METRIC HALO

Thump User's Guide

Thump Users Guide

Metric Halo

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Part I. Installation

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1. System Requirements

- *Pro Tools™ (Mac)*: Pro Tools 10 or higher running on a Macintosh computer. This software supports Native and AAX DSP operation.
- *Pro Tools™ (Windows)*: Pro Tools 10 or higher running on a Windows computer. This software supports Native and AAX DSP operation.
- *Native (Mac)*: Any Mac DAW that supports Audio Unit or VST plug-ins.
- *Native (Windows)*: Any Windows DAW that supports VST plug-ins.

- *Mac*: Any Intel-based Mac running Mac OS X 10.6.8 or newer
- *Windows*: Any Windows PC running Windows 7 or newer

- A PACE iLok.com account. You can install your license on your computer or on an iLok key. Please note that one license authorizes the software on any platform.

2. Installation

For both Mac and Windows, there is a single standard installer for Thump containing all formats that allows you to decide which formats you would like to use.

Mac

Please note– The following graphics show installation on an OS 10.9 system; the process may be slightly different in other versions of the OS, but the basic concepts are the same. Small details such as file sizes shown may vary with subsequent releases.

- Double-click the “MH Thump.pkg” application

Figure 2.1: MH Thump.pkg

- The installer dialog will appear:

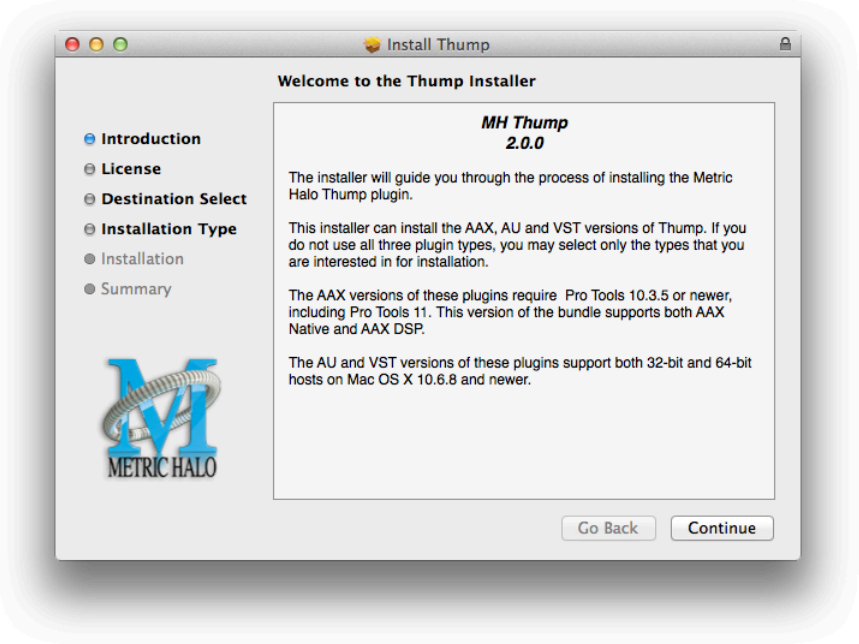

Figure 2.2: Opening Dialog

Click “Continue”…

- Now you will see the Metric Halo License Agreement:

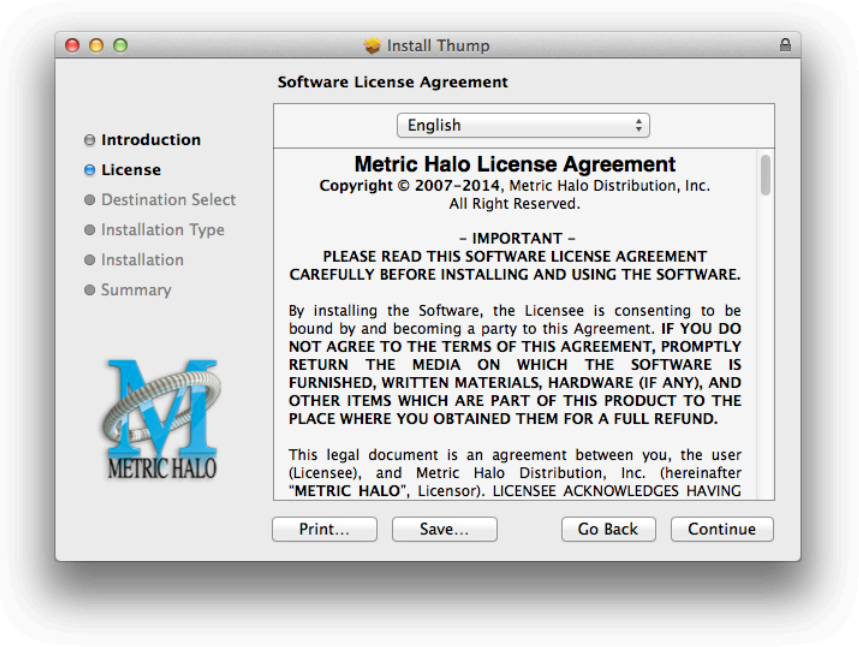

Figure 2.3: License Agreement

After you have read it, click “Continue”…

- Next, click “Agree” to accept the License Agreement:

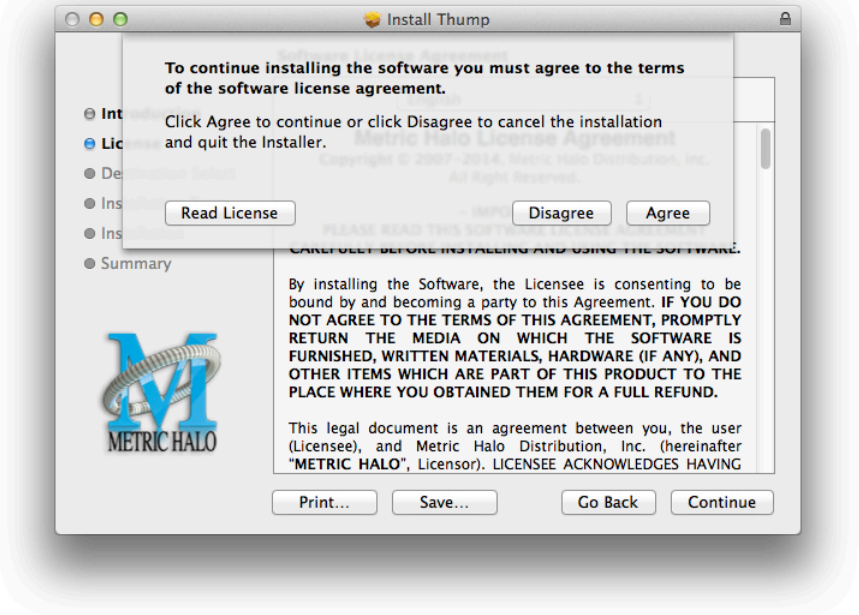

Figure 2.4: Accepting the License Agreement

- Next, select which formats you would like to install. Check "Thump: All Plug-In Types" to install Thump on all platforms (Audio Unit, VST, AAX):

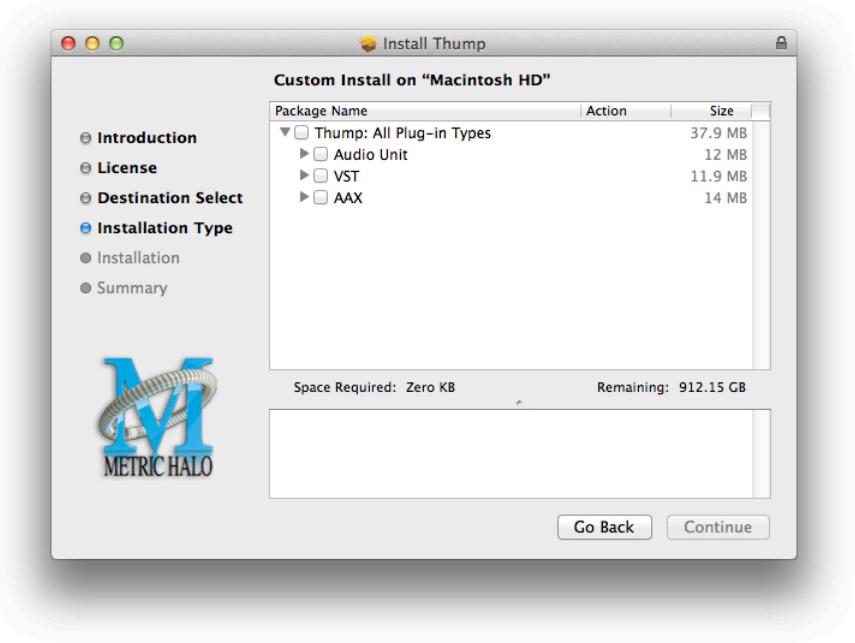

Figure 2.5: Choosing the Components to Install

- Click the disclosure arrow to reveal the individual formats to select only those you wish to install. Click "Continue" to proceed.
- Now select the disk you would like the software to be installed to:

