

Introduction;¬Basics;¬YASE (Yet Another Sound Editor) is a lightweight sound editor designed to make a large subset of the features of the Sound Kit available in an application. It features simultaneous recording through the built-in microphone, playback of sound files, cut-and-paste editing, format conversion, sound mixing, envelopes, frequency shifting, and compression with graphic equalization. YASE should thus be able to perform all the functions of the new Sound.app and the old SoundEditor and SoundPlayer, along with some new ones.

Documents;¬For each sound, YASE maintains a single resizable SoundDocument window, containing a scrollable SoundView that displays a representation of the sound's waveform. Cut and paste operations work on these SoundViews in precisely the intuitive manner that one might expect. Also, sound data and .snd files may be dragged and dropped into these SoundViews; they will be copied and pasted in. One of these SoundDocument windows will be the main window at any one time; this window is the one that will be operated upon by the various panels and loadable modules. Where appropriate, operations will act upon the current selection in the main window; otherwise, they will act upon the entire sound displayed in the main window. Any number of SoundDocument windows may be present at one time; to move from one to the other, simply click on the one desired to bring it to the front and make it the main window, or alternatively use the Windows menu. Although only the main window may be operated upon, playing and recording that have begun will continue in the background even when the appropriate window is no longer main. Only one sound may be played and one recorded at a time.

Editing;¬There are also several new editing operations designed for combination of sounds. The silence operation replaces the current selection with an equal duration of silence. The lift operation copies the current selection to the pasteboard, then puts an equal duration of silence in its place. The pasteover operation places the contents of the pasteboard in place of an equal-length section of the current sound, starting at the beginning of the current selection. The mixin operation

adds (sample by sample) the contents of the pasteboard to an equal-length section of the current sound, starting at the beginning of the current selection. The multiply operation applies the contents of the pasteboard as an envelope for the current selection, resizing the contents of the pasteboard until they match the length of the current selection, then multiplying (sample by sample) the current selection by them. The reverse operation reverses the current selection, sample by sample. The test operation selects a section of the current sound with length equal to that of the contents of the pasteboard, starting at the beginning of the current selection; it can be used to show where a mix in or pasteover would go. The pasteover, mix in, and test operations also have corresponding 'before' operations, which differ only in that they align the end of the pasteboard contents with the end of the current selection. The testbefore operation can also help if you want to undo a paste or pasteover operation. There are also after and before operations, which simply change the selection to a zero-length selection either at the end or the beginning of the current selection. One warning: because of the way SoundViews are implemented, selections are accurate only to the pixel; they tend to drift when you zoom the view in and out, or use the editing operations. The Selection Panel will let you see what is happening.

Save/Load;→New SoundDocument windows can be created using the New menu item (new sounds will be created in the 8-bit mulaw CODEC format, and will contain one second of silence). Soundfiles created by YASE or any other application can be loaded with the Open menu item. There are also the usual variety of menu items for saving soundfiles. Closing a SoundDocument window (with the Close button, the Close menu item, or the Close Window item in the Windows menu) causes YASE to free the associated sound; for this reason, YASE keeps track of modifications to sounds, and presents an alert panel whenever a window is closed with unsaved changes to its sound.

ControlPanel;→The main panel used to operate upon sounds is the Control Panel. This has the standard buttons for Play, Record, Stop,

Pause, and Erase. The Play button causes the current selection to be played; the Record button starts recording from the built-in microphone to replace the current selection. Note that there is currently no limit to the duration of recording; if you let recording go long enough, you will fill up your disk and crash your computer. The Stop button will stop playback or recording. The Pause button temporarily halts playback or recording; to resume, hit the Pause button again. The Erase button erases the entire current sound. The Control Panel also contains a SoundMeter that graphically displays the level of recording or playback. At the lower right of the Control Panel is a Compact button that can be used to compact the current sound when it becomes fragmented, and a slider that controls the reduction factor of the current SoundView. To zoom in on the current sound, move this slider to the left; to zoom out, move it to the right. The slider will be automatically readjusted so that its extreme positions zoom in or out by a factor of two; to zoom further, simply move it again. At the lower left of the Control Panel are two sliders that control the right and left volume levels, a Mute button, and a Filter button; the Filter button controls whether the internal low-pass filter is used on output. These controls may not always respond to manipulation of the volume level and mute from the keyboard, so there is also an Update button that causes all panels to update themselves in accord with current conditions. If you do not wish to use the mouse to control recording (it can be rather noisy) you can make the Control Panel the key window (by clicking on its title bar) and use the keyboard alternatives ```, `=`, `/`, and `*` (the top four keys on the numerical keypad) for the Play, Record, Stop, and Pause buttons respectively.

