

Drumagog

User's Guide

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Table of Contents

GETTING STARTED	7
Registering Drumagog	7
Installing Drumagog.....	8
For PC-Based Systems:.....	8
For Mac-Based Systems:	8
Free Sample Collection.....	9
Unlocking your copy of Drumagog.....	9
Upgrading from Drumagog 3.x.....	11
CONTACTING TECH SUPPORT.....	13
FEATURE OVERVIEW	15
Cutting-Edge Triggering Technology	15
GOG Sample Format	15
Using Your Own Samples.....	16
Multi-sample Support	16
Positional Multisamples	16
Left/Right Hand Support.....	17
Auto-Align Feature	17
Visual Triggering.....	17
Comprehensive Sample Management.....	18
Add From Track.....	18
Virtual Drum Movie.....	18
VU Meters.....	19
Favorites.....	19
Stealth Mode	19
Dynamic Tracking	19
Pitch	20
Filter.....	20
Live Triggering Mode.....	20
Built-In Synthesizer	20
Auto Sample Rate Conversion.....	20
Auto-Ducking	21
Polyphony	21
MIDI Input and Output	21
Blend Control.....	22

USING DRUMAGOG.....23

How it works.....	23
Auto Align.....	24
Dynamic Multisamples	25
Random Multisamples	25
Positional Multisamples	27
GOG Files	28
Using your own samples	29
Favorites.....	30
Stealth Mode	31

DRUMAGOG STEP BY STEP33

1. Insert Drumagog onto an audio drum track	33
2. Select the sample of your choice.....	34
3. Choosing a Triggering Mode	35
4. Adjust the Sensitivity and Resolution	36
5. Bargraph, Drum Movie	38
6. Adjust Sample Output Volume	38
7. Enjoy!.....	38

VISUAL TRIGGERING.....39

Sensitivity.....	40
Resolution	40
Triggering Circles	41

SAMPLE MANAGEMENT.....43

Overview	43
Dynamic Groups	44
Positional Groups	45
Hand Groups	46
Sample Pages	46
An Example Gog File.....	47
Dynamic Tracking.....	49
Sample Properties Box.....	50
Solo and Mute	50
Dynamic Group Arrows.....	51
Positional Group Arrows.....	51
Audition Buttons	52
Adding Samples	53
Add From File	53
Add From Track.....	54

Creating a New GOG File.....	55
Deleting Samples	56
Exporting gog samples	56
Choosing a new sample.....	57
Naming a GOG File	58
Selecting a Drum Movie	58
Sample Groups View	59
Auto-assigning samples to groups.....	60
Copy from last gog.....	61

MIDI FEATURES.....63

Midi Output.....	63
Pro Tools:.....	65
VST Applications (such as Nuendo, Cubase, Sonar):.....	67
MIDI Input	68

ADVANCED TECHNIQUES.....69

All About Latency	69
Fixed Latency Version	70
Delay Compensation in Pro Tools HD.....	71
Trigger Filter	73
Synth.....	74
Auto Align.....	76
Psycho-acoustical / Actual Peak:	76
Optimize for Bass Drums or Snare Drums.....	76
Auto Ducking	78
Ducking Group.....	79
Ducking Response	79
Ducking Time	80
Ducking Level.....	80
Polyphony	80
Auto Sample Rate Conversion	81
Stealth Mode Controls.....	82
Stealth Response	82
Stealth Crossfade	83
Dynamic Tracking.....	83

CONTROL DESCRIPTIONS.....85

Main Page	85
Input Control.....	86
Sensitivity Control	86

Resolution Control	86
Output Control	86
Phase Control	86
Filter	86
Position Control	87
Blend Control.....	87
Pitch Control	87
Visual Triggering Button	87
Use Dynamic, Random and Positional Multisamples	88
Dynamic Tracking	88
Stealth Mode	88
Auto Align	88
Use Left/Right Hand Samples.....	88
Drum Movie.....	89
Bargraph.....	89
Moving or Renaming gog files and folders.....	89
Synth	89
Samples Page	90
Sample Box.....	90
Dynamic Group Arrows.....	91
Positional Group	91
Hand.....	91
Add From File.....	91
Add From Track.....	91
Play and Stop Buttons	91
Save Gog.....	92
Movie	92
Recycle Bin.....	92
New	92
Advanced Page.....	93
Triggering Engine	93
Auto Align	95
Hand Timing	95
Midi Output Controls	96
Auto Ducking Controls	96
Stealth Mode Controls	98
Other Controls.....	98

1

Getting Started

Welcome to the exciting world of drum replacing! You've purchased the most powerful tool available for improving your drum sound. Drumagog is the result of years of development and has proven to be an indispensable tool for engineers and producers worldwide. This manual is designed to get you started quickly, and explain some of the more powerful features Drumagog has to offer.

Registering Drumagog

Note: If you've purchased Drumagog through our web site (www.drumagog.com), please skip this step.

Before installing Drumagog, you must register with us via the Drumagog web site. Without registering, you won't be able to unlock your copy. Please visit www.drumagog.com/register and fill out the simple registration form. After submitting the form, your registration details will be e-mailed to you immediately.

Installing Drumagog

To install Drumagog, follow these simple steps:

For PC-Based Systems:

1. If you've purchased Drumagog through our web site, please download the "retail version" first by visiting www.drumagog.com, clicking on "support", and then following the link for the retail version download. Once you've downloaded this file, double-click on it to start the installation process.
2. If you've purchased the boxed version of Drumagog, insert the DVD into your computer, and run the *setup* file on the DVD.
3. Follow the installation instructions on your screen. If you're unsure about a folder location question, just click the default option ("Next").
4. Drumagog will automatically install itself into your VST and Pro Tools folders.

For Mac-Based Systems:

1. If you've purchased Drumagog through our web site, please download the "retail version" first by visiting www.drumagog.com, clicking on "support", and then following the link for the retail version download. Once you've downloaded this file, double-click on it to start the installation process.
2. If you've purchased the boxed version of Drumagog, insert the DVD into your computer, and run the Drumagog OSX Setup file (or Drumagog OS9 Setup if you're using OS9) on the DVD.

3. Follow the installation instructions on your screen. If you're unsure about a folder location question, just click the default option ("Next").
4. Drumagog will automatically install itself into your VST, Pro Tools, and Audio Units folders. **Mac users:** Do not manually move or rename the Drumagog folder in your applications folder. Drumagog requires that this folder be present.

Free Sample Collection

Drumagog comes with a free extensive sample collection. If you've purchased Drumagog through our web site, this sample collection must be downloaded separately. Please go to the Drumagog web site (www.drumagog.com), click on *Download*, then choose *Download Samples*.

If you've purchased the boxed version of Drumagog, the samples are automatically installed onto your hard drive.

Unlocking your copy of Drumagog

Your copy of Drumagog will continue to function for 14 days without unlocking, but it's a good idea to do this now.

Unlocking can be done from any computer – it is not necessary to have internet access on the same machine Drumagog is installed to. To unlock your copy, please follow these steps:

1. Drumagog should be installed before unlocking. If you haven't installed Drumagog yet, please refer to the previous section first.

2. Launch your audio program (for example Pro Tools, Nuendo, etc.).
3. Insert Drumagog onto a track.
4. On Drumagog's graphics window, click on the text at the bottom that says "click to unlock" as shown below:



Fig. 1 - Click to Unlock

5. A window will pop up. Make a note of the CPUID listed in this window.
6. On your internet browser, go to www.drumagog.com, and click on *support*. If you don't have internet access available on your audio machine, please do this on another machine which has internet access.
7. On the support web page, fill out the *unlock code form*, located towards the middle of the web page. Enter the CPUID from step 5. Make sure to use the same name, e-mail address and phone number you provided when you

registered. *If you haven't registered yet, please refer to the previous section on registering.* If you've purchased Drumagog through our web site, registration is automatically done for you.

8. The Drumagog web page will e-mail you an unlock code immediately. When you receive the unlock code, type it into the Drumagog window from step 5.
9. Close your audio application. When you re-open it, Drumagog should be unlocked (the "click to unlock" message at the bottom should disappear).
10. If you still see the "click to unlock" message after unlocking, it's possible that the CPUID you entered was off by a digit somewhere. Please try the process again, and make sure you type the CPUID very carefully as it appears on the screen.

Upgrading from Drumagog 3.x

Drumagog 4 installs itself as a separate plug-in from version 3. You'll see it in your plug-in lists as "Drumagog" instead of the previous "Drumagog 3".

If you've created your own collection of gog files in a previous version, and would like to use them in 4.0, please follow these steps:

1. Open "My Computer", then click on "C" (or a different drive if Drumagog is installed elsewhere).
2. Navigate to "Program Files", then to "Drumagog 3", then to "Gog Files".
3. Select all the gog folders you'd like to save, and move them to the new 4.0 gog folder, which is normally located in "C:\Program Files\Drumagog40\Gog Files".

2

Contacting Tech Support

We're always glad to answer any questions you may have about using Drumagog. Please don't hesitate to contact us by:

E-mail: support@drumagog.com

Phone: (877) 318-WAVE or (312) 733-5900

US Mail: WaveMachine Labs, Inc.
346 N. Justine St.
Suite 200
Chicago, IL 60607

Our web site at: <http://www.drumagog.com> contains support information, FAQ's, and other tips.

Also, our user's forum has many helpful questions and answers from other users. Posting your question on the forum usually results in a quick answer. To get to the forum, visit drumagog.com and click on "Forum" at the top of the page.

3

Feature Overview

Cutting-Edge Triggering Technology

Drumagog's advanced triggering engine makes drum replacing a breeze. It accurately tracks the incoming audio and replaces even the most detailed drum nuances with ease. In addition to the basic controls to adjust input, output, and triggering parameters, Drumagog features several controls on its advanced page for custom tuning of the overall triggering process.

GOG Sample Format

Drumagog introduces its own multisample format called GOG. In one GOG file, Drumagog packs up to 384 multisamples, and all associated settings. The GOG file format allows you to author, arrange and save your own sample sets in a single file. This makes accessing and transferring samples between projects simple, and allows you to permanently record in the GOG file all of the triggering information and parameters associated with a sample set.

Using Your Own Samples

Drumagog provides the ability to use your own samples. It reads WAV, AIF, SND and SDII files. These samples can either be used directly, or within your own multisample GOG files.