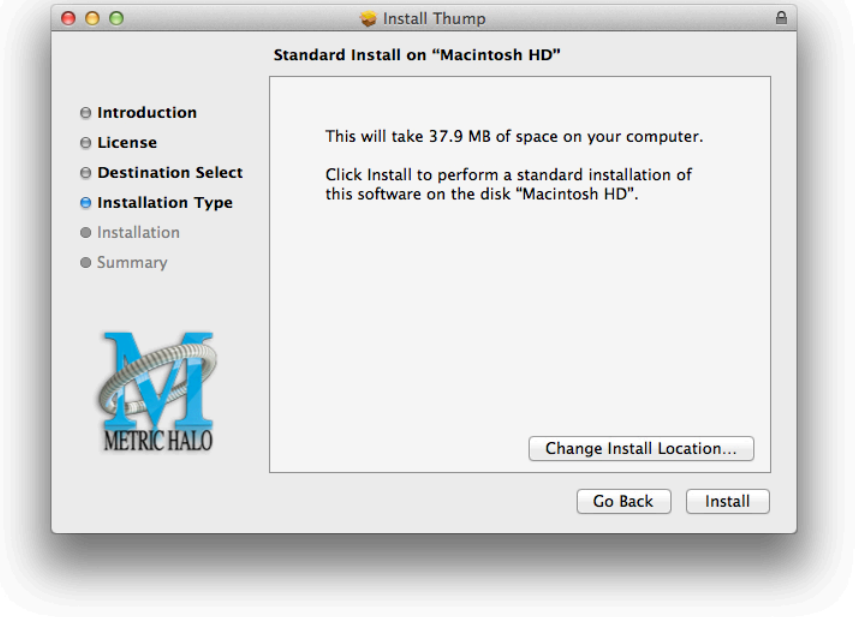

Figure 2.6: Selecting the Installation Location

We recommend that you use the standard installation location unless you have a specific reason not to.

Click “Install”…

- You must now enter the name and password you use to log in to your computer, to give the Installer permission to write the software:

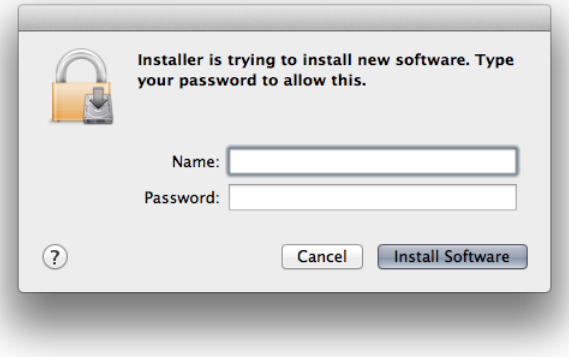

Figure 2.7: Giving the Installer Permission

Enter your credentials and click “Install Software”…

- Once the installer has finished, you'll see this dialog:

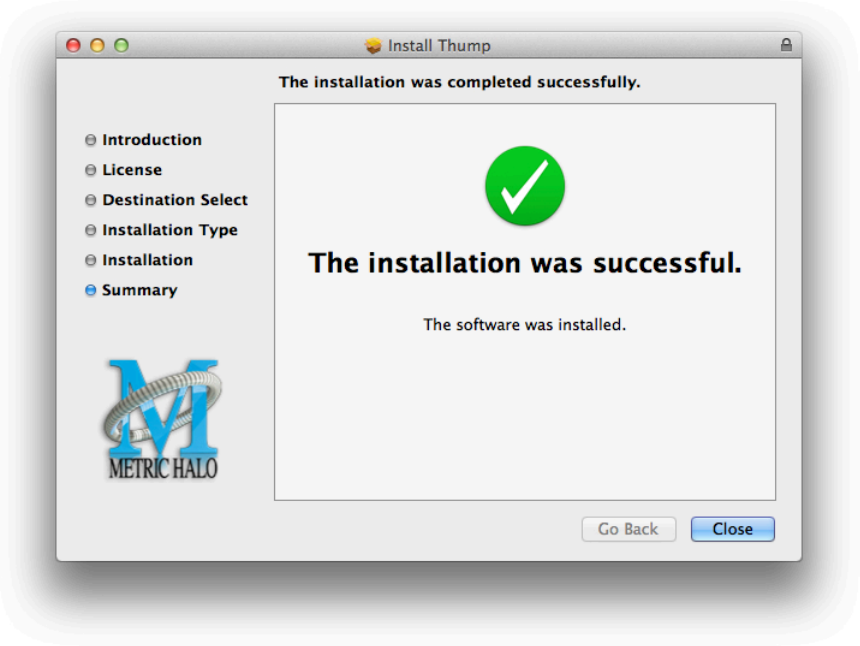

Figure 2.8: Installation Complete

That’s it! Enjoy using Metric Halo plug-ins!

Windows

The standard Thump installer will provide the option to install both the 32-bit and 64-bit versions if they are supported on your system.

These installation instructions show a 32-bit installation, but the process is the same for 64-bit installations.

Please note– The following graphics show installation on an Windows 7 system; the process may be slightly different in other versions of the OS, but the basic concepts are the same. Small details such as file sizes shown may vary with subsequent releases.

- Double-click the “MH Thump.exe” application

Figure 2.9: MH Thump Installer

- The installer dialog will appear:

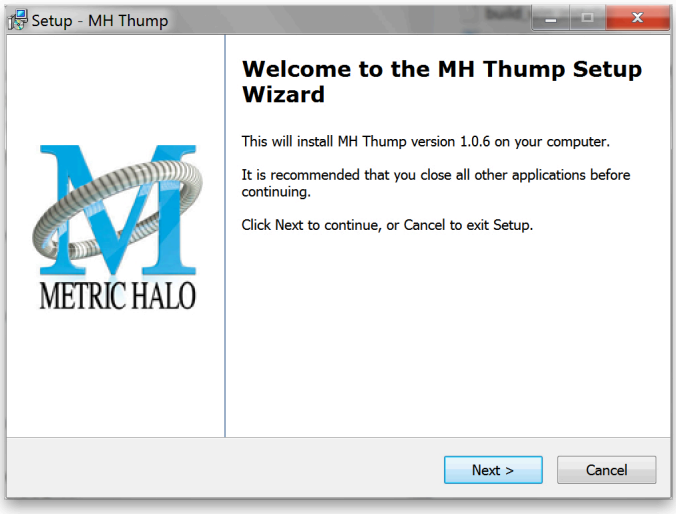

Figure 2.10: Opening Dialog

- Read the Metric Halo License Agreement:

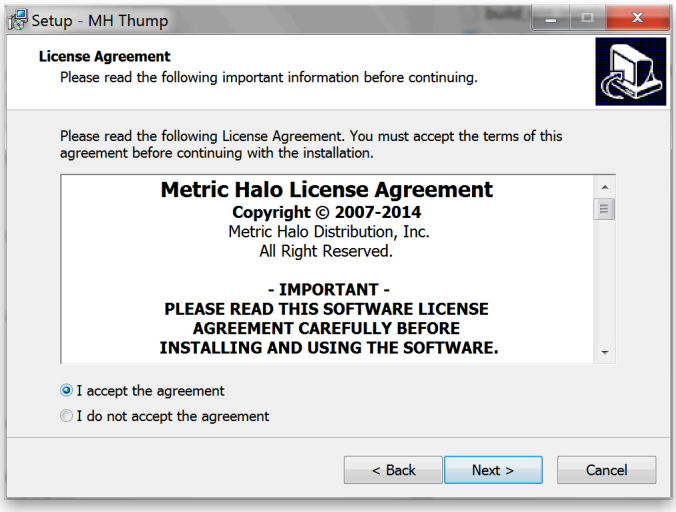

Figure 2.11: License Agreement

After you have read it, click next to “I accept the Agreement” and click “Next”.

