

SMDrums version 1.0 in Sforzando



SMDrums

Quote from Scott McLean:

*"This is a sentimental thing for me (like a dream come true).
I get to share my vintage drum kit with the world to use in
their productions.."*



1960s Ludwig Oyster Blue Pearl drum kit

1968 Kick Drum: 14"x22" Shell: Maple/Poplar/Mahogany/Finish.

Snare_HyB: A snare highly processed from Snare65_NR

1965 Snare: 5"x14" (not shown in photo above) Shell: Mahogany/Poplar/Mahogany/Finish.

1967 Snare: 5"x14" Shell: Maple/Poplar/Mahogany/Finish.

1969 Toms: 8"x12", 9"x13", 14"x14" Shell: Maple/Poplar/Mahogany/Finish.

Cymbals: A Zildjian series and Wuhan China

Hi-Hat: 14" New Beat

Ride: 20" Ping & 17" Thin

Crash cymbals: 13", 15", 16", 17" Thin Crash

China: Wuhan 15" (custom cut)

Credits

Scott McLean

Engineered & Recorded all the drum and cymbal samples.

D. Smolken

SFZ Programming in Sforzando
Co-authored User Guide for Sforzando

Tod Stillwell

Edited the SMDrum samples
Co-authored User Guide for Sforzando

Suleiman Ali

Created the SMDrums web site

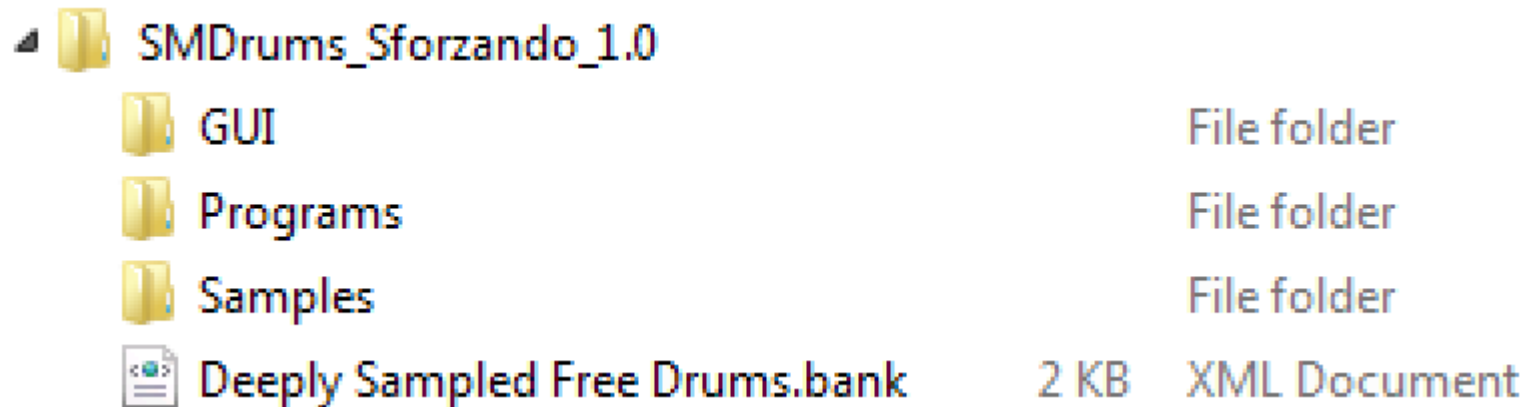
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Installation

The sfz version of SM Drums requires Plogue Sforzando version 1.848 or newer. It is a free plugin/standalone application for both Windows and Mac, and you can download it from: <http://www.plogue.com/products/Sforzando/>

Download and unzip the **SMDrums_Sforzando_1.0.zip** file. Inside is a folder called SMDrums_Sforzando_1.0. Place this folder where ever you keep your libraries. When you open the SMDrums_Sforzando_1.0 folder it will look like this.