Multi-sample Support

Drumagog supports dynamic, random, and positional multisamples for the ultimate in acoustical realism. Each drum can contain several dynamic multisamples, representing distinct volume levels. Drumagog will automatically choose from one of these samples to match the incoming audio volume perfectly. Random multisamples are also supported, allowing Drumagog to randomly choose between two or more sets of samples of the same volume. Using random multisamples allows a level of realism previously un-attainable with other software. In addition to dynamic and random samples, Drumagog also features positional multisamples, where different areas of a drum or cymbal are represented by different samples (for example rim shot, side stick, etc.). All three of these sample types can be combined for a single sound resulting in a very complete representation of a drum. With Drumagog's advanced multi-sample support, even complex drum rolls sound realistic.

Positional Multisamples

In addition to dynamic and random multisamples, Drumagog features positional Multisamples, which enable you to "dial in" the perfect stick hit position when replacing drums. For instance, if a part of the song calls for a bell sound from the ride cymbal, or a rim shot from a snare drum, you simply adjust the position control to achieve the perfect stick position.

Left/Right Hand Support

Drumagog supports samples containing separate left/right hand multi-samples. It can automatically alternate between these samples based on the speed of the original drum performance. With this feature it's possible to achieve an unprecedented level of realism, accurately reproducing the distinctly different sound that's produced when a drummer strikes the drum with a left or right hand.

Auto-Align Feature

Drumagog is phase and sample accurate (only on audio programs which support Plug-in Delay Compensation), making manual sample alignment completely unnecessary. Click the auto-align button, and Drumagog guarantees a perfect, phase-aligned match every time – even if the samples you're using aren't trimmed properly.

Visual Triggering

Drumagog includes a visual triggering feature that simplifies the adjustment of the triggering controls. A scrolling, real-time waveform display is shown, with the triggering controls (sensitivity, resolution) superimposed on top of the waveform. This provides a visual indication of exactly which incoming hits will trigger Drumagog. For example, the sensitivity control is represented as a horizontal line that can be moved up or down, while the audio waveform scrolls from right to left. As the incoming audio moves scrolls past, it's easy to see which audio impulses will trigger Drumagog and which won't. All the audio above the line will cause a trigger, and the audio below it will be ignored. The incoming audio that scored a "hit" is displayed as a white dot, making it easy to see a history of which hits caused Drumagog to trigger.

Comprehensive Sample Management

Drumagog's Samples page features a visual sample management scheme that simplifies importing and organizing of samples. Each multi-sample being used is represented as a colored rectangle within this sample box. During playback, the individual colored rectangles flash, indicating which multi-sample is being used for replacement. Up to 384 multisamples are supported, and any combination of dynamic, random and positional multisamples is possible.

Add From Track

The "Add From Track" feature enables you to easily build your own GOG files by adding drum hits directly from the track Drumagog is inserted on. With this feature, you simply insert Drumagog on a track with drums samples on it, tell Drumagog how many samples to record, and then press play on your transport. Drumagog automatically records the drum hits into a gog file, chopping the hits into individual multisamples. Note: add from track is not available in Drumagog Basic.

Virtual Drum Movie

The virtual drum movie presents a sophisticated means of representing a triggered response from Drumagog. Going beyond the standard simple blinking LED, a small window displays a movie of an actual drum being played in perfect synchronization with the incoming audio. This feature is particularly useful when triggered samples are being blended with the original source track. The image of a drum being struck is often more intuitive to the user than a flashing light, thereby making it easier to visually catch missed triggers when the sensitivity control is set too high. The virtual drum movie does not adversely affect CPU usage since the movie is on a separate very-low priority processing thread. Audio playback always maintains priority.

VU Meters

Drumagog features accurate, responsive VU meters for both input and output levels.

Favorites

Drumagog includes a better way to manage your samples – favorites. Clicking on the favorites button instantly brings up a list of your favorite samples. Note: the favorites feature is not available in Drumagog Basic.

Stealth Mode

Stealth mode is a powerful feature that passes all the original audio through unchanged until the trigger threshold is reached. This is especially useful in tracks that contain both a snare and a hi-hat on a single track. Drumagog will pass the hi-hat through, quickly crossfade into the replaced snare sample when the snare drum is heard, then crossfade back into the hi-hat again. The whole operation is so seamless, that often it's hard to tell Drumagog's actually on.

Dynamic Tracking

Drumagog automatically tracks the incoming drum hits and adjusts the volume of the samples it plays according to the volume of the original hits. Sometimes, however it's desirable to control the dynamics. Drumagog provides a dynamic tracking control that allows adjustment of how Drumagog tracks the dynamics. This feature can be used to add a solid feel to an overly dynamic performance without the side effects imparted by traditional audio compression.

Pitch

Drumagog's pitch control enables adjustment of the sample's pitch by $\pm 100\%$. This is a useful feature for tuning the drums to the accompanying tracks. Note: pitch control is not available in Drumagog Basic.

Filter

A flexible filter is provided to filter out un-wanted audio from a track before triggering. For instance, a snare track might contain undesirable bass drum bleed. In this case, the filter could be set to highpass to only allow the snare audio to pass through. This technique greatly reduces any chances for mis-triggering when bleed is present on the source track. Using the filter, it's even possible in some cases to trigger drums from a mixed stereo track.

Live Triggering Mode

Live Triggering Mode enables a whole new aspect to Drumagog use - Live Drum Triggering. With this new mode, Drumagog introduces no latency, making it ideal for using Drumagog at a live show (for example on a laptop connected to the board), or as a drum sample player for your drum trigger pads. Note: this mode is not as accurate as other triggering modes.

Built-In Synthesizer

Thanks to this great new feature, Drumagog now allows you to add depth and flavor to your drum samples. Need an extra "punch" for your kick drum? Or some more "sizzle" on your snare? Just dial it in. The built-in synth supports 9 different waveforms, and many adjustable controls. Note: the synth function is not available in Drumagog Basic.

Auto Sample Rate Conversion

When this feature is enabled, Drumagog will automatically convert the sample rate of the samples being used to match the sample rate of your project. There's no need to worry about

manually converting your drum samples to match the project's sample rate.

Auto-Ducking

Sometimes it's not enough to just replace the drums on a track, as there are often other tracks that still contain bleed from the original drum. Drumagog's auto-ducking solves this problem. For instance, if a snare drum is being replaced, and the original snare can still be heard through the overhead tracks, Drumagog would be inserted into each of the overhead tracks. Then, the two overhead Drumagog's would be set to receive auto-ducking information from the main Drumagog instance on the snare track. Every time the snare plays, the two Drumagog's on the overhead tracks will automatically "duck" the audio by a set amount (usually 2 or 3 dB). This results in the original sound effectively being removed from all the tracks on which it appears, without affecting any of the other sounds on those tracks. The original sound is then replaced with the sample(s) by Drumagog. The combined audio sounds flawless.

Polyphony

Drumagog provides several polyphony modes (the ability to play a new sample while a previous one is still playing): 16-note, 256 note, or cymbal. Cymbal polyphony mode is useful for cymbals, while 16 and 256-note polyphony modes are great for snares and other instruments. Cymbal polyphony is also useful for replacing recorded drum machine tracks, as it allows for the original drum machine's feel to be maintained. "Machine gun" snare replacements used in dance and hip hop tracks will still stutter like the original!

MIDI Input and Output

While Drumagog sounds great by itself, sometimes it's desirable to extend Drumagog through the use of MIDI. The MIDI output feature allows triggering of external drum machines and virtual

instruments like BFD and DFHS. In addition, Drumagog's MIDI input allows the use of Drumagog as a live drum source – perfect for triggering using drum pads. Note: MIDI features are not available in Drumagog Basic.

Blend Control

Drumagog's blend control provides control of the mix between the original audio and the replaced samples. By using this feature, it's easy to find the "sweet spot", by combining the sound of your original drum with the new replaced sound from Drumagog.

4

Using Drumagog

How it works

Replacing drums using Drumagog can be as simple as inserting Drumagog into the desired audio track. Often, no fine-tuning is needed – just plug it in and go. However, a general understanding of the drum-replacing process can help for more challenging drum tracks.

Drumagog is not a stand-alone program, it's a plug-in. To use Drumagog, it must be inserted into an audio track in a compatible application (for example Pro Tools, Logic or Nuendo). Drumagog works by listening to the incoming audio, and playing a sample when the volume of the audio reaches a certain level. This level is called the threshold. Every time the audio reaches the threshold level, a sample is played. The threshold is controlled by the Sensitivity knob on the *Main* Drumagog page.

For even greater flexibility, Drumagog offers another control called “resolution”. This control sets the amount of time Drumagog should wait before re-triggering. It's very useful in

situations where it is difficult to set the threshold, due to a noisy track. If you know that the drummer never plays any faster than once every half-second, just set the resolution to 500ms. This way, when a drum sample is played, Drumagog will wait 500ms before allowing the next sample to be played. During this 500ms, Drumagog ignores any audio, even if it is louder than the threshold level. This minimizes false and double-triggering due to extraneous noise.

Drumagog can use a variety of sample formats (WAV, SDII, AIF, SND and GOG). It also has a very powerful multi-sample implementation. Multisamples are collections of individual samples grouped in such a way as to improve the realism of the drum being replaced. Multisamples come in four flavors: Dynamic multisamples, Random multisamples, Positional multisamples and Hand multisamples. Drumagog can use sample sets comprised of one or more of these types.

Auto Align

Normally, Drumagog starts playing its samples immediately upon detecting a drum hit. This works in many cases, but often the samples don't line up perfectly in the end. This is simply due to the fact that every drum has unique acoustical characteristics, and some drums don't present their peak immediately upon playback. Auto align is designed to solve this problem. Note: Auto align is not available in Drumagog Basic.

When it's enabled, Drumagog automatically phase-aligns the incoming hit with the sample you've chosen every time. Note: Even though the samples may be perfectly aligned, the entire *track* may be off due to Drumagog's latency. This shouldn't present a problem, because this latency is always consistent. Moving the track back by the amount shown in Drumagog's "total latency" display solves any latency issues (if your audio program supports Auto Delay Compensation, this is done for you automatically).



Fig. 2 - Auto Align

Dynamic Multisamples

A dynamic multi-sample set is a collection of samples, each of which contains a recording of the drum being played at a different volume. For instance, a multi-sampled snare might contain eight samples, each one representing the snare being played at a different volume. Dynamic multisamples are useful because drums sound differently depending on how hard they are hit. Drumagog will automatically determine which sample to use out of a dynamic multi-sample set in order to match the original drum's volume.

Random Multisamples

A sample set that contains random multisamples is simply a set of samples that Drumagog can randomly pick from when replacing a drum. Random multisamples are often used in conjunction with dynamic multisamples to achieve the greatest

level of acoustical accuracy. In the real world, when a drummer strikes a drum, it never sounds exactly the same, even if it's played in the same spot on the drum with the same force. The laws of physics guarantee this. For this reason, random multisamples provide variety in the replaced sound because Drumagog randomly chooses a different sample each and every time. Even amongst the randomized set of samples, the same sample will never be played twice in a row. When random multisamples are used, the resulting audio track doesn't sound like it came from a drum-machine. It starts to sound like the real thing. The ear is very good at recognizing when the same sample is played over and over. Random multisamples solve this problem.



