derived from FFT analysis are divided in accordance with the frequency linear principle—non-technically, this means that there are far more bands in the highest octave than in the lowest).

dB Warp and Analyzer Top

These two parameters allow you to change the vertical scale of the EQ and analyzer curves.

dB Warp allows you to increase the resolution of the EQ *Gain* parameter in the most interesting area around the zero line. Click-holding in the green *dB* scale on the left side of the graphic display, and moving the mouse up will increase it (down to decrease). The overall range is always $\pm30dB$, but small values will be easier to recognize.

As soon as the Analyzer is activated, you can change the *Analyzer Top* parameter, which alters the scaling of the FFT analyzer, on the right side of the graphic display. The visible area represents a dynamic range of 60 dB, but by click-holding and vertically dragging, you can adjust the maximum value between *+20 dB* and *−40 dB*. The Analyzer display is always dB-linear.

2.2   Tape Delay

The additional parameters of the Tape Delay (previously reached via 001011 button) have been integrated into its graphical user interface. As a result, the functionality of these parameters have changed slightly, as indicated in the following text.

There is a new *Sync* button. When the *Sync* button is engaged, the delay is synchronized to the song tempo of Logic 6. In this mode, the plug-in uses the internal tempo of Logic Platinum to determine the delay time. The sole purpose of the *Tempo* box is to display the current *bpm* value. This is as per the use of the Tape Delay in the past.

Disengage *Sync* if you would like to adjust the delay time independently of the song tempo (or change the song tempo without changing the delay time). In this mode, the *bpm* value or *ms* values can be altered freely by click-holding in the *Tempo* or *Delay* (time) parameter fields while dragging up or down with the mouse. Note that click-dragging on the left-hand side of *Delay* field will increment the ms values in large steps. Click-dragging on the right-hand portion of the field will increment the ms values in small steps. Delay time is adjustable between *0* and *1260 ms*.

The *Freeze* parameter captures the current delay repeats, and sustains them until the *Freeze* parameter is released.

The Tape Delay includes an LFO for delay time modulation. Use it to produce chorus-like effects—even with long delays. The LFO offers adjustable *Speed* and *Depth* controls.

Flutter simulates the tape speed irregularities of the tape transports found in analog tape delay machines, and is adjustable in *Rate* and *Intensity*.

Smooth determines how quickly the "analog tape" can change its speed when switching between different note values. It also evens out the effect of LFO modulation and tape flutter. Pitch changes caused by the use of LFO modulation or *Flutter* will sound less pronounced when the *Smooth* value is increased.

2.3   Groups

Logic 6 introduces Groups. A Group allows you to combine multiple channel strips in order to link their volume faders and mute buttons. If, for example, multiple audio tracks (with individual choir voices) are assigned to one Group, changing the volume of one choir track changes the volumes of all choir tracks. Individual level relationships—at the time the channels assigned to the Group—are retained.

Groups can also link the selection of objects in the Arrange window, thereby linking all edit operations you perform on grouped tracks.

Up to 32 Groups can be created. Each channel can be a member of multiple Groups.

2.3.1   Assigning a Channel to a Group

There is a new Group display in the channel—above the automation mode display. Clicking on the Group display opens the Group flip menu where one of the 32 Groups can be chosen, turned "off", or the "Group Settings …" dialog window launched.

Overlapping Groups

One channel can belong to more than one group. To assign an additional group to a channel, press ⌂ while choosing a Group via the Group flip menu.

Fast Assignment

Groups can be quickly set and cleared by holding ⌦ when clicking on the Group display. The last Group setting—also overlapping groups—will be applied to the current channel, without opening the flip menu.

2.3.2   Group Settings

The Group flip menu (of the Group display) also allows you to open the "Group Settings …". In the group setting dialog, the following options can be set for each individual group:

Name
You can name each group.

Enable
A group can be completely disabled here.

Arrange Selection (Edit)
Selecting an arrange object on one member track of a group selects the same horizontal range of all member tracks.

Arrange Track Zoom
Zooming an individual track of a group will zoom all members.

Arrange Track Hide
Hiding an individual track of a group will hide all members.

Arrange Track Record
Record enable/disable of an individual track of a group will record enable/disable all members.

Automation Mode
Changing the automation mode of an individual track of a group will change the automation mode for all members.

Instrument Color
Changing the color of one group member channel will assign this color to all group member channels.