Now open Sforzando, either the stand-alone or as a VSTi, and drag the "Deeply Sampled Free Drums.bank.xml" file shown above, into the Sforzando interface, shown below. This registers SMDrums so it will be available in the Sforzando loading menu and the GUI will work.



Folder structure

As shown above, the SMDrums_Sforzando_1.0 folder contains 3 more folders.

GUI - graphical user interface elements and settings

Program - sfz files containing all the mappings

Samples – This folders contains all the WAV samples

We highly recommend that you keep all these folders and files together. However, if you need to move the samples to some other location, this can be done, but all the sfz files in the Program/mappings subfolder will need to be edited and all sample paths in them replaced. This is easy with search-replace in any text editor, but since there are quite a few files, it is quite tedious.

Instruments

Once you've got SMDrums registered you can load the various SMDrums instruments by left clicking on the INSTRUMENT tab, scroll down to Deeply Sampled Free Drums where you'll see the 7 instruments available.

Left click in the area indicated in yellow



Crash bus: All 4 crash cymbals, Crash 13, Crash 15, Crash 16, Crash 17, along with the China cymbal.

Hi-hat bus: Hat Tight, Hat Loose, Hat Open, Hat Foot Open, Hat Foot and Hat Closed-Open

Kick bus: All Kick files

Ride bus: 2 ride cymbals, Ride 17 & Ride 17 Bell, Ride 20 & Ride 20 Bell.

SM Drums kit: This is the full kit with all the instruments.

Snare bus: 4 Snares and a Sidestick

Tom bus: 4 Toms, Floor, Low, Mid, and Hi.

How to use the Instruments

There are two ways too use the instruments, either as a Full Kit, or Individual Kit Pieces.

With the Full Kit, you have all the individual intruments in one instance of Sforzando. The Full Kit has 1 stereo output, Sforzando does not have multiple outputs.

Using the Individual Kit Pieces, you load the 6 bus Instruments into individual instances of Sforzando. Here you have individual stereo outputs for each Instrument.



Full Kit Controls

Interface

The most important part of the interface is the Controls tab. This contains volume, pan, tune and envelope controls for all the elements (except there is no pan for the kick). All controls are assigned to MIDI CC and can be automated. The volume and pan controls should be self-explanatory.

In the Full Kit, each kit piece has it's own Volume, Pan, Tune, and Envelope, although the Snare/Sidestick and Rides/Bells share their Pan, Tune, and Envelopes.

Notice that the SNARE has two volume controls. One is the "Sidestick", and the other is "Main", which is the volume for the other four Snare drums.

Tune:

The tune controls have a much wider range than most drum libraries. When the knob is centered, the pitch is unaltered. Turning it to the left pitches the sound down by up to 1 octave, and turning it to the right pitches the sound up by a maximum of three octaves.

For a realistic sound, small adjustments near 0 (zero) work best, but the extremes can be useful for trip-hop or glitch sound. Automating the pitch knob can also be used to create EDM-style risers, so if you've ever wanted a snare riser that has velocity layers and round robins, here you are.

Env:

The envelope controls also have a fairly extreme range. They affect the hold, decay and sustain parameters in an AHDSR envelope, with different hold and decay value ranges for different kit pieces (or even different hi-hat articulations).

When the knob is all the way to the left, no envelope is applied and the drums sound naturally. Turning it up slightly is useful for controlling tom decays, turning it up more can simulate cut-up breakbeat drum sounds, and extreme settings result in short clicks.

Again, these can be automated, so tom decays can be shorter during a busier part of a track, or a ride cymbal can gradually morph from short clicks to a natural-sounding ride.

Effects tab:

Here some factory effects available in sforzando can be used. We have not configured anything here, so please consult documentation from Plogue if you want to use them. They can be safely ignored, but feel free to experiment.

Settings tab:

This is useful for monitoring RAM usage and configuring RAM allocation (though we have found that the default settings work fine). Again, this is a standard sforzando tab and we have not configured anything here.