Fig.3 - Dynamic and Random Multisamples

Positional Multisamples

Positional multisamples add a completely new dimension to the sample set. A positional multi-sample set contains a separate sample (or group of samples) for every stick position with which a drum can be played. For example, a snare sample set might contain 3 positional groups – one for the drum being played in the center, one off the side, and one for a rim shot hit. A ride cymbal might use positions from the outer rim of the cymbal to the bell. A hi-hat positional sample set could have the positions represent the various foot-pedal positions (open to closed). By adjusting the position control, these various positions can be controlled in real-time.



Fig. 4 - Position Control

GOG Files

Drumagog's native file format is GOG. A GOG file is a single file that can contain up to 384 individual samples. GOG files are unique among other multi-sample formats, because a GOG file contains many Drumagog-specific settings, such as the trigger level of each sample, and positional information.

Drumagog comes with a free extensive sample collection. If you've purchased the downloadable version of Drumagog, this sample collection must be downloaded separately. Please go to the Drumagog web site (www.drumagog.com), click on *Download*, and choose *Download Samples*.

If you've purchased the boxed version of Drumagog, the samples are automatically installed onto your hard drive.

Other great GOG sample libraries are available for sale on the Drumagog web site. Be sure to check them out at www.drumagog.com.

Using your own samples

In addition to using the included gog samples, you can easily use your own WAV, AIF, SDII and SND files. To load your own sample, choose “Browse” (shown in fig. 5) from the folder selection box and choose a sample.



Fig. 5 - Choosing your own samples

Favorites

Drumagog can remember a list of your favorite samples. To add a sample to the favorites list, select a sample, then click the add button under the sample selection box. You can switch between samples and favorites by pressing the “Fav” button. Pressing “Del” removes a sample from the favorites list. Note: removing a sample from the favorites list does not actually delete the file; it simply removes it from the list of favorites. Note: the favorites feature is not available in Drumagog Basic.



Fig. 6 - Favorites

Stealth Mode

Drumagog introduces a feature called *Stealth Mode*. This powerful feature passes all the original audio through unchanged until the trigger threshold is reached. Stealth mode is especially useful in tracks that contain both a snare and a hi-hat on the same track. Drumagog will pass the hi-hat through, quickly crossfade into the replaced snare sample when the snare drum is heard, then crossfade back into the hi-hat again. To use *Stealth mode*, enable it by clicking on its checkbox located in the *Main* page. The *Advanced* page also contains two controls for adjusting how stealth mode operates. These are discussed in the *Advanced Techniques* section.



Fig. 7 - Stealth Mode

5

Drumagog Step by Step

1. Insert Drumagog onto an audio drum track

The specific instructions on how insert Drumagog onto a track vary with the particular application you're using. Generally, you would select the track you're interested in, and then click the insert button. Next, find Drumagog in the list. Drumagog will be listed as "Drumagog" in your application's plug-in list (see fig. 8).

Fixed Latency Version?

Beginning with version 4.03, Drumagog consists of two plug-ins: Drumagog and Drumagog Fixed Latency. The new Fixed Latency version reports a fixed latency of 80ms to your audio program, which makes delay compensation easier. If you're using an audio program which supports Plug-in Delay Compensation (PDC), (such as Pro Tools HD, Logic, Digital Performer, Nuendo or Cubase), you should use the Fixed Latency version, since this makes latency compensation easier for your program. If you're using non PDC hosts (such as Pro Tools LE), use the regular Drumagog version. Latency is described in more detail later in the manual.



Fig. 8 - Inserting Drumagog on an audio track

2. Select the sample of your choice

If your audio application does not automatically bring up Drumagog's graphical pages, click the Edit button on your application's insert box. Drumagog is divided into three pages, Main, Samples, and Advanced. Make sure the Main page is showing, and then select the sample you want from the sample selection box on the left (see Fig. 9). You can also choose a different sample folder by clicking the down arrow on the folder selection box (located directly above the sample selection box). To quickly select your own samples, select "Browse" from this folder selection box. More elaborate custom sample sets can be created as GOG files. Details for this procedure are discussed in the Sample Management section.



Fig. 9 – The Sample Selection Box

3. Choosing a Triggering Mode

Drumagog has three triggering modes to choose from: Simple, Live and Advanced. The default setting is “Simple” (if you’re using the Fixed Latency version of Drumagog, the default mode is “Advanced”). To choose a different triggering mode, click on the Advanced tab at the top of the plug-in window (see fig. 10). Note: If you purchased Drumagog Basic, only one triggering mode is available – Simple.

Advanced Triggering Mode is highly recommended over all the other modes, as it has superior triggering capabilities. However, it also introduces some latency, and uses more CPU than the other triggering modes. If your audio program supports Auto Delay Compensation, the latency will be of no consequence.

Simple Triggering Mode also introduces a delay, but it’s quite small and usually goes unnoticed. It strikes a good balance between CPU cost and performance.

Live Triggering Mode introduces no delay (zero latency), but it has lower accuracy in terms of dynamics. It is only recommended if using Drumagog at a live show (running on a laptop, plugged into the main board, for example). It is therefore not recommended for general use.



Fig. 10 - Triggering Modes

4. Adjust the Sensitivity and Resolution

Position your audio program’s cursor to a spot where the drum track plays, then press play on the transport. If Drumagog’s settings are correct, you should hear the new replaced drum track. If not, turn the sensitivity control until you hear the new sample being played (see fig. 11). It’s much easier to use Drumagog’s Visual Triggering feature when adjusting the sensitivity. To do this, simply click on the “Visual” button on

the main page. In the visual triggering box, your drum track will scroll from right to left, while the sensitivity and resolution controls remain superimposed on top of the audio. Adjusting the sensitivity is as easy as clicking on the horizontal line with the mouse, and dragging it up and down. When Drumagog triggers on a drum hit, the corresponding audio will have a white dot on top of its peak in the waveform. In most cases, the resolution should be left at 100ms (or “Auto” if using advanced triggering), however if the drum track you’re working with is noisy, you may want to increase this so Drumagog won’t falsely trigger. This is done by moving the resolution line right to left. When you are done adjusting using visual triggering, click the “Analog” button to return to the normal screen. For more information about visual triggering, please see chapter 6.



Fig. 11 - Adjusting the Sensitivity and Resolution

5. Bargraph, Drum Movie

As a visual aid for adjusting the triggering controls, Drumagog provides a bargraph display and the drum movie. These share the same window, located on the lower left of the main page. To switch between the two, click the appropriate icon on the top of this window. The bargraph shows the audio level of Drumagog's input and output. The drum movie shows an actual movie of a real drum being played, synchronized with the drum sample playing.



Fig. 12 – The Drum Movie

6. Adjust Sample Output Volume

Use the output knob on the Main page in conjunction with the gain knob or fader on your audio program's channel strip to adjust the volume of the samples in your mix. Drumagog's bar graph display can be used to verify if audio is being sent back to your program at the proper level.

7. Enjoy!

Using Drumagog is fun. Sit back and enjoy the ride. Consider all the time you'll be saving by having Drumagog replace your drums. Go buy yourself an ice cream sandwich.

6

Visual Triggering

Visual Triggering is a unique feature that makes adjusting Drumagog's levels fast and easy. The sensitivity and resolution controls are superimposed on top of a real-time scrolling waveform. Adjusting the controls is as simple as clicking and dragging them to the desired position. Visual triggering is enabled by clicking on the button labeled "Visual" on the main page.

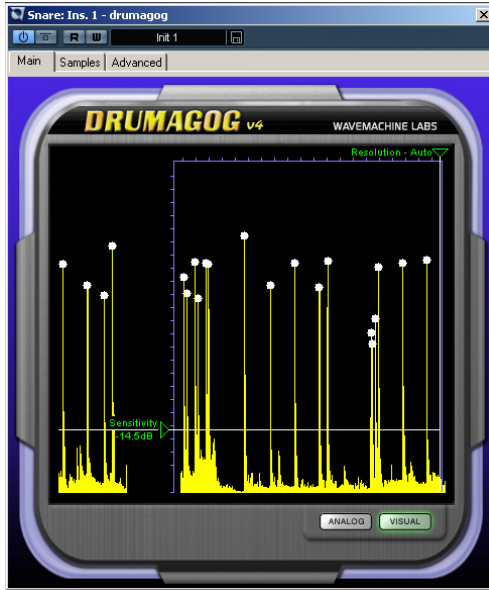


Fig. 13 – Visual Triggering

Sensitivity

Adjusting Drumagog using visual triggering is intuitive. As you can see in Fig.13, the sensitivity control is represented by a horizontal line. Any audio below this line will cause Drumagog to trigger. You can verify this by moving the sensitivity line above the peaks and observing how Drumagog no longer responds to the audio.

Resolution

The resolution control is represented by a vertical line. Moving this line right or left adjusts how long Drumagog must wait before triggering again. This is a useful control in situations where it's difficult to set the sensitivity, due to noise. If you know that your track doesn't contain any hits closer than .5 seconds apart, set the resolution to 500ms. This way, Drumagog will ignore all audio for 500ms after each hit, even if it's above

the triggering threshold level. Normally, this should be set to 80-100ms to ensure proper capturing of nuances. If using the advanced triggering mode (described later), normally set the resolution to “auto”.

Triggering Circles

Drumagog displays a white circle above each peak that caused it to trigger. This is useful in determining if Drumagog is triggering on the proper hits, or if double-triggering is occurring.

NOTE: The height of the drum circles represents the actual volume Drumagog is outputting. If dynamic tracking is turned off, the circles will always be drawn in the same place vertically. Also, if the output level is higher than 0dB, the circles will be drawn above the waveform. This provides an accurate picture of Drumagog’s output volume in relation to the original track.

7

Sample Management

On the Drumagog installation CD, you will find more than just the program itself. We have also included a sample library designed to start you off with some quality sounds using sample parameters that are pre-set to work well in most drum replacement situations. Of course we realize that there will be times when these presets might not be the best for a particular source track, or the included samples won't suit the style of the song or the tastes of the engineer and musicians. We have therefore provided the *Samples* page as a means to both modify our sample sets as well as a place to create and organize your own samples and multisamples into GOG files. This section goes into the details of these operations.