Volume
Changing the volume fader of one group member channel will change the volume of all member channels—while maintaining the level relationships between them. If possible, use a volume fader with a high initial setting

Mute
The Mute status of all member channels is synchronized.

2.3.3   Group Automation

For mix automation, any Group member can act as a "master". When an automation parameter value is written, the corresponding value of all other Group members is also written, depending on their Automation mode (e. g. Touch or Latch). The data is written individually for each channel. As a result, you can disable the Group later, without affecting the automation of any Group member—and can obviously edit or change channels individually.

2.3.4   Temporarily Disable a Group (Clutch)

It is possible to temporarily disable all Group parameter links—e. g. in order to change the volume of an individual channel, even if it is member of a Group with linked volumes. To do so, simply use the *Toggle Group Clutch* Key Command (default G). As long as the Clutch is active, all Group displays will change color—from yellow (normal) to blue (Clutch active, all Groups temporarily disabled).

2.3.5 Group Handling on the Logic Control

Click-holding the GROUP button allows you to use the SELECT buttons to assign the selected channels to the next free (new) group. You can use the BANK switches during this operation.

While in the Group mode (click and release the GROUP button), you can switch between Groups with ⬆ and ⬇. The Group number (G1—G9, 10—32) is displayed in the 7-segment ASSIGNMENT display; the first characters of the Group name are displayed in the SMPTE/BAR display.

The LC-Display shows the track names in the top line. The bottom line will indicate the Group properties of the selected Group. ⬅ and ➡ switch to further pages of Group properties. The SELECT keys display/edit the assignment of their channel to the currently selected Group.

TRACK+GROUP activates a Track Multi Channel View mode, which allows you to assign each channel to any Group (or turn it "off") via each channel's V-Pot. Alternatively, you can enter this mode by pressing TRACK and then ⬅ or ➡ until you reach the "Group" page.

2.3.6 Supported Control Surfaces

Logic supports various Control Surfaces besides the Logic Control. More information about Control Surfaces can be found in the folder "Control Surfaces Info" in the section "Service" of your Emagic Software CD. Here's an overview over the supported devices.

- CM Labs Motormix
- Emagic Logic Control, Logic Control XT
- Radikal Technologies SAC-2K, SAC 2.2
- Roland SI-24
- Tascam US-224, US-428

2.4   Automation Quick Access

This new feature makes Track Automation extremely fast and simple if you only have one hardware MIDI controller available (e. g. one fader on your MIDI keyboard or even just the Modulation wheel). You can use this single hardware controller to access the currently visible Automation parameter of the selected Track in the Arrange window.

2.4.1   Setting Up Automation Quick Access

Open the Automation Settings dialog: Options > Track Automation > Track Automation Settings…

There is a new section labeled: *Automation Quick Access* which can be enabled or disabled via a checkbox. Once enabled, click the *Learn Message* button below, and move the hardware controller that you'd like to use for Automation Quick Access. The other parameters shown here will immediately identify and indicate the type of control element you are using (even quite exotic formats are supported). Disable the *Learn Message* button, by clicking on it a second time, or close the Automation Quick Acess dialog.

Once done, you will have hardware control over any currently visible Automation parameter which is set in the current Arrange track.

Enable/Disable Automation Quick Access

In case you are using the Modulation Wheel for Automation Quick Access (AQA), you might want to switch between using it for AQA and "normal" Modulation Wheel duties—as MIDI controller #1.

This can be done with the global *Toggle Automation Quick Access* Key Command.

2.5 New Options for Digital Mixdown/ Bounce

The *Bounce* function allows you to write the signal of an Output object as an audio file, which would otherwise simply be played live. You can initiate the Bounce process(es) by clicking the "*BNCE*" button on the Output object channel that you would like to bounce.
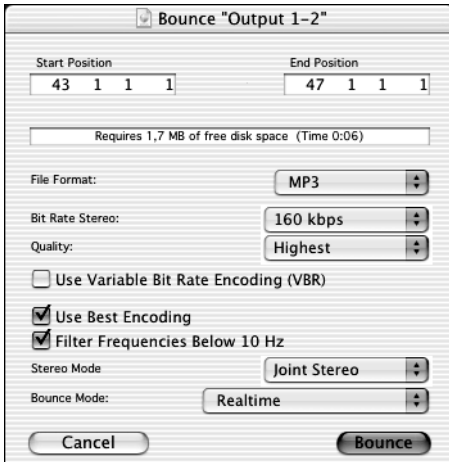
The bounce dialog of Logic 6 has been restructured, and offers a couple of new options…

2.5.1 Bouncing MP3 Format Audio Files

Logic 6 for Mac OS X now allows the bouncing of MP3 (or by its correct name: MPEG-2-Layer-3) format files. This well-known data reduction format for digital audio signals was developed by the Fraunhofer Institute, and allows high compression rates while maintaining quite good audio quality (depending on the compression rate). MP3 is the current standard for audio file exchange via the Internet.

