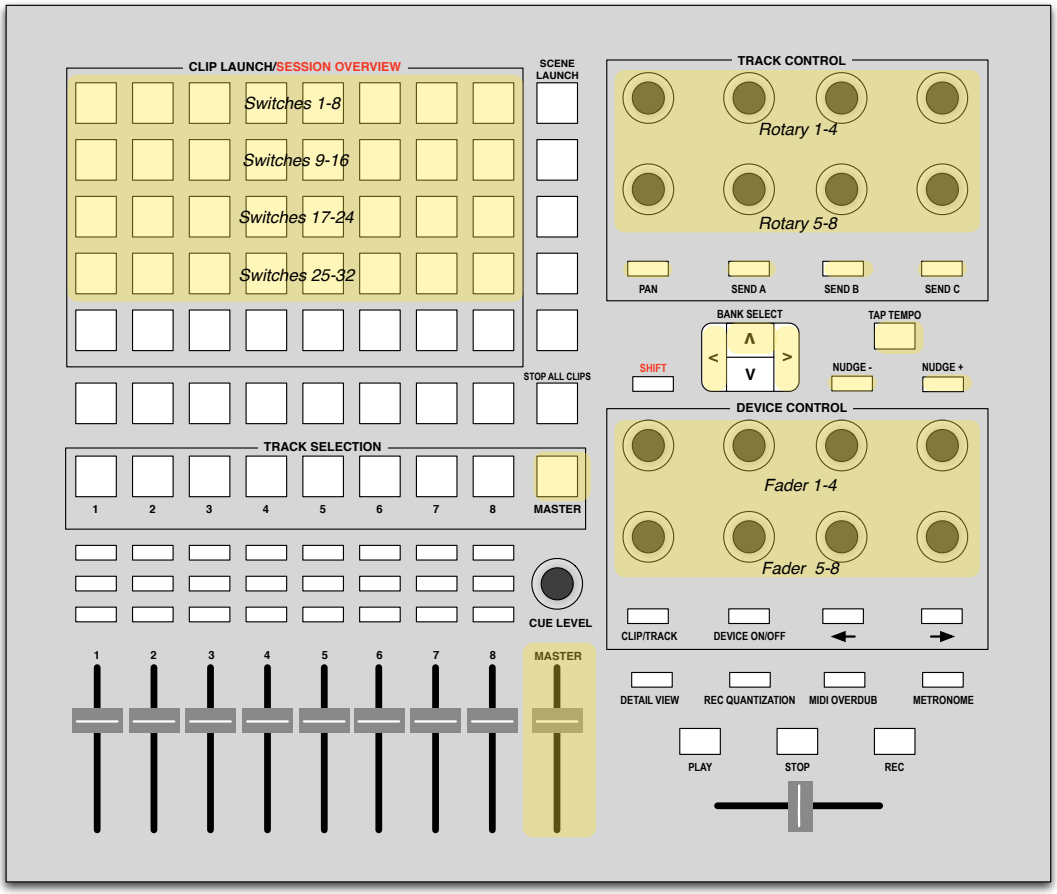
D E L O R A S O F T W A R E ™

by Harmony Systems, Inc.

vKA

Akai APC40 control surface for Kyma VCS



Every effort has been made to ensure the accuracy of this manual. Please contact Delora Product Support (support@delora.com) should you have questions regarding information in this manual.

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Introduction to vKA

Symbolic Sound's Kyma X sound design workstation and environment is a powerful yet flexible tool for creating, or discovering, fantastic new sounds. A user can interact with a Kyma system using typical personal computer devices: mouse or trackball, keyboard, and the display monitor. But Kyma also offers another means of interaction that can be far more satisfying: a physical control surface with faders, knobs, switches, and lights.

Kyma's control surface support is through its "Virtual Control Surface", often simply referred to as its "VCS". Kyma sounds are, by their very nature, unconstrained to a specific arrangement of knobs, faders, and other control elements. Yet Kyma does a remarkable job of automatically creating a usable VCS setup for each sound that you can modify as necessary.

The VCS is often controlled with simple mouse movements. Where it really shines though is when coupled with one of the supported hardware control surfaces. If you do not have one of these VCS-compatible controllers then you are missing a lot of the joy of physical interaction with your Kyma creations!

However, not many hardware devices work seamlessly with Kyma's VCS. The grandmother of all VCS controllers is the *MotorMix.* But these are getting harder and harder to find. The VCS also supports the affordable Behringer *BCF2000*, though its very nature limits the VCS support to only a subset of what is possible.

Harmony Systems' Delora **vM2** product in 2009 expanded Kyma VCS support to include the JazzMutant *Lemur*, an innovative, forward looking controller that pioneered multitouch technology. **vM2** combined with the *Lemur* provides arguably a *superior* interaction with the Kyma VCS over even the *MotorMix.* Unfortunately *Lemurs* are expensive.

vKA is the latest addition to the Delora Software "V Family" of control surface solutions that work together with Kyma's VCS. **vKA** transforms the popular, affordable Akai *APC40* into a VCS controller. It delivers most of the features of the VCS in an intuitive, easy to use manner. If you already own an *APC40* (and if you regularly use Ableton Live you really should!), **vKA** represents an inexpensive addition to your Kyma studio that will pay for itself in time saved and the pleasure you gain from using Kyma in a hands-on matter. Furthermore, since Akai manufactured its *APC40* to withstand the rigors of live performance, **vKA** may well be *the best* option if you like to use Kyma on stage.

The *APC40* is by some measures a dedicated control surface for Ableton Live. Harmony Systems designed **vKA** so that it works in concert with Ableton Live. You can continue to use the *APC40* with Ableton Live, *even at the same time you are controlling a Kyma sound.* **vKA** keeps track of messages from both Ableton Live and Kyma's VCS. A simple button press toggles you at any time between Live and Kyma. This seamless sharing between Live and Kyma means you can have one less controller surface taking up valuable desk space in your studio, or in your performance setup.

vKA has built-in support for Symbolic Sound's new "MIDI-over-OSC" feature now supported in Paca(rana) based Kyma setups. **vKA** can communicate directly with the Paca(rana) without the use of a physical MIDI interface! This saves the expense of a MIDI interface on your Mac and one for your Paca(rana), plus MIDI cables. In addition, **vKA** provides a utility virtual MIDI port named "Paca(rana)" that sends MIDI to and from your Mac using the previously mentioned "MIDI-over-OSC" feature. Sequencers, Max/MSP, and other music software can send MIDI directly to and from the Paca(rana) sound computation engine without requiring a MIDI interface.

vKA in Summary

- Native OSX user agent program that is compatible with Intel and G5 Macs running Leopard or Intel Macs using Snow Leopard.
- Transforms the Akai APC40's MIDI commands to and from appropriate Kyma's VCS control messages.
- Supports Symbolic Sounds' Capybara sound engine and Paca(rana) family of sound engines.
- Works with a direct MIDI connection to the sound engine, or optionally with the Paca(rana) using its "MIDI-over-OSC" network MIDI protocol.
- Provides a "virtual MIDI port" when used with the Paca(rana) and "MIDI-over-OSC". This affords MIDI applications direct communication with the Paca(rana) without requiring additional MIDI or USB interfaces.
- Retains Ableton Live APC40 compatibility.
- Easy one button switching between controlling Ableton Live or Kyma VCS.
- Can be used with Harmony Systems PacaMidi utility to further expand the Paca(rana)'s MIDI connections.
- "Set up once and forget about it" ease-of-use.

How it Works

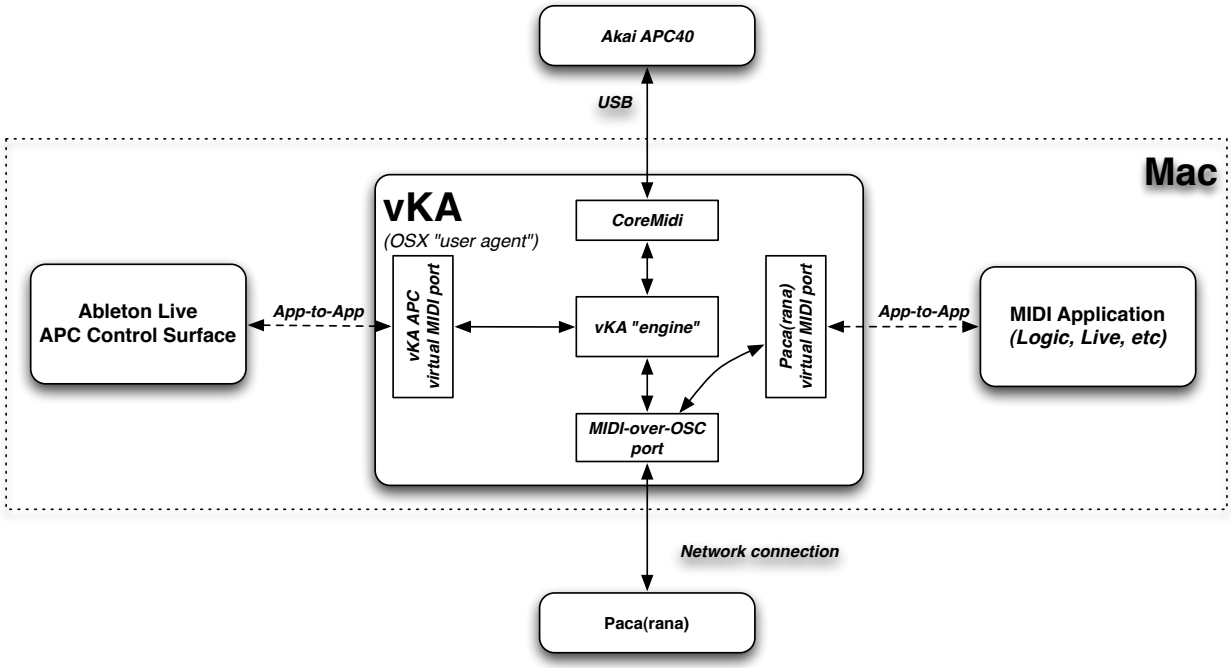
vKA is a small, light-weight OSX application that run unobtrusively in the background. It is easy to set up, and once you have done this you can pretty much forget it's even there. You do not really even need to understand what is happening "behind the scenes".