Overview

Drumagog's *Samples* page provides an easy, yet sophisticated way to view, edit and manipulate the individual samples that Drumagog uses when replacing. The *sample box* is the main component of the samples page. It's the large black box in the center of the page. There are two available views on the

samples page, the *Samples* view, and *Groups* view. In the samples view, every individual sample in the current GOG file is displayed as a colored rectangle. The groups view displays the level of each dynamic group, described later in this chapter.

The samples page is used to edit the currently loaded GOG file, or to create your own GOG files. Although Drumagog can use several sample formats, including WAV, AIF, and SDII, the real fun begins when using Drumagog own GOG format. A GOG file can contain up to 384 individual samples, arranged into three groups (dynamic, positional and hand).



Fig. 14 - The Samples Page

Dynamic Groups

A gog file contains several dynamic groups. Each dynamic group is represented as a different color. A dynamic group is a group of samples which are played when Drumagog encounters a drum hit closest in amplitude to the level of that particular

group (the levels of each dynamic group are set in the groups view).

The samples in a particular dynamic group are not played simultaneously. Instead, Drumagog randomly picks which sample to play within a particular dynamic group. This is a powerful feature, because it virtually guarantees a sample never gets played twice in a row, making the drums sound very realistic.

Positional Groups

A gog file can also be divided into several positional groups. A positional group is a group of samples representing a drum hit at a particular position (for example, the rim of the drum, or the center). The samples page divides positional groups into several “pages”, which can be selected by clicking the position arrows under the sample box (see below).



Fig. 15 - Positional Page Buttons

Hand Groups

Drumagog also features hand groups. Samples in a gog file can be assigned as left hand or right hand samples. For example, a left hand sample is a sample which only gets played when Drumagog determines that the drummer is playing the drum with the left hand. This is determined based on the speed of the incoming drum hits – as Drumagog detects fast enough playing, it starts alternating between left and right hand samples. In addition to setting a sample for left or right hand, it can also be set to “both”. This setting will cause Drumagog to play that sample regardless of the hand position.

Sample Pages

A gog file can contain up to 384 samples. However, the sample box screen only allows 48 samples to be displayed at a time. If there are more than 48 samples within a gog files, page arrows are displayed on the edges of the sample box. Pressing these arrows moves between the different sample pages. The current page number is displayed at the bottom center of the sample box (see fig. 16). The format is 1/4 (where “1” is the current page number, and “4” is the total number of pages). This should not be confused with positional group pages, described later.

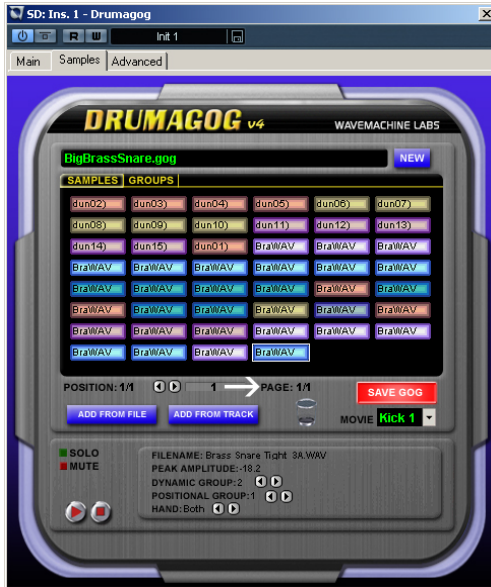


Fig. 16 - Current Page Display

An Example Gog File

To illustrate how the samples page works, let's say we have a gog file that contains 5 samples (see fig. 17). The first two samples are set to dynamic group 1 (shown in purple), and the last three are set to dynamic group 2 (shown in blue). The levels of the dynamic groups are shown in fig. 18. As you can see, the first dynamic group is set to -4dB, and the second at -15dB.



Fig. 17 - Example Gog File

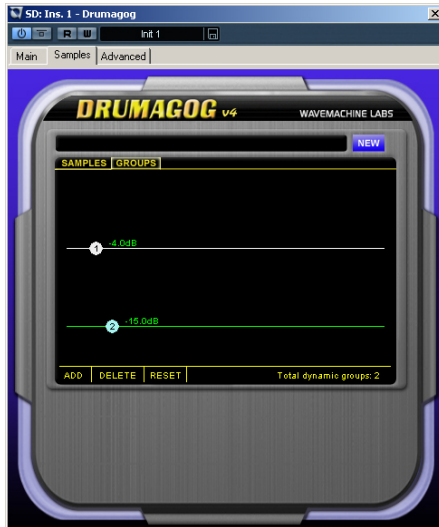


Fig. 18 - Example Dynamic Groups

In our example, because there's more than one sample in each dynamic group (two in the first group, and three in the second), Drumagog automatically makes each "extra" sample in a group a random multi-sample. This means that because the first group contains two random multisamples, Drumagog will randomly pick between these two samples when replacing, provided the volume of the drum it's replacing reaches this first dynamic group's peak amplitude. An input signal closest to -4dB will randomly trigger one of the first two samples and a signal closest to -15dB will randomly trigger one of the second three samples. Random multisamples, as well as all multisamples can be enabled or disabled altogether on the main page.

Dynamic Tracking

It is important at this point to differentiate between the dynamic groups found on the *Samples Page* and the dynamic level that Drumagog uses when playing the samples back. Dynamic groups are used to determine which sample gets played back for a given input volume. The actual volume of the samples being played back are automatically adjusted to exactly correspond to the input volumes of the sounds of the original track, thus maintaining the exact same dynamic as the original track. In other words, a -3dB snare hit will trigger Sample X, but if sample X is not a natively a -3dB sample, Drumagog will raise or lower its volume to -3dB , so it matches the original hit. The purpose of the samples page is to simply control *what* samples are played for a given input dynamic and not to control the output dynamic of the new sample. However, the dynamics of the new samples *can* be controlled with *Dynamic Tracking* settings described later in this manual.



Fig. 19 - The Sample Properties Box

Sample Properties Box

By clicking on an individual sample, the sample properties box is displayed (see above). In this box, information about the selected sample is provided.

Solo and Mute

The solo and mute buttons provide for an easy way to isolate one or more samples from a gog file. To solo or mute a sample, select the sample, then press solo or mute in the properties box. Solo and mute can also be selected by right-clicking (or control-clicking for Mac users) on a sample. The solo feature is a fast way to single out a few samples in a GOG. For example, a pop song contains a snare that sounds best at maximum dynamic throughout the song. Only the loudest few samples in the GOG can be selected for playback. Conversely, the mute function allows quick muting of a particular sample. When the dynamics are important to a performance, but the samples with the

smallest associated dynamics sound too weak, these samples can be muted with the mute button.

Dynamic Group Arrows

The dynamic group arrows can be used to manually place samples into different dynamic groups. Every time one of the arrows is pressed, the sample is “bumped” up or down to the next dynamic group. Note, that the dynamic arrows only allow you to choose from dynamic groups that already exist. In other words, if there are only two dynamic groups available (set in the groups view), the arrows only allow choosing between these two groups. They will not put a sample into a third group. Adding or deleting dynamic groups is done in the groups view.

Positional Group Arrows

As described earlier, positional multisamples are groups of samples representing different variants in the drum. An example would be hi-hat foot-petal positions, or different snare striking positions. Drumagog supports up to 16 positional groups.

The samples within a positional group are divided into separate pages. By default, positional group 1 is always displayed. To switch to a different positional page, just click on the position arrows, directly below the sample box. The current page number is displayed, along with the maximum number of positional pages in this format: 1/4 (“1” indicates the current page number, and “4” indicates the number of pages available). Each positional page can also be named. This is done by clicking on the box to the right of the position arrows. Choosing a name for a positional group is a great way to remember what position that group represents.

Note: right-clicking on the name box (or control-clicking for Mac users) brings up a menu which allows you to use the positional names from the last gog file opened. This is useful

when creating many gog files, eliminating the need for re-typing the names each time.

Note: This naming feature was not available in previous versions of Drumagog, and as a result, some older gog files may display a simple number, for example “1” instead of an actual position name when loaded.

To set up a gog file for positional multisamples, select one sample at a time, and choose its positional group by clicking on the *positional group arrows* in the sample properties box. For example, suppose we have a hi-hat gog file with 48 samples and each group of 8 samples represent a different foot pedal position. Select each sample in the first group of eight, and set the positional group to “1”. Then do the same for the other six groups.

Drumagog determines which position to play with the *position* knob on the main page. Turning this knob allows you to change positions on the fly. This is particularly useful when combined with automation, allowing the sound of the drum to change within a song.

Note: The placement of dynamic and random multi-sample groups is always relative to a particular positional group. This means that if eight samples are part of positional group one, and another eight are part of positional group two, the determination of which samples belong to which dynamic and random multi-sample groups is done *within* each positional group.

Audition Buttons

The audition buttons, located in the properties box allow auditioning of an individual sample. This is very useful when building a gog file, or choosing the perfect sample for a song. Right-clicking on a sample also provides the option for audition. In this case, right-click on a sample and select “play”.

Note: Since not all audio applications enable the plug-in audio while the transport is stopped, you may not hear any audio when auditioning while the transport is stopped. In this case, simply start your application’s transport, and move to a section of your song that contains silence. Setting your host program to loop on this silence can make it easier when building gog files.

Adding Samples

To add samples to a gog file, Drumagog provides two choices: adding a file (such as a WAV, AIF or SDII file), or adding a sample directly from the audio track Drumagog is inserted on.

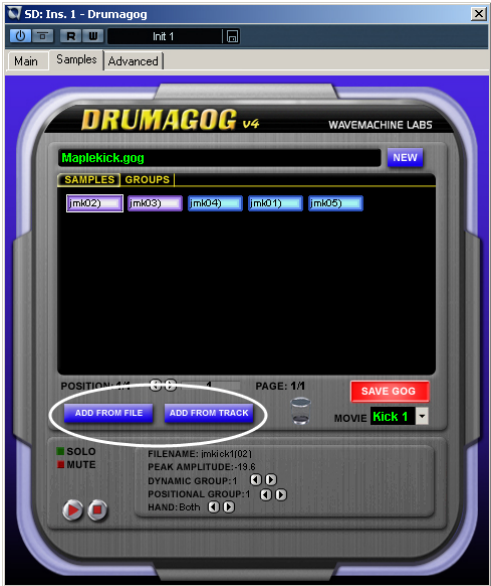


Fig. 20 - Add From File and Add From Track

Add From File

To add a sample to your gog file, click the “Add From File” button. This brings up a dialog box (see fig. 21) for choosing the appropriate file. Drumagog supports WAV, AIF, SND,

SDII, and GOG files. Choose a file, then press *Open*. Drumagog adds this file to the sample box. To select multiple files, simply hold down the *Ctrl* key on your keyboard while clicking each sample. “Add from file” is also available by right-clicking anywhere in the sample box.