- Select the Components

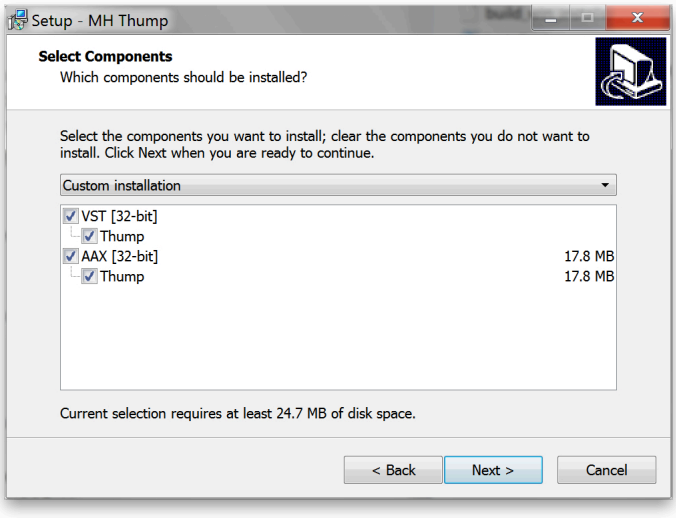

Figure 2.12: Component Selection

By default, VST and AAX formats will be selected for installation. To customize, check only the boxes for those formats you wish to install.

Click "Next" to continue.

- Next, you have the option to change the location you would like the software to be installed to:

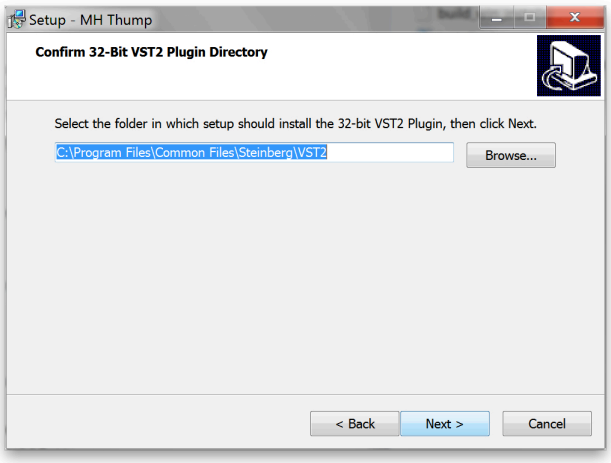

Figure 2.13: Selecting the Installation Location

We recommend that you use the file path that will allow your host software to recognize the plug-ins. See your host software documentation.

Click “Next” to continue.

- A final dialog will summarize the installation about to take place:

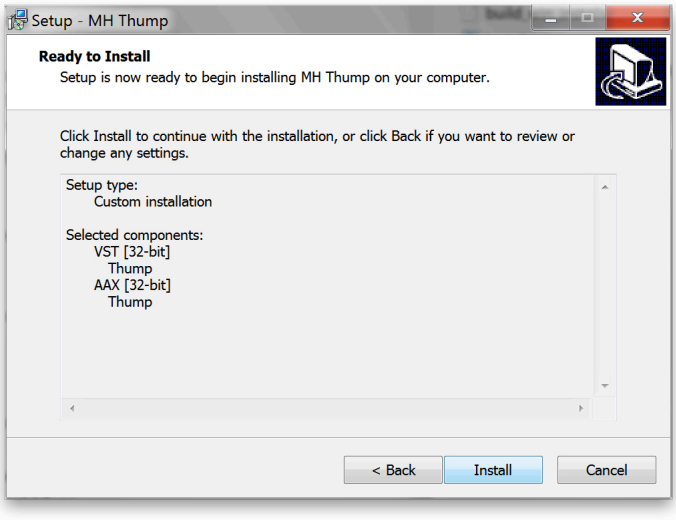

Figure 2.14: Installation Ready

Click “Install” to proceed with the installation.

- The Setup Wizard will install the files:

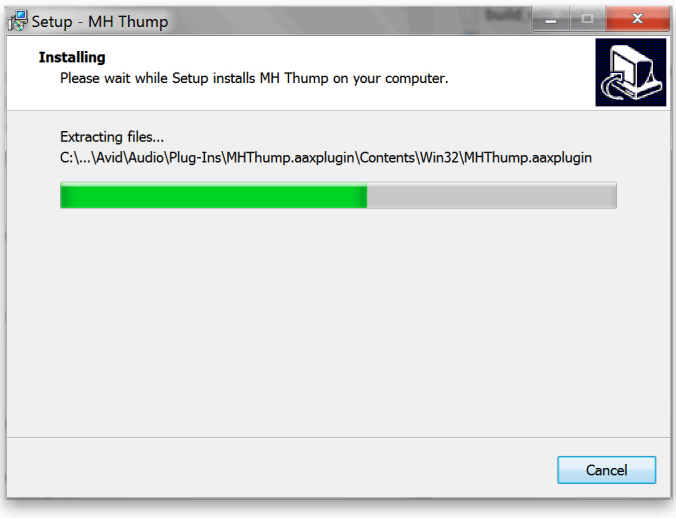

Figure 2.15: Installation in Progress

- Once the installer has finished, you'll see this dialog:

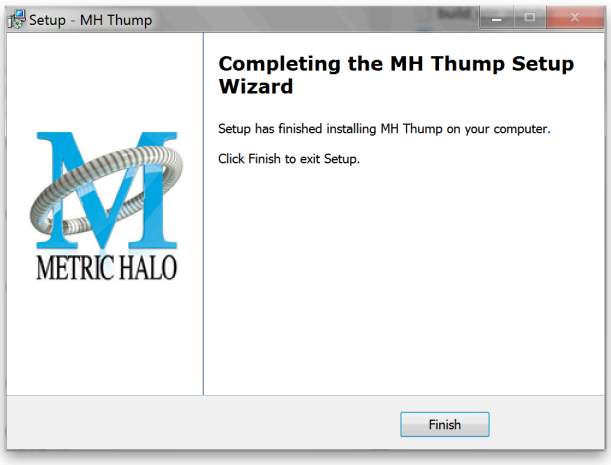

Figure 2.16: Installation Complete

That's it! Enjoy using Thump!

Update Notification

Thump Plug-ins will automatically check to see if there's a newer version available (if your computer is connected to the internet). If so, the version number in the UI will turn into an update notice. Click on the notice and a browser window will open to our download page, where you may download the newest installer.

Part II. Plug-In System Control

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3. Plug-In System Control

All Production Bundle plug-ins display the MH system control bar directly above the general plug-in UI. This control bar is very useful for organizing your presets, as it allows you to readily move them between plug-in platforms. It is also especially useful in the event that your host does not support plug-in preset management.

Plug-In System Control Bar

Figure 3.1: Plug-In System Control

The Plug-In System Control Bar appears at the top of each plug-in window. A description of the control elements of this bar follows.

Help Button

Figure 3.2: Help Button

This button toggles the tooltip display. When enabled, tooltips will be shown when the mouse hovers over a control. When the tooltip display is disabled, you may still see tooltips by holding down the **?** key and hovering over a control.

UI Size Selector

Figure 3.3: UI Size Selector

This button switches the plugin user interface between small, medium and large sizes to accomodate different display resolutions.

Graph Visible Selector

Figure 3.4: Graphs Closed

Figure 3.5: Graphs Open

This button toggles visibility of various response graphs. Not all Production Bundle plug-ins will have this button. This button allows you to maximize screen real-estate while still providing details on the processing when they are needed. Click on this control to toggle the visibility of the graphs. The plug-in window will automatically become smaller when you hide the graphs.

