

# Synclavier<sup>3</sup><sup>®</sup>

Introduction to Synclavier<sup>3</sup>

Upgrading from SynclavierX or SynclavierPowerPC™

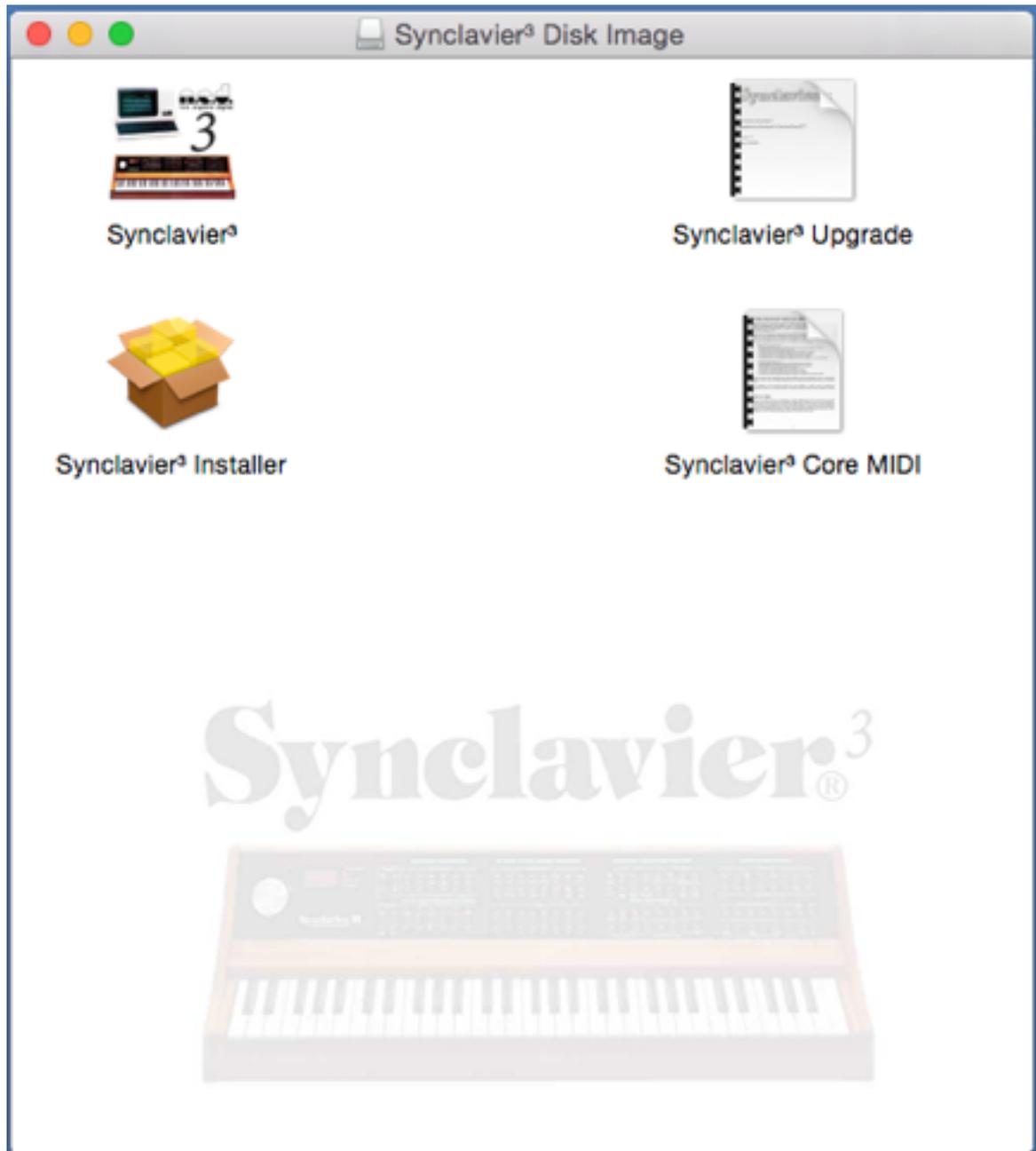
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What Is Synclavier<sup>3</sup>?