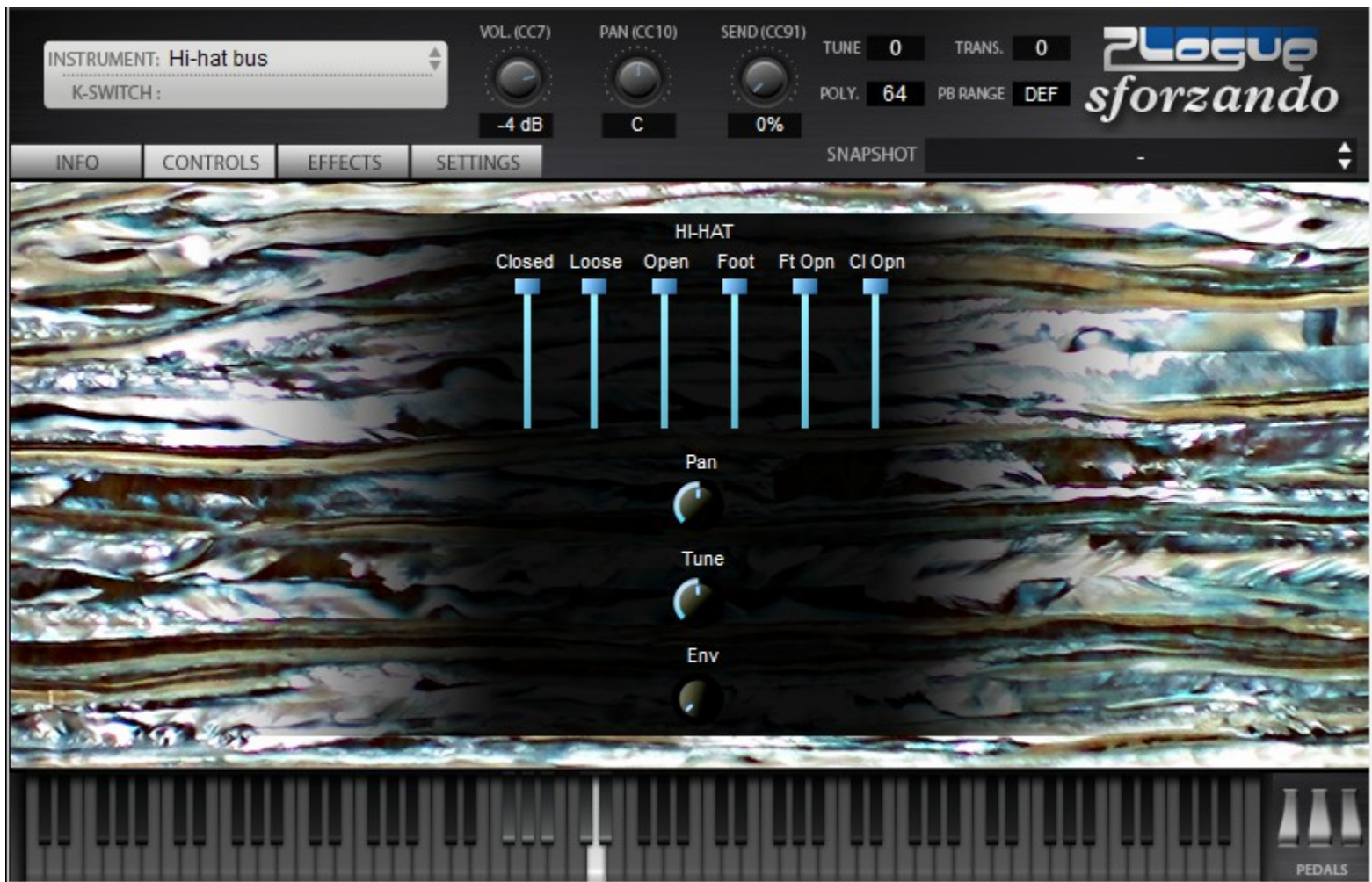
The most important setting is probably the Inst. Disk Pre-Caching. This gives Sforzando the ability to read Direct From Disk (DFD). This is extremely important because, although SMDrums is nearly 3.5G, it will only use between 600MB and 700MB in your DAW. At least that's what it shows in Reaper.