Preset Step-Through Buttons

Figure 3.6: Preset Step-Through Buttons

These buttons step through Factory and User Presets in succession. The left arrow chooses the previous preset. The right arrow chooses the next preset.

Presets Selector Popup Menu Control

Figure 3.7: Presets Selector Popup Menu Control

The name of any selected preset will be displayed in the bar at all times. When a change is made to a loaded preset, it will appear in italics. Factory presets are read-only. If you save changes to a Factory Preset, you will be prompted to save the updated preset as a new User Preset.

Clicking anywhere on this bar will disclose the presets menu.

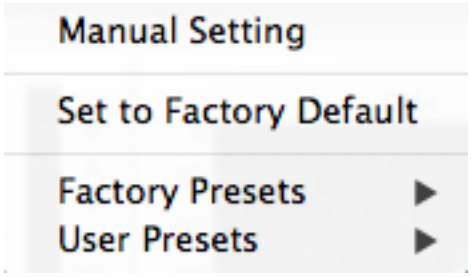

Figure 3.8: Presets Menu

The first item of this menu reflects the existing state of the plug-in. Selecting this item from the menu does not change anything, and lives at the top of the menu to avoid changing the state of the plug-in with accidental clicks on the presets popup menu. If no preset is loaded, "Manual Setting" will be displayed. If a preset is loaded, the name of the loaded preset will appear.

The second item, "Set to Factory Default", loads the plug-in's factory default setting as a preset.

The remaining menu choices are Factory Presets and User Presets.

Preset Command Popup Menu

Figure 3.9: Preset Command Popup Control

Use this menu to save presets, delete presets, or reveal the preset file in the system's file browser. Factory Presets are read-only and cannot be deleted.

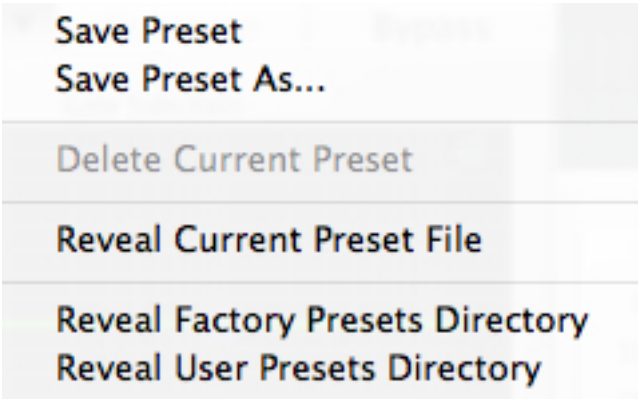

Figure 3.10: Preset Command Menu

Compare Button

Figure 3.11: Compare Button

To use the compare button, a preset must first be loaded. The compare button will be lit up when the current settings differ from the selected preset. If you click this button while it is lit, the preset settings will be restored, but you can still return to the changes you made by clicking on the button again. It is important to note that any changes you make to activate the compare light are always for comparison to the last loaded preset.

Soft Bypass

Figure 3.12: Soft Bypass Button

This button will maintain the time delay through the channel and will continue to show metering, but will cleanly disable the processing.

Part III. Thump

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4. Introduction

Thank you for downloading Thump by Metric Halo. Thump synthesizes bass notes from the input signal, allowing you to generate anything from simple drum reinforcement to synthetic bass lines. This manual will show you how to use Thump in your audio projects.

Figure 4.1: Thump's User Interface

5. Operation

As with most plug-ins, Thump provides many copies of controls that are all operated in a similar manner. The Thump user interface uses a few different control elements to control all of the processing. These elements are:

Control Knob

Control Knobs are used to control the value of various continuous parameters of a process. Examples of these types of parameters include: Attack Frequency, Envelope Attack, Out Gain, etc.

Figure 5.1: Swept Knob

The rings around these encoders sweep from a minimum to maximum value, from left to right.

You can change the value of each knob in a number of different ways. Click and drag the knob to change the value continuously. Dragging up or to the right will increase the value, while dragging down or to the left will decrease the value. If you hold down the Mac ⌘ (Command) key or Windows Control key when you click, you will be able to adjust the value with finer precision. If you hold the Mac ⌥ (Option) key or Windows Alt key when you click, the knob will reset to its default value. You may also double-click a knob to reset it.

Click on the number (readout) of the knob to display a text entry field that allows you to type in a number directly. The pop-up will remain active until you dismiss it by clicking somewhere else or hitting the return, enter, tab, Mac ⌘. (Command + .), Windows Alt key or ESC keys. Hit return or enter to confirm the value and dismiss the pop-up. Hit the tab key to confirm the value and display an entry field for the next control. ⇧–tab (Shift + tab) will display the entry field for the previous control). Hit the Mac ⌘. (Command + .), Windows Control. (Control + .) or ESC (Escape) to dismiss the pop-up and cancel the change.

When you enter a number into the pop-up entry, you can use a couple of abbreviations: “k” multiplies the number by 1000 and “m” divides the number by 1000. So if you want to enter 16,500 Hz you can just type 16.5k.

Toggle Button

Figure 5.2: Toggle Button (Off)

Figure 5.3: Toggle Button (On)

Toggle buttons are simple on/off switches. They light up when they are on and are dark when they are off. You toggle the state of the button by clicking on it. These buttons are used to enable the oscillators.

Fader

Figure 5.4: Mix Fader

The faders are used to control the output gain of the oscillators. This allows you to set the mix level of each tone.

Oscillator Pitch History

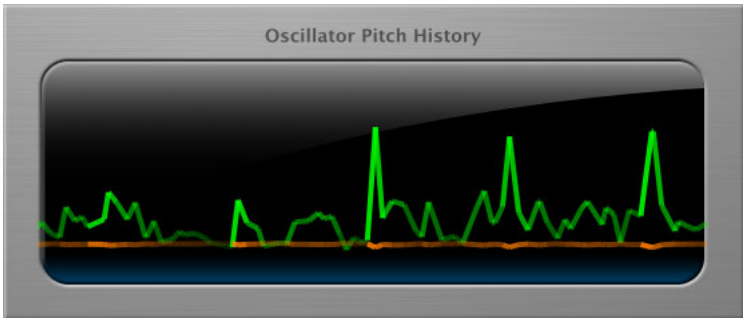

Figure 5.5: Pitch History Display

This display shows the activity of the two oscillators; Oscillator 1 is shown in green, Oscillator 2 in orange. As the display scrolls from right to left, each trace displays the oscillator output. As the oscillator pitch goes up in frequency, the trace goes higher in the window. As the oscillator output gets louder, the trace gets brighter.

Output Meter

Figure 5.6: Output Meter

For the main output stage of Thump we have provided meters driven with SpectraFoo™ metering technology. These meters show, in addition to the peak metering provided for the input stages, RMS level and VU level. The peak level is represented by the floating colored bar, the RMS level by the solid colored bar and the VU level by the overlaid gray bar. Both the Peak and RMS level are represented with fast PPM ballistics. The VU meter shows IEEE standard 300 ms RMS average level. When Thump is on a mono insert there will be a single meter. When Thump is running in stereo mode the left meter shows the left channel output level and the right meter shows the right channel output level. The output section clip lights activate if there is an over in the output stage or in any of the processing section input stages. It is reset by clicking on the meter; Mac ⌥ (Option)–click or Windows Alt-click to reset the clip lights on all the meters.

A Note About Clipping Indicators:
The clip lights do not mean that the plug-in is clipping; it means that the audio level in the DSP is currently over 0 dBFS. If you do not lower the signal level you run a chance of actually clipping the input of another processor or D/A convertor.

Click the Logo…

Clicking on the Thump logo will bring you to Metric Halo's web site where you can learn more about the Production Bundle and other MH audio products.

6. Processing

A Detailed Description

In this chapter we'll discuss what each processing block does and how the controls work.