Synclavier<sup>3</sup> is a new application for the Macintosh® that combines all the features of earlier software products known as SynclavierPowerPC™, SynclavierX and InterChangeX. It also incorporates a host of new features, the most important of which is the ability to directly load and manage sound files, timbre files and sequence files stored anywhere on your Mac or your Local Area Network. AIFF, WAV and CAF sound files can be used directly with Synclavier<sup>3</sup> without the need for conversion. Long file names (up to 127 characters) can be used with Synclavier<sup>3</sup>.

## Installation

The Synclavier<sup>3</sup> Disk Image is downloaded from [synclavier.com](http://synclavier.com) using the provided link. You must agree to the terms of the License Agreement before the Disk Image can be opened.

This Disk Image contains the Synclavier<sup>3</sup> Application, the Synclavier<sup>3</sup> Installer, and related documentation in PDF format.

The Synclavier<sup>3</sup> Application may be copied to your Desktop, your Applications folder, or any convenient place.

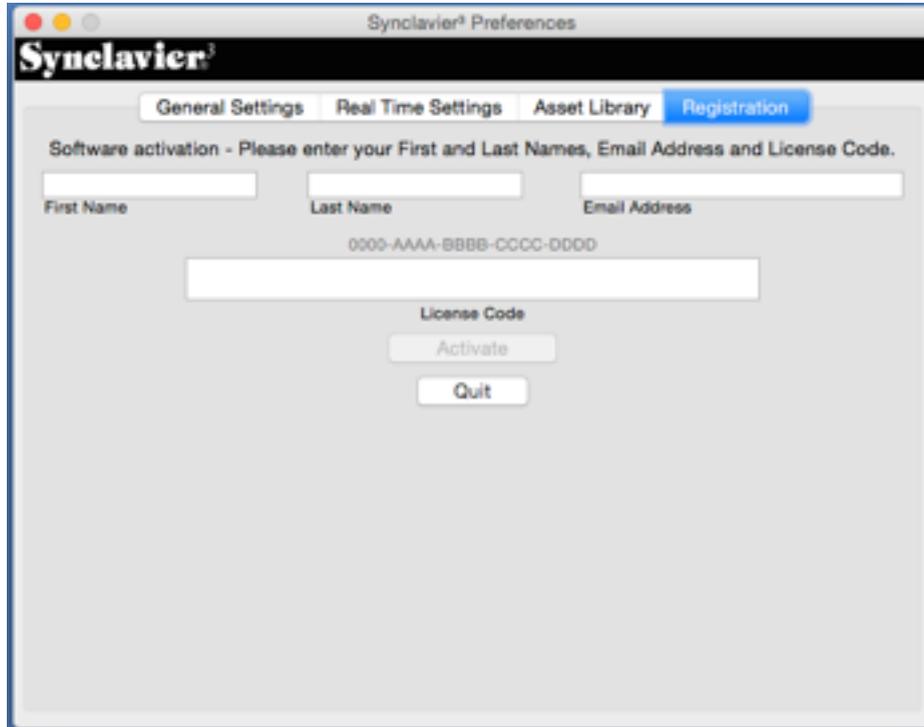
You must run the Synclavier<sup>3</sup> Installer for full functionality. The Synclavier<sup>3</sup> Installer places the following items in their appropriate location:

- Synclavier<sup>3</sup> PCI Kernel Driver (SynclavierDigitalPCI.kext)
- Synclavier<sup>3</sup> MIDI Driver (SynclavierDigitalMIDIPlugin.plugin)
- Synclavier<sup>3</sup> Audio/MIDI Icon (SynclavierDigitalAudioMIDIIcon.tiff)

A Restart will be required after installation.

## Activation

Synclavier<sup>3</sup> is protected by registration authentication. An Activation Key specific to your name and email address is provided following purchase.