ℹ️ Due to the fact that encoding an MP3 file equates to a loss of audio quality, you should not use MP3 files during a production if you have access to the same audio data in linear formats such as: AIFF, WAV or SDII.

If you set the *File Format* flip menu in the bounce dialog to *MP3*, you will see all available options for the encoder (which translates the PCM linear format into compressed MP3 files).

Bounce "Output 1-2"

Start Position   End Position
  43   1   1   1   47   1   1   1

Requires 1,7 MB of free disk space (Time 0:06)

File Format: MP3
Bit Rate Stereo: 160 kbps
Quality: Highest
☐ Use Variable Bit Rate Encoding (VBR)
☑ Use Best Encoding
☑ Filter Frequencies Below 10 Hz
Stereo Mode   Joint Stereo
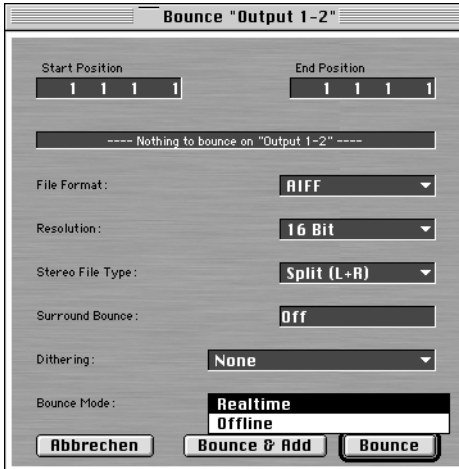Bounce Mode: Realtime

Cancel   Bounce

ℹ️ You can change the default settings for the encoding engine via the Preferences > MP3 Export menu.

For details on the individual MP3 encoding parameters see the *MP3 Export Settings* section, on page 40 of this addendum.

2.5.2   Bounce Mode

The new Bounce dialog option *Bounce Mode* is available in Logic 6 for Mac OS X and Mac OS 9.

In older versions of Logic, bounces were always performed in real-time. The new *Bounce Mode* parameter allows you choose between two options:

● *Realtime*: Creates the bounce file in real-time, as in older versions. Use it whenever you wish to bounce audio and audio instrument tracks *plus* external MIDI sound sources that are routed into the Logic Mixer via (Live) Input objects.

● *Offline*: Accelerates the bounce process—depending on the complexity of your arrangement and available CPU processing power. It also allows the bouncing of complex arrangements that would normally exceed the power of your CPU, if trying to play them in realtime. Offline bouncing, however, is limited to internal sources (audio tracks or audio instrument tracks). The MIDI tracks and Input Objects of Logic's mixer are deactivated during offline bouncing.

ℹ️ Please note that the *Offline Bounce Mode* is only available to the Output objects of mixers that belong to native audio driver systems. DSP-based audio hardware (e. g. ProTools) can not make use of offline bouncing due to the nature of its stream-oriented technology.

ℹ️ Other software applications, which are fed into your Logic Mixer via ReWire technology are available for offline bounce processes!

During an Offline Bounce, you can see the SPL moving through the song (usually much faster than real-time). A separate "bounce" progress bar is also shown.

Unlike online (realtime) bouncing, audio outputs will be muted during offline bouncing.

3 Arrange Window

3.1 Freeze

Logic 6 introduces a completely new way to save almost 100% of the CPU power used for software instruments and effect plug-ins—namely, the innovative *Freeze* function. You can apply it, individually, to audio tracks or audio instrument tracks.

3.1.1 Concept

Internally, Freeze performs individual offline bounce processes for each "frozen" track. All plug-ins of a track (including software instrument plug-ins, if applicable, along with all related automation data) are rendered into a "freeze file".

As long as a track is frozen—following the freeze process—this freeze file will play back in place of the original track (and its CPU-hungry plug-ins). The original track and plug-ins are temporarily deactivated, and use no CPU resources.

