

UNVEIL

User Manual V1.6.2



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Welcome To UNVEIL

What is UNVEIL?

UNVEIL is a plug-in that allows you to attenuate or boost the amount of reverb in a mixed signal, even on mono sources. Due to the nature of the process we employ, it also allows attenuating or boosting other components that human perception regards as “background” signals, like some types of ambience or “mud” in music mixes. It is not a gate/expander, transient shaper, de-noiser-like FFT thresholding processor, and does not do any phase cancellation or inter-channel correlation. Basically, UNVEIL does what it does based on our MAP de-mixing technology, it separates foreground components from background components and then allows you to process these separately. As a side-effect, UNVEIL can also be used for stereo-to-quad up-mixing, by separating the reverb of a recording and using that for the rear channels, while using the de-reverberated signal for the front - these two signals are exactly complementary and there are thus no phase-shift induced resonances like when using an EQ or other up-mixing strategies.

We sincerely hope you will enjoy using UNVEIL as much as we did creating it. It is the culmination of 40 combined years of research and professional audio production expertise, and thus we are very excited to provide you with this unique and exceptional tool.

Yours,

Stephan M. Bernsee & Denis H. Gökday

zynaptiq headquarters

Hannover, Germany

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System Requirements

Mac Requirements

- Intel-based Apple Mac computer
- Minimum of 2 CPU cores running at 2.4 GHz or faster
- 1 GB of available RAM
- Mac OS X 10.5.8 or newer
- 60 MB free Hard-Disk space
- Apple AU (AudioUnits), Steinberg VST 2.4 or Avid RTAS/AAX compatible host software
- Internet Connection for Activation (though not necessarily on the Computer used for audio)

Windows Requirements

- Minimum of 2 CPU cores running at 2.4 GHz or faster
- 1 GB of available RAM
- Microsoft Windows XP SP3, Windows Vista or Windows 7/8
- 60 MB free Hard-Disk space
- Steinberg VST 2.4 or Avid RTAS/AAX compatible host software
- Internet Connection for Activation (though not necessarily on the Computer used for audio)

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Installation & Authorization

Installation Mac

Installing and authorizing **UNVEIL** on a Mac is very straight-forward. Simply expand the ZIP file you received, navigate to the *Mac OS X* folder in the resulting directory and mount the contained disk image file (.dmg) by double-clicking it in the Finder. Then launch the installer contained on the resulting, auto-mounted volume. Follow the on-screen instructions to install.

The installer will install the following files to the following locations:

- 1) AudioUnits mono/stereo and 8-channel ("8ch") plug-ins for both 32- and 64-bit use to <root drive>/Library/Audio/Plug-ins/Components/
- 2) VST mono/stereo and 8-channel plug.ins for both 32- and 64-bit use to <root drive>/Library/Audio/Plug-ins/VST/
- 3) RTAS mono/stereo plug-in to /Library/Application Support/Digidesign/Plug-Ins/
- 4) AAX mono/stereo plug-in to /Library/application Support/Avid/Audio/Plug-ins
- 5) Manual, UNVEIL Authorizer app & stand-alone application to /Applications/Zynaptiq Plug-In Support/

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Installation Windows

Installing and authorizing **UNVEIL** on a Windows system is very straight-forward. Simply expand the ZIP file you received and navigate to the *Windows* folder in the resulting directory. Therein, you will find the following individual installers:

- 1) VST 2.4 mono/stereo and 8-channel plug.ins (32bit)
- 1) VST 2.4 mono/stereo and 8-channel plug.ins (64bit)
- 2) RTAS mono/stereo plug-in
- 3) AAX mono/stereo plug-in

Choose the appropriate installer and launch it. Please note that you need to be logged in as admin level user!

The installers create the following files:

- 1) The VST installer creates the UNVEIL VST and UNVEIL VST 8ch plug-ins in <Program Files Folder>\Steinberg\VstPlugins. **Note:** should you keep your VST plug-ins in a different location, you should point the installer to that directory when provided with the option. **Note:** please do not rename, move or delete the "Data" folders installed next to the plug-ins.
- 2) The RTAS installer creates the UNVEIL RTAS plug-in as well as the UNVEIL RTAS data folder in <Program Files Folder>\Common Files\Digidesign\DAE\Plug-Ins. **Note:** please do not rename, move or delete the "Data" folder installed next to the plug-in.
- 3) The AAX installer creates the UNVEIL AAX plug-in in <Program Files Folder>\Common Files\Avid\Audio\Plug-Ins.