The image shows a screenshot of the Synclavier<sup>3</sup> Preferences dialog box, specifically the Registration tab. The window title is "Synclavier<sup>3</sup> Preferences". The dialog has a dark header with the Synclavier<sup>3</sup> logo and four tabs: "General Settings", "Real Time Settings", "Asset Library", and "Registration" (which is selected and highlighted in blue). Below the tabs, the text reads "Software activation - Please enter your First and Last Names, Email Address and License Code." There are three input fields for "First Name", "Last Name", and "Email Address". Below these is a larger input field for the "License Code", with a placeholder text "0000-AAAA-BBBB-CCCC-DDDD" above it. At the bottom of the dialog, there are two buttons: "Activate" and "Quit".

## Hardware Installation

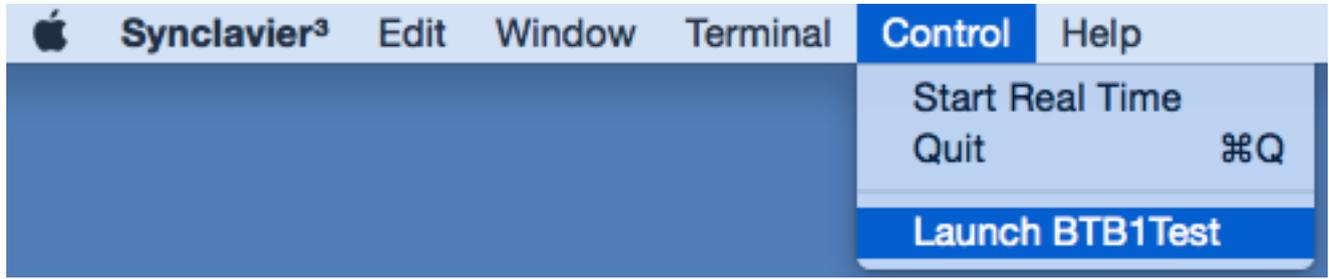
The hardware connection to your Synclavier® keyboard and voice cards is accomplished via a custom-configured PCI-Express Digital I/O Card, the BTB-1 Bus Transceiver, a twisted-pair cable, and the D0-PCI Interface Card.

The BTB-1 Bus Transceiver is a fragile electronic device and could be damaged by static electric discharges or rough handling. It is designated for industrial-use only and does not meet the requirements of a consumer electronic device. BTB-1 Bus Transceiver should only be installed by a qualified individual under the direction of a Synclavier® service technician.



## Hardware Test

The Synclavier<sup>3</sup> application menu contains a command to invoke the BTB1Test program. You should operate the test program before using the Real Time Software.



```
Start of BTB-1 Test Program (OS X 3/15/2015)
```

```
Looking for PCI cards...
```

```
Synclavier® Digital hardware Vendor ID 494f Device ID 0c61 detected.
```

```
BTB-1 revision 1 identified
```

```
OK: Board pci494f,c61 found; beginning tests...
```

```
Testing the PCI-1 Registers on board pci494f,c61...
```

```
OK: Looks like a poly system is available for testing board pci494f,c61
```

```
Note: Test will run forever. Halt test with ctrl-c
```

```
time tested: 0:00:05 meps tested: 2 poly meps/min: 23
```

```
time tested: 0:00:10 meps tested: 5 poly meps/min: 29
```

```
time tested: 0:00:15 meps tested: 7 poly meps/min: 27
```

```
time tested: 0:00:20 meps tested: 10 poly meps/min: 29
```

```
time tested: 0:00:25 meps tested: 13 poly meps/min: 31
```

```
time tested: 0:00:30 meps tested: 15 poly meps/min: 29
```

```
time tested: 0:00:35 meps tested: 18 poly meps/min: 30
```

## Synclavier<sup>3</sup> Application Menus

The Synclavier<sup>3</sup> Window menu includes commands for two new windows - the Asset Library Window and the Sound File Import Window.