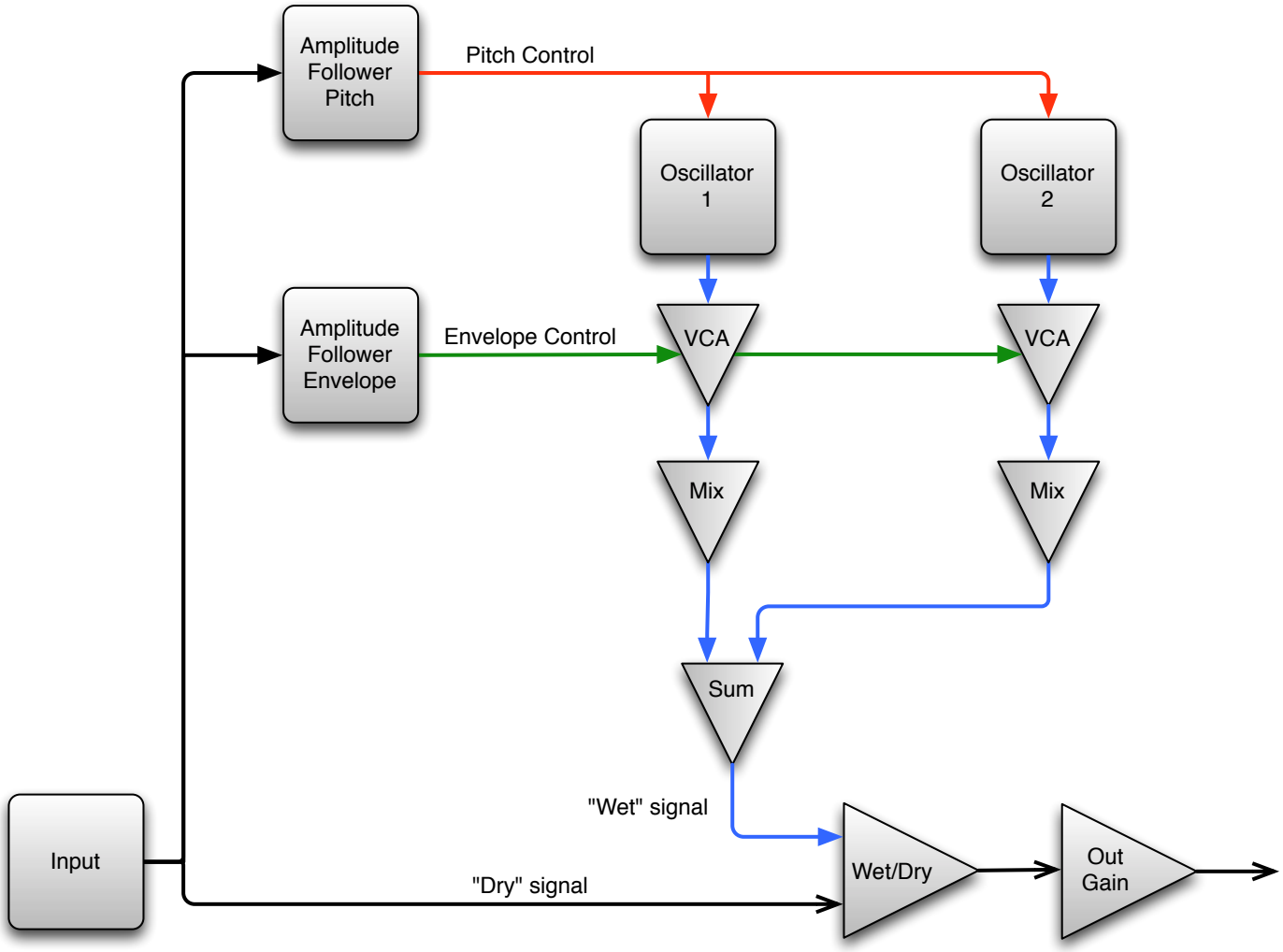

Figure 6.1: Thump Signal Flow

The block diagram above illustrates the overall structure of the processing system provided by Thump. The diagram does not indicate the various metering blocks.

Now lets examine the various processing blocks indicated in the diagram.

Amplitude Followers

Thump's Amplitude Followers convert the audio input into control signals for the oscillators. The Envelope Amplitude Follower extracts an envelope that is used to control the amplitude of the output of the oscillator. The Pitch Amplitude Follower extracts an envelope that is used to control the pitch of the oscillators.

Each Amplitude Follower functions as an envelope detector that is driven by the input audio signal. The Amplitude Follower extracts the amplitude envelope from the signal. Each Amplitude Follower provides the following controls that you can use to control it's behavior:

- The *Envelope Atk.* and *Pitch Atk.* controls set the attack time constant in milliseconds (ms) of their respective Amplitude followers. The attack time constant controls how quickly the envelope output increases when the level of the input signal is higher than than the envelope output. Smaller values cause the envelope to follow the signal more closely, but values that are too small could lead to distortion, depending on the characteristics of the input signal.
- The *Envelope Sust.* and *Pitch Sust.* controls set the release time constant in milliseconds (ms) of their respective Amplitude followers. The release time constant controls how quickly the envelope output decreases when the level of the input signal is lower than than the envelope output. Smaller values cause the envelope to follow the signal more closely, but values that are too small could lead to distortion, depending on the characteristics of the input signal.

Oscillators

The envelope outputs from the Amplitude Followers are used to control the two oscillators that make up Thump's synthesis section. Each oscillator has two controls to allow you to adjust how the frequency of the oscillator changes with the control input from the Pitch Amplitude Follower:

- *Atk. Frequency*: This control sets the frequency of the oscillator when the Pitch Amplitude Follower output is at its maximum value (e.g. the input signal is at full-scale). This control ranges from 1 to 440 Hz.
- *Sust. Frequency*: This control sets the frequency of the oscillator when the Pitch Amplitude Follower output is at its minimum value (e.g. the input signal is silent). This control ranges from 1 to 440 Hz.

As the output of the Pitch Amplitude Follower swings from its minimum value to its maximum value, the oscillator's frequency will swing from the value set by the *Sust. Freq.* to the value set by the *Atk. Freq*. Each of the controls can take any value in the range, so that the oscillator frequency can be decreasing as the signal decays away, increasing as the signal decays away or even constant (if both controls are set to the same value). The traditional decaying pitch drum sound can be made by setting the attack frequency higher than the sustain frequency. The frequency characteristics of each oscillator can be set independently.

The output of the Envelope Amplitude Follower is used to control the amplitude envelope of the output of the oscillators. The overall amplitude of each oscillator is independently controlled by its associated mix parameter. By adjusting the *Env Atk.* and *Env Sust.* parameters you can control how audible the attack frequency sweep is, and how long the decay of the sound will continue to be audible.

The oscillators have two master controls:

- *Enable*: This button turns each oscillator on and off.
- *Mix*: this fade sets the output level of each oscillator, from -∞ to +6 dB.

Output

Thump's output section has two controls:

- *Wet/Dry Mix*: This controls the balance between the original signal and synthesized audio. 0% is full dry (no effect), 50% is equal balance and 100% is full effect (no original audio). If you are using Thump on an aux bus, you would traditionally set the Wet/Dry Mix to 100.
- *Out Gain*: This sets the final output level of Thump, and ranges from -24 to +24 dB.

Part IV. Working with Hosts

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7. Pro Tools (Mac/Win)

Your Pro Tools software provides a standard interface for controlling various aspects of AAX plug-ins. While you should refer to your Pro Tools documentation for a complete description, we will summarize the most important points here.

If you wish to use a plug-in on multiple channels in your mix, you should Mac ⌥ (Option) or Windows Alt insert the plug-in on the desired channels and ensure that the plug-in is inserted on the same insert point on every channel (e.g. ensure that the plug-in is on insert "a" for every channel). This will allow you to take advantage of a number of time saving features provided by Pro Tools.

Plug-in Window

The illustration below shows the standard Pro Tools plug-in window.

Figure 7.1: Pro Tools Plug-in Window

If you have inserted your plug-in(s) as we suggested above you can click on the channel name pop-up in the upper left hand corner of the window (labeled "Audio 1" above) to switch from channel to channel.

The next pop-up in the window (labeled "b" above) allows you to switch to another insert on the same channel. You would use this to switch to another plug-in on the same channel.

The bypass button allows you to bypass the effects of the plug-in.

