SIRENAUDIO

Generative 2

Quickstart Guide (January 2015).

System Requirements

Windows System Requirements

Windows XP, Vista, Windows 7, or Windows 8 machine and 4 GB RAM. An ASIO-compatible sound card is recommended for optimum audio performance. Windows users should thoroughly test the demo version on their computer.
Windows users will need the latest version of Java installed, which can be downloaded here:
https://java.com/en/download/

If you do not have an ASIO-compatible soundcard please try the free ASIO4All audio driver available here:
http://www.asio4all.com/

Macintosh System Requirements

Mac PPC or Intel machine running OS X 10.4.11 or later, and 4 GB RAM.
Mac users will need to have Java SE 6 installed which can be downloaded here:
http://support.apple.com/kb/dl1572

Support

If there are any issues with performance, send an email to: support@sirenaudio.co.uk outlining the nature of the problem and how you were using the application when the problem occurred.

Installation

SirenAudio software does not use an installer. Once the software is downloaded and has been authorised it is ready to use. By using the application you agree to the license agreement. The license agreement is included in the downloaded folder.

About the application

The Generative application was designed to create continually evolving soundscapes using audio from a sound file, or an external audio input. There are four granular devices whose parameters are altered continually by the application. Whilst the playback is granular, the input audio remains relatively unchanged. With the completion of version 2 of the application, many of the previously unchangeable parameters are available for the user to control. These include the pitches of each device, global tuning, segment selection, and granular settings.

Demo Version

The demo version of Generative has no internal record capabilities. If you create something interesting with the demo you can save it, however you cannot restore that session with the demo version.
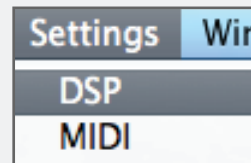The application will close after 20 minutes.

Configuring an Audio Driver

Step 1 : DSP Status Window

When the application is first run or when you change audio interfaces, you will need to choose an audio driver from the driver menu in the *DSP Status* window.

To view the *DSP Status* window, click on the Settings application menu, then pick *DSP* from the list.

## Step 2 : Choosing an Audio driver

You will now see the *DSP Status* window. There are various options that you can configure in this window, but the one we're interested in is the second item - the *Driver* menu.

Click on the driver menu to reveal a list of audio drivers. If you are using the application with a particular audio interface, choose this device's from the list.

The Driver Menu
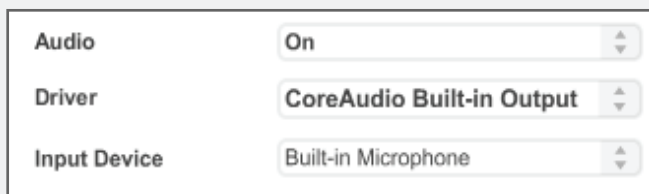
The Driver menu is the second item in the DSP Status' options, and when clicked shows you a list of available audio drivers.

A list of available Drivers

Here is a list of the drivers that I can use with the application on my Macintosh computer.

Your list will likely have different audio driver options.

Step 3 : Setting Vector Sizes and Sampling Rate

The Generative application sets the I/O and Signal Vector sizes automatically to 512 samples. These are the recommended settings and it is likely that values less than 512 samples will cause problems with the audio.

Generative has been tested primarily with a sampling rate of 44.1kHz, or 44100Hz as shown in the menu opposite. This is the recommended sampling rate, and higher values may cause degradation of the audio.

Vector and SR options

The values shown above are the recommended settings for the Feedback application.

* Note for Windows Users

For Windows users an ASIO-compatible sound card is recommended. If you are experiencing any problems with existing audio drivers, please try the Asio-4-All driver to see if this solves them. The Asio-4-All driver is a free audio driver available from : ***http://www.asio4all.com/***
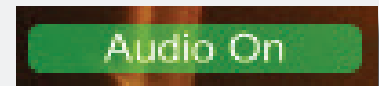
Turning Audio On / Loading + Copying Files

Step 4 : Turn Audio On

The audio toggle is turned on by default. However, whenever a driver is changed you will need to turn the audio off and then on again. This can be done in the DSP Settings window, however there is a control in the main interface for this purpose.

Turn the audio off and on again to activate audio in the application.

Step 5 : Loading Audio

There are two types of audio that the application uses as sources. The first is an external input. This can be any device that is connected to your audio interface, such as a microphone, guitar, or synthesiser.

The second type of audio is from an audio file that is loaded in to the application. Since not every user will have access to an external sound source to use with the application, I will demonstrate how to use the application with an audio file, which is also later relevant to using an external input (Steps 6-9).

File and Folder Loading Options

The File and Folder loading options are located above the application's waveform display, in the main window.