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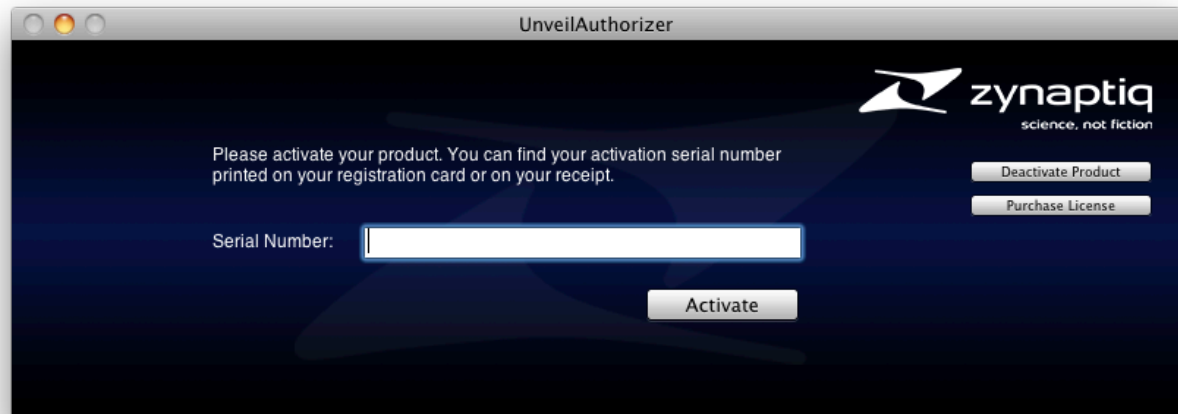
All Windows installers will install the UNVEIL Authorizer app to <Program Files Folder> \Zynaptiq\Unveil\.

Windows Vista, Windows 7/8 users running VST x64: please note that if you have an UNVEIL version older than 1.6.2 installed, please follow the steps described below to avoid conflicts with UAC (if enabled).

- 1) De-activate your plug-in before installing the new version. To do this, launch the UnveilAuthorizer app located in /Program Files(x86)/Zynaptiq/UNVEIL/ and click "de-activate"
- 2) Uninstall the older version. Uninstallers for the various formats can be found in the "UNVEIL Data" folder which is located right next to the plug-in.
- 3) To ensure that all uninstalled files are actually gone, please log out and back in to your account.
- 4) Install VST x64 and make sure you activate the plug-in when the activation dialog is opened during install (and NOT from within your host!)

Authorization Mac & Windows

To be able to use your new software, it needs to be activated. During installation of **UNVEIL**, the **UnveilAuthorizer** app, will automatically be launched.



Enter your serial number and click "Activate". If your machine has access to the internet, you'll be shown a confirmation of the successful authorization and you're good to go. If the machine you're activating on has no internet connection, you will be guided through the process.

Authorization Details

Generally, our copy protection mechanism will allow you to have two machines authorized at the same time. It is essentially a challenge-response type system that takes specifics of your computer into account anonymously. However, unlike most other challenge-response systems,

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the Zynaptiq copy protection allows the user to de-activate a system at any time, and re-activate it later - without contacting us. So essentially, you can pretty much move your authorizations around as needed. The only limitation is that in order to de-activate a machine, it needs to be connected to the internet.

De-Activating a Machine

To free up an activation, you can de-activate a machine. To do this, please launch the **UnveilAuthorizer** app, and click "Deactivate Product".

You will be presented with a confirmation message and you're done.

Please note that the machine to be de-activated needs to be connected to the internet!

Notes On Formats

Plug-In Formats and Channel Layouts

As you will have noticed, we install separate mono/stereo and 8-channel versions for some formats. Why is that? Here's a run-down on the formats and why we may or may not have multiple plug-in builds for them.

AudioUnits: This format theoretically allows having one plug-in build that works for any channel count. However, in some hosts, the ability of a plug-in to have more than two channels will prevent using multi-mono instances for multi-channel scenarios. Also, some hosts are not capable of inserting multi-mono instances to create a multi-channel instance. Hence we need two separate plug-ins to cater for all scenarios. (The advantage of multi-mono is that it allows you to have separate settings for the individual channels).