So what is happening "behind the scenes"? **vKA** is a "native" OSX application that is technically a "user agent" program. This is a special type of OSX application that does not require (nor offer) any direct user interface. Its operation is fully under OSX's direction. **vKA** can automatically start when you log into your OSX account. If OSX detects any type of problem it can automatically restart **vKA**. If you need to manually control **vKA**'s operation, or adjust its few settings, it has a control panel available through OSX's **System Preferences**, just like you control your mouse, keyboard, and other OSX components. There are, however, very few settings. In fact when used with a Paca(rana) set up is pretty much automatic!

A brief comment about **vKA** being "native" - **vKA** was created using OSX's standard developer tools and languages. It does not require a special "run time" or other unique components for it to operate. It is literally "built for OSX". This ensures smoother operation, less processing and memory demands, and better overall compatibility. Since **vKA** was created with the same tools Apple uses for its applications you can expect a smoother transition when OSX, or your Mac, changes in the future.

vKA

Paca(rana) mode



This diagram highlights how **vKA** works when in the "Paca(rana) mode". The vKA "engine" monitors MIDI traffic from the Paca(rana) for VCS related messages. These messages are transformed into an appropriate sequence of APC40 messages. This is done so that the APC40 provides the necessary "faders" (more on this in a moment), rotary controls, switches, and lights that the VCS requires. Likewise **vKA** interprets APC40 messages into VCS user actions, like moving a fader or setting a switch. All of this works so that the user can use APC40 rotary controls and switches to change the VCS.

vKA provides an OSX CoreMidi compatible "virtual MIDI port" that applications like Logic, Ableton Live, or any other application that supports CoreMidi, can use to send MIDI to and from a Kyma sound. This **VKA** feature is like gaining a USB MIDI interface for free! In fact since the Paca(rana) normally also needs a USB MIDI interface you are getting two for free. **PacaMidi**, another Harmony System product, is a "virtual MIDI interface and patchbay" that not only replaces these physical USB MIDI interfaces but also provides MIDI merging and routing support for two external MIDI devices. You can use **PacaMidi** along-side **vKA** if your MIDI set up requires these extra features.

What has been described thus far is sufficient to transform the *APC40* into a VCS controller. But **vKA** does not stop there. You probably would like to continue using your

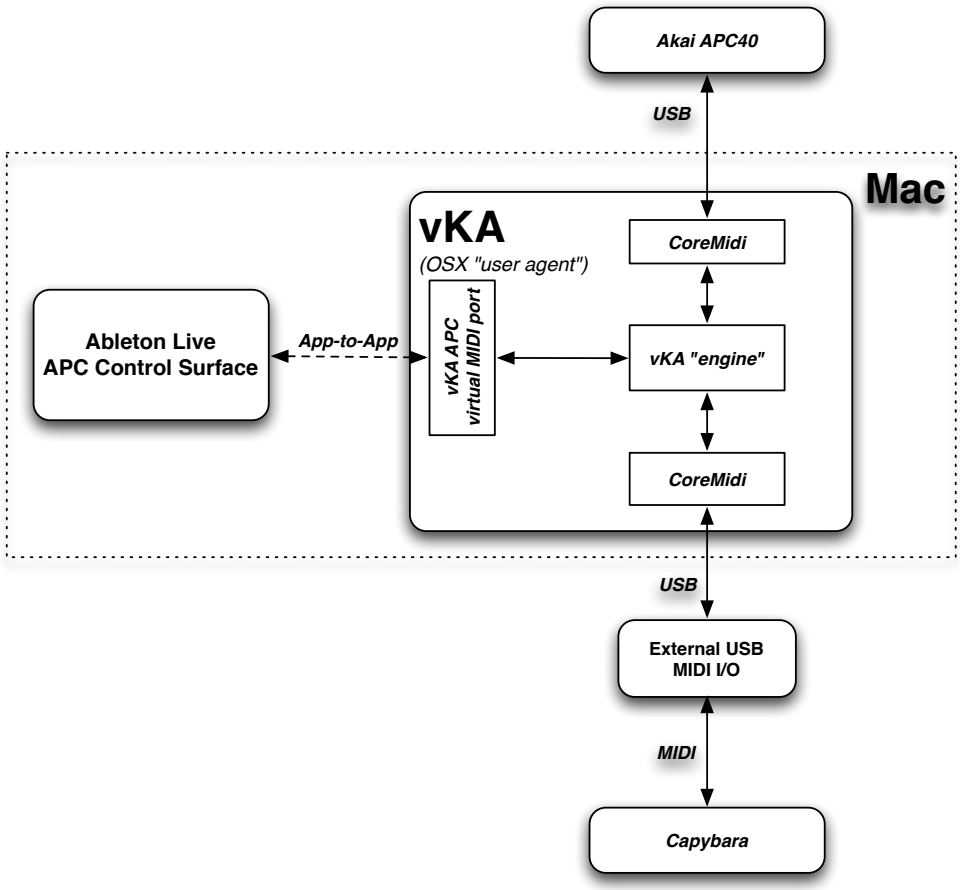
APC40 to control Ableton Live without switching cables, settings, or running “MIDI pipes”, “MIDI patchbays”, or other applications. **vKA** “virtualizes” the *APC40* so that Ableton Live and the Kyma VCS can both use it *at the same time.*

vKA provides a second virtual MIDI port named “vKA APC”. If you set Ableton Live to find the *APC40* on this port instead of the APC40’s actual port then **vKA** can keep track of Ableton Live. You switch between “VCS mode” and “Live” mode using one of the APC40’s buttons.

When you are controlling the VCS **vKA** continues to monitor MIDI arriving over the “vKA APC40” virtual port. It takes note of the commands and remembers what these commands did. If you then switch to controlling Ableton Live, **vKA** makes sure that the APC40’s lights and rotaries are where Live expects them to be. Meanwhile **vKA** still listens to VCS commands arriving from the Paca(rana) (or Capybara) and takes note of those. When you switch back to VCS mode **vKA** makes sure that the *APC40* reflects the current VCS settings.

vKA

Capybara mode



This diagram illustrates the differences when **vKA** operates in “Capybara mode”. What this really means is that a physical MIDI connection is used to send and receive MIDI with the Capybara (or Paca(rana) should you choose to use conventional MIDI with it). No application virtual MIDI port is available (the “Paca(rana)” virtual port). The reason this is omitted is that there is already a MIDI interface connected to the Capybara and any application can send and receive MIDI with that, even while **vKA** is operating. However the “vKA APC” virtual MIDI port is still provided as that is essential to sharing the *APC40* between the VCS and Ableton Live.

So how does the *APC40* provide the necessary controls that the VCS expects? This is covered in the **Operation** section but a few words are in order here regarding faders. The VCS uses a “banking” strategy to allow eight physical “faders” to control a some-

what unlimited number of VCS settings. Button presses are used to change what sound setting is currently assigned to one of the eight “faders”. This is how many DAW control surfaces work so you are probably already familiar with it.

The problem with these “bank changes” is that the physical controls have to somehow adjust to reflect the current VCS value. Controllers like the *MotorMix* or *BCF2000* employ motorized faders that move the fader handles to the correct value. **vM2** accomplishes the same feat by commanding the Lemur’s virtual faders to also update. Unfortunately the *APC40’s* faders are not motorized, making them inappropriate.

What the *APC40* does have is sixteen endless rotary controls, each with an “LED ring” that can be set to show a current value. Essentially these rotaries can be used like a conventional “potentiometer” (or knob). When you adjust one of them the LED ring will show the new value. Likewise when the VCS adjusts one it will also then show the current value.

vKA’s engine uses the APC40’s “Device Control” group of eight rotaries as VCS faders. You will find that the operation is accurate, smooth, and intuitive. In a short time you will reach for one of these “knobs” whenever you wish to adjust a VCS fader.

For now, the APC40’s physical faders are unused by the VCS. That way they remain fully available to Ableton Live without the undesired consequences when switching between VCS and Live mode.

Limitations

vKA only provides a subset of the VCS functionality you would find if you used a *MotorMix* or **vM2** with a *Lemur*. This is not unlike using the *BCR2000* (except **vKA** provides many additional features). In practice what is “missing” is probably not something you will miss. The *APC40* was chosen because it is one of the few physical controllers available that can provide a substantive VCS experience.

Requirements

- Mac OSX 10.5 or higher. Compatible with Leopard and Snow Leopard. G5 Macs are supported on Leopard only.
- Akai APC40 Ableton Controller.
- Symbolic Sound Kyma system with Capybara or Paca(rana) sound engine.
- To be used with Kyma Capybara (or Paca(rana) without the MIDI Over OSC feature), **vKA** requires a Firewire, USB or other physical MIDI interface connecting the Kyma hardware to your Mac.

About Your License

vKA requires a license that is contained within a special file. You received this license when you purchased **vKA**, or when you requested the **vKA** demo. Your license file is unique *to you.* It contains your name and contact information. Please take proper measures to insure that it remains safe and secure.

If you are evaluating **vKA** the demo license that we sent you is valid for a limited time. The time interval should be sufficient for you to do a proper evaluation and hopefully see how invaluable **vKA** is in your daily workflow. However, if you need additional time please contact sales (sales@delora.com) to discuss your specific requirements.