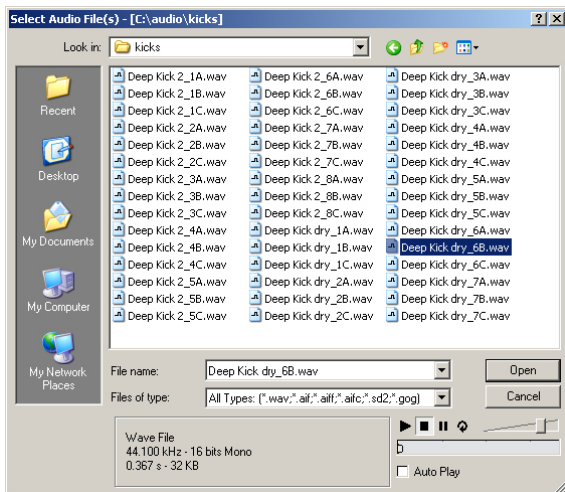


Fig. 21 - Add From File

Add From Track

To add a sample from your existing audio track, press “Add From Track” (see fig. 20). This brings up a box that allows you to record a sample directly from the audio track Drumagog is currently inserted on (see fig. 22). Select the number of samples you want to add from the selector on top of the box. Then press *Record*. The status box will display “Listening”. Now position your audio app’s cursor to a location before the drum you want to sample (a second of silence before the drum is sufficient). Next, press play on your app’s transport. The status display will change to “Recording Sample 1”. Note: add from track is not available in Drumagog Basic.

When it's done recording, the status display will change to "Recorded". You may need to adjust the Threshold and Input controls to achieve the proper triggering, however a setting of --14.5 for the threshold, and 0dB for the input works well for most tracks. Please note that the audio track should be as noise free as possible. Processing the track with a gate is a good idea if noise is a problem.



Fig. 22 - Add From Track Box

Creating a New GOG File

To create a new GOG file, click the "New" button located on the upper right of the sample page. This clears the current sample box, and creates a new GOG file. At this point, you can add samples to this new GOG file using the "Add from file", or "Add from track" buttons. To save the GOG file when finished, press the "Save GOG" button.

When a new gog file is created, it is automatically assigned 8 dynamic groups. Changing the levels of these groups, or adding/deleting dynamic groups can be done in the groups view.

Deleting Samples

Removing a sample from the sample box is accomplished by dragging the sample into the recycle bin, located in the center of the samples page (see fig. 23). Deleting a sample from the sample box does *not* permanently delete it from the hard drive. Right-clicking on a sample also provides an option for deleting a sample.



Fig. 23 - Recycle Bin

Exporting gog samples

Individual gog samples can be exported to wav format by right-clicking (or control-clicking for Mac users) on a sample and choosing "export to WAV". A dialog box is presented for selecting the folder to copy the wav file to. By right-clicking on the sample box itself (on the black space where there are no samples) allows you to export *all* the samples in the gog file to a

folder. The wav files that are created are 32-bit float wav files, and are either stereo or mono, depending on the sample being exported.

Choosing a new sample

By right-clicking (or control-clicking for Mac users) on a sample (see below) and selecting “choose new sample”, a new file can be chosen for that particular sample. This is simply a time-saving function to be used instead of deleting a sample and adding a new one using “add from file”.



Fig. 24 - Right-clicking on a sample

Naming a GOG File

A GOG file can be named (or renamed) by clicking in the edit box that contains the name of the file (see fig. 25). Note that renaming a GOG file actually makes a second copy of the file with the new name. If you wish to delete the first file, use the delete control in the Main page (right click on a gog file in the sample selection box and choose delete).



Fig. 25 - Naming a Gog File

Selecting a Drum Movie

You may choose a drum movie for the current GOG file by clicking on the "Drum Movie" box, and selecting a movie (see fig. 26). Pressing "Save GOG" makes this selection permanent for that GOG file.



Fig. 26 - Selecting a movie

Sample Groups View

The sample groups view enables you to view and modify the dynamic groups contained in your gog file. To switch to the groups view, click the “groups” text above the sample box (see fig. 27). The groups view is similar to the visual triggering view on the main page. It displays a real-time scrolling waveform with the group levels superimposed on top of the waveform. The level of each dynamic group can be changed by simply clicking on the circle for a particular group and dragging the line to the new level. To add more dynamic groups, press the “Add” button at the bottom. To delete a dynamic group, first select it by clicking on its circle, then press “delete”.

Pressing “Reset” brings up a menu which allows you to reset the dynamic groups to certain pre-set levels(see fig. 28). For example, choosing “16 Dynamic Levels” deletes all the current dynamic groups and creates 16 groups with equally spaced amplitude levels. Note: making changes to the dynamic groups does not add or delete any actual samples, it simply changes the dynamic groups that samples can belong to, and their levels.



Fig. 27 - Sample Groups View

If, when deleting a dynamic group, Drumagog discovers that a sample in your gog file uses that group, it automatically re-assigns that sample to the next closest group.

Auto-assigning samples to groups

Drumagog has the ability to automatically assign samples to groups. This is done by selecting “Auto assign all samples to current groups” in the reset menu described above. Choosing this option will cause Drumagog to examine each sample in your

gog file, and assign it to the closest group in amplitude based on that sample's peak amplitude. This makes it fast and easy to create new gog files, as long as the files you're using are not normalized (brought to the same level peak level) beforehand.

Copy from last gog

Selecting the “Copy from last gog” option in the reset menu sets the dynamic groups to the same levels as the last gog file that was opened. This makes creating large numbers of gog files easier, since the dynamic levels can be copied from one gog to another without having to re-create them.

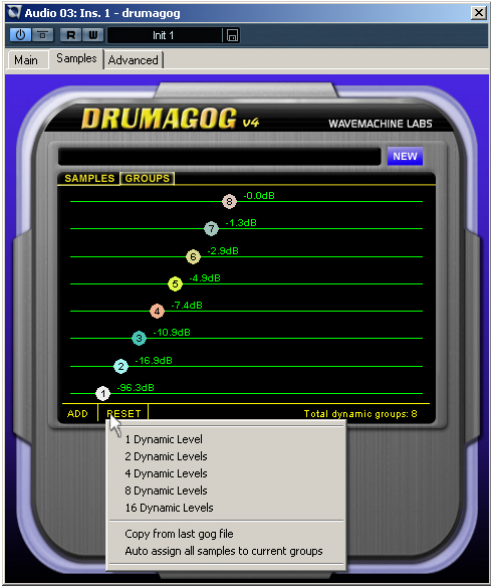


Fig. 28 - Reset Menu

8

MIDI Features

Drumagog's MIDI implementation adds a new level of expandability to its extensive sample playback capability. Using MIDI, it's possible to have Drumagog play your favorite external drum machine, synthesizer, or software-based sampler such as BFD and DFHS every time it detects a drum hit. Drumagog can also accept a MIDI input signal, to use its internal samples as a sound source. The MIDI features are accessed through the *Advanced* page.

Note: MIDI features are not available in Drumagog Basic.

Midi Output

Due to the fact that MIDI output from a plug-in is not directly supported on most audio applications, Drumagog's MIDI output is not as accurate as its audio mode. The timing of MIDI notes generated from Drumagog may be off by as much as a few milliseconds.

Drumagog's MIDI output implementation is different depending on which program you're using it in. Please see the appropriate section below.



Fig. 29 - MIDI Settings

Pro Tools:

External MIDI device

To send MIDI directly to an external device (connected to a MIDI interface), please follow these steps:

1. Enable MIDI output on Drumagog's advanced tab.
2. Choose the appropriate MIDI port from the drop-down list.
3. Choose a MIDI note and channel.
4. On your MIDI device (drum machine, synthesizer, etc.), choose the same MIDI note and channel number.

Drumagog will output MIDI from your selected MIDI interface.

Note: Drumagog will also continue to output its internal samples the normal way, even when MIDI is enabled. You may wish to turn down this output using the Output control on Drumagog's *Main* page.

Virtual Instruments

To send MIDI to a virtual instrument, such as BFD, DFHS, Halion, Giga Studio, etc. a virtual MIDI cable is required in order to route the MIDI properly. A virtual MIDI cable routes MIDI data from one program to another. The procedure is different for Mac and PC users. Please see the appropriate section below:

PC:

1. Download and install a virtual MIDI cable program (not included). A free program called Midi Yoke does a good job (www.midiox.com).
2. Enable MIDI output on Drumagog's advanced tab.
3. On Drumagog's MIDI port drop-down box, choose your virtual MIDI cable port (for example MIDI Yoke Port 1).
4. Choose a MIDI note and channel.
5. On your virtual instrument (for example BFD), choose the same MIDI port (MIDI Yoke Port 1), note and channel number.

Mac:

OSX 10.3.9 and later contains a built-in virtual MIDI cable called *IAC*. We do not recommend using this feature, as it causes problems when used with some audio applications. Instead, we recommend using a program called Midi Pipe (<http://homepage.mac.com/nicowald/SubtleSoft>). Please follow these instructions for using Drumagog with MIDI Pipe.

1. Download and install MIDI Pipe.
2. Launch Midi Pipe, and then drag an input and output from the left window to the right window. The right window should now have only two lines listed: "MIDI In" and MIDI Out". Make sure they are in that order (IN first, then OUT).
3. Important: Leave MIDI Pipe open - don't close it.
4. Enable MIDI output on Drumagog's advanced tab.
5. On Drumagog's MIDI port drop-down box, choose the MIDI Pipe port. NOTE: Midi Pipe labels its ports backwards, so choose "MIDI Pipe Input" in this box.
6. Choose a MIDI note and channel.
7. On your virtual instrument (for example BFD), choose the MIDI Pipe port (again, they are backwards, so choose "MIDI Pipe Output"). Also choose the same note and channel number as you selected in Drumagog.

Drumagog will output MIDI from your selected MIDI interface. Note: Drumagog will also continue to output its internal samples the normal way, even when MIDI is enabled. You may wish to turn down this output using the Output control on the *Main* tab.

VST Applications (such as Nuendo, Cubase, Sonar):

If your audio application directly supports MIDI output from a plug-in (Nuendo, Cubase for example), using MIDI output is easy:

1. Enable MIDI output on Drumagog's advanced tab.
2. Choose "Internal Port" from Drumagog's MIDI port drop-down list.
3. Choose a MIDI note and channel.
4. On your audio application, create a new MIDI track.
5. On this new MIDI track, choose "Drumagog" as the MIDI input. Also, choose the appropriate MIDI output port (if you're sending MIDI to a virtual instrument, such as BFD, choose BFD).