InspectorPanel;¬FormatPanel;¬Another panel used to operate upon sounds is the Format Panel. This Panel describes the size and format of the current sound. If the sound needs compacting, the size in bytes may be incorrect and will be displayed in gray. In addition, this panel can be used for format conversions: the data format, sampling rate, and number of channels of the current sound can all be changed. Simply use the pop-up lists to change these quantities, then press the Set button to perform the conversion. Note that not all conversions can

be performed; if a given conversion cannot be performed, the closest approximation will be substituted, or else no conversion will occur. Not all available formats are editable, playable or recordable; also, some conversions may lose a great deal of information, while some may produce a great deal of data. The 8-bit linear format at CODEC rates in particular is not recommended due to its unpredictable qualities. The Info associated with the current sound is also displayed, and can be edited in this panel; the Set button performs the change. The Revert button causes the original information and format to be redisplayed.

**Selection;**→The Selection Panel describes the size and location of the current selection and view in bytes, samples, and seconds. It can also be used to set the current selection and view, by editing the displayed quantities. Of course, it is easy to edit these quantities so that they are inconsistent; in that case, YASE will rely on some over others, according to the following rules: edited entries over unedited ones, seconds over bytes over samples, and length over start or end (unless both have been edited). The displayed quantities may not be meaningful for certain formats. Note that while this panel is visible, messages are sent to it continuously while you are making a selection or scrolling a sound view, so that these operations may become somewhat sluggish. If you wish more speed and do not need the precise control that the Selection Panel gives you, simply close it. Be warned that selection and view entries can be precise only to the pixel; their precision in samples depends on the reduction factor. If you wish accuracy down to the sample, you must zoom in all the way.

**Envelope;**→The Envelope Panel can be used to change the amplitude of the current selection (or of the contents of the pasteboard) in accordance with an adjustable envelope. Simply set the envelope by adjusting the sliders (whose values range from 0 to 1) and the overall gain (0 to 2) (all gains are expressed as linear factors). Then press the appropriate button to apply this envelope to either the current selection or the contents of the pasteboard; or alternatively, to perform the inverse operation on either. Note that the sound will be clipped if it goes off-

scale; be particularly careful about this with the inverse operations.

**Time/Freq;**→The Time/Frequency Panel can be used to change the effective speed of the current selection (or of the contents of the pasteboard), thus altering both its duration and its frequency. Simply set the slider to the factor desired (between 0.5 and 2) and press the appropriate button to apply this factor to either the current selection or the contents of the pasteboard. The Reset button resets the slider to 1; the reciprocal button sets it to the inverse of its current value.

**Silence;**→The Silence Panel can be used to create arbitrary lengths of silence (currently, up to one minute). Type the number of seconds of silence you want in the field and hit return; that quantity of silence will be placed on the pasteboard.

**Equalizer;**→The Equalizer and ATC Panels operate together to control compression and decompression of 16-bit linear sounds using the ATC algorithm. The ATC Panel provides detailed control over all these operations; the Equalizer Panel is a convenient but cruder method of controlling playback and decompression only. ATC compression is performed whenever a sound is converted to compressed format; it uses the squelch settings in each of 40 different frequency bands, completely silencing the sound if the squelch is 1. ATC decompression is performed whenever a compressed sound is played back or converted to another format; it uses the gain settings in each frequency band. Thus the gain settings may be used to equalize the playback or decompression of compressed sounds. The gain slider settings range from 0 to 2.

**Exiting;**→The YASE application remains active even when there are no SoundDocument windows, but most items on the panels can no longer be manipulated. The application can be hidden using the Hide menu item, but to remove the application it is necessary to use the Quit menu item. The application will bring up an alert panel if there are any

remaining unsaved modifications to sounds.

Preferences;—The Preferences Panel allows you to select what other windows and panels will be brought up when the application is launched. Click on the names of the panels you want; those that are highlighted will be brought up automatically. Highlight the 'New' item to have a new SoundDocument window brought up automatically.