Entering your license is the step #5 of the Setup process (see Chapter "Set-Up"). Once the license is installed, **vKA** will work on that computer, even if you later add more memory, add or replace hard drives, or reinstall OSX, provided the license file is not deleted. Should your license file ever become damaged or inadvertently removed you will be greeted by a message on the vKA preference pane like the one that occurred when you first installed the program. A similar message will "pop up" on the Lemur the next time you use **vKA**. Repeat the same steps you used before to reinstall your license, or replace it with a new one. If you continue to encounter difficulties, or you have misplaced your license file, please email product support (support@delora.com) and we will help you work through the issue.

Installation

Note: If you are updating to a new version of ***vKA****, please go to the next chapter "Updating vKA" for the installation procedure.*

vKA uses OSX's standard installation application to place its required files in the appropriate locations on your Mac's hard drive.

The entire **vKA** application is contained in the single file, *vKA* **,** provided on the distribution media. To install **vKA,** simply double-click on this file. The OSX installer will then walk you through the installation.

vKA consists of two program components, its "preference pane" and the "user agent". You interact, as needed, with **vKA** through its preference pane. The user agent component works silently in the background and is managed by OSX directly. The preference pane settings inform OSX and the agent how you wish it to operate.

If you have set your Mac up with only a single OSX user account then **vKA** works pretty much as you would expect. Each time you "log-in" to your account (or if you have automatic log-in turned on) OSX starts **vKA** up and it is ready to go. When you log out of your account **vKA** is halted.

If, on the other hand, you share your Mac with other users who each have their own account then there are a few things to consider. **vKA** is installed as a system wide resource, meaning that each user account *can potentially* use **vKA**. **vKA** is designed to work seamlessly in this situation. For example your license, once installed, validates all possible user accounts. Each account can also have its own settings for **vKA**.

vKA only runs in an account in which it has been set up to operate. *This includes the account you were in when* **vKA** *was installed!* To turn **vKA** "on" you must visit its preference pane in **System Preferences** at least once to enable **vKA** to operate in an account. So each user account will have to do so in order for **vKA** to operate when that account is active. Conversely if you do not want **vKA** to run when an account is active simply do not ever "turn it on", or if was enabled in the past use the preference pane to disable it.

Updating vKA

If you are updating your production version of **vKA** after an initial installation, please follow these procedures:

- Run **System Preferences** and click on the **vKA** preference pane
- Press the *STOP* button
- Quit/close **System Preferences**
- Click on the **vKA** (updated) installer file sent to you and follow the installation instructions
- Run **System Preferences** and click on the **vKA** preference pane. If the new version offers new or changed features through the preference pane adjust your settings accordingly then run **vKA**.

Set-Up

Once you've finished the OSX install, you will need to complete these setup procedures to begin using **vKA**:

1. Plug your *APC40* into an available USB port.
2. If you are using a Capybara or a Paca(rana) with MIDI instead of MIDI-over-OSC
   - verify that the USB or FireWire MIDI interface connected to your Capybara is also plugged in and powered
   - Note that if plan on using MIDI with the Paca(rana) it too needs a USB or FireWire MIDI interface
3. (alternative to #2) If you are using a Paca(rana) with MIDI-over-OSC
   - Make sure that the Paca(rana) is connected to the same computer network as the Mac running **vKA**
4. Power up the *APC40* and Capybara or Paca(rana).
5. Run the vKA preference pane and enter your license
6. Setup the vKA preference pane
7. Run **vKA**
8. Enable Kyma's VCS

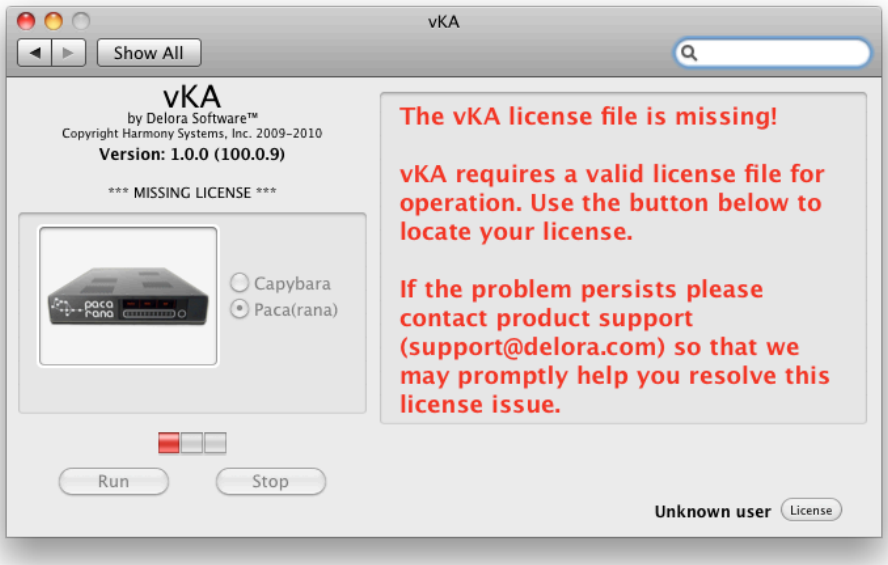
Completing the setup procedures establishes the necessary connections between the various components working in a typical **vKA** usage.

Run the vKA Preference Pane and Enter Your License

*Note: You must run the vKA preference pane at least once, otherwise **vKA** will not run! Also you must access the preference pane the very first time and enter your license from an account that has administrator privileges.* Once this has been done you can access the preference pane from any account.

Select *System Preferences...* from the "Apple Menu" (upper left corner of screen). Click on the **vKA** icon (highlighted in the screen shot above).

The first time you select the vKA preference pane from the **System Preferences** application you will encounter a message like the one in red text in the graphic below.

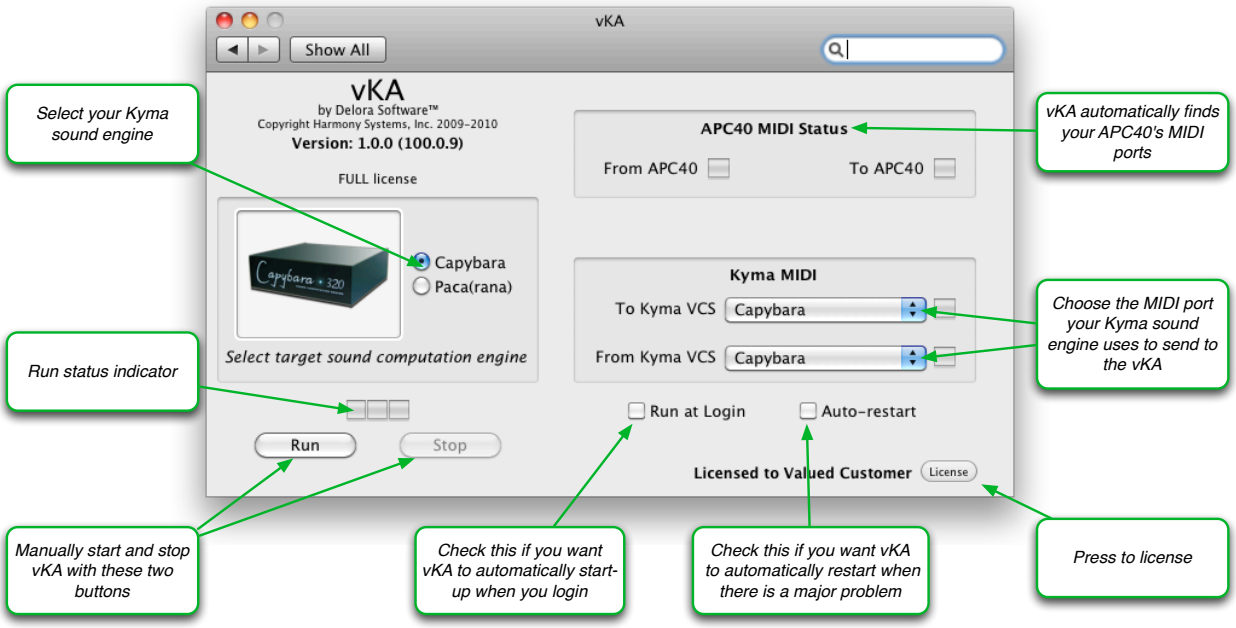


Press the *License* button and use the file dialog to locate the license file you received as part of your order or demo request. (You will also see this message if you are a demo or beta user and your demo/beta license has expired).

If you are installing your first production version of **vKA** but have a Beta or demo license installed that is still valid, the "vKA license file is missing" message will not display on the preference pane screen. Instead, you will see the message in the bottom right corner - "licensed to demo user" or "licensed to beta user". Press the *License* button and use the file dialog to locate the production version license file you received as part of your **vKA** purchase.