If your audio application **does not** directly support MIDI output from a plug-in (Cakewalk and Sonar for example), you will need to use a virtual MIDI cable (not included). A virtual MIDI cable routes MIDI data from one program to another. The procedure is different for Mac and PC users. Please see the appropriate section below:

PC:

1. Download and install a virtual MIDI cable program. A free program called Midi Yoke does a good job (www.midiox.com).
2. Enable MIDI output on Drumagog's advanced tab.
3. On Drumagog's MIDI port drop-down box, choose your virtual MIDI cable port (for example MIDI Yoke Port 1).
4. Choose a MIDI note and channel.
5. On your virtual instrument (for example BFD), choose the same MIDI port (MIDI Yoke Port 1), note and channel number.

Mac:

OSX 10.3.9 and later contains a built-in virtual MIDI cable called *IAC*. We do not recommend using this feature, as it causes problems in some audio applications. Instead, we

recommend using a program called Midi Pipe
(<http://homepage.mac.com/nicowald/SubtleSoft>)

1. Download and install MIDI Pipe.
2. Launch Midi Pipe, then drag an input and output from the left window to the right window. The right window should now have only two lines listed: "MIDI In" and MIDI Out". Make sure they are in that order (IN first, then OUT).
3. Important: Leave MIDI Pipe open - don't close it.
4. Enable MIDI output on Drumagog's advanced tab.
5. On Drumagog's MIDI port drop-down box, choose the MIDI Pipe port. NOTE: Midi Pipe labels its ports backwards, so choose "MIDI Pipe Input" in this box.
6. Choose a MIDI note and channel.
7. On your virtual instrument (for example BFD), choose the MIDI Pipe port (again, they are backwards, so choose "MIDI Pipe Output"). Also choose the same note and channel number as you selected in Drumagog.

MIDI Input

Drumagog's MIDI input is useful for playing Drumagog's internal sounds from another device, such as a keyboard or MIDI track. Please follow these steps to set up Drumagog's MIDI input:

1. On Drumagog's *Advanced* tab, choose MIDI Input enable.
2. On the MIDI port drop-down box, choose "Internal port".
3. Choose a MIDI note and channel.
4. On your audio application, create a new MIDI track.
5. On this new MIDI track, choose "Drumagog" as the MIDI output. If you're sending MIDI to Drumagog from an external device, choose the appropriate MIDI input port on this track.

NOTE: While Drumagog's MIDI Input is enabled, Drumagog will not trigger on any audio itself. Please remember to disable MIDI input before continuing to use Drumagog for normal audio triggering.

9

Advanced Techniques

All About Latency

Drumagog, like many other plug-ins has to *look ahead* while it's working, in order to more accurately trigger on an incoming drum hit. Any time a plug-in needs to look ahead, it causes a delay, or *latency* in the audio for that particular track. Many modern audio programs compensate for this latency automatically. This is called Automatic Delay Compensation, or ADC.

If you own one of these audio programs (for example, Pro Tools HD, Logic, Digital Performer, Nuendo, and Cubase), you don't need to worry about latency, because it's taken care of completely by the audio program. However, some programs do not support ADC (for example Pro Tools LE). When using a program which doesn't support ADC, you must manually move the track (nudge) by the amount of delay Drumagog generates. For convenience, Drumagog lists the amount of latency it's generating on the main page (see fig. 30).



Fig. 30 - Total Latency

Fixed Latency Version

Beginning with version 4.03, Drumagog consists of two plug-ins: *Drumagog* and *Drumagog Fixed Latency*. The new Fixed Latency version reports a fixed latency of 80ms to your audio program, which makes delay compensation easier. If you're using an audio program which supports ADC, you should use the Fixed Latency version. Doing so keeps the latency constant, even if you switch triggering modes, making it easier for your audio program. If you're using a non ADC program (such as Pro Tools LE), use the regular Drumagog version.

Delay Compensation in Pro Tools HD

If you own Pro Tools HD, please follow these instructions for setting up your Auto Delay Compensation. Doing so will make Drumagog work well in your system.

1. In Pro Tool's Playback Engine settings, set the Delay Compensation Engine to "Long (4095 Samples per channel)".

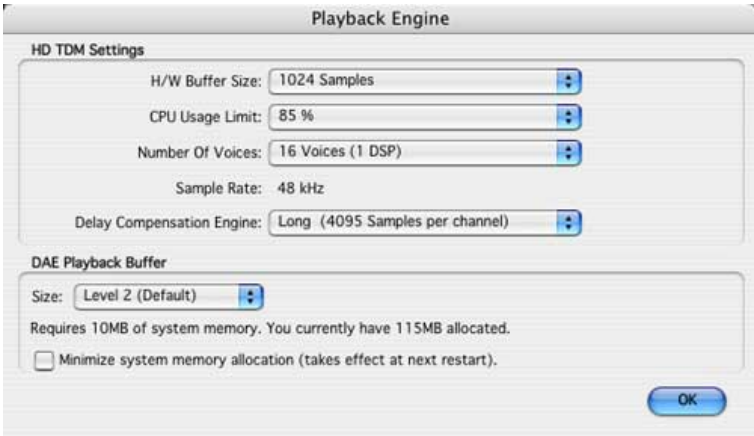


Fig. 31 - Setting up ADC in Pro Tools HD

2. Once you've done this, make sure you actually enable ADC in the Operations menu, as shown below:



Fig. 32 - Enabling ADC in Pro Tools HD

Trigger Filter

Most drum tracks are easy to replace, but on occasion there may be excessive bleed from other instruments, which cause problems when triggering. Drumagog contains a trigger filter for use in these cases. This filter, located on the main page enables you to fine-tune the frequency range of interest, making the desired drum easier for Drumagog to replace. Drumagog's trigger filter has four modes: hi-pass, low-pass, bandpass and notch.



Fig. 33 - Trigger Filter

To use the filter, just press the filter mode button until it displays the mode you want. Next, set the frequency of the filter and the level to their desired settings. To hear what the filter is doing to the incoming audio, press the Audition button. This allows you to hear the filter in action.

Note: remember to disable the audition button when you're done auditioning the filter, as you won't be able to use Drumagog in the normal way when it's engaged.

In general, a hi-pass filter is useful when replacing snare drums, and a low-pass filter when replacing bass drums. The notch and bandpass filters can be used in cases where the bleed from other instruments is so severe that it overlaps the frequency range of the drum you're interested in. In these cases, you can concentrate the bandpass filter on an area of the drum that's less overlapped, and raise that level.

The filter also has adjustable Q, or bandwidth. This can be adjusted by pressing the Q button first, then adjusting the knob above it.

Note: the filter doesn't actually change the audio of the samples being output, it filters the incoming audio, making it easier to trigger

Although Drumagog is designed for use on separate drum tracks (snare drum on one track, bass drum on another, etc.), by using the trigger filter, it's possible to use Drumagog to replace drums on a mixed stereo drum track. To do this, make two exact copies of the mixed drum track and insert Drumagog on both copies. Next, set the first Drumagog's trigger filter to low pass, and the second Drumagog's filter to hi-pass. With some careful adjustments, the first Drumagog should trigger only on the bass drum, while the second only on the snare drum.

Synth

Drumagog features a built-in synthesizer, which can be used to add tones or noise to existing samples (see fig. 34). This feature can be particularly useful for adding low frequency rumble to a bass drum. Note: the synth function is not available in Drumagog Basic.

To use the synth, first enable it by clicking on the mode button. The mode button enables switching between 10 modes: Off, Sine, Square, Sawtooth, Triangle, Triangle 2, Triangle 3, White Noise, Pink Noise, and Filtered Noise.

To change the frequency of the synth, first press the “F” button, then adjust the control to the desired frequency. The synth level is set by pressing the “L” button, then adjusting the control.

Attack and Decay are set by pressing “A” or “D”, then making an adjustment using the control. Setting the control to the “Trk” setting allows Drumagog to automatically follow the attack of the incoming audio.

The “M” button enables adjustment of the overall synth mix. Setting the control between 0% and 100% adjusts the mix of synth to sample audio.



Fig. 34 - Synth

Auto Align

Normally, Drumagog starts playing its samples immediately upon detecting a drum hit. This works in many cases, but often the samples don't line up perfectly in the end. This is simply due to the fact that every drum has unique acoustical characteristics, and some drums don't present their peak immediately upon playback. Auto align is designed to solve this problem. Note: Auto align is not available in Drumagog Basic. When auto align is enabled, Drumagog automatically phase-aligns the incoming hit with the sample you've chosen every time. Note: Even though the samples may be perfectly aligned, the entire track may be off due to Drumagog's latency. This shouldn't present a problem, because this latency is always consistent. Moving the track back by the amount shown in Drumagog's "total latency" display solves any latency issues (if your audio program supports Plug-in Delay Compensation, this is done automatically).

Auto align has several options which can be set in the advanced tab (see fig. 35).

Psycho-acoustical / Actual Peak:

By default, Drumagog's auto align feature will align the sample being used with the incoming hit's peak using a psycho-acoustical formula. This results in an alignment which sounds correct to the human ear, even though it may not be aligned exactly to the sample. Usually, this mode works best. However, if you find that the sample sounds out of phase, choosing Actual Peak will align the sample based on the exact position of the peak.

Optimize for Bass Drums or Snare Drums

Auto Align can optimize its algorithm specifically for bass drums or snare drums. Normally, the bass drum setting works well for most samples.



Fig. 35 - Auto-Align Options

Auto Ducking



Fig. 36 - Auto Ducking Controls

Often it's not enough to just replace the drums on a track. Sometimes there are tracks that still contain bleed from the original drum. Auto-ducking can solve this problem. It's a feature used to "duck" audio in one track based on a trigger in another track. Auto-ducking is great for removing the snare drum from overhead tracks, or for quieting a loud hi-hat track. With auto-ducking, it is possible to remove virtually every trace of an old sound from a recording without damaging the tonality of the spillover tracks with destructive EQ. Several "ducking groups" are provided, so that, for example a snare could be removed from an overhead track at the same time a kick drum is removed from a tom track. The two would use different groups. The auto-ducking controls are located in the Advanced page (see fig. 36). To use it, follow these simple steps:

1. Enable auto-ducking on the track that contains the source for the trigger, by setting it to send. For example, if your goal were to remove a snare from overhead tracks, the source track would be the snare track. Also, set the ducking group to "A".
2. On the tracks you want to duck, set auto-ducking to receive. These would be the overhead tracks in our example. Set the ducking group to "A" also.
3. Adjust the ducking response and ducking time controls to suit your needs.
4. Drumagog will now automatically duck the overhead tracks every time a snare hit is heard.