The "Inst. Disk Pre-Caching" is set at 32kB as a default, however, if you experience problems with things like stutters or the sound cutting in and out, you can try increase it some.

Individual Kit Pieces

As already mentioned, each Instrument bus can be loaded in individual instances of Sforzando. The advantage here is that it not only gives you individual stereo outputs, but also gives you the ability to use other outside plugins and FX for each kit piece.

Below is the Hi-hat bus, notice each articulation has it's own volume control. Also, triggering any hi-hat articulation will always mute any hi-hat articulation currently playing.



Hi-hat bus

SNAPSHOTS

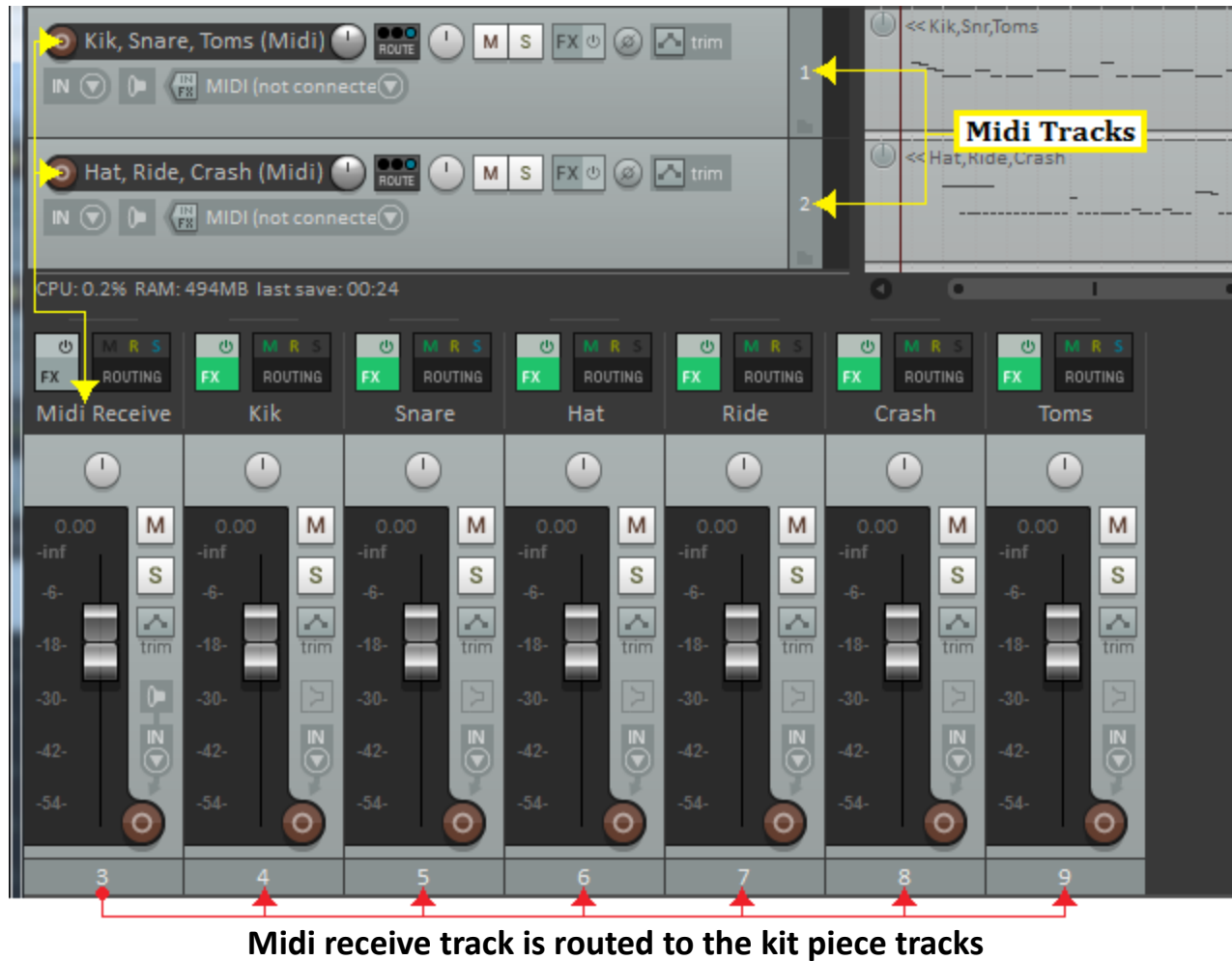
The Snapshot button in the upper right part of the Sforzando interface can be used to save and load presets with any adjustments you may have made to the controls.