Setup the vKA Preference Pane

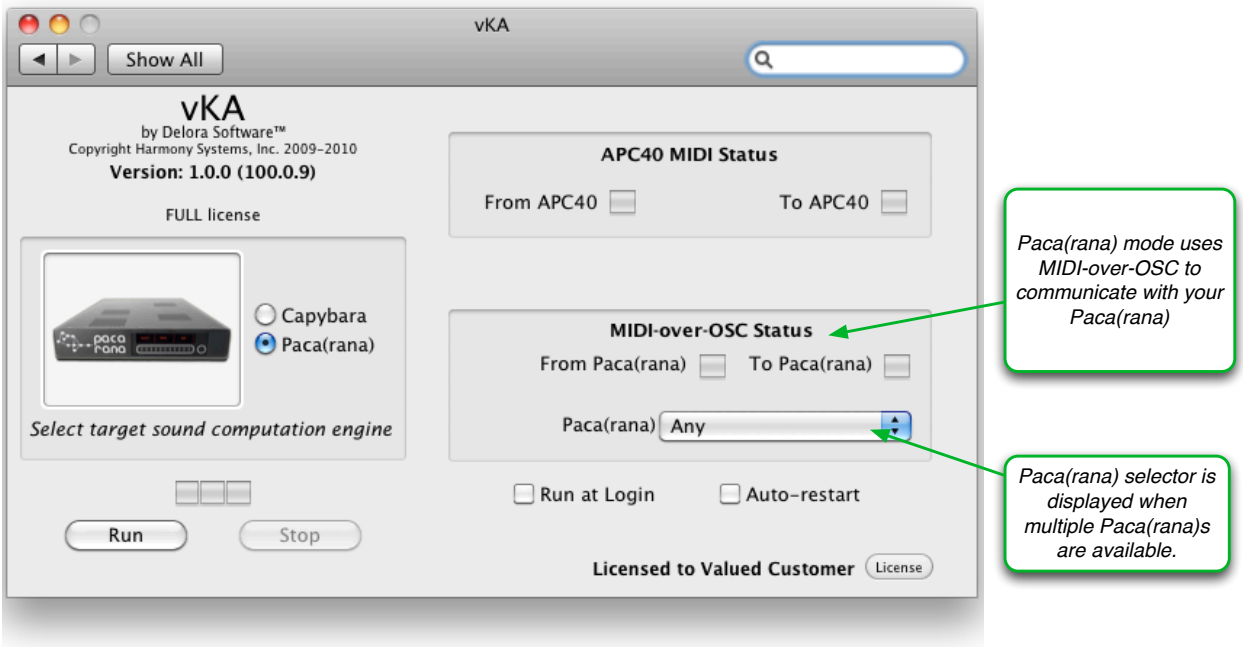
vKA is, for the most part, *self-configuring* for typical use. The one exception is when you use it with a Capybara, or elect to use MIDI instead of MIDI-over-OSC with the Paca(rana).



vKA 2.0 has two modes of operation:

1. Capybara: uses MIDI to communicate with a Capybara or Paca(rana) Kyma sound computation engine. Though it is named "Capybara" since the older Capybara sound computation engine only supports standard MIDI, it can also be used with the newer Paca(rana) should you wish to use standard MIDI instead of the new "MIDI over OSC" features. This mode requires a physical MIDI interface connected to the Kyma sound engine.

2. Paca(rana): uses the Paca(rana)'s "MIDI over OSC" capabilities to send MIDI to and from the Kyma sound computation engine. This mode also creates a virtual MIDI port call "Pacarana" that is available in your sequencer and other software that can be used to send and receive MIDI from your Paca(rana). All communication ports in this mode are automatically configured. **vKA**'s Paca(rana) mode only works if you have a Paca or Pacarana!



Select target application

Select your target sound engine. Notice that the preference pane changes if you select the Paca(rana) (see screenshot above).

1. If you have selected the ***Capybara*** target:

Kyma Midi (To Kyma VCS), (From Kyma VCS)

vKA uses a MIDI input and output port to communicate with the Capybara:

- Assign **vKA** to use the physical MIDI ports that connect to the hardware device. To use **vKA** with Kyma Capybara (or with the Pacarana without the MIDI-over-OSC feature), you must have a Firewire, USB or other physical MIDI interface connected to your Mac. This is usually a USB MIDI interface or perhaps the MIDI interface from another USB controller. The physical inputs and outputs of this MIDI interface must connect to the Capybara's corresponding MIDI input and output. The Paca(rana)'s MIDI interface is the one you plugged into its USB or Firewire connection. (Note: *the Capybara Flame's MIDI over FireWire feature will not work*.)
- Set the desired ports using the pull down selectors for *To Kyma VCS* and *From Kyma VCS*. Normally the same interface is used for both input and output but **vKA** gives you the flexibility to make these different.

2. If you have selected the ***Paca(rana)*** target:
   - The new MIDI-over-OSC feature eliminates the need for you to provide MIDI In and MIDI Out parameters in the Preference Pane. **vKA** uses Bonjour technology to automatically configure the Paca(rana)'s network details.

Run at Log-in, Auto-restart

If you would like **vKA** to run every time you log-in, "tick" the *Run at login* checkbox. This is the way we recommend you use **vKA**. The *Auto-restart* checkbox determines whether **vKA** will start up again in the event that OSX determines it has become "stuck" or crashed. This is an unusual happenstance but stuff does happen. The recommendation is to have this setting on if you have also checked the *Run at Log-in* box.

Run vKA

Run, Stop

The *Run* and *Stop* buttons do exactly what they imply: they control whether **vKA** is running or not. The three segment progress indicator above those buttons indicates the status of the Run process. In general,

- all segments green: **vKA** appears to be running properly
- two segments yellow: the program is in the process of starting up or shutting down
- one segment red: a serious condition in which the process has become "stuck" and the program is unable to shut down (logout, force quit, or restart should this occur)

At this point of your first installation and setup, the indicator segments should be grey/darkened since **vKA** has never been started.

Press the *Run* button. The indicator should turn yellow then green. While **vKA** is starting, the control panel panel indicators may momentarily display red or yellow. *This is normal.* If, however, the red or yellow remains, and the **vKA** progress indicator shows yellow, then **vKA** has detected a problem with the current setup. Go to "Troubleshooting with the Preference Pane" below to determine the likely causes and remedy.

You can start or stop Kyma (or Ableton Live) while **vKA** is running. *There is no need to restart vKA when you run, quit, or change applications.*

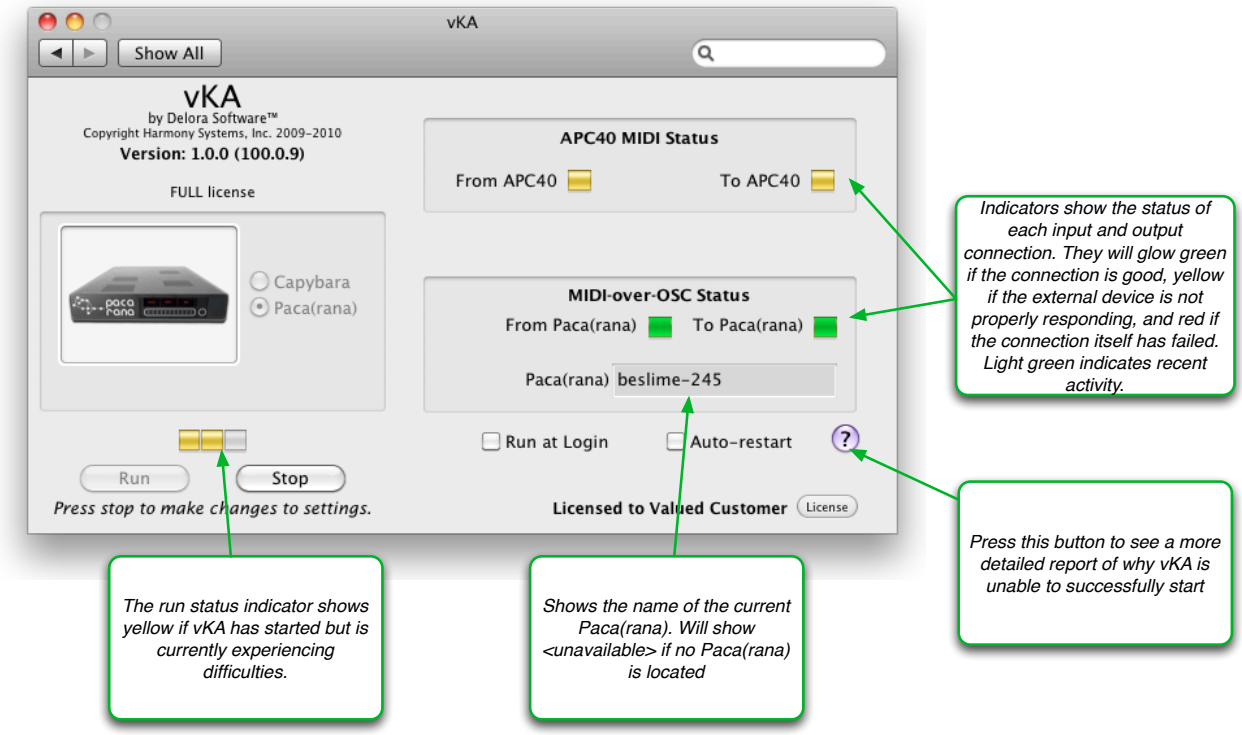
Enable Kyma's VCS

Bring up Kyma's preferences and press the "Performance" button. Then on the displayed "Performance Preferences" panel select "MotorMix" under "External Midi Controller". Close this panel, and then preferences, and Kyma should be ready to use **vKA**.