ℹ️ Please note that the Freeze function always bounces *all* of a channel's signals. If you are using more than one track that addresses the same audio or instrument channel, then all tracks of this channel will be frozen, and cannot be edited independently.

ℹ️ Due to technical reasons, the Freeze function is not available for the tracks of DSP-based audio hardware systems (e. g. ProTools), tracks that use plug-ins which are calculated on DSP cards (Powercore, UAD-1, Pulsar etc.), or tracks that use external signal processing devices via the I/O plug-in. You can, however, "freeze" tracks that use Sends to Busses that have inserted DSP-based or I/O plug-ins.

3.1.2   Application

In real-world situations, Freeze allows you to:

- use additional plug-ins or software instruments in further audio or instrument tracks, which would normally not be possible as it would exceed the CPU processing limits of your computer.
- play back songs created on computers with greater CPU power.

Freeze was made for very CPU-intensive processes, which are generally (from higher to lower demand) outlined as follows:

- Software synthesizers with a complex voice architecture
- Plug-ins with a complex structure (e. g. reverbs, filter banks or FFT-based effects)
- Software synthesizers with a simple voice architecture
- Software sampler with active filter
- Software sampler with deactivated filter
- Plug-ins with a simple structure

As long as your computer is able to calculate all active processes in real-time, it is not necessary to freeze a track.

Freeze is recommended whenever your system's power runs short *and* one, or multiple, existing tracks with CPU-intensive instrument and/or effect plug-ins are in a final state, or at least seem to require no further changes for the meantime—i. e. "close to final".

As long as a track is frozen, its CPU usage is reduced to that of a high resolution audio track, without any effect plug-ins inserted—regardless of the number, or processing demands, of the plug-ins that were used originally.

3.1.3   How to Freeze a Track

It is extremely easy to freeze a track: simply activate the Freeze button—
i. e. the button that features a small ice crystal icon. If the Freeze buttons
are not visible, activate the View > Track Freeze Switch menu option in the
Arrange window.

The Freeze button of the "Audio 1" track

Logic will create freeze files after receiving the next "*Play*" command. This
allows you to activate the Freeze buttons of multiple tracks, and render
their freeze files in one go.

During the Freeze process, the SPL will follow the currently rendered posi-
tion. A floating progress bar window is also displayed.

- Freeze files are always rendered between the song start and end
  mark—it is recommended that you check the song end mark in the
  bar ruler before starting a Freeze process. Please note that the end
  mark should be adjusted to include feedback-dependent delay repeti-
  tions or reverb tails. Empty areas (digital zero) at the end of freeze
  files will automatically be removed after the Freeze process.

- You can abort freeze processes by pressing ⌘.—in this scenario,
  the portion of the frozen track(s) that has already been rendered will
  remain in the freeze file(s), and will be used for playback. Frozen
  tracks will remain silent beyond this point.

- The freeze process uses 100% of available CPU power. If, for example,
  a track uses 40% of the CPU, its freeze file will be created in 2.5 times
  the realtime speed. If the original tracks uses 100% of the CPU power,
  the freeze process will happen in (approx.) real-time—even if offline
 bouncing is used.

Working with Frozen Tracks

Once a track has been frozen, you cannot edit any instrument or plug-in parameters (or related automation data). You can, however, still edit the:

- effect send levels and destinations,
- panorama and surround parameters,
- volume, mute and solo

of frozen tracks—including their automation data.

Whenever you try to edit "forbidden" parameters of frozen tracks, (e. g. plug-in parameters that were rendered into the freeze file), Logic will display an error message.
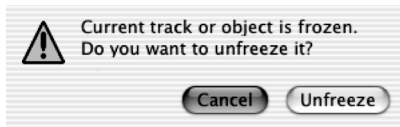
Error message if you attempt to edit a frozen track

In this situation:

- deactivate the *Freeze* button of the track,
- This will *delete* the freeze file.

ℹ Please note that the track will now use the amount of CPU processing power that it originally required, if you enter "Play" mode.

- perform your edits,
- activate the *Freeze* button again, if required.

It is not possible to cut and re-arrange the freeze files in any way, nor is it possible to mix the freeze files with their originals on a single track—you can use one or the other, not both!

It is also not possible to record audio on frozen tracks. In fact, the *Record* button will be hidden while a track is frozen.