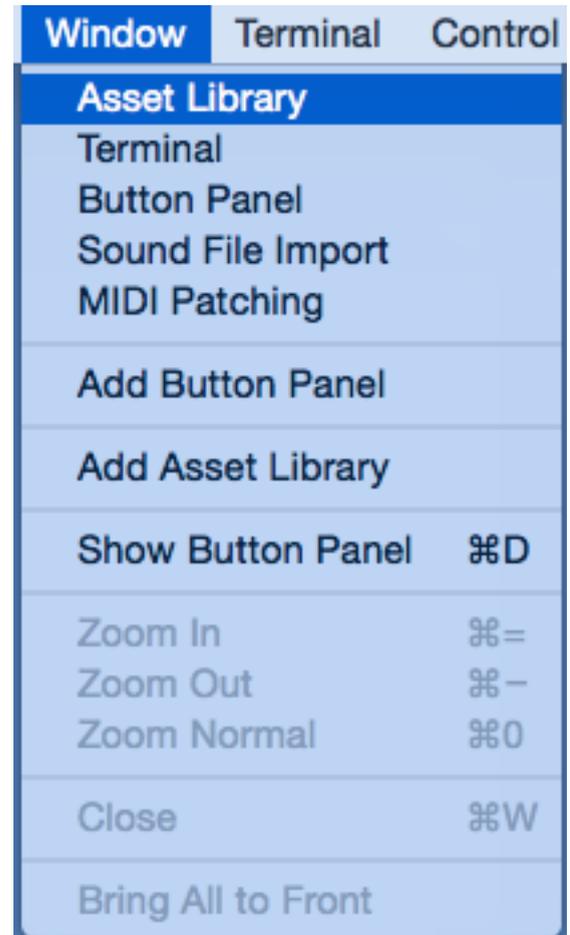
Briefly, the Asset Library Window provides the mechanism for cataloguing, locating and calling up sound files, sequence files, timbre files, and sequence workspaces. It is explained in greater depth below.

The Asset Library Window is a replacement for the Sound File Directory (B screen), the Sequence Directory (C screen) and the Subcatalog Directory (D screen) in the Real Time Software.

Multiple Asset Library Windows and Button Panel Windows can be created to provide a very flexible work environment.

The Sound File Import window is used to import sound files, sequence files and timbre files from SCSI hard drives, SCSI optical drives, or from Synclavier® Disk Image Files created with earlier versions of Synclavier PowerPC™ and SynclavierX.

The following sections review the capabilities of Synclavier PowerPC™ and SynclavierX and introduce the major new features of Synclavier<sup>3</sup>.



## Review - Mac OS 9 - SynclavierPowerPC™

SynclavierPowerPC™ dated from 1999 and provided an OS-9 implementation of SynclavierPowerPC™, Termulator, EditView, AutoConform, MIDINet and TransferMation. The InterChange™ application was first introduced for OS-9.

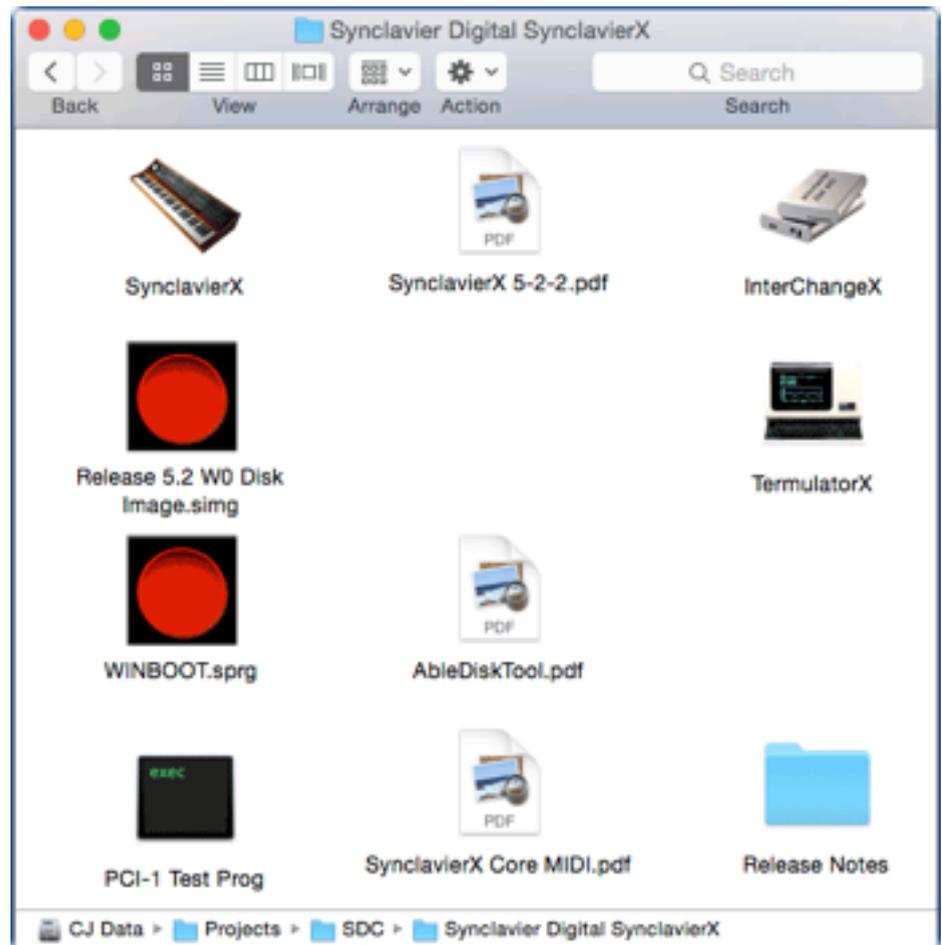
SynclavierPowerPC™ used the original PCI-1 PCI card to control the Synclavier® keyboard and voice cards using a twisted-pair cable and a circuit card known as the D0-PCI.