Troubleshooting with the Preference Pane

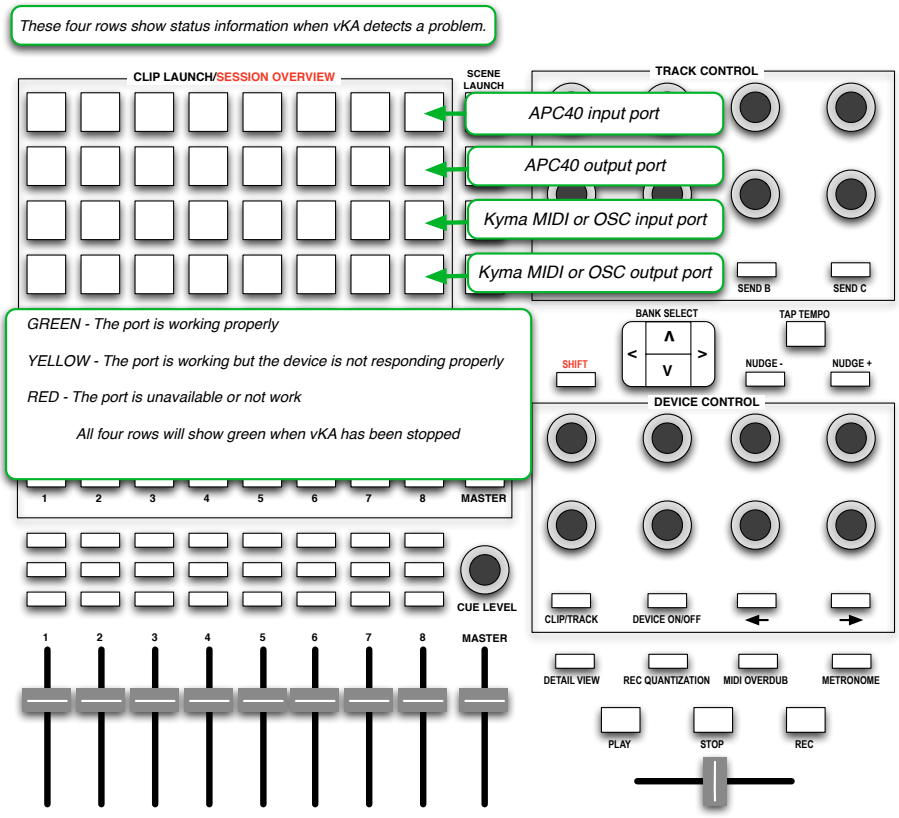
vKA helps you diagnose potential set up issues. After pressing the *Run* button, some indicators may show as follows (please refer to the next diagram):

- yellow: hardware connections are likely OK, but information is not being exchanged properly between **vKA** and the APC40 and/or Kyma's VCS.
- red: an error indicating a critical connection problem. This signifies a hardware problem, usually a MIDI port that is no longer available, the APC40 is no longer powered or connected, or the Paca(rana) is no longer powered or is not connected to the network.



You can access a detailed description of the problem by pressing the help button (the question mark near the bottom right of the screen). This shows a dialog with information to guide you to fix the problem.

If the *APC40* is connected and powered it will notify you of problems. Essentially this duplicates the status indicators shown in the preference pane. This feature eliminates the need to keep the preference pane open. This feature does not work if **vKA** is unable to communicate with the *APC40*.



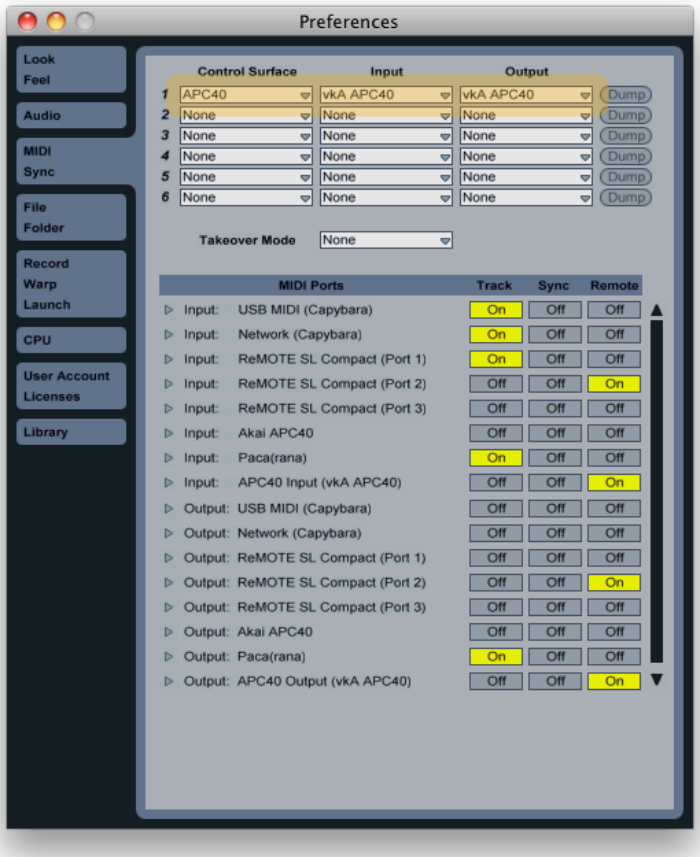
Additional Set-Up for Ableton Live

Once you've finished the standard Setup steps in the last chapter and you plan on using the *APC40* and **vKA** with Ableton Live, you will need to use a slightly different set-up than you would normally have for Live.

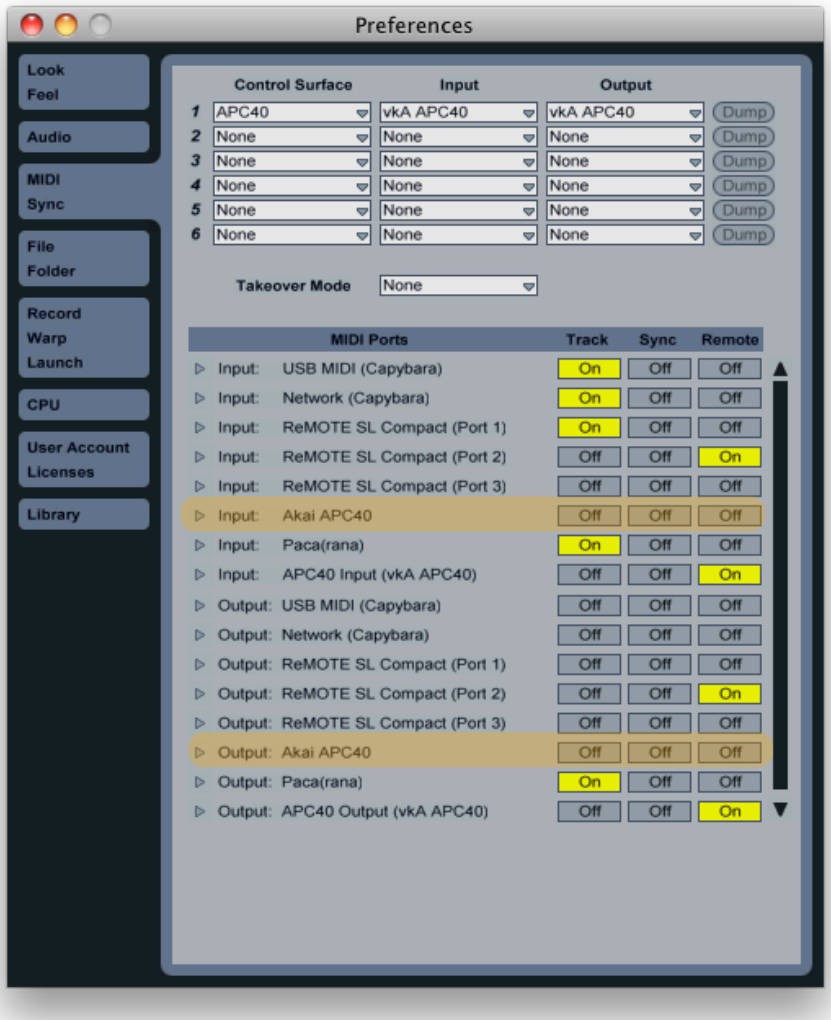
Configure Ableton Live

Start Live, bring up its preferences, and select the "MIDI/ Sync" tab.

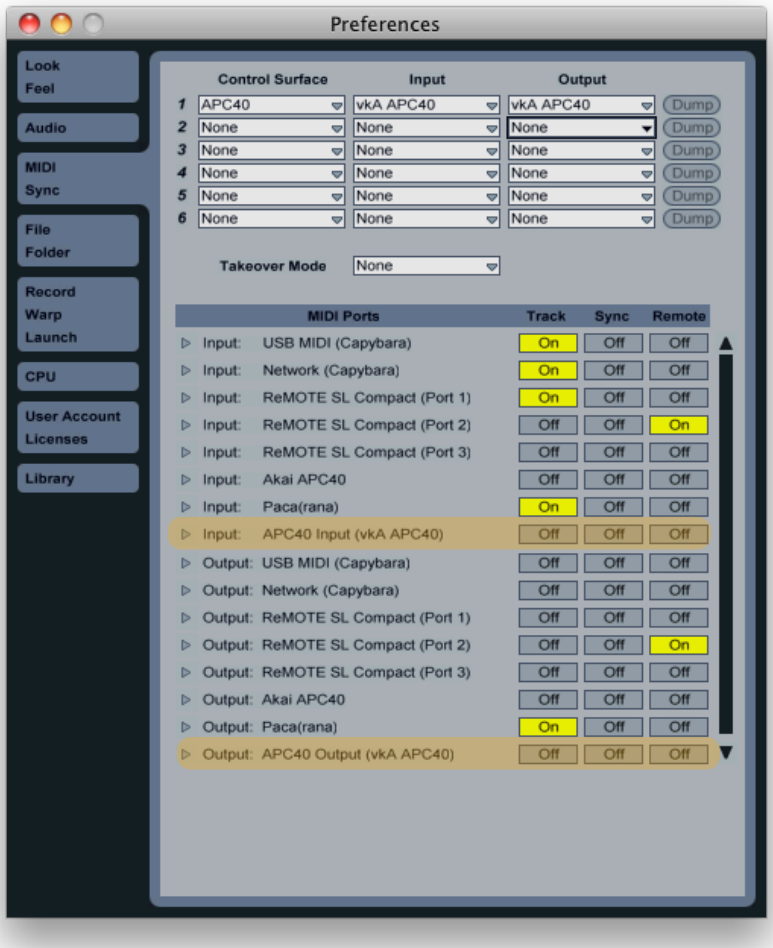
Make sure that you have "APC40" selected as at least one of the control surfaces. Use the drop-down menu selector to choose "vKA APC40" as its input, and "vKA APC40" as its output. You can have additional APC40 controllers *provided they do not use the physical APC40 you are using with* ***vKA****.*