VST 2.4: The VST 2.4 standard allows plug-ins to have a large number of channels under the hood, but activating only the number actually required by the channelstrip/bus the plug-in is inserted into. However, some hosts will always activate all the "under-the-hood" channels, regardless of whether they are needed or not. This results in a very large CPU overhead if all you want to do is process one or two channels. Also, VST 2.4 does not easily allow using multi-mono instances for multi-channel use. Hence, it makes sense to have separate mono/stereo and 8-channel versions of the plug-in.

RTAS & AAX: RTAS and AAX allow using plug-ins in multi-mono configurations under all circumstances. As using multi-mono is actually preferable, as ProTools is able to run the multi-mono channels on separate cores, these formats need only one plug-in build.

AudioSuite in ProTools

In ProTools, the AAX plug-in allows being used as AudioSuite for offline processing, including real-time preview.

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Overview

Applications For UNVEIL **UNVEIL** has a lot of uses, here are some of them:

- Reduction of reverb on location sound and dialog
- Matching of reverb amounts and thus perceived distance on multiple location/dialog recordings
- Reduction of reverb on sub-optimally miked musical recordings, or recordings from venues with less-than-ideal acoustic properties.
- Up-Mixing by separating reverb and direct signal, and using these complementary signals for rear and front channels
- Reducing or boosting “mud” or “grit” in a music mix to bring out the details or move the mix out of focus to make space for additional signals
- Moving sounds/ambience in to or out of focus for On-Screen/Off-Screen differentiation
- Moving background sounds further back to allow foreground sounds to stand out clearer
- Creative sound design
- Generating dynamic “states” from just one recording in game audio.

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The Parameters

The Process: How We Do The Magic

UNVEIL utilizes a novel process based on pattern recognition and perceptive modeling to determine perceptually relevant information within an audio stream. It assigns the detected patterns a significance based on their statistical properties, and attenuates or boosts the parts that do not appear to contribute a significant amount of information to the signal.

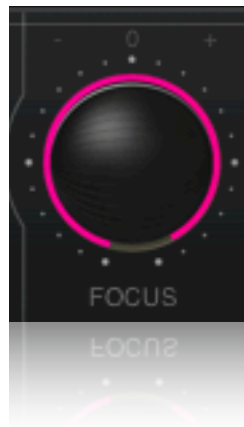
As a pattern recognition based algorithm that de-mixes the signal it has the advantage of not requiring stereo information to determine room reflections from the signal. Therefore, it can be applied to mono and stereo, even surround channel configurations with equal ease and success. Also, since it does not use Fourier transform based filtering, it does its magic with a minimum of side effects, keeping your signal crisp, clean and transparent.

NOTE that UNVEIL is designed to leave discrete echoes untouched. Feedback delay is often a relevant part of a composition, and should thus be considered as part of the signal rather than as reverb.

UNVEIL comes with a number of parameters that allow tweaking its basic properties to work well with a variety of signals.

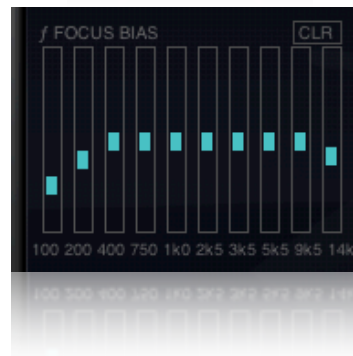
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FOCUS



The **FOCUS** parameter controls the overall signal focusing, or reverb attenuation/boost. Essentially it is a cross-fade between reverb/mud and the direct/foreground signal. Higher values remove reverb and "mud" from the signal, lower values add reverb by attenuating the direct (incident) signal. Center has no effect and leaves the signal unchanged. For best results we recommend setting FOCUS to its highest value while adjusting the other parameters so their effects become immediately apparent, then backing off FOCUS as needed. CTRL-Click sets this parameter to default.

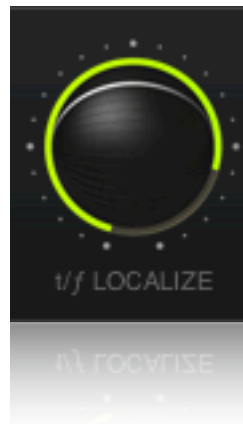
f FOCUS BIAS



This bank of sliders allows setting the FOCUS parameter depending on the signal frequency. With these parameters you can de-reverberate critical frequencies more than frequencies that have less reverb to them, such as the low frequency end. The FOCUS BIAS is relative to the amount set using the FOCUS control. If you set FOCUS to its center position the signal will pass through unchanged. You can then use FOCUS BIAS to change the signal focus for certain frequencies only. A CTRL-click on one of the sliders resets it to neutral, and a click on the CLR button resets all sliders to neutral.