The Pro Tools editor/librarian button (the small, downward pointing triangle) provides access to a pop-up menu that allow you to manage presets and libraries of settings for the plug-in. Use this menu to save libraries or open groups of libraries. See your Pro Tools documentation for more information.

The preset library pop-up menu (labeled "factory default" above) shows the active preset name (in italics if the current settings do not match the library). Click this pop-up to select from the available presets.

The "Compare" button indicates when the controls have changed for the current preset settings. Click this button to toggle between your current settings and the preset settings.

Figure 7.2: Compare Button

Clicking the "Automation" button causes Pro Tools to display the plug-in automation configuration dialog box:

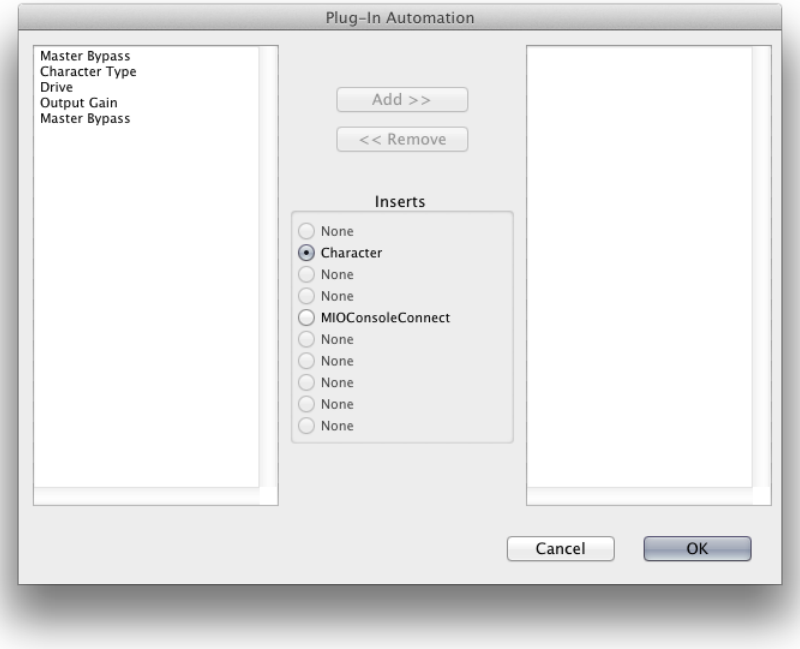

Figure 7.3: Automation Window, Showing Character's Parameters

This dialog box allows you to enable any or all of the processing parameters for automation. When a parameter is enabled for automation you will be able to record and play-back automated parameter changes directly from your Pro Tools session. If the channel that the plug-in is inserted on has automation enabled Character will highlight the controls associated with the automated parameters:

- Off: No color
- Read: Green
- Touch, Latch, Write: Red
- Controlled via control surface: Blue

Key Commands

The following key commands are used to when clicking on controls:

Table 7.1. Pro Tools Key Commands

Command	Mac Key Sequence	Windows Key Sequence
Display Automation Dialog	⌥⌘ (Option + Command)–click	Alt + Control–click
Show Automation Breakpoint	^⌘ (Control + Command)–click	Control + Windows–click
Set Parameter to Default Value	⌥ (Option)–click or double–click	Alt-click or double-click

8. AU Hosts (Mac)

The Production Bundle is compatible with any Core Audio compatible host. Support for features like sidechains differ between hosts; please check your host's documentation for more info. As an example, we'll look at using the Production Bundle in Logic.

Logic

Logic provides a standard interface for controlling various aspects of AU plug-ins. While you should refer to your Logic documentation for a complete description, we will summarize the most important points here.

If you wish to use a plug-in on multiple channels in your mix, you should click and drag the selection marquee over the desired channels in the Mixer, and insert the plug-in on any one of them; this will insert the plug-in at the same insert point on every channel.

Plug-in Window

The illustration below shows the standard Logic plug-in window.

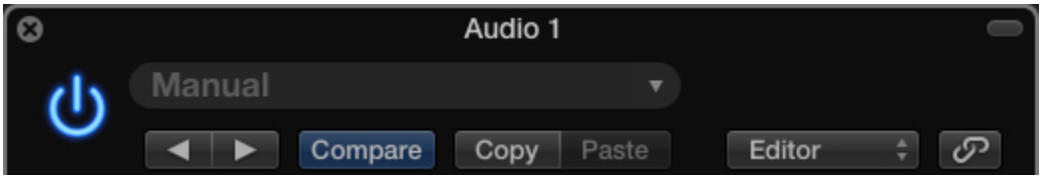

Figure 8.1: Logic's Plug-in Window

If you have inserted the plug-in as we suggested above you can click on the “Show Channel Strip” pop-up to switch between instances of the plug-in on different channels.

The “Show Insert” pop-up allows you to switch to another insert on the same channel. You would use this to switch to another plug-in on the same channel.

When the Link button (the button with the chain icon) is on, a single plug-in window is used to display all plug-ins. Turn this off if you would like to have multiple plug-in windows open at once.

The View button is used to toggle between the generic AU user interface for the plug-in and the standard view provided by Metric Halo.

The Power icon button allows you to activate/de-activate the plug-in.

The Compare button allows you to toggle between the current settings and the settings as they were before the last paramenter change. By using the Compare button you may “A/B” changes in settings.

The left/right arrows move backward and forward between presets.

The Logic preset menu (the pop-up menu with the small downward pointing triangle next to the left/right arrows) allows you to manage presets and libraries of settings for the plug-ins. Use this menu to save libraries or open groups of libraries. See your Logic documentation for more information.

The Copy and Paste buttons allow you to copy settings from one instance of a plug-in and paste them into the same plug-in on other channels without creating a preset.

The sidechain input pop-up menu allows you to select from any mono input or bus in your system and feed it to the internal sidechain bus within plug-ins that have sidechain support. You then use the sidechain routing buttons within the plug-in UI to assign the sidechain bus to the dynamics detectors. This menu is only present when a sidechain-enabled plug-in is viewed.

9. VST Hosts (Mac/Win)

The Production Bundle is compatible with any Core Audio compatible VST host on Mac as well as any VST host on Windows. Support for features like sidechains differ between hosts; please check your host's documentation for more info. As an example, we'll look at using the Production Bundle in Reaper and Cubase Elements.

Reaper

Reaper provides a standard interface for controlling various aspects of VST plug-ins. For our purposes, operations are basically the same across Mac and Windows platforms unless otherwise noted. While you should refer to your Reaper documentation for a complete description, we will summarize the most important points here.

Note Regarding Windows VST Operation in Reaper

Depending on the path you chose during installation, Reaper may not recognize where the plug-ins are located, and will fail to load them. Should you not be able to insert a MH Production Bundle plug-in in Reaper, open Reaper preferences, and ensure that the VST plug-in path is set correctly as shown.