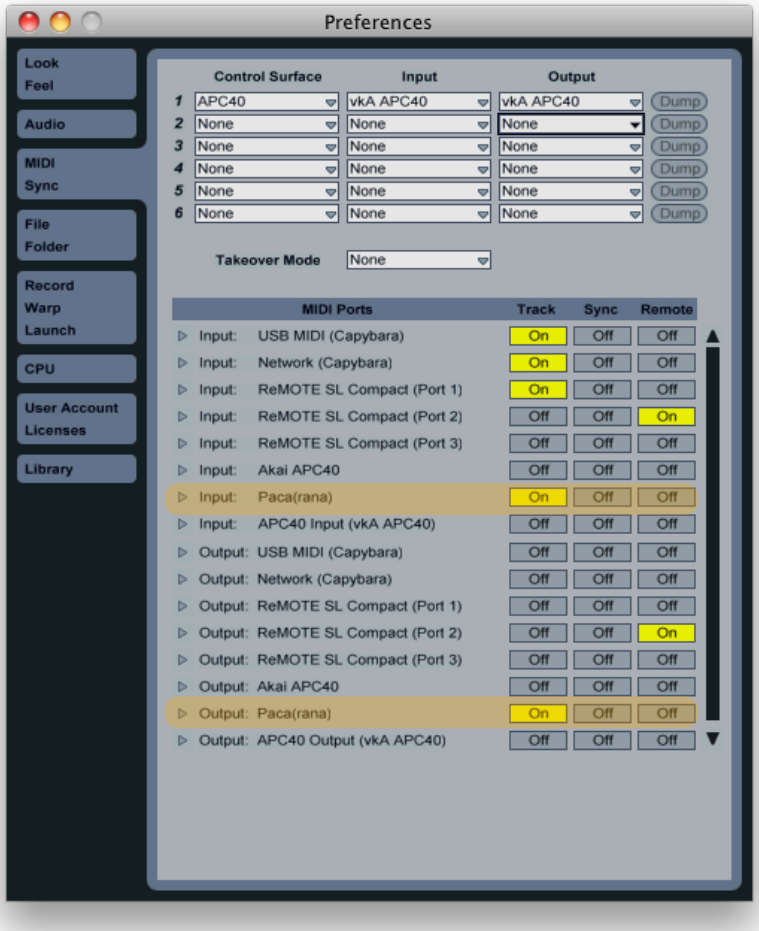
Look at the MIDI device list and find the entry “Akai APC40” (if you have more than one APC40 locate the one used with **vKA**). Turn off the Track, Sync, and Remote options for both input and output.



Now locate the two lines “APC40 Input (vKA APC40)” and “APC40 Output (vKA APC40)”. Turn off Track, Sync, and Remote.



Finally, if you have set up **vKA** in Paca(rana) mode and wish Live to control, or be controlled by a Kyma sound, locate the lines “Paca(rana)”. Set Track on, Sync off, and Remote off.



Using **vKA**

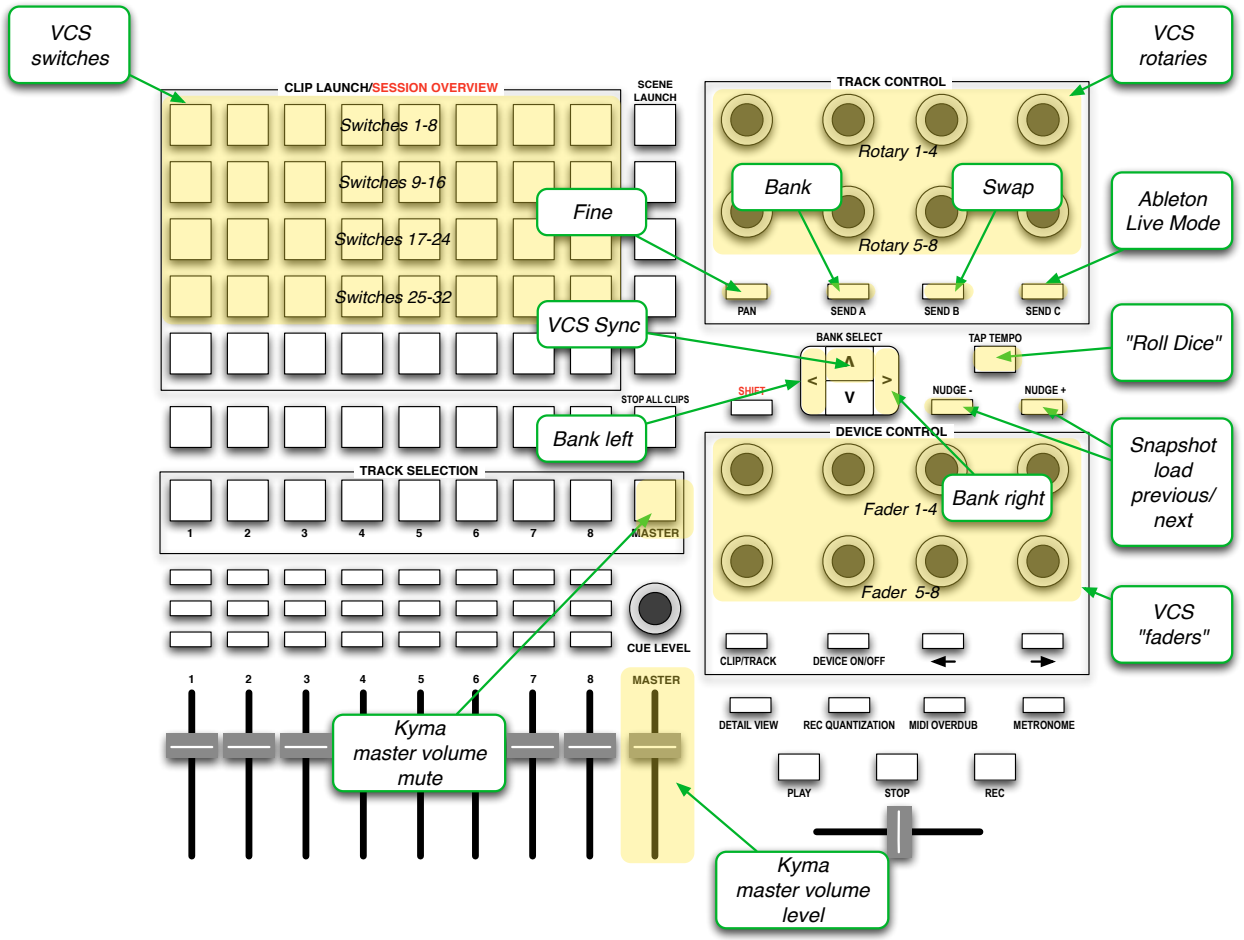
vKA is designed to work automatically in the background once you have everything properly set. It will load each time you log into your OSX account and sit quietly in the background waiting until you need to use the controller. When **vKA** sits idle it consumes very little computer resources and can generally be ignored. However if you are the type of user that prefers to only have software running when you are actually using it then you can manually start and stop **vKA** from its preference pane.

If you like to turn off the *APC40* when you are not using it, **vKA** will be idle until you turn the *APC40* on. **vKA** will then come alive with a "reset sequence" to bring everything into proper operating order. You can also power down your Capybara and MIDI interface, or Paca(rana) when not in use and **vKA** will perform the same initialization sequence when your equipment again is powered or connected.

How the VCS Uses the APC40's Controls

Kyma's VCS requires eight sliders, eight rotaries, and thirty-two push buttons. The push buttons are also required to have lights that the VCS can turn on and off. Eight additional push buttons control VCS operation, three of which also offer lights.

The diagram on the next page highlights each of these controls on the APC40's panel. Notice also that many of the APC40's switches and other controls are currently unused by **vKA** to provide VCS functionality. In some cases they are unused because the choice was inappropriate for proper VCS usage. Let's tour the main controls groups and dig in a bit.



Master volume fader and mute button

The Paca(rana) and Capybara each offer a *hardware* volume control feature that can be adjusted from the Kyma preferences or by sending the proper MIDI command to the sound engine. The Paca(rana) also offers a way of adjusting master volume from its front panel. **vKA** taps the master volume feature to offer a volume control fader and a mute function. Strictly speaking these are not VCS “features” but they are handy to have.

The mute button is not lit when the sound engine is playing at whatever master volume you have set. When you press the mute button it sends a “turn the volume all the way down” message to the sound engine. The button remains lit to remind you that you have turned off the sound. Press mute again and the sound engine returns to its previous volume setting. **vKA** tracks any changes that you make to the master volume fader while the sound engine is muted. When you “unmute” these changes take hold.

Since the APC40 faders are not motorized it is possible for the fader position to not reflect the current sound engine’s master volume level. This can happen if the level is

changed by another means, like through the Kyma preferences, or the Paca(rana)'s front panel.

vKA's master volume fader and mute button work in a such a way that if you prefer to set master volume level by other means, and do not often change it, then **vKA** will not get in the way. Basically **vKA** keeps track if you have adjusted the master volume fader previously. It saves whatever the last value you set and restores this value each time you start **vKA**. So if you never adjust this setting **vKA** never sets your sound engine's master volume.

VCS switches and lights

The APC40's upper-most grid of eight by four pushbuttons provide the thirty-two switches and lights that the VCS supports. When you press one of these buttons the VCS is sent the appropriate message that the corresponding VCS switch has been pressed. The action the VCS takes in response to this action is left to the current sound running.

