

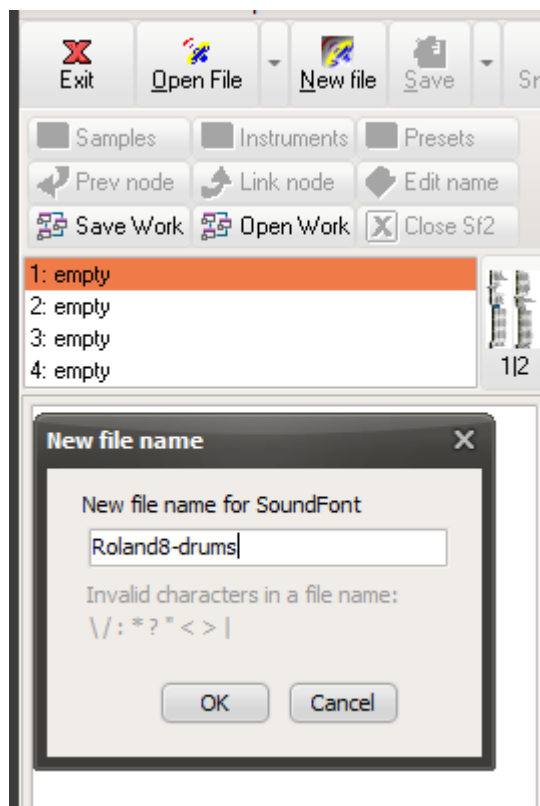
# How to create a percussion SoundFont using the “Keys” file feature in Viena version 0.998

In this tutorial I will assume two things:

1. You have the audio samples ready for the SoundFont in one or several folders.
2. You have an idea of how the samples should be assigned to the keys on the keyboard.

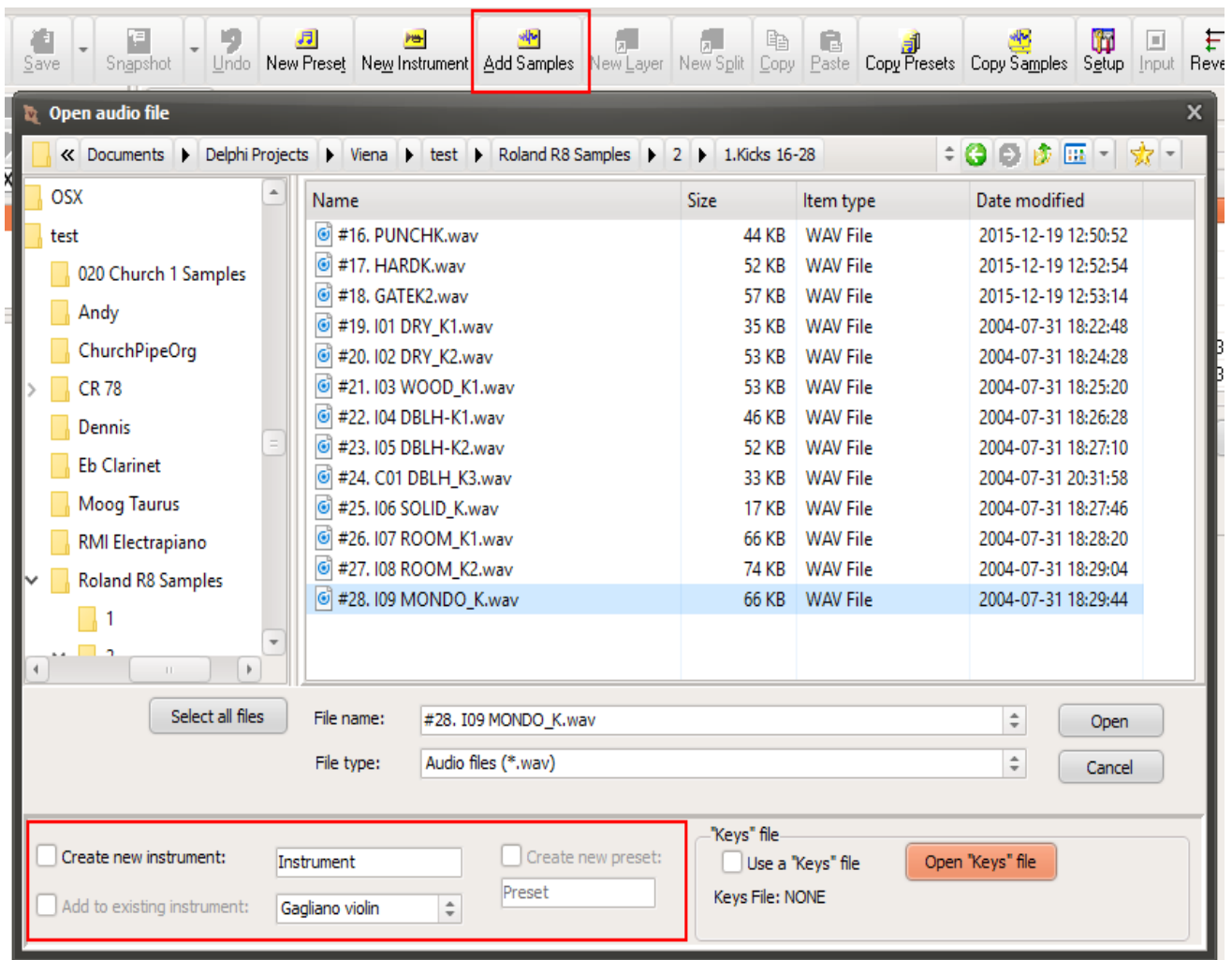
## 1. Using the full capability of the “Keys” file feature