The way that the application transforms the audio file is by using granular synthesis. Each granular device must have a number of segments or ranges within the audio file that are used as destinations for its playhead, or playback position. So if a device does not have any segments, it will not play. There are two main ways of adding segments to a device, but first lets load an audio file in to the application.

Click on the File button to open a dialog. From the dialog, locate an audio file on your computer and then load it in to the application. The Generative application accepts Wave (.wav), and AIFF (.aif / .aiff) audio files. You cannot use any type of compressed audio files (MP3 / Flac / Etc). Once the audio file is loaded it will be displayed in the waveform display directly below the file and folder buttons.

Now lets look at the first of the two main options for adding segments - copying a selection of audio.

Step 6 : Copying Audio

The copy selection method is the quickest way of turning the input audio in to a soundscape. By default the entire audio file is selected when a new file is loaded, however it is often better to use the application with audio of lengths of around 15-30 seconds, so when choosing an audio file, pick one that is at least this length, if not a little longer.

To make a selection, click on the select tab in the main application window directly under the top waveform display. Now click on the waveform and drag to select a section of the audio file. Once you have done this you can click the copy selection button.

Your selected audio will now be copied to the lower waveform display and a number of random segments will have been created. You should now hear the audio from the four granular devices and see each device's playhead moving across the bottom waveform. If not all granular devices have audio, try selecting a larger portion of the audio file

Copy Selection

The Copy selection button copies the selected audio in to the lower waveform display.

Segments / Analysis

Step 7 : Reviewing Segments

A quick way of troubleshooting the copy selection method is to look at the segment distribution control section.

This is located in the panel directly below the waveform on the right. It provides two functions, the first is to show you how many segments each granular device has, and the second is to allow you to distribute these segments between devices using th sliders.

If any of the numbers show 0, it means that there are no segments within that granular device, and it will not produce any sound. By default all segments are split equally by their length. As in the picture a total of 24 segments are first split in to large and small segments (12 / 12), then in to further large and small segments
(6 / 6 / 6 / 6) which are sent to each device. If you do not see any segments using the copy selection method, try selecting a larger portion of audio.

Segment Distribution Controls
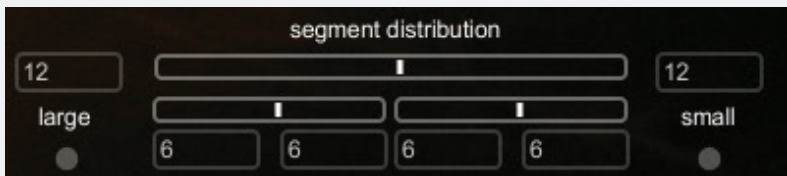
Low Waveform, Segments and Playhead
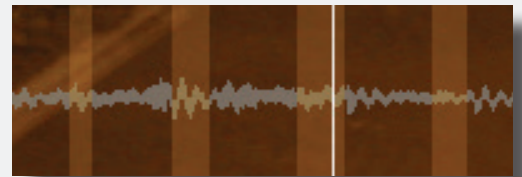
Segments are distributed between devices automatically, however you can use the sliders in the segment distribution section to do this manually if needed. Segments are overlaid on to the lower waveform in an orange colour, with playheads being white in automatic playback mode, and multi coloured in user playback mode

Step 8 : Analysis

The other method of adding segments is to analyse a selection of the input audio. This analysis is a simple measure of volume peaks in the selected audio. It is also the way in which you can use an external input with the application.
Read about the analysis settings (below right), and when you're finished click the analyse selection button to start analysis of the audio file. You will now see audio being recorded in to the lower waveform display.

It may be possible that only a few segments have been found during this analysis stage. There are various reasons why this may happen. The sensitivity parameter could be too low, or the volume of the input audio may be too quiet. It's also possible that the amplitude of the file does not contain much variation in amplitude, meaning that it is hard to define segments based on variation in amplitude.

The analysis method can sometimes be a difficult way of working with the application - however it does produce a different type of segment that does vary the output of the resulting audio, and once you are comfortable using it, it can produce interesting results.

 If you are finding that using this method does not create enough segments, then it's much easier to use the copy selection method - which produces random segments and guarantees that you will have some segments within the audio.