It's important to understand that the light within the switch is *completely* controlled by the VCS and will be on or off depending on the nature of the sound setting assigned to the companion switch. Some sounds use a "toggle" switch and the light will alternate between on and off on each press. Others use a "push button" style switch and the light will remain off. One useful VCS "trick" is that you can use these switches for the light function and ignore any switch action.

Eight VCS faders

The four by two group of rotary controls in the APC40's lower right corner provide the VCS faders. The top row corresponds to faders 1 - 4; the bottom 5-8. The "LED rings" around the rotaries are used to display the current fader position. So if you change Kyma sounds, or adjust a fader on the VCS display on your computer, these indicators change to reflect the latest value.

If you adjust a VCS fader on the computer screen be aware that Kyma does not send the updated value to its control surface until you release the mouse button after dragging the fader!

Eight VCS Rotaries

The four by two group of rotary controls in the APC40's upper right corner provide VCS rotary controls. These are "endless rotaries", meaning that the information the VCS receives when you adjust one relates to how much you have changed the control and not

the absolute position. These rotaries work the same way they do in the *MotorMix*, the original VCS controller.

It is for this reason that these controls do not have their “LED ring” lit. The VCS does not provide any feedback about the current value of a setting assigned to a “pot” or rotary encoder. However there is a “trick” described in the “swap” feature section that you can use to instantly learn what each of these are set to!

VCS bank control

Kyma allows for a large number of rotaries and faders, more than just the eight of each **vKA** provides. Kyma uses a “bank system” to choose which of the eight VCS faders and rotaries are currently affected by **vKA**. *Please note that VCS switches and lights are not banked! You only have thirty-two of each.*

Three buttons control the VCS bank system: *BANK, BANK LEFT, and BANK RIGHT.* The *BANK* button has a light that is on whenever the VCS is in the “bank mode”.

Imagine that all of the faders currently showing on the VCS’ computer display are arranged in one long line in the order they occur on screen (left to right; top to bottom). Now imagine a box or frame that encloses eight consecutive faders. Whatever sound setting assigned to the faders currently “in the box” are controlled by the eight APC40 “faders”.

When bank mode is off (light extinguished) *BANK LEFT, and BANK RIGHT,* moves this box one position left or right. So if the box is currently around faders 1-8, pressing *BANK RIGHT* moves it to enclose VCS faders 2-9 and the APC40 now controls those settings (APC40 “fader” 1 controls VCS fader 2, APC40 “fader” 2 controls VCS fader 3 and so on). Likewise *BANK LEFT* moves the box one position to the left. Notice that no matter how many times you press *BANK LEFT* it never goes past the first position. The box also stops at the last VCS fader currently assigned no matter how many times you press *BANK RIGHT.*

If you press *BANK* to turn bank mode on (light glowing) *BANK LEFT, and BANK RIGHT,* moves this box eight positions left or right, or if it “runs out of faders”, to the first or last fader respectively. Bank mode on is useful when you have a large number of faders and your VCS is constructed to place related settings in groups of eight.

VCS fine control

Sometimes you need to precisely adjust a sound setting. Press *FINE* to turn on the fader "fine adjust" mode. When Fine is on (the light in the *FINE* button will glow) the VCS adjusts the values of **vKA**'s "faders" so that they all are "half way up", meaning the LED rings will light to the half (12 o'clock) position. Any increases or decreases you now make in a value will adjust the corresponding setting from its current setting but with a much smaller change for each degree you rotate the controller. Press *FINE* again to return to normal operation.

Note that not all settings assigned to a VCS fader have a meaningful "fine" adjust. Sometimes the corresponding sound setting will have only a couple of actual values. The VCS will not center the LED display in this case when you activate fine mode.

VCS swap

Rotary controls are very different than fader controls so sometimes it is handy to temporarily reassign faders to rotaries and rotaries to faders. Kyma's VCS has a mode called "swap mode" that does just this. When swap mode is off the faders and rotaries behave as normal but when swap mode is on the roles are reversed. Sound settings previously assigned to faders are now placed on the rotaries, and the ones that were on the rotaries before now are controlled by the faders.

vKA's *SWAP* button engages this mode. When swap is on the button's light also glows. Each time you press *SWAP* it toggles between swap and normal.

Since **vKA** has no real faders and instead assigns the "faders" to one of the eight groups of APC40 rotaries, swap mode works a little different then you might first expect.

When swap is active **vKA** does not change what is being controlled between the two groups of rotaries. Instead it changes how each of the groups operate. Normally (swap is off) the upper group of eight rotaries correspond to the VCS rotaries and work in an "incremental fashion" (see "Eight VCS Rotaries" for more discussion). Their LED rings are always off. The lower group is used for the VCS faders. They work in an "absolute fashion" and the LED rings always reflect their current setting.

When you activate swap mode the two groups of eight rotaries change how they work. The upper eight now work in an absolute fashion, with their LED rings displaying the current value. The lower eight become incremental and their LED rings are extin-

guished. *Note that what these rotaries control does not change. The upper eight rotaries still control the same sound settings are it did before the swap; likewise the lower eight rotaries.*

Why does **vKA** operate in this fashion? Unlike a *MotorMix* or other hardware controller where there are different types of physical controls for the faders and rotaries, the *APC40* has identical ones for both functions. So there was really no advantage to have a sound setting physically "jump" from control to control when you toggle swap. Instead the setting stays with the same rotary. This is of course useful if you are learning how to control a sound for performance; it helps develop muscle memory.

So why even offer the swap mode? One of the limitation of the VCS is that it does not convey the current value for any sound setting assigned to a rotary. This makes sense when you think about the *MotorMix* and how its eight rotaries had no way of showing current values. *But the APC40's rotaries all have LED rings and do not suffer this limitation.* So **vKA** re-purposed swap mode to mean "show the values currently assigned to my rotary controls". In practice this is quite useful!

VCS snapshot next, previous and "roll dice"

vKA has three buttons you can use to load a Kyma sound's "snapshot" (like a synthesizer preset). Each Kyma sound stores one or more histories (or snapshots) of all of the sound's current VCS settings. These buttons are grouped together in the APC40 upper right, below the group of eight rotary controls. *LOAD NEXT* ("nudge +") loads the next available snapshot into the current sound. *LOAD PREVIOUS* ("nudge -") loads the previous snapshot. The list of snapshots "wraps around", meaning if you press either *LOAD NEXT or LOAD PREVIOUS* enough times in a row you will return to the same snapshot.

ROLL DICE ("tap tempo") randomly chooses new values for all of the current VCS settings except those you exclude with the VCS "lock feature" (those setting names show in gray on the computer screen). This button performs identical to pressing the small dice icon with your mouse on the VCS's computer display.

VCS Sync

vKA and Kyma work in concert to insure that the various vKA switches, LED rings, and so on reflect the current VCS settings. Normally this happens automatically. However there are rare cases where the two may become "out of sync". If you should suspect this then simply press the "VCS Sync" button (up arrow in four-way navigation switch).

Ableton Live mode

The *APC40* is at its heart a purpose-built control surface for Ableton Live. So its entirely likely that you purchased yours with this use in mind and would like to share the APC40 between Kyma duties and Live duties.

vKA has special "smarts" that enable it to alternate between "Live mode" and "VCS mode" without missing a beat. The *ABLETON LIVE MODE* ("Send C") button is used to toggle between these two modes.

Whenever **vKA** is in "VCS mode" this button is lit. Simply press and release it immediately to switch to "Live mode".

When in "Live mode" things are a bit more complex. Ableton Live makes full use of each and every switch, light, rotary, and fader on the APC40. As such there is no "safe" button that can be used to switch back to "VCS mode", nor is there any fool-proof way to indicate that you are now in "Live mode". So **vKA** has to resort to trickery to facilitate switching back.

To return to "VCS mode" press *and hold* the *ABLETON LIVE MODE* ("Send C") button for about two seconds. When you release the button you will have returned to "VCS mode".

As far as "how do I know when I am in Live mode?" goes it is usually fairly obvious. One of more of the buttons that are never used in "VCS mode" will be glowing. Another "hint" is that the "Send C" button may or may not be lit, whereas in "VCS mode" it is always lit. So if you notice that button's light is extinguished you are in "Live mode". If, on the other hand, the light is on and you press it it *will not extinguish* if **vKA** is in "Live mode". The light will stay lit. Note that there is nothing wrong with switching modes at any time so you can simply press *ABLETON LIVE MODE* ("Send C") and see what happens. If you end up in a different mode than you expected simply switch back.

Important Notes About the VCS

Kyma's VCS has some operational attributes that impact the **vKA**. Some of these may at first appear strange or "wrong" until you understand the idiosyncrasies. VCS was made to work well with a *MotorMix* so some of its flavor remains in the stew. Two examples of note:

1. When you move an on-screen fader using the mouse the VCS *does not* send any indication of change to **vKA** (or any other control surface) until you release the mouse button. However if your mouse or trackball has a "scroll wheel" that is set up prop-

erly you can adjust the on-screen fader using that and **vKA** will display the change as expected.

2. If you start **vKA** while Kyma is already displaying the VCS for a playing sound, or **vKA** reinitializes for any reason (for example if your OSX MIDI configuration changed when you turned on a USB MIDI controller), **vKA** issues a "resync" request to the VCS. This command causes the VCS to send information about the fader, switch LEDs, and other current settings. Normally **vKA** automaticly does this whenever it needs to and stays in lock-step with the VCS.

   However occassionally the VCS and **vKA** can get out of step. *This is normal and is a direct result of how the VCS works with the MotorMix and other controllers*. Most of the inconsistencies will be in the "faders" LED rings showing incorrect values and/or the "LEDs" on sw1 - sw32 being incorrect.

   The remedy is to press **vKA**'s *VCS Sync* button. This button sends a "resync" request to Kyma. Kyma replies with the needed information to bring things back in line.