3.1.4   Freeze Files

The temporary freeze files are saved in a folder named "Freeze Files" which is created in the root directory of your song (e. g. the project folder). Usually, you won't need to access these freeze files directly.

Logic manages these freeze files for you automatically in the background: They are created during the Freeze process, will play back in place of the original tracks (as long as these tracks are frozen), and will be deleted as soon as the *Freeze* button of the corresponding track is deactivated.

In some cases, however, it might be handy to use freeze files directly: e. g. if you want to freeze *all* of your tracks, and use the freeze files for a remix in another studio (on DSP-based systems, for example).

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3.2   Arrange Channel Strip

In Logic 6, the Channel Strip of the currently selected Arrange track will appear in the parameter area of the Arrange window, provided that there is sufficient space to display it. If there is not enough vertical room, click the upper left triangles in the Sequence Parameter and/or Instrument Parameter Boxes and/or hide the Toolbox (View > Toolbox). The Arrange Channel Strip allows you to access all of the mixer channel functions (volume, pan, sends, inserts, etc) directly from the Arrange window. Any adjustments you make to a track's Arrange Channel Strip will be reflected in the corresponding Track Mixer and Environment Channel Strip as well.

3.3 Sample-accurate Waveform Display
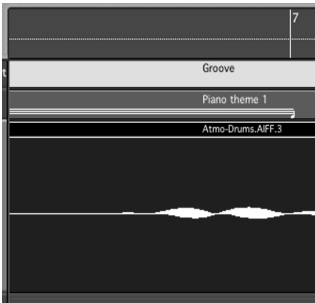
The Arrange window now displays the actual waveform of an audio file, all the way down to single sample resolution at the highest zoom levels. The new *Waveform vertical zoom* Key Commands make this feature even more useful; for precise Arrange edit operations, and for operations on audio regions with low signal levels.

3.4 The Marquee Tool

Logic 6 introduces a new tool to the Arrange window's toolbox: the Tool, which looks like a crosshair. This tool can also be selected via the *Set Marquee Tool* Key Command. You can use the Marquee tool by click-holding within the Arrange window (on the Arrange window background, or directly on objects) to begin your selection. A shaded selection rectangle will appear onscreen as you move the mouse. You can drag the selection rectangle freely, allowing you to make selections—independent of existing part/object boundaries; when you release the mouse, only the area that falls inside the "marquee" is selected. In other words, you can use the Marquee tool to make selections within existing regions and sequences; your selection is completely determined by the selected "marquee" area.

Within the selected area, you can perform almost all regular Arrange edit options, including:

- Delete (⌫ or click with the eraser tool)
- Move (drag selection or using a Nudge Key Command)
- Copy (⌥-drag) using the Arrow tool
- Cut/Copy (⌘X, ⌘C)
- Paste (at SPL, quantized to the nearest bar divisions)
- Copy/Paste via pencil tool (quantized to current format value)
- Cut at selection border (click inside the selection with the scissors tool)
- Mute (Key Command or tool; will also result in a cut at the selection borders)
- Solo (Key Command or tool; will also result in a cut at the selection borders).

If your selected area falls between musically relevant values, the Marquee tool's selection rectangle will automatically "snap" to the nearest musically relevant position, in accordance with the settings of the new "SmartSnap" feature. This facility adjusts the snap resolution according to the current zoom setting. If you make your selection while holding ⌘, the selection will snap to the finest resolution possible within the chosen zoom factor. By holding down ⇧, the current Marquee selection can be altered from either the left or right side, as well as up or down.

The new *Crop objects outside Marquee Selection* Key Command removes all unselected areas from objects which are partly selected by the marquee.

3.5   Time Stretching Regions

Logic 6 allows you to change the length of audio regions (without changing their pitch) directly in the Arrange window—via menu options or key commands.

Adjust Object Length to Locators

Functions > Object > Adjust Object Length to Locators stretches or compresses selected audio regions (or MIDI sequences) to fit between the current positions of the left and right locators. The object's start point is not changed by this function—so don't be overly concerned if the Locators are not precisely above the region or sequence.

Adjust object length to nearest bar

Functions > Object > Adjust object length to nearest bar adjusts the length of selected regions to the closest whole bar. This provides an ideal method for fitting previously trimmed drum loops into songs where small discrepancies between the loop and song tempo exist.