Note that a preset applies to one instrument, which means that if you're using the individual kit instruments, you will need to save a separate preset for each instrument whose settings you want to save.

Setting up a single midi Receive track In Reaper

One of the problems with individual kit pieces is that Sforzando does not pass midi through, so you can't put all the individual instances of Sforzando on one track. Instead, the 6 Sforzando kit pieces will have to go on separate tracks, which means that any and all midi tracks will have to be assigned to all 6 tracks.

However, with most DAWs you can set up one midi track to both receive midi from other midi tracks, and then send it to all 6 kit piece tracks. Below is a picture of how this looks in Reaper.



Step 1 (set up a Midi Receive track): Add a new track and route it to all 6 Sforzando tracks. If you have questions about routing in Reaper check out **REAPER Routing Essentials** in the latest Reaper manual.

Step 2 (add midi tracks): Now add another track for your midi and route it to the Midi Receive track. If you're like me and use two midi tracks, all you need to do is duplicate the first midi track. I like to keep my main drums and cymbals on separate midi track because it makes editing velocities much easier.

Setting up a single midi receive track in FL Studio

Step-1

To use the individual kit piece instruments in FL Studio, open six instances of Sforzando, load the instruments into them, and send each one to a different mixer track.



Step-2

Then add a layer channel.



Step-3

Click on the layer channel to open its settings. Then select the six Sforzando instrument channels, and click the "Set children" button in the Layer channel.



SMDrums Key Map

		(65) F3	RimShot_Snr65
Ride20"_Bell	D#3 (63)	(64) E3	Snare65_Reg
Ride17"_Bell	C#3 (61)	(62) D3	Ride20"
		(60) C3	Ride17"
China_Cymbal	A#2 (58)	(59) B2	
Crash16_R	G#2 (56)	(57) A2	Crash17_L
Crash13_R	F#2 (54)	(55) G2	Crash15_L
		(53) F2	Snare67_NR
Hat_ClsOpn	D#2 (51)	(52) E2	Snare65_NR
Hat_FootOpen	C#2 (49)	(50) D2	Hat_Foot
		(48) C2	Toms1_Hi
Hat_Open	A#1 (46)	(47) B1	Toms2_Mid
Hat_Loose	G#1 (44)	(45) A1	Toms3_MidLo
Hat_Closed	F#1 (42)	(43) G1	Toms4_Low
		(41) F1	Snare_HyB1
RimShot_HyB1	D#1 (39)	(40) E1	Snare_HyB2
SideStick	C#1 (37)	(38) D1	Snare_HyB3
		(36) C1	Kick

A note on the Snare_HyB: Although all three sound very similar, there is a slight difference between them. Snare_HyB1 has a slightly sharper attack, while Snare_HyB2 has a slightly less sharp attack and Snare_HyB3 has slightly less then Snare_HyB2. Alternating them in the midi programming can add slight differences.

Editing the Keymap

(Create your own Keymaps)

If you open the Programs folder that was included in the zip download, you will see seven SFZ files as shown below. These are the files that have the key numbers for creating your own keymaps.