   Finally, the volume slider and mute button deserve special mention. Kyma's master volume command is "write only", meaning that Kyma never informs **vKA** what the current value master volume is set to. **vKA** remembers how you has changed the master volume and mute setting in the past and will use the latest value each time **vKA** initializes. If you never adjust master volume or mute using **vKA** then **vKA** leaves Kyma's master volume unchanged. In other words if you prefer to set volume by another means then do not use **vKA** volume controls.

Getting the Most Out of vKA With the Kyma VCS

Kyma's VCS integration provides a number of useful features that are not fully documented, or the documentation requires a careful reading of Kyma X Revealed! Here are a few of our favorites.

Viewing a rotary's value: If you want to see quickly all the rotary values in one go just press *SWAP*. **vKA**'s rotaries will switch to "fader mode" and the LED rings will display the current value. Feel free to adjust a rotary's value while they are swapped. When you are finished hit *SWAP* again. For a quick check just toggle *SWAP* in quick succession.

Optimize the VCS for **vKA**: Kyma provides substantial, easy-to-use, VCS editing. It is easy to adjust a sound's VCS to fit your particular needs. Often though a sound's VCS

is laid out best for the computer's display and not **vKA**. If you use a sound frequently, or rely on adjusting it in a performance setting, then it makes sense to adjust the various "widgets" to better fit **vKA**. Here are a few hints:

1. Use faders for any control where immediate visual feedback is important. **vKA** and the VCS work in tandem to display many more that just eight faders through the bank facility. So there is no reason to hamper your interaction with a sound simply to fit it all on one screen. Assign rotaries to those settings where visual feedback is of less value.

2. If you require more than eight faders or rotaries make sure that they are ordered in such a way to show in groups of eight on **vKA**. Kyma assigns the order automatically but often the choice is not what is best for use on **vKA**. Study Kyma X Revealed for how you can move VCS "widgets" around on the screen to get the grouping you desire on **vKA**. This takes a little experimenting but the results are well worth it.

3. The 32 switches can be used as status indicators. The VCS will display the first 32 push buttons or toggle buttons on **vKA**'s thirty-two push buttons. If a toggle button is used then its on/off status will show on each switch's "LED". You can assign toggle switches to any of your sound's "hot values", and it is easy to control its value from the sound itself! A great example of this is the sound *SequencerWithIndicator.kym* available on the Kyma Wiki. This is a analog-style step sequencer that uses the switch indicators as a "case light" to show in real time the currently playing step. This is just one example of an excellent "alternative" use of a VCS toggle widget.

Create alternative VCS pages: Each sound can have as many "pages" as you wish. Normally this is used to provide VCS access for each sound contained within a sound but an alternative use is to provide a different style VCS for specific needs. For example, you might have one VCS page that is optimized for computer display, but another one that is more appropriate for use with **vKA.** Another example is a VCS page that only shows those controls used during performance, optimized for ready access from **vKA**. You will have to select the active page from the computer but once selected everything is controlled from **vKA.** Note that you can determine which page is shown when a sound is first run by selecting that page before saving the sound.

Roll the dice!: The "dice roll" is one of the coolest features in Kyma and can be an extremely effective way to explore a sound's possibilities, provided the sound's VCS is set up appropriately. This is discussed thoroughly in Kyma X Revealed. What you might

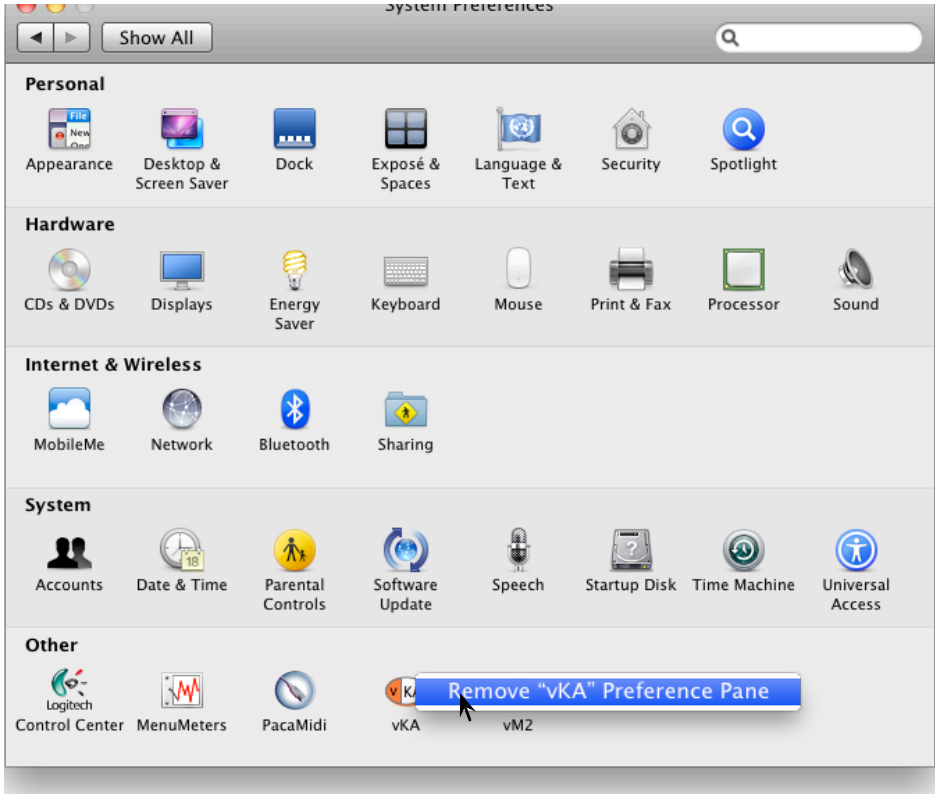
have missed though is how easy it is to use this feature with **vKA**! **vKA** has a dedicated push button that you can press whenever you wish to create a brand new variation from the current sound. Use this liberally when you first encounter a sound (after “surfing the snapshots of course”), or you just want some inspiration from a well-traveled one.

Removing **vKA**

If you need to remove **vKA** from your Mac for any reason:

First, go to the vKA preference pane and press *STOP* to stop **vKA** from running.

Next, close the vKA preference pane, then right click on the vKA icon (see diagram below). Select *Remove "vKA" Preference Pane*. This will remove the vKA preference pane and the user agent program from your system. Once this is removed **vKA** will no longer run on your system. Run the installer should you decide to you wish to use it at a later time.



If you would like to completely remove all traces of **vKA**, delete these files:

***<YOUR HOME FOLDER>*/Library/LaunchAgents/com.delora.vKA.plist"**

***<YOUR HOME FOLDER>*/Library/Preferences/com.delora.vKA.agent.plist"**

/Applications/vKA (remove entire folder)

/Library/Documentation/vKA (remove entire folder)

Note that you *must* have administrative rights to perform the final two deletions.

Troubleshooting

vKA is usually very transparent in daily use once it is properly configured. It also has a sophisticated self-configuration system that means in many situations little or no configuration is needed. Most of the initial connection issues are straight forward to diagnose. Typical problems arise due to selecting an incorrect MIDI port when using it in “Capybara mode”. The preference pane also a “help” button to assist in diagnosing problems after the initial installation. See the “Set-Up” chapter for more on this.

Problems though can arise from time to time even with a set up that was working "just a minute ago". If your *APC40* no longer seems to be functioning as a VCS controller (and you have double checked it is not in “Ableton Live mode”!) then it is possible that **vKA** has encountered a problem and may even have become stuck or crashed. If you suspect this then visit the vKA preference pane and see whether its run status is showing "green", "red", or the indicators are dark. It is very rare that status would be " all green" while **vKA** is otherwise confused or has failed. If the status is all green then first look elsewhere, perhaps restarting Kyma.

If you are using **vKA** in “Paca(rana) mode” then your computer network is used to communicate directly with your Paca(rana) and Kyma. **vKA** uses Apple’s Bonjour technology to set up this connection. Normally this is completely automatic. However there are some operational aspects that may at first seem confusing or incorrect.

When the network connection between the Paca(rana) and **vKA** is disconnected for any reason **vKA** takes note of this almost immediately. If you have the preference pane open you will see both of the “MIDI-over-OSC” ports showing yellow. This is true *even when you turn the Paca(rana) off.*

When **vKA** decides that the Paca(rana) is unresponsive for any reason its first action is to attempt to reconnect using Bonjour. Bonjour, however, takes a while to notice that the Paca(rana) is no longer available and continues to provide **vKA** with “it’s here”, which **vKA** in turn uses to attempt the reconnect. All while this is happening **vKA** shows the status as “yellow”. It is only after Bonjour has finally decided that the Paca(rana) is no longer available that **vKA** is informed it is completely offline and the MIDI-over-OSC “To Paca(rana)” status is shown as red. This can take a minute or so.

There is a rare situation where the **vKA** application can still be found loaded in memory and is running (more or less) but is not responding. The run status indicator will show

clear, leading you to conclude it is not running. However any attempt to start **vKA** will fail.

The usual cause is that a prior run of **vKA** is still lingering in memory. This is what computer experts refer to as a "zombie process". Unfortunately, like the zombies found in video games and horror movies, a zombie process can be quite difficult to “kill”.

The easiest way to clear this condition is to log out of OSX and log back in. However if you are comfortable working “under the hood” then you can use OSX's *Activity Monitor* application to display active processes. Search for "vKA_agent". Quit that process and you should be able to restart **vKA** from the preference pane. If you are a real OSX guru you can do something similar from the *Terminal* application. If neither of these approaches work then you will need to log out and restart your Mac.

Acknowledgements

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AquaticPrime

oscpack -- Open Sound Control packet manipulation library