## Review - SynclavierX

SynclavierX dated from 2006 and provided an OS X port of SynclavierPowerPC™. Also in 2006 the InterChange 2.0™ application was ported to OS X and renamed InterChangeX.

SynclavierX did not include EditView, AutoConform, MIDINet or TransferMation.

The file import/export capabilities of InterChange 2.0™ were moved to a separate operating system utility known as AbleDiskTool.



SynclavierX also introduced significant enhancements in MIDI capability with the implementation of very flexible Virtual MIDI Ports (see [SynclavierX Core MIDI Documentation](#)).

### Virtual Disk Drives - Otherwise Known As “Disk Image Files”

SynclavierPowerPC™ introduced the concept of a “Disk Image File” as a replacement for a physical hard disk connected to actual Synclavier® hardware. A disk image file was a single file on your computer or local area network that appeared to SynclavierPowerPC™ and InterChange 2.0™ as a virtual W0, W1, O0 or O1 hard drive or optical drive.

SynclavierX expanded the size limitation of disk image files from 2.0 GB to 8.0 GB.

InterChange 2.0™ used several configuration menus to set up the hard drive workspace on your system. Provided you had the PCI-1 PCI card you could, for example, use a real SCSI hard drive connected to your Synclavier® hardware for W0, and a disk image file stored on your computer for W1.

Most users used InterChange 2.0™ to copy their sound files from real SCSI hard drives into disk image files. The image files could then be moved, backed up, or shared at will.

#### *Terminology*

<i>“W”</i>	<i>==</i>	<i>“Winchester”</i>
<i>“O”</i>	<i>==</i>	<i>“Optical”</i>
<i>W0</i>	<i>==</i>	<i>System hard drive</i>
<i>W1</i>	<i>==</i>	<i>Secondary hard drive</i>
<i>O0</i>	<i>==</i>	<i>Primary Optical Drive</i>
<i>O1</i>	<i>==</i>	<i>Secondary Optical Drive</i>

*Early computer hard drives were called “Winchester Disks”.*

## Synclavier<sup>3</sup> Virtual Disk Drive W0

Synclavier<sup>3</sup> significantly expands the concept of a disk image file. In Synclavier<sup>3</sup>, W0 is dynamically constructed in real time. W0 is no longer a single "disk image file". W0 is now an imaginary ("virtual") hard drive that can include any and/or all files located on your computer or your local area network. In Synclavier<sup>3</sup> the size of W0 is unlimited.

Synclavier<sup>3</sup> creates W0 on the fly from resource files stored within the Synclavier<sup>3</sup> application bundle, plus files that are found in the ~/Documents/Synclavier<sup>3</sup>/W0 directory. The resource files include all the "system" files, the Real Time Program, and other file assets that were traditionally stored on W0.