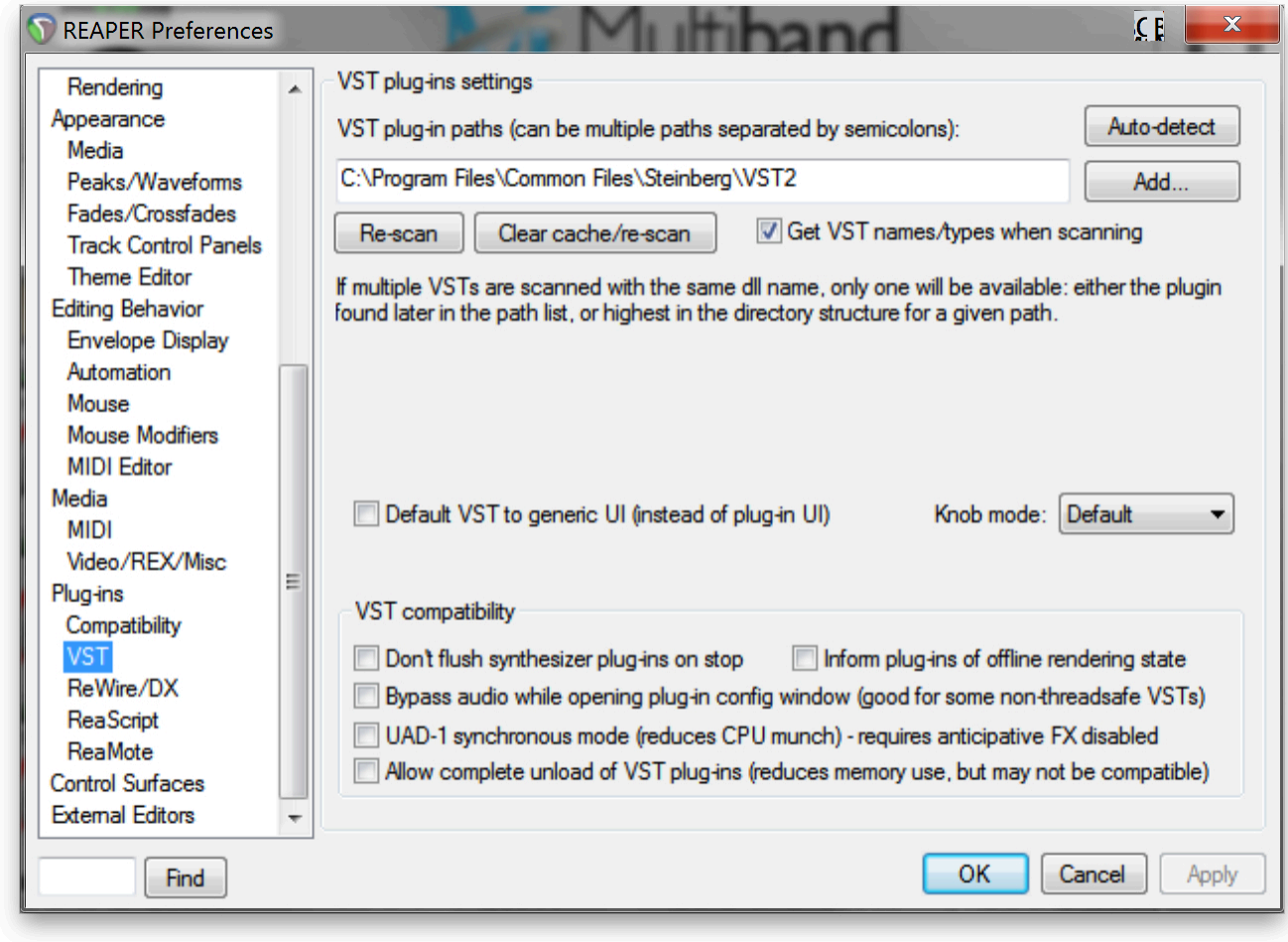

Figure 9.1: Reaper Preferences: Setting the VST Plug-In Path

Plug-in Window

The illustration below shows the standard Reaper plug-in windows operating with Production Bundle plug-ins.

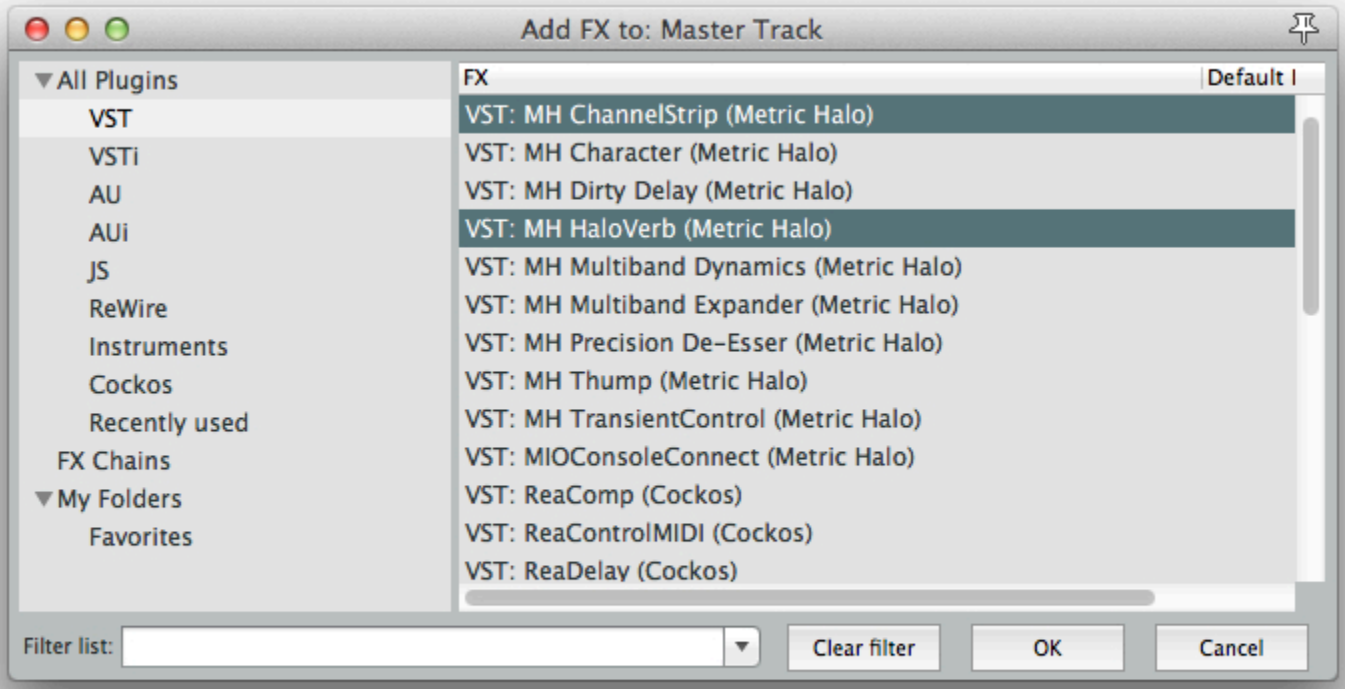

Figure 9.2: Reaper's Add FX Window

Click on the FX button of any Reaper track containing no pre-existing effects to launch the Add FX window. You can select one or more plugins (using the Command [⌘] key), and select OK to insert on the track. You may also drag and drop a plugin from this window onto any track.

Figure 9.3: Reaper's FX Window

Subsequent plug-in operation for the track takes place in the Reaper FX window. Click "Add" in the bottom left corner to reopen the Add FX window.

Click and drag the plug-in names in the left column to change their order.

Use the program window to load presets, and the "+" menu to save user presets and navigate through other preset options.

The Param menu provides access to various supplemental track automation and MIDI learn functions.

The plugin pin configuration button (labeled "2 in 2 out" above) provides a routing matrix to create complex internal effect chains. See your Reaper documentation for more information.

The UI button is used to toggle between the generic VST user interface for the plug-in and the standard view provided by Metric Halo.

The wet/dry balance knob can be used to blend the effected track with a dry copy of the track.

The check box switches the state of the plug-in effect between enabled and bypassed.

Cubase

Cubase provides a standard interface for controlling various aspects of VST plug-ins. For our purposes, operations are basically the same across Mac and Windows platforms unless otherwise noted. While you should refer to your Cubase documentation for a complete description, we will summarize the most important points here.

Plug-in Window

The illustration below shows the standard Cubase plug-in window operating with Production Bundle plug-ins.

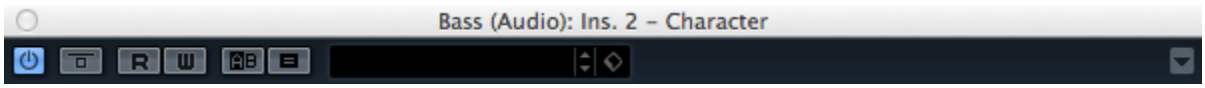

Figure 9.4: Cubase Plug-In UI

The Power icon button allows you to activate/de-activate the plug-in. Activating this button will also activate a bypass button that allows you to bypass the effect without de-activating it.

The "R" and "W" buttons toggle Read Automation and Write Automation, respectively, for all tracks.

The A/B button toggles between alternate settings. The adjacent button copies the active setting to the alternate setting.

The next panel provides the preset chooser.

The arrow menu on the far right provides additional preset management, remote editor and view options.