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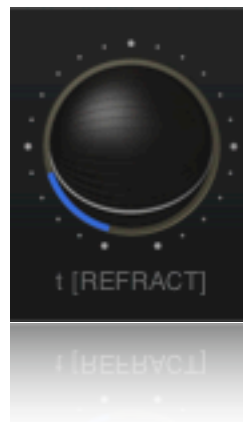
t/f LOCALIZE



This parameter determines pattern localization along the time and frequency axes. Higher values resolve individual frequencies better but might introduce high frequency oscillations that can sound artificial when a lot of noise is present within the signal. Lower values reduce this type of artifacts but might cause signal amplitude modulation ("pumping") that results from the process affecting not only the detected patterns, but their surrounding sounds as well. A value around the center position is usually the preferred setting. If both low and high values do not produce satisfactory results, we recommend you set it to its center position, set FOCUS to center as well and change FOCUS using the FOCUS BIAS sliders for critical frequencies only. That way you will be able to separate reverb without applying the process to the entire signal at once.

As an analogy, think of this as the "number of bands" - less bands mean less control but less artifacts, more bands give more control but more potential for artifacts.

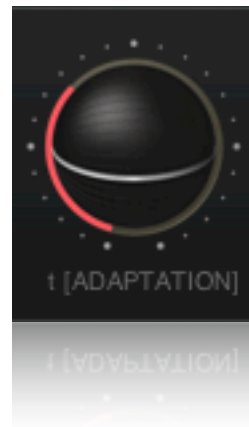
t[REFRACT]



t[REFRACT] determines the refractory time for the analysis network, or "how long the algorithm thinks about what it has heard before reacting". Shorter values will cause the analysis to be more sensitive to signal changes, but might affect short term oscillations such as noise in a way that sounds artificial. If you increase the refractory time, the overall sound of the de-reverberated signal usually improves, but some of the reverb reflections might return. We recommend you start out at a zero value and increase as needed.

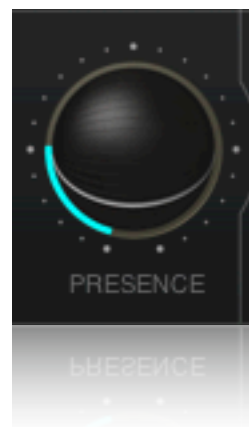
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t[ADAPTATION]



This determines the adaptation time of the analysis network ("forgetting factor"). The setting of this parameter should be approximately equal to the reverb tail length of the signal. You can get an idea of how to set this parameter by visually comparing the related decay curve in the display to the amplitude decay of the input signal. If the steepness looks similar, you're good. "Release Time" is a suitable analogy to get the idea of this control (though technically, it is very different.). If the adaptation time is lower than the reverb tail time of the reverberated signal you will hear some reverb come back on a few msec after the incident sound. In this case you should increase the adaptation time until the reverb is gone.

PRESENCE



This parameter adds a random signal to the network's input on each pass of the analysis recursions. This changes the starting conditions of the evaluation slightly, and causes the output to be more generalized. The effect on the audio signal is mainly a gain in high frequency content and a more natural sound, as the noise and short time scale fluctuations in the signal are averaged away and remain largely untouched. With some "well behaved" signals this setting might not have any effect, some signals (especially voice) can benefit greatly from increasing this value. Start low & raise as needed.

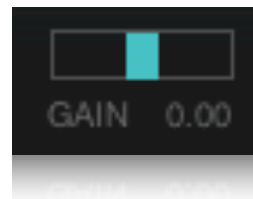
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TRANSIENT THRESH



UNVEIL offers the option to automatically bypass very short transient signals in order to increase "punch" and intelligibility for certain types of signals. This bypass is triggered both by evaluating overall signal levels as well as its statistical properties. We recommend you use the SOLO switch to monitor the output of this circuitry and use the threshold slider to set an appropriate value between 0 (= everything is regarded a transient) and 1 (= circuit is off, nothing goes through).

GAIN



This control adjusts the output gain of the plug-in, the unit is dB. Processes based on perceptive modeling generally tend to change peak levels. The GAIN control allows you to compensate for this.