ℹ These two functions use the most recently selected Time Stretching Algorithm—set in the Time and Pitch Machine (Sample Editor > Factory > Time and Pitch Machine).

3.6   New Arrange Icons

Logic 6 introduces a new icon format, offering high resolution, scalable (from 128×128 pixels downwards), and user-definable icons. A few of the new icons are direct replacements for the older Logic icons, but most of the previous icons remain in the program to ensure backwards compatibility. If you vertically zoom a track with new icons sufficiently, you will see the large size icon in addition to the small icon at the top.

3.6.1   User-definable Icons

You can create your own icons for Arrange tracks. These Icons must be at the size of 128×128 pixels, and must be saved in the "portable network graphics" format, and must have an alpha channel for transparency. Please note that these files must be saved with the ".png" suffix. The file-name must also start with a three-digit number. If this number is below 325, the corresponding built-in Logic icon will be replaced by your new graphic (you can check the number of existing Logic icons by double-clicking on them in the Instrument Parameter Box).

In OS 9, user icons must be located inside the *Emagic Resources > Icons* subfolder within your *Logic* application folder.

In OS X there are two possible locations for user icons:

The *~/Library/Application Support/Emagic/EmagicResources/Icons* folder can contain icons which are only valid for the particular user (~ is the user name).

If you save your icons in the root directory—*/Library/Application Support/ Emagic/EmagicResources/Icons*—the icons are valid for all users.

If icons with identical numbers exist in both folders, the icons found in the user folder have priority.

3.6.2   Icon Color

The old, monochromatic icons used to adopt the color of their "parent" Audio Object or MIDI Instrument—which is also still used for newly recorded Regions/Sequences in the Arrange window.

The new high resolution Arrange Icons have their own color and, therefore, can no longer adopt the "parent" object color. To circumvent the overriding color of the new icons, Logic 6 incorporates a small color strip on the right-hand edge of the Track List.

The View > Shadow for Instrument Icons option was removed.

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4   Editor Windows

4.1   Improved Time Machine in the Sample Editor

The Time Machine in Logic 6 features four additional algorithms for time and pitch modifications. Each of the new algorithms is specialized for certain types of audio material. All new algorithms deliver the highest precision possible, to avoid alterations to the length of the audio material.

You can still use the Time Machine as per usual: from within the Factory menu of the Sample Editor (see the main Logic manual for instructions).
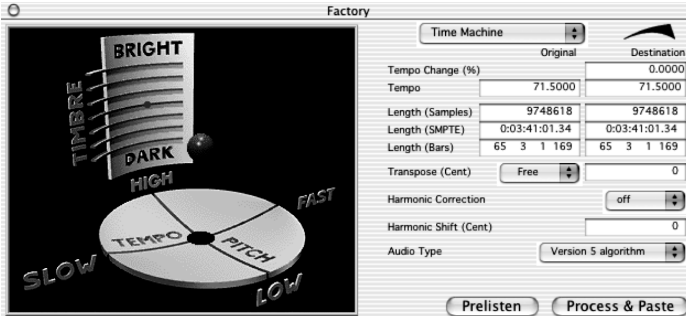
Audio Type
This new parameter allows you choose between the old and the four new algorithms:

● *Version 5 algorithm*
  this is, obviously, the well-known algorithm of Logic 5 and earlier versions.

- *Any material*
  This is the most universal algorithm which, theoretically, should be able to handle most kinds of material—it is the new "default" setting when using the Time Machine. The following algorithms can, however, deliver better results in cases where the material exactly matches the following criteria:

- *Monophonic*
  A specialized algorithm for monophonic material, e. g. an individual voice, brass or woodwind.

- *Pads*
  Use this algorithm on polyphonic material with harmonic content, e. g. choirs or string sections.

- *Beats*
  This algorithm perfectly maintains the timing of percussive material. It should be your first choice for all kinds of drum loops. It may also be useful on staccato, rhythmic piano or guitar parts—i. e. "comping". Experiment with this, if you find that the default algorithm isn't delivering the desired results.

4.2 Chord Recognition in the Matrix Editor

When selecting multiple notes in the Matrix editor, the information section in the upper left corner now displays the chord name of the note combination being played.