Part V. Appendices

Table of Contents

A. Key Commands

There are several key commands used as modifiers combined with mouse actions:

Table A.1. Tooltip Control

Command	Mac Key Sequence	Windows Key Sequence
Show tooltips	Hold ? down	Hold ? down

Table A.2. Control Knob Modifiers

Command	Mac Key Sequence	Windows Key Sequence
Fine control	⌘ (Command)-click and drag	Control-click and drag
Reset to default value	⌥ (Option)-click or double-click	Alt-click or double-click

Table A.3. Numeric Field Modifiers

Command	Mac Key Sequence	Windows Key Sequence
Confirm & dismiss numeric pop-up	return, enter	return, enter
Confirm & move to next entry	tab	tab
Confirm & move to previous entry	⇧–tab (Shift + tab)	⇧–tab (Shift + tab)
Dismiss numeric pop-up & cancel change	⌘. (Command + .), ESC	Control. (Control + .), ESC

Table A.4. Meters

Command	Mac Key Sequence	Windows Key Sequence
Reset Clip	⌥ (Option)–click the meter	Alt-click the meter

Table A.5. EQ Transfer Functions

Command	Mac Key Sequence	Windows Key Sequence
Toggle band enable	⌘ (Command)–click or double-click frequency dot	Control-click or double-click frequency dot
Adjust bandwidth (click then drag)	⌥ (Option)–click frequency dot	Alt-click frequency dot
Change filter type	⌘⌥ (Command + Option)–click frequency dot	Control+Alt-click frequency dot
Access EQ TF settings	^ (Control) or right-click graph	Right-click graph

Table A.6. Pro Tools Key Commands

Command	Mac Key Sequence	Windows Key Sequence
Display Automation Dialog	⌥⌘ (Option + Command)–click	Alt + Control–click
Show Automation Breakpoint	^⌘ (Control + Command)–click	Control + Windows–click
Set Parameter to Default Value	⌥ (Option)–click or double–click	Alt-click or double-click

B. Service and Support

Metric Halo takes great pride in the reputation for customer service and support that we have built. If you have any problems, questions, or suggestions please get in touch with us at:

- http://mhsecure.com/support
- support@mhsecure.com
- (727) 725-9555

Note for ChannelStrip 3 for GarageBand Users
ChannelStrip 3 for GarageBand is *not* eligible for phone support. Please use one of the online methods listed above above.

Please keep us informed about your successes and projects. We love to hear from you!

C. Changelog

Please note that this changelog incorporates changes for all plug-ins across all supported formats.

2.0.2:

- [Thump] Updated UI
- Fixed crash on Windows when closing UI of some plugins

2.0.1:

- Fixed scroll-wheel behavior on Mac when Natural Scrolling is enabled
- Fixed authorization problem for Dirty Delay on Windows
- Fixed handling of Pro Tools keyboard modifier-clicks on Windows
- Made it so that fine-mode adjustments switch in and out as you press and release the command key rather than only being selected when you initially click on the control
- Fixed a crash that occurred with some hosts

2.0:

- Bug Fixes
- Code Optimizations
- Added a new plugin - MH Dirty Delay
- Added support for band linking in the Multiband plugins
- Added UI resizability to all the plugins
- Added MH Preset Manager to all the plugins
- Added Auto-Drive to Character
- Added Auto-Sensitivity to TransientControl
- Updated the UI in ChannelStrip
- Added VST support for both Mac and Windows
- Added universal installer for all plugin types
- Enabled host-based licensing for the Production Bundle plugins - no iLok required

1.0.5:

- Fix alignment issue with some UI elements in ChannelStrip
- [AU] Fix issue in some hosts where parameter updates may be lost
- Fix for potential crash on deinstantiation in Multiband Plugins
- [AU] Fix for crash in some hosts (specifically FCPX) due to initialization on a thread
- [AU] Fix meter reset for MultibandCompressor
- [AU] Fix meter reset for MultibandExpander
- [AU] Fix potential crash in HaloVerb
- [AU] Fix meter reset for Character
- Fix meter allocation for MultibandExpander
- Fix analysis buffer allocation for MultibandExpander
- Fix analysis buffer allocation for MultibandCompressor
- Fix analysis buffer allocation for De-Esser
- [AAX] Add support for PT11 and 64-bit build

- [AAX-Win] Implement full optimization for host code (decreases CPU usage)
- [AAX-Win] Implement 64-bit Installers
- Sign Binaries for PT 10.3.x / PT 11
- Fix auto-suffixing of parameter readouts to deal with negative numbers
- [TransientControl] Fix (extend) range of the sustain parameter
- Fix locking for threaded plotter of crossover functions to avoid potential race condition and crash
- [Mac] Fix problem with signing 32-bit binaries (led to corrupted PT 10.3.x plugins)
- Fix Gain Reduction meters for PT reported meters (so that PT11 and control surfaces render them properly)

1.0.4:

- Fixed potential problem with licensing code when plugin scanner opens and closes plugin very quickly
- Moved drawing of HaloVerb impulse response onto background thread for responsiveness
- Moved drawing of Multiband dynamic EQ response onto background thread for responsiveness
- Added caching for background image of plugin window to reduce CPU used for drawing static image
- Fixed incorrect interpretation of wet/dry parameter when computing HaloVerb impulse response display
- Optimized computing HaloVerb impulse response display
- Optimized redraw of EQ response curve
- Fixed problem with incorrectly showing that preset was changed (when it wasn't) via Compare button
- Deferred redraw of UI until host sends parameter changed message -- fixes PT UI pauses when changing certain parameters
- Fixed problem with parameter notification that caused recording of automation for ChannelStrip to not function
- Added work-around to fix problems with multi-parameter touch automation recording in Logic (works-around Logic bug)

1.0.3:

- Soft Interpolation of band Bypass in ChannelStrip EQ
- Fix slight transparency on some controls
- Fixed problem with tool-tip tracking
- Fixed problem with phantom mouse clicks after dragging beyond UI boundary
- Fixed problem with silent output from CS2/CS3 on some hosts with disconnected sidechain input
- Fixed problem with compressor gain state on instantiation
- ChannelStrip: removed recall of Bypass from preset state (to match standard PT behavior)
- Add support for Mac OS 10.5
- Add support to cancel text entry with ⌘. (Command + .) [Control. (Control + .) on Win]
- Fixed interpolation to support bit-clean bypass
- Fixed noise problem with LF high-pass filters
- Fix problem with tooltips appearing even if window is covered by another window or is hidden
- Added a preference to control auto-enable of bands to the Transfer Function popup menu in ChannelStrip 3
- Fixed interpolation in ChannelStrip:
  - Stereo EQ bands
  - Compressor/Limiter threshold
  - Stereo Gate
- Fixed interpolation in Multiband Dynamics:
  - Compressor/Limiter threshold

- Knee control in ChannelStrip 3 is hidden when not in "MIO" character mode
- Added version number reporting and update notification
- Initial release for Windows AAX
- Initial release for Macintosh AU
- Initial release of ChannelStrip 3 for GarageBand

1.0.2:

- Fixed issue with grunge when DSP is filled with MH Precision De-esser
- Further optimized CS3, Precision De-esser, and MH MultibandDynamics, leading to an increase in instance counts
- Fixed bit-cleanliness on bypassed CS3 blocks -- so now CS3 with phase invert nulls with unprocessed audio

1.0.1:

- Substantial optimization of the processing code, especially for HDX
- Accurate Cycle Counts for HDX
- Enhanced control surface page table layouts
- Fix for some corner case bugs that apparently can cause a DSP crash on heavily loaded systems
- Additional interpolation of various parameters in the plugins to provide glitch free parameter changes
- Fixed a conflict between CoreGraphics and DAE that can lead to DAE errors (DSP + Native), CPU Spiking or CPU overloads (Native)
- Fixed a filter stability issue for high session sample rates
- Fixed an issue where the average trace in the analyzer view can get stuck
- Reduce the size on disk and in memory of the plugins
- Fixed some missing control surface metering support and clip detection
- Fixed some small graphic anomalies
- Fix for detector for classic compressor in CS3 when Side-Chain filter is enabled
- Signed installer for Mountain Lion compatibility

1.0: Initial release for Macintosh AAX