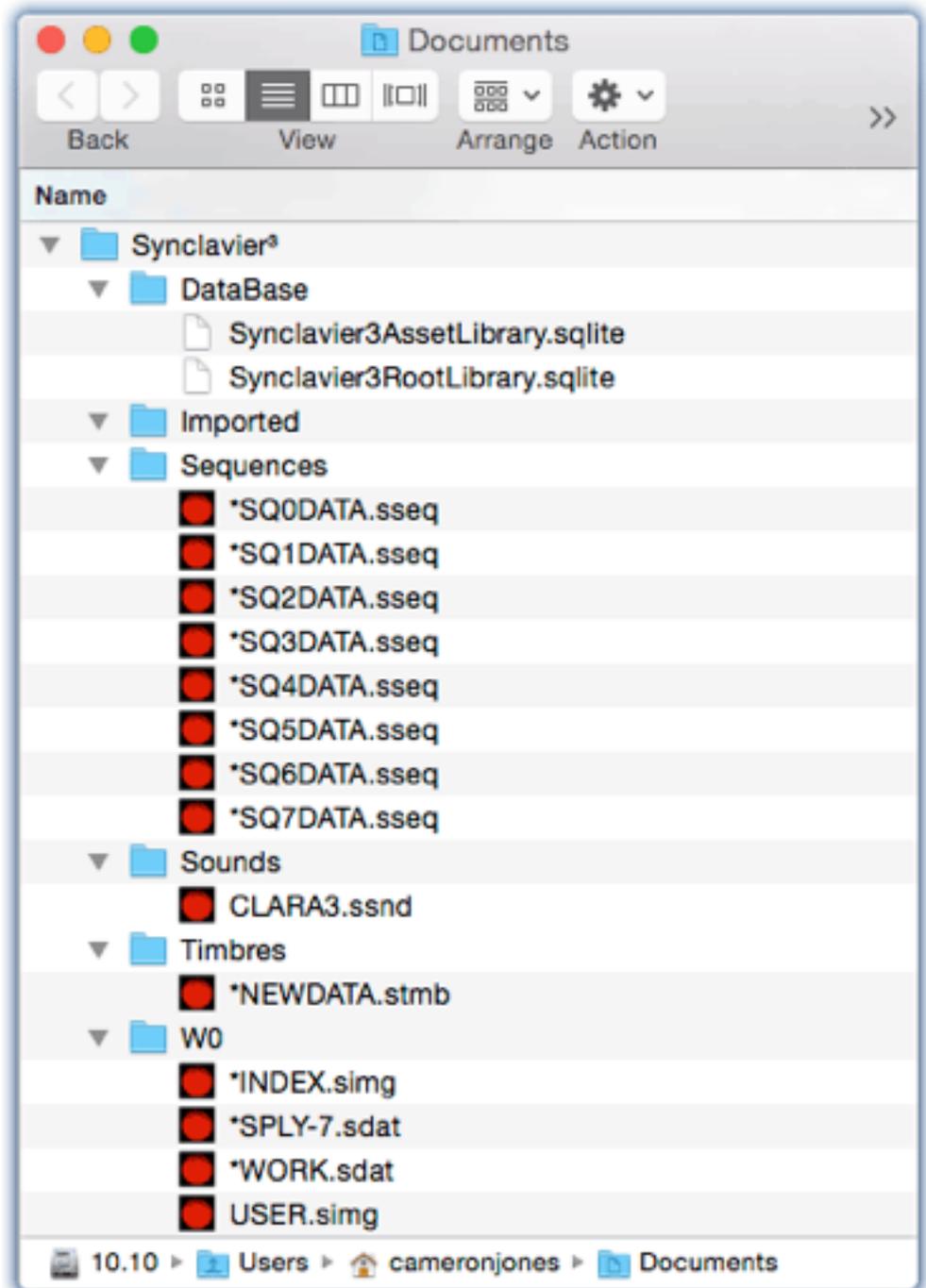
Because W0 is dynamically constructed during program startup, it cannot be modified. Files and subcatalogs at the top level of W0 cannot be deleted, changed or renamed.