5   Audio Standard Support

5.1   MP3 Support (Mac OS X only)

The Mac OS X version of Logic 6 offers full support for the importing and exporting of MP3 files:

5.1.1   MP3 Import

MP3 files may be imported into Logic using the same methods employed when adding AIFF, SDII, or WAV files: namely by ⌂-clicking with the pencil tool in the Arrange, using the Audio > Add Audio File command, via the Audio File local menu of the Audio Window, or by dragging MP3 files from the Finder into the Audio Window or Arrange.

When you import MP3 files, Logic converts the MP3 file to an AIFF file, and it is the AIFF file that is used in Logic. Logic does this because many functions, such as waveform display, sample accurate editing, and so on, would tax the CPU if Logic had to constantly decode and re-encode the MP3 files in realtime for each change. By converting the MP3s to AIFF on import, Logic ensures the most efficient use of resources.

5.1.2   MP3 Export

Logic can export MP3 files as well, using technology Apple licensed from the Fraunhofer Institute, the developers of the MP3 format. You can select MP3 as a file format for Bouncing, or by using the "Convert to MP3" command in the Audio File local menu of the Audio Window.

Bouncing MP3 Files

"MP3" is now one of the options in the pull-down *File Format* menu of the *Bounce* dialog. When you select *MP3* as your file format, the bounce options for *Resolution*, *Stereo File Type*, *Surround Bounce* and *Dithering* are replaced by the "MP3 Export Settings" listed below. You can choose to Bounce MP3 files in realtime, or offline.

Convert To MP3

MP3 files can also be created from individual audio files by using the "Convert To MP3" command of the Audio File local menu in the Audio Window. When you create an MP3 file via this command, the encoder uses the Global settings of the MP3 Export Preference dialog, found in the Logic menu.

MP3 Export Settings

Below are the MP3 Export settings found in the Logic > Preferences > MP3 Export menu, along with some usage tips.
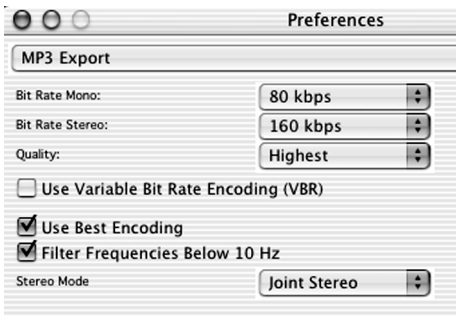
Bit Rate (Mono/Stereo)

The bit rates are selectable between *8kbps* and *320kbps*, but default to *80kbps mono,* and *160kbps stereo*. These rates offer acceptable quality and good file compression. If you can afford the extra file size, we recommend 96kbps for mono, and 192kbps for stereo streams, as this provides better audio quality. You can, of course, choose even higher rates, but the quality improvement in bit rates above 96/192kbps is minimal.

Quality

Keep this set to *Highest* whenever possible. Reducing the quality will speed up the conversion process, but at the expense of audio quality.

Use Variable Bit Rate Encoding (VBR)

Variable Bit Rate encoding compresses "simple" passages more heavily than harmonically-rich passages, generally resulting in better quality MP3s. Unfortunately, not all MP3 players can accurately decode VBR-encoded MP3s, which is why this option is turned off by default. If you determine that the listener/s of your MP3 can decode VBR-encoded MP3s, you can switch this option on.

Use Best Encoding

Again, like the *Quality* parameter, you will gain encoding speed at the price of audio quality if this option is unchecked. This should always be left on, unless conversion time is an issue.

Filter Frequencies Below 10Hz

When this option is checked, frequencies below 10Hz (which are usually not reproduced by speakers, and are not audible to human ears, at any rate …) will be removed, leaving slightly more data bandwidth for the frequencies which we can hear, resulting in an improvement in perceived quality. Only uncheck this if you're experimenting with subsonic test tones, or exporting MP3s for whales …

Stereo Mode

You can select joint stereo or normal stereo mode. Depending on the original file, these settings may (or may not) offer any audible difference. Experiment with both settings to determine your preference.

6   Project Manager

File > Save as project ...

This global command internally uses the Project Manager's database. Use it to Save a Song with all, or specific data types (audio files, EXS instruments, samples, movie files), into a new folder—i. e. the "Project Folder". This is useful for backing up a production, transferring a song to another studio, or simply to organize your hard disk(s) more efficiently ...

Use of this command will launch the "Consolidate Song Functions" dialog window, where you can enter a "Project Folder Name" and choose from several options (mainly regarding choices to copy, move or simply leave certain file types at their current location(s)).