Note: Both the ducking response and ducking time controls should be adjusted on the receiving track(s). They have no effect on the send track.

Ducking Group

The ducking group selector is useful in situations where many auto-ducking instances are used at once. For example, you may want to auto-duck the snare from the overhead tracks, and at the same time, duck the bass drum from the tom tracks. Just make sure that each pair is set to the right group.

More than one track can be used as a trigger source, and more than one track can be used to receive one trigger, too. There's no limit to how many tracks can be set to the same group.

Ducking Response

The Ducking Response control is used to adjust how much Drumagog should "look ahead" for the trigger. In most cases this should be set to 1. When using higher values, a delay is introduced, which may cause phase problems when mixing with other tracks.

Ducking Time

The Ducking Time control adjusts how long Drumagog will duck after it receives a trigger. This should be adjusted to completely notch-out the unwanted audio, while still preserving the other instruments in the track. 3000-5000 usually does the trick.

Ducking Level

Use this control to adjust how much ducking should be applied. 0dB provides no ducking at all, and -96dB ducks the full amount. Start at 0dB, and move the control until the unwanted audio can't be heard.

Polyphony



Fig. 37 - Polyphony Settings

The polyphony control, located in the advanced page, controls how Drumagog outputs multiple drum hits (see fig. 37). Drumagog is capable of playing up to 256 samples at the same time. It's useful to have polyphony when replacing drums, because if a drum sample is triggered while another one is still playing, Drumagog will continue to play the first one (and up to 255 more) while the new one is played. There are seven polyphony modes available: 2, 4, 8, 16, 32, 256, and *Cymbal*. 16 is the default mode, because in most cases, drum parts will decay long before 16 notes could be played at once. However, in cases where it's desirable, other modes are provided. In the cymbal mode, the current sample is choked, or stopped when another one is played. This is useful in replacing cymbals.

Note: Care must be taken when using large polyphony settings, as playing long samples can easily overload a system's CPU resources.

Auto Sample Rate Conversion

Auto Sample Rate Conversion is a very useful feature which automatically re-samples your gog files, as you use them to match your project's current sample rate. To use this feature, simply enable it in the *Advanced* page (see fig. 38). Please note, that using Auto Sample Rate Conversion will make loading samples slower, because it does the conversion upon loading (instead of eating up valuable CPU time while you're playing the samples).



Fig. 38 - Sample Rate Conversion

Stealth Mode Controls

The *Advanced* page contains two controls for adjusting how *Stealth mode* operates (see fig. 39). These are *Stealth Response*, and *Stealth Crossfade*. Normally, *Stealth mode* works great with the default settings. However, sometimes you may wish to fine-tune its operation.

Stealth Response

This control is used to adjust how fast *Stealth Mode* responds to an incoming drum hit, on a scale of 1 to 100. The higher the number, the better the response. However, there is a tradeoff. The higher the number, the more of a delay that will be introduced into the replaced track.. A value of 30 works fairly well and only introduces an additional delay of 0.6ms (this delay is automatically compensated for if your audio program supports ADC).

Stealth Crossfade

Stealth Crossfade adjusts how long Stealth Mode takes to crossfade the original track back in, after the replaced drum hit is played. On tracks with very long-decaying drum hits, choose a larger number, so that none of the original sound is heard. A value of 95 works well in most cases



Fig.39 - Stealth Mode Controls

Dynamic Tracking

The Dynamic Tracking control, located in the *Advanced* page (see fig. 40), adjusts how well Drumagog tracks the dynamics of the incoming track. At 100%, Drumagog will use exactly the same amplitude for the replaced drum sound as is found in the original drum track. At 0%, the replaced sound is at a constant volume.

Normally, 100% is used. Changing dynamic tracking to a value other than 100% is an effective means to control overly dynamic tracks without the artifacts imparted by traditional compression. It also works well “upstream” from a compressor, when the compressed effect is desired, but not at the level required to achieve the desired dynamic control.



Fig. 40 - Dynamic Tracking Control

10

Control Descriptions

Main Page



Fig. 41 - The Main Page

Input Control

The input control adjusts the level of audio entering Drumagog's triggering engine. The input control can also be used to force Drumagog to choose different multisamples, because Drumagog uses the volume of the incoming audio to determine which sample to use. Input is adjustable from -96.3 to +4dB

Sensitivity Control

This control adjusts Drumagog's trigger threshold. Setting it too low causes Drumagog to false trigger, while setting it too high causes missing notes.

Resolution Control

This adjusts how Drumagog rejects samples that are too close together. If you set it for 1 second (1000 ms), Drumagog will not retrigger for another second after triggering on a drum. This is useful in cases where the track is very noisy, and using the sensitivity control alone proves to be difficult.

Output Control

This controls Drumagog's audio output level. Output is adjustable from -96.3 to +4dB

Phase Control

The phase control is used to make fine adjustments to the output phase. Unlike standard phase controls, which only allow 0 or 180 degree phase shifts, Drumagog's phase control allows a greater range of phase adjustment. This is accomplished by varying the amount of signal delay (from 0 to 30 samples) at Drumagog's final output. While it is difficult to determine the exact phase that a given delay amount will shift for a particular instrument, it's best to experiment by turning the phase knob while listening for phase changes to find the "sweet spot". Note: the phase control is not available in Drumagog Basic.

Filter

This feature enables a filter to be used before it gets to

Drumagog's triggering engine. This is useful for tracks that have a lot of bleed from other instruments. The Audition button lets you hear what's actually being applied to the audio before it reaches the triggering engine.

Position Control

This control is used in conjunction with a sample set that contains positional multisamples. Positional multisamples are groups of multisamples used to represent the different stick striking positions. The position control selects which multi-sample should be played from that layer. For example, if a ride cymbal sample that contains positional multisamples is used, the position control can be used to control where the drummer plays the cymbal. Moving the control to "Edge" selects a spot 2" away from the edge, while "Bell" selects the bell of the ride. The position names can be edited on the samples page. The naming feature was not available in previous versions of Drumagog, and as a result, some older gog files may display a simple number, for example "1" instead of an actual position name.

Blend Control

This control adjusts the balance between the original audio and the replaced audio. A setting of 100% outputs only the replaced audio, while a setting of 0% outputs the original, unchanged audio.

Pitch Control

The pitch control is used to alter the pitch of the sample. The pitch can be adjusted from -100% to +100%. Note: pitch control is not available in Drumagog Basic.

Visual Triggering Button

Pressing this button allows you to use the new Visual Triggering Feature. This provides a window with a scrolling audio display that enables adjusting of the sensitivity and resolution in relation to the image of the scrolling audio.

Use Dynamic, Random and Positional Multisamples

These checkboxes enable or disable Drumagog's utilization of these multisamples (if the currently loaded gog file supports them). Dynamic multisamples represent a drum at different volumes. Random multisamples are multiple samples of the same drum at the same volume which alternate randomly to provide a more realistic sound. Positional multisamples are samples of a drum at different stick playing positions (for example rim shot or side stick).

Dynamic Tracking

Turning off Dynamic Tracking makes Drumagog ignore all dynamic (volume) information for the incoming audio. To further control the incoming dynamics, please use the Dynamic Tracking control, located on the advanced tab.

Stealth Mode

Stealth mode allows the previous audio to bleed through, except upon a trigger. This is useful for letting the hi-hat go through, while just replacing the snare.

Auto Align

When enabled, Drumagog automatically phase-aligns the incoming hit with the sample you've chosen. Note: Auto align is not available in Drumagog Basic.

Use Left/Right Hand Samples

If the currently loaded GOG file supports left/right hand samples, checking this option causes Drumagog to automatically choose between left and right samples, depending on the speed of the incoming hits. When it detects that the hits are fast enough, Drumagog alternates between left and right samples automatically. This speed threshold can be set in the advanced page (under Hand Timing).

Drum Movie

Although really only a fun visual gimmick, the drum movie is useful as a visual indication of a trigger. It plays a short sequence of frames, depicting an actual drummer playing the drum. Using the drum movie does not utilize any more cpu cycles, as it runs in a low priority thread.

Bargraph

The bargraph display is useful for determining the audio levels for both the input and output of Drumagog. To view the bargraph, click on the bargraph icon.

Moving or Renaming gog files and folders

By right-clicking (or control-clicking for Mac users) on the folder and sample selection boxes, several options are available, such as: deleting, renaming, moving gog files and sample folders.

Synth

Drumagog features a built-in synthesizer, which can be used to add tones or noise to existing samples. This feature can be particularly useful for adding low frequency rumble to a bass drum. Note: the synth function is not available in Drumagog Basic.

Samples Page

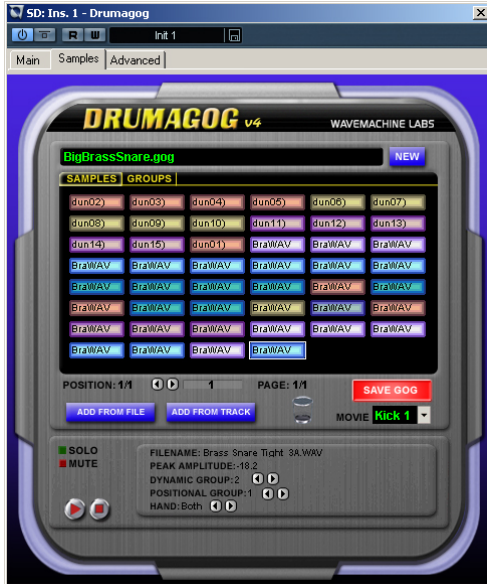


Fig. 42 - The Samples Page

Sample Box

The sample box provides a visual indication of all the samples that are currently part of the gog file being using. Every individual sample is represented as a colored box, with each color representing the dynamic group the sample belongs to. Drumagog supports up to 384 samples per gog file. To change a sample's properties, click on the sample. The box that appears below is called the sample properties box. In this box, the following controls are present:

Dynamic Group Arrows

These buttons allow you to manually change which dynamic group the sample should belong to. Dynamic groups are set up in the groups view screen.

Positional Group

These buttons select which positional group each sample should belong to.

Hand

These buttons determine whether a sample should be designated as a left-hand sample, a right-hand sample, or both. When the “Use left/right hand samples” checkbox is enabled on the main page, this function causes Drumagog to automatically alternate between left and right hand samples when the incoming hits are fast enough.

Add From File

This button lets you add a sample (or samples) from the hard drive. Only WAV, AIF, SND, SDII and GOG files are supported. Make sure to press the ‘new’ button first, unless you want Drumagog to add these samples into your current gog file.

Add From Track

This feature allows you to grab audio right from your existing audio track. To use it, simply select the number of samples to add, and press record. After it’s done, close the box and you’ll see your new samples in the sample box. Note: add from track is not available in Drumagog Basic.