Analysis Settings
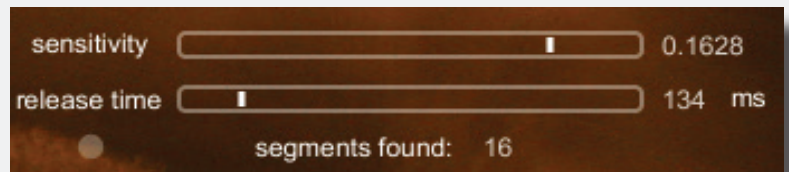
*The **sensitivity** control allows you to set a value that the analysed audio must rise above, and fall below before a segment is defined. Larger values make this control more sensitive (more likely to find segments).*

*The **release time** control stops lots of segments being defined over a short period of the analysis. After a segments end point has been found, a new segment cannot be defined before the release time has elapsed.*

Analyse Selection Button
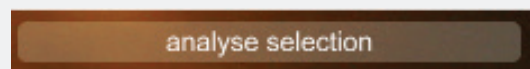
When clicked, the analyse selection will begin playback of the selected audio, and look for variations in amplitude in order to create segments which are distributed between the granular devices.
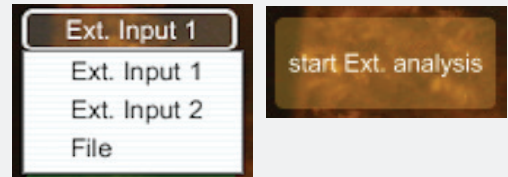
External Input / Device Selection / Pitches

Step 9 : Using an External Input

If you want to use an external input with the application, you can do so by selecting external input 1, or 2 from the input selection menu. Then clicking on the start / stop Ext. Analysis button. These controls are in the top left hand corner of the main application window.

Whilst recording an external source the application will always look for segments, however this does not mean that once audio is recorded random segments cannot be created, amended, or added via the segment add / edit / delete functions. These controls are explained in detail in Generative's manual (page 15).

### Input Selection + Ext. Analysis

In order for the external analysis to take place, the input source menu must be set to one of the external inputs.

Step 10 : Device Selection

Once a device has segments it will begin granular playback automatically. In order to change a device's pitch and filter settings it must first be selected from the device selection tab. This is located directly below each device's gain fader, and allows you to show each device's pitch and filter settings.

The Device Selection Tab
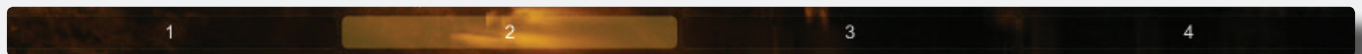
The device selection tab allows you to change which device's pitch or filter settings are shown in the display area. In the picture above device 2 is selected.

Step 11 : Changing Pitches

Once a device has been selected its filter or pitch parameters will be shown in the display area directly below the device selection tab. Directly to the left of the tab are the Filter and Pitch tabs which when clicked allow you to show the corresponding device's filter or pitch parameters.

To change the pitch, first click on the pitch tab to view the selected device's pitch settings. Then from the pitch display you can choose to alter the pitch of the device, either by clicking on a note on the keyboard, or by using the pitch slider to find pitches in between notes.

Filter and Pitch Tabs

Pitch Display
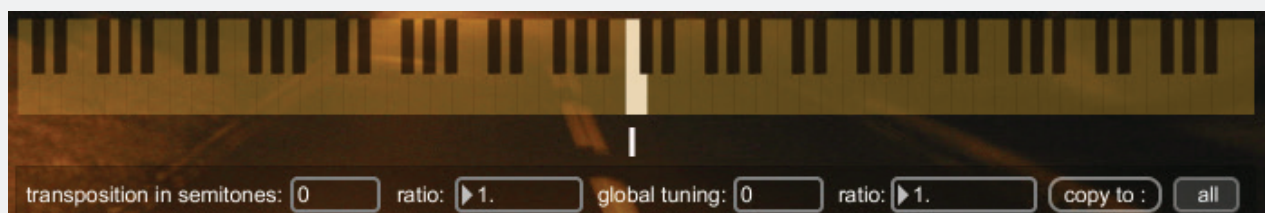
The pitch display allows you to copy the pitch shown to different devices or to all devices. It's also possible to alter the global tuning of all devices which can produce interesting effects.

How to get the best from the Application

There is no specific way to use the application, however it is useful to consider the types of sounds that work best with the application.

Solo Instruments and Voice : By using sound produced from only one instrument the resulting audio is more focused on that particular sound, and it can be an interesting base or focal point for a composition. If you choose to use samples with many different sounds in them, it may be that the audio output becomes too crowded. Technically this may be because each voice of each device has a slightly different pitch, which when spread over multiple instruments may become overbearing.

Samples without transients : Generally transients don't produce the best sounds when used with the application. Granular synthesis can sound interesting with short grain lengths, however this isn't the focus of Generative. This is a personal preference - don't let it stop you using drum solos with the application if you like how it sounds.

Samples that do not change key : If you are using a sample from a file or the external input that has lots of key changes it may be that these different harmonic sections will overlap each other once the granular devices are playing them. Again this is personal preference, so don't let it stop you experimenting.

This document is a quick guide for you to start making sounds. To learn more about the application, read the manual document, where all parameters are explained in detail.