**** It is very important that you do not change any files in the **mappings** folder unless you understand sfz and know what you're doing. ****

****And, we strongly recommend making backup copies of any files you edit, so you can go back to the original versions if needed.****

Programs	File folder
mappings	File folder
Crash_bus	2 KB SFZ File
Hi_hat_bus	2 KB SFZ File
Kick_bus	1 KB SFZ File
Ride_bus	2 KB SFZ File
SM_Drums_kit	7 KB SFZ File
Snare_bus	2 KB SFZ File
Tom_bus	2 KB SFZ File

These sfz files can be opened with any text editor such as Notepad or Notepad++, and the numbers you need to change all have "KEY" in their names. For example, if you open the **SM_Drums_kit**, you'll see the KEY names and numbers for the whole kit, as shown below. Also shown is the individual **Crash_Bus** and **Tom_bus**.

SM_Drums_kit

```
//Kick
#define $KICKKEY 36
```

```
//All the snares
#define $SIDEKEY 37
#define $SNARE3KEY 38
#define $RIM1KEY 39
#define $SNARE2KEY 40
#define $SNARE1KEY 41
#define $SNR65NRKEY 52
#define $SNR67NRKEY 53
#define $SNR65RKEY 64
#define $RIM2KEY 65
```

```
//Hi-hat articulations
#define $HHCLOSEKEY 42
#define $HHLOOSEKEY 44
#define $HHOPENKEY 46
#define $HHFOOTOPKEY 49
#define $HHFOOTKEY 50
#define $HHCLOPENKEY 51
```

```
//Toms
#define $TOMFLKEY 43
#define $TOM2KEY 45
#define $TOM3KEY 47
#define $TOM4KEY 48
```

```
//Crashes
#define $CR13KEY 54
#define $CR15KEY 55
#define $CR16KEY 56
#define $CR17KEY 57
#define $CRCKEY 58
```

```
//Rides
#define $RI17EKEY 60
#define $RI17BKEY 61
#define $RI20EKEY 62
#define $RI20BKEY 63
```

Crash_bus

**The 4
Crash cymbals** → **China cymbal**

```
//Keymap for the crashes
#define $CR13KEY 54
#define $CR15KEY 55
#define $CR16KEY 56
#define $CR17KEY 57
#define $CRCKEY 58
```

Tom_bus

```
//Keymap for the toms
#define $TOMFLKEY 43
#define $TOM2KEY 45
#define $TOM3KEY 47
#define $TOM4KEY 48
```

****Do not change anything but the KEY numbers in the exact position as you see them.**

****Also we highly recommend that you don't change any other numbers unless you know exactly what you're doing.**

MIDI CC controller assignments

Here is a chart showing the CC controllers assigned the Volume sliders, along with the Pan, Tune, and Envelope knobs.

**** Changing these would require editing the sfz files and the GUI, so it's generally not recommended. ****

CC chart for Individual kit peices

	Volume	Pan	Tune	Envelope
Kick	70		20	21
Sidestick	71	80	36	37
Snare_HyB3	22	"	"	"
Snare_HyB2	23	"	"	"
Snare_HyB1	24	"	"	"
Snare_HyB_Rim	25	"	"	"
Snare65_NR	73	"	"	"
Snare67_NR	77	"	"	"
Snare_Reg	73	"	"	"
Snare_Reg_Rim	79	"	"	"
Hi-hat_Closed	81	92	42	43
Hi-hat_Loose	83	"	"	"
Hi-hat_Open	85	"	"	"
Hi-hat_Foot	87	"	"	"
Hi-hat_Foot_Open	89	"	"	"
Hi-hat_Close_Open	91	"	"	"
Crash-13"	93	94	26	27
Crash-15"	95	96	28	29
Crash-16"	97	98	30	31
Crash-17"	99	100	32	33
China cymbal	101	102	34	35
Ride-17" tip	103	105	16	18
Ride-17" bell	104	"	"	"
Ride-20" tip	106	108	17	19
Ride-20" bell	107	"	"	"
Floor Tom	109	119	50	51
Low Tom	111	112	52	53
Mid Tom	113	114	54	55
Hi Tom	115	1166	56	57