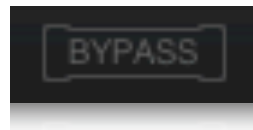
I/O DIFF



Activating this switch creates a volume compensated difference between input and output signal.

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BYPASS



Bypasses all processing and routes the input signal directly to the output.

PK LINK



Links the peak of the input and output signal display so the UNVEIL effect becomes visible independent of absolute signal levels.

NORM.



Soft-normalizes the display of the input and output signals.

DIAGRAM



Enables the diagram that displays the adaptation rate in relation to the input signal.

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Presets

The Preset Manager

To make working with the different plug-in formats easier, UNVEIL provides it's own preset manager and preset format. This way, you can load your custom settings exactly the same way regardless of whether you're working on the Mac or on a Windows machine, whether you're using RTAS or VST.

The Preset manager is accessed using the small triangle icon in the upper left corner of the GUI:



A click on the triangle icon brings up a menu that provides options for saving and loading presets, saving the current setting as default and re-setting the default preset to factory default values. If you edit a recalled preset, the triangle icon will be lit up to indicate that the current and saved values don't match.

Storage Locations

There are separate locations for factory presets and user presets, and they both depend on the OS platform you're working on:

Factory presets (Mac OS X): these are stored inside the actual plug-in.

Factory presets (Windows): these are stored in the UNVEIL VST/RTAS/AAX Data folder, which is installed next to the plug-in.

User presets (Mac OS X and Windows): these are stored to <your user document directory>/Zynaptiq/UNVEIL/Presets/

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■ The Standalone App

On MacOS X, UNVEIL comes with a simple stand-alone application, the *Zynaptiq Stand-Alone*. This application is intended for quickly previewing audio through the plug-in, and is explicitly NOT intended to be an editing application. See it as a free bonus FYC.

The application allows playing files through UNVEIL, as well as recording the results to a new file. As the application is not a full-blown host, it uses the Mac system audio preferences - including device & sample rate. As any open application including browsers, the finder etc can request to change the system sample rate, this means that in order to make sure your new file has the correct sample rate written, you should follow the following steps:

- 1) make sure you set the system sample rate to the rate that your source & destination files have/should have, from within the Audio MIDI Setup utility
- 2) start playback on the source file **before** you start recording

FAQ

Questions & Answers

Q: I am hearing ugly drop-outs/ring-modulation/distortion, what is causing that & what can I do?

A: Most likely, you are overloading your CPU. UNVEIL is a computationally very “heavy-weight” process. The first thing you should try is to set the I/O and/or processing buffers of your host to higher values, ideally 2048 samples or higher. This will significantly decrease the CPU use and in most cases eliminates the artifacts mentioned above.

Q: (Mac) Logic Pro shows me a “Sample Rate Mismatch” or similar error when inserting UNVEIL, and sound is distorted or stops altogether. What can i do?

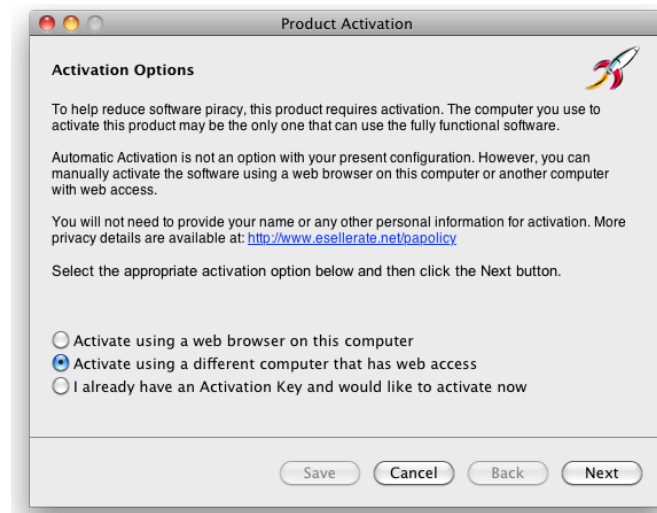
A: You are overloading the CPU, but Logic is displaying the wrong error message. Increasing the I/O and process buffer sizes usually cures this issue. If not, see the CPU load optimization section below for some tips on how to get more out of your machine.