Play and Stop Buttons

These buttons allow auditioning of a sample. This feature only works when your audio application enables its plug-ins. Many applications only enable plug-ins while the transport is playing.

Save Gog

This button saves the current gog file in the sample box onto your hard drive.

Movie

This box lets you pick a different movie for the Drum Movie on the main page.

Recycle Bin

The recycle bin lets you delete samples out of the sample box. Simply drag a sample from the sample box to the recycle bin to delete a sample. Note: Deleting a sample by dragging to Drumagog's recycle bin does not permanently delete the sample. It only removes it from the current gog file.

New

Creates a new gog file and empties the sample box..

Advanced Page



Fig. 43 – The Advanced Page

Triggering Engine

Drumagog has three triggering modes to choose from: Simple, Live and Advanced. The default setting is “Simple” (if you’re using the Fixed Latency version of Drumagog, the default mode is “Advanced”). These modes change the method Drumagog uses to trigger on an incoming hit. Usually, the default mode works fine, but in some cases you may find that a different triggering mode works better for your particular situation. Note: If you purchased Drumagog Basic, only one triggering mode is available – Simple.

Each triggering mode also has an adjustment slider next to it. The function of this slider is different, depending on the triggering mode chosen.

Advanced Triggering Mode is highly recommended over all the other modes, as it has superior triggering capabilities. However, it also introduces some latency, and uses more CPU than the other triggering modes (if your audio program supports Auto Delay Compensation, the latency will be of no consequence). In this mode, using the slider changes the amount of detail Drumagog will trigger on. If the slider is set to the right, Drumagog will pick up all the nuances of a drum, including “ghost notes”, etc. However, if the slider is set too far to the right, it may falsely trigger, picking up too much detail. Moving the slider to the left reduces the amount of detail, useful for noisy tracks. Setting the slider in the middle usually provides the best balance.

Simple Triggering Mode also introduces a delay, but it’s quite small and usually goes unnoticed. It strikes a good balance between CPU cost and performance. In this mode, the slider changes the amount of latency Drumagog uses to “look ahead”. This latency is shown below the slider for your information. While normally it’s a good idea to minimize latency (especially if you’re using an audio program which doesn’t support ADC, like Pro Tools LE), having the latency set too low will cause Drumagog to trigger less accurately. In other words, the slider position strikes a compromise between triggering accuracy and latency. While there is no “ideal” setting, 4ms provides a good balance.

Live Triggering Mode introduces no delay (zero latency), but it has lower accuracy in terms of dynamics. It is only recommended if using Drumagog at a live show (running on a laptop, plugged into the main board, for example). It is therefore not recommended for general use. In this mode, the slider controls a balance between accuracy and tracking speed. Setting the slider towards the right will cause Drumagog to respond to changes in dynamics faster. Setting the slider towards the left provides for higher triggering accuracy. Setting the slider in the middle is usually good in this mode.

Auto Align

Psycho-acoustical / Actual Peak

By default, Drumagog's auto align feature will align the sample being used with the incoming hit's peak using a psycho-acoustical formula. This results in an alignment which sounds correct to the human ear, even though it may not be aligned exactly to the sample. Usually, this mode works best. However, if you find that the sample sounds out of phase, choosing *Actual Peak* will align the sample based on the exact position of the peak.

Optimize for Bass Drums or Snare Drums

Auto Align can optimize its algorithm specifically for bass drums or snare drums. Normally, the bass drum setting works well for most samples.

Hand Timing

The hand timing control is used in conjunction with Drumagog left/right hand sample support (see the section on Sample Management). This control sets the speed at which Drumagog starts using left and right samples. If the incoming hits are faster than this setting, Drumagog alternates between left and right hand samples. Note: the samples will still be played back at the original intended speed. This control simply tells Drumagog when to start using left/right samples. In order to use left/right samples, the currently loaded gog file must support them. Also, the "Use Left/Right Samples" checkbox must be enabled in the main page. In most cases, 670ms is a good setting.

Midi Output Controls

Please see the Advanced Techniques section for more information on MIDI.

Note: MIDI features are not available in Drumagog Basic

MIDI Input Enable

Enables MIDI Input

MIDI Output Enable

Enables MIDI Output

Port

Select the MIDI port to use for output

Channel

Selects the MIDI channel

Note

Selects the MIDI note

Auto Ducking Controls

Ducking Mode

The ducking mode can be set to “Off”, “Send”, or “Receive”. Setting it to “Send”, allows the current instance of Drumagog to send ducking information to other copies of Drumagog located on separate tracks. Setting this mode to “Receive” makes a given instance of Drumagog “duck” the audio based on a trigger signal it receives from another Drumagog instance located on a separate track that has its Auto-ducking mode set to “Send”.

Ducking Group

The ducking group selector is useful for situations where many auto-ducking instances are used at once. For example, you may want to auto-duck the snare from the overhead tracks, and at the same time, duck the bass drum from the tom tracks. Just make sure that each pair is set to the same group. More than one track can be used as a trigger source, and more than one track can be used to receive one trigger, too. There's no limit to how many tracks can be set to the same group.

Ducking Response

The Ducking Response control is used to adjust how much Drumagog should "look ahead" for the trigger. In most cases this should be set to 1. When using higher values, a delay is introduced, which may cause phase problems when mixing with other tracks. This control is only visible when the ducking mode is set to receive.

Ducking Time

The Ducking Time control adjusts how long Drumagog will duck after it receives a trigger. This should be adjusted to completely notch-out the unwanted audio, while still preserving the other instruments in the track. 3000-5000 usually does the trick. This control is only visible when the ducking mode is set to receive.

Ducking Level

Use this control to adjust how much ducking should be applied. 0dB provides no ducking at all, and -96dB ducks the full amount. Start at 0dB, and move the control until the unwanted audio can't be heard.

Stealth Mode Controls

Stealth Response

This control is used to adjust how fast Stealth Mode responds to an incoming drum hit, on a scale of 1 to 100. The higher the number, the better the response. However, there is a tradeoff. The higher the number, the more of a delay that will be introduced into the replaced track.. A value of 30 works fairly well and only introduces an additional delay of 0.6ms (this delay is automatically compensated for if your audio program supports ADC).

Stealth Crossfade

Stealth Crossfade adjusts how long Stealth Mode takes to crossfade the original track back in, after the replaced drum hit is played. On tracks with very long-decaying drum hits, choose a larger number, so that none of the original sound is heard. A value of 95 works well in most cases

Other Controls

Dynamic Tracking Control

The Dynamic Tracking control adjusts how well Drumagog tracks the dynamics of the incoming track. At 100%, Drumagog will use exactly the same amplitude for the replaced drum sound as is found in the original drum track. At 0%, the replaced sound is at a constant volume (provided the Dynamic and Random multisamples are turned off, too). Normally, 100% is used.

Polyphony Mode

The polyphony control adjusts how Drumagog outputs multiple drum hits. Drumagog is capable of playing up to 256 samples at the same time. It's useful to have polyphony when replacing drums, because if a drum sample is triggered while another one is still playing, Drumagog will continue to play the first one (and up to 255 more) while the new one is played. There are seven polyphony modes available: 2, 4, 8, 16, 32, 256, and *Cymbal*. 16 is the default mode, because in most cases, drum parts will decay long before 16 notes could be played at once. However, in cases where it's desirable, other modes are provided. In the cymbal mode, the current sample is choked, or stopped when another one is played. This is useful in replacing cymbals.

Note: Care must be taken when using large polyphony settings, as playing long samples can easily overload a system's CPU resources.

Auto Sample Rate Conversion

Auto Sample Rate Conversion is a very useful feature which automatically re-samples your gog files as you use them, to match your project's current sample rate. To use this feature, simply enable it. Please note, that using Auto Sample Rate Conversion will make loading samples slower, because it does the conversion upon loading (instead of eating up valuable CPU time while you're playing the samples).

Index

A

Actual Peak, 76
Add From File, 53, 91
Add From Track, 54, 91
Adding Samples, 53
Advanced Triggering Mode, 35
Audition Buttons, 52
Auto Align, 24, 76, 88, 95
Auto Ducking, 78
Auto Sample Rate Conversion, 81
Auto-assigning samples to groups, 60

B

Bargraph, 38, 89
Blend Control, 87

C

Choosing a new sample, 57
Copy from last gog, 61
Creating a New GOG File, 55

D

Delay Compensation in Pro Tools
HD, 71
Deleting Samples, 56
Drum Movie, Selecting, 58
Ducking Group, 79
Ducking Level, 80
Ducking Response, 79
Ducking Time, 80
Dynamic, 88
Dynamic Group Arrows, 51, 91
Dynamic Groups, 44
Dynamic Multisamples, 25, 88
Dynamic Tracking, 49, 83, 88

E

Exporting gog samples, 56

F

Favorites, 30
Feature Overview, 15
Filter, 73, 86
Fixed Latency Version, 33, 70

G

GOG Files, 28
Groups, 44
Groups View, 59

H

Hand, 91
Hand Groups, 46
Hand Timing, 95

I

Input Control, 86
Installing Drumagog, 8

L

Latency, 69
Live Triggering Mode, 36

M

MIDI Features, 63
MIDI Input, 68
Midi Output, 63
Movie, 38, 89, 92

Moving or Renaming gog files
and folders, 89
Mute, 50

N

Naming a GOG File, 58
New, 92

O

Optimize for Snare Drums, 76
Output, 38
Output Control, 86

P

Phase Control, 86
Pitch Control, 87
Play and Stop Buttons, 91
Polyphony, 80
Position Control, 87
Positional Group, 91
Positional Group Arrows, 51
Positional Groups, 45
Positional Multisamples, 27, 88
Psycho-acoustical, 76

R

Random Multisamples, 25, 88
Recycle Bin, 92
Registering Drumagog, 7
Resolution, 36, 40
Resolution Control, 86

S

Sample Box, 90
Sample Collection, 9
Sample Groups View, 59
Sample Management, 43
Sample Pages, 46
Sample Properties Box, 50
Sample Rate Conversion, 81
Save Gog, 92
Sensitivity, 36, 40
Sensitivity Control, 86
Simple Triggering Mode, 35
Solo, 50
Stealth Crossfade, 83
Stealth Mode, 31, 82, 88
Stealth Response, 82
Synth, 74, 89

T

Tech Support, 13
Trigger Filter, 73
Triggering Circles, 41
Triggering Engine, 93
Triggering Mode, 35

U

Unlocking, 9
Use Left/Right Hand Samples, 88
Using Drumagog, 23
Using your own samples, 29

V

Visual Triggering, 39
Visual Triggering Button, 87

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