CC chart for Full Kit

	Volume	Pan	Tune	Envelope
Kik	70		20	21
Sidestick	71	80	36	37
Snare	73	"	"	"
Hi-hat	81	92	42	43
Crash-13"	93	94	26	27
Crash-15"	95	96	28	29
Crash-16"	97	98	30	31
Crash-17"	99	100	32	33
China cymbal	101	102	34	35
Ride-17" tip	103	105	16	18
Ride-17" bell	104	"	"	"
Ride-20" tip	106	108	17	19
Ride-20" bell	107	"	"	"
Floor Tom	109	119	50	51
Low Tom	111	112	52	53
Mid Tom	113	114	54	55
Hi Tom	115	1166	56	57

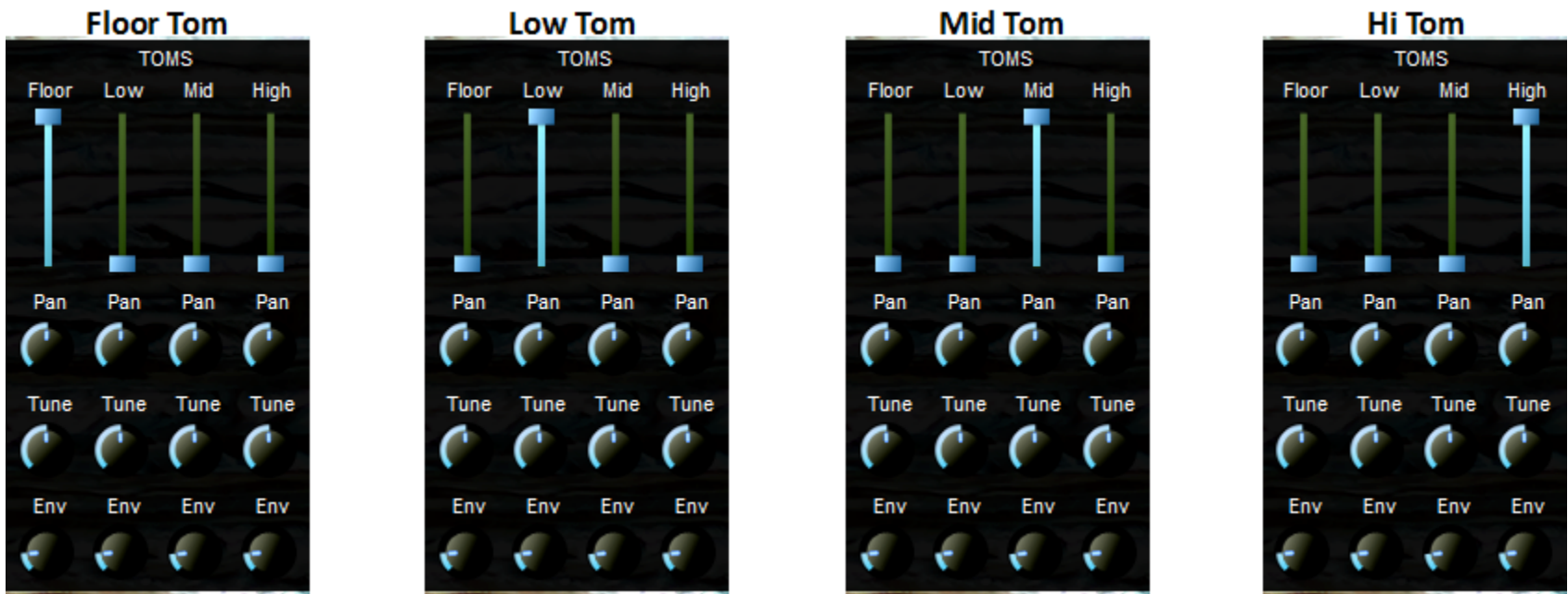
Separating Drum parts for individual processing

Many times it would be beneficial to separate kit parts so that they can be processed differently. For example, a Sidestick usually requires different EQ and reverb then the Snares do, or many times it would be beneficial to EQ the Toms differently. I'll use the Toms to demonstrate.