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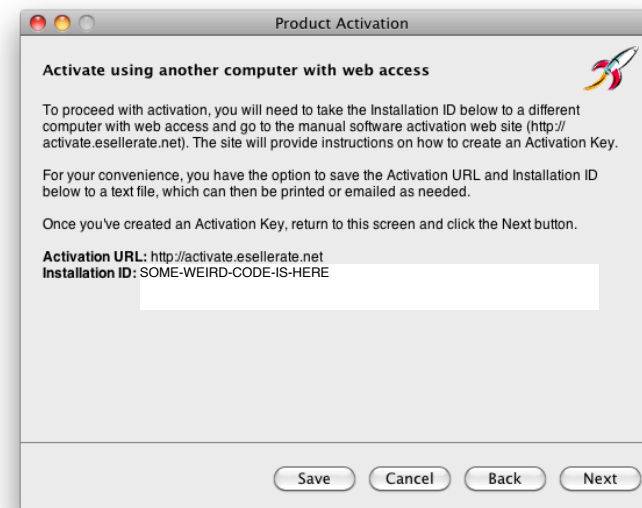
Authorization Issues Windows

Q: I am using Windows and when I try to activate UNVEIL, I am seeing an error message stating there has been an “Unknown Error” and activation fails. What can I do?

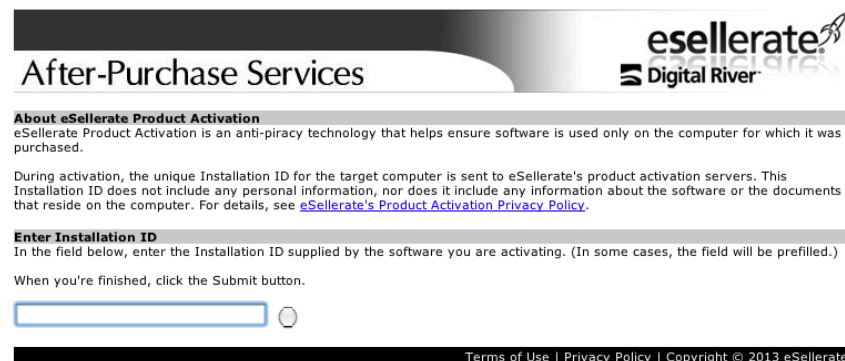
A: This means that there is something interfering with the activation process. Disable any firewall, security or anti-virus software and try again. If the problem persists you should temporarily disable your internet connection (by pulling the ethernet cable, for example). The Authorizer app will now display a dialog window that gives you several options for off-line activation:



Choose “Activate using a different computer that has web access” and click “next”. This will bring up another window.



Enter the Installation ID into the webform found at the URL displayed, using a different computer to access the web:



You will then receive a response code.



Product Activation

Enter Activation Key

Enter your Activation Key in the fields below, using the Tab key to advance through the fields.
If you've copied the Activation Key to the Clipboard, you may paste the entire key in at once (using Cmd-V).
When you've finished, click the Activate button.

Activation Key: - - - -
 A B C D E
 - - - -
 F G H I J

Save Cancel Back Activate

Enter the response code into the Authorizer app, click “activate”...and your software should now be activated successfully.

CPU Load optimization

UNVEIL uses a lot of CPU. The mathematics involved are highly complex, so there's a lot of computation to be done. However, CPU load is affected by a couple of variables. We'll outline strategies to get the most out of UNVEIL on your CPU here.

- 1) **Use large buffer sizes.** UNVEIL needs to look at a certain amount of signal to be able to discern what is reverb and what isn't. If your buffers are set to values that are shorter than that, CPU load increases significantly. UNVEIL internally operates on a buffer size of 4096 samples, so in most host applications, you'll want to set the buffer size to the highest possible value. We recommend *at least* 1024 samples.
- 2) In ProTools, **use multi-mono instances if possible.** ProTools can compute the channels of a multi-mono instance on separate CPU cores, which distributes the CPU load more evenly and allows larger channel counts than when running a multi-channel instance on just one core.
- 3) In Logic Pro, all plug-in that are inserted on a bus, output or aux strip that is fed by a live input source - such as a live input or a virtual instrument track set to record enabled - are rendered on one core. This may result in CPU overload messages even while all except one core are idling. Try changing the routing or disabling any record enable switches on virtual instrument tracks.
- 4) Use the mono/stereo version of the VST plug-in whenever you do not explicitly need more than one or two channels.
- 5) Closing the plug-in GUI saves some CPU cycles, too.

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Getting Support

If you're having trouble with UNVEIL that isn't covered in these FAQ, please email us & we'll get you up and running ASAP. We can be reached via <http://www.zynaptiq.com/support-form/>

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