A special subcatalog at W0:USER is created as a space to hold any files created within the Synclavier® Real Time Program or using MONITOR. You may, for example, record a Sound File using the Sample-To-Memory interface ("L" Screen). You could save that sound file in the W0:USER subcatalog. Doing so would save the sound file within the ~/Documents/Synclavier<sup>3</sup>/W0/USER.simg disk image file. You could then use Synclavier<sup>3</sup> to import the contents of USER.simg into your computer.

Practically speaking there are very few reasons you would need to use the W0:USER subcatalog. Using the Sample-To-Memory interface to record a sound file is one reason. The startup PROFILE file is also stored in W0:USER. You may choose to edit W0:USER:PROFILE to change the startup behavior of the Real Time Program.

## Synclavier<sup>3</sup> Default Files and Folders

Synclavier<sup>3</sup> creates default files and folders in your Documents directory. Your Documents directory is a suggested location; Synclavier<sup>3</sup> can directly access files located anywhere on your local area network.



## Synclavier<sup>3</sup> Asset Library and Data Base

Synclavier<sup>3</sup> uses several new windows to catalog, browse, and recall sound files, timbre files and sequence files stored on your computer or your local area network.

A new Synclavier<sup>3</sup> Asset Library Window lets you choose “root folders” from anywhere on your computer or your local area network. The root folders are automatically searched for files that can be used by the Synclavier® Real Time Software.

The Asset Library is centered around a data base that is created and managed by Apple’s Core Data framework.

## Sequence Workspaces

A “Sequence Workspace” is a folder or directory on your computer or local area network that contains 8 sequence files. The sequence files within the workspace use the same canonical file names that were used with earlier versions of the Synclavier® Real Time Software (“\*SQ0DATA” for example). When a sequence workspace becomes active, the sequences in that directory are associated with the corresponding sequence save and recall buttons on the VK button panel.

### *Asset Library*

*Your “Asset Library” is the entire collection of sound files, timbre files and sequence files (“assets”) available on your computer or local network. Synclavier<sup>3</sup> can load asset files from anywhere on your network.*

### *Sequence Workspaces*

*A “Sequence Workspace” is a folder or directory on your computer or local area network that contains 8 sequence files. The sequence files in your sequence workspace can be easily accessed from the VK button panel.*

## Importing Files To Your Computer

A new Sound File Import window lets you easily import sound files, timbre files and sequence files from a real SCSI hard drive connected to your Synclavier® hardware, or from a disk image file created earlier with SynclavierX or InterChangeX. The sound files can be stored in Core Audio Format (.caf), AIFF (.aiff), WAVE (.wave), or native Synclavier® Sound Format (.snd).

### Sound File "Handles"

Every sound file that is imported to your computer or network is assigned both a file name and a "file handle". When a file is first imported both the computer file name and file handle are identical, and match the 8-character original file name.

Once a file has been imported it may be moved or renamed as needed. Patches or sequences that refer to the file will be able to automatically locate the file and call it up when the sequence or patch is activated.

### CAF, AIFF and WAVE Files

The Synclavier<sup>3</sup> Asset Library automatically finds and catalogs sound files in the Core Audio, WAVE or AIFF format. Sound files in those format can be called up to the keyboard directly; there is no need to convert the files to native Synclavier® format before they are used. The Synclavier® 8-character file name limit is still an impediment, but I hope to address that limitation before product release.

#### *Sound File "Handles"*

*A file "handle" is the original 8-character file name that was used for the sound file when it was stored on a real hard drive or in a Synclavier® disk image file.*

*Once the file is imported to your computer, it can still be recalled using the original handle even after the file has been renamed on your computer.*

## .SMAP-7 and Other Data Files

The latest build of Synclavier<sup>3</sup> imports special-purpose data files such as the .SMAP-7 file that is used to calibrate the velocity keyboard. The file must be moved into the W0 folder (~ /Documents/Synclavier<sup>3</sup>/W0/) to be effective.

## Screen Shots

Screen shots of the new windows in Synclavier<sup>3</sup> are available at <http://www.synclavier.com/InfoPages/Sync3ScreenShots.html>.