In the first image I've duplicated the Toms track 4 times and then renamed them.



Then I opened the the Sforzando FX on each track and set them up as illustrated below by simply turning the volumes off on the the three Toms not used . Now I can process each Tom separately.



Also in case you're wondering, duplicating the tracks with instances of Sforzando does not double up on the RAM used, Sforzando is quite efficient with RAM.

The image below shows the test results for a test I made. The top image is the RAM readings Reaper shows and the bottom image is the Task Manager readings.

The actual size of the library is nearly 3.5GB. However, you can see that according to Reapers numbers, the Individual Kit with 6 tracks is only 418MB, and then when you double it to 12 tracks it's only 125MB more.

	Total Ram used Reaper	RAM used by Sforzando	
CPU: 0.0% RAM: 69MB	69 MB		<Empty Reaper (before loading Sforzando)
CPU: 0.0% RAM: 487MB	487 MB	418 MB	<6 Tracks of Sforzando (Individual Kit Peices)
CPU: 0.0% RAM: 612MB	612 MB	125 MB	<12 Tracks of Sforzando (duplicated Individual Kit Peices)

	Total Ram used Task Manager	RAM used by Sforzando	
1.75 GB	1.75 GB		<Empty Reaper (before loading Sforzando)
2.20 GB	2.20 GB	450 MB	<6 Tracks of Sforzando (Individual Kit Peices)
2.28 GB	2.28 GB	80 MB	<12 Tracks of Sforzando (duplicated Individual Kit Peices)

Track Templates

Also included in the download zip file is a folder called “Track Templates”. This folder contains Track Templates for both Reaper and FL Studio.

The Reaper folder “Reaper Track Templates” has another folder, **SMDrums_Track_Template_Sforzando** which is the folder you place in your Reaper “Track Templates” folder. To find this folder, go to the main menu click on:

Options>Show REAPER resource path in explorer/finder

The track templates are:

- SMDrums_Full-Kit (Incudes 2 midi trks)**
- SMDrums_Full-Kit**
- SMDrums_Individual-Kit (Incudes 2 midi trks)**
- SMDrums_Individual-Kit**

The FL Studio folder is called **Bus Templates FL Studio** which you place in the folder that has your other track templates. This folder contains thes files:

- smdrums_bus_template_32**
- smdrums_bus_template_64**

Snare 65

Ludwig 5"x14" snare drum (1965).

Finish: Oyster Blue Pearl.

Shell: Mahogany/Poplar/Mahogany/Finish.

Reinforcement rings: Maple.

Serial number: 164953.

Date stamp: 06/15/1965.



Snare 67

Ludwig 5"x14" snare drum (1967).

Finish: Oyster Blue Pearl.

Shell: Maple/Poplar/Mahogany/Finish.

Reinforcement rings: Maple.

Serial number: 496555.

Date stamp: 01/26/1967.



Kik (K68)

Ludwig 14"x22" kick drum (1968).

Finish: Oyster Blue Pearl.

Shell: Maple/Poplar/Mahogany/Finish.

Reinforcement rings: Maple.

Serial number: 598366.

Date stamp: 04/09/1968.



Tom-1 69

Ludwig 8"x12" tom tom drum (1969).

Finish: Oyster Blue Pearl.

Shell: Maple/Poplar/Mahogany/Finish.

Reinforcement rings: Maple.

Serial number: 679520.

Date stamp: 02/19/1969.



Tom-2 69

Ludwig 9"x13" tom tom drum (1969).

Finish: Oyster Blue Pearl.

Shell: Maple/Poplar/Mahogany/Finish.

Reinforcement rings: Maple.

Serial number: 692747.

Date stamp: 02/19/1969.



Tom-3 69

Ludwig 14"x14" floor tom drum (1969).

Finish: Oyster Blue Pearl.

Shell: Maple/Poplar/Mahogany/Finish.

Reinforcement rings: Maple.

Serial number: 680940.

Date stamp: 02/24/1969.