We will start with creating a new SoundFont in Viena. Press the New file button:

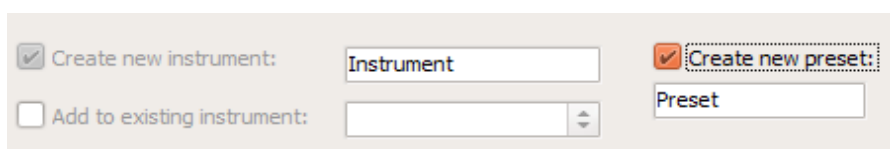


You can give the SoundFont any name you want.

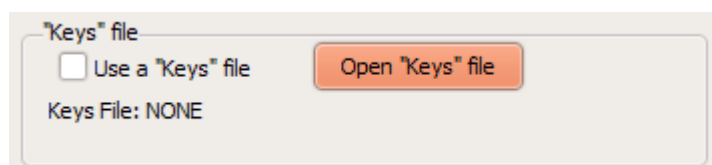
Next, add the audio samples:



First, before you start actually adding any samples, look at the bottom of this image. Because this is a new, empty SoundFont you want to immediately create a new SoundFont Instrument to which the samples should be assigned. You can give this Instrument any name you want. You also want to create a new SoundFont Preset for this Instrument. Remember that Presets are visible to the synth engine, and not Instruments. So, check the Create new preset box:



**But wait**, before you select the samples you want (noticed the new "Select all files" button?) and press the Open button, have a look at the area down-right labelled "Keys" file:



You can make the whole task a lot easier by using the “Keys” file. Before even starting Viena you should create this file. Use your favourite spreadsheet editor to create a table which you save as a “Comma Separated Values” file (“CSV” file, with extension \*.csv). The CSV file is just a text file in which you list the samples and at least the Root Key. Additionally you can add a column for the key range and one for the velocity range. These values define the split “positions” on the keyboard. This is how the file looks in LibreOffice Calc:

	A	B	C	D	E
1	Default data	60	1	2	2
2	#16. PUNCHK	16	16-16	0-127	
3	#17. HARDK	17	17		
4	#18. GATEK2	18	18		
5	#10. IN1 DRUM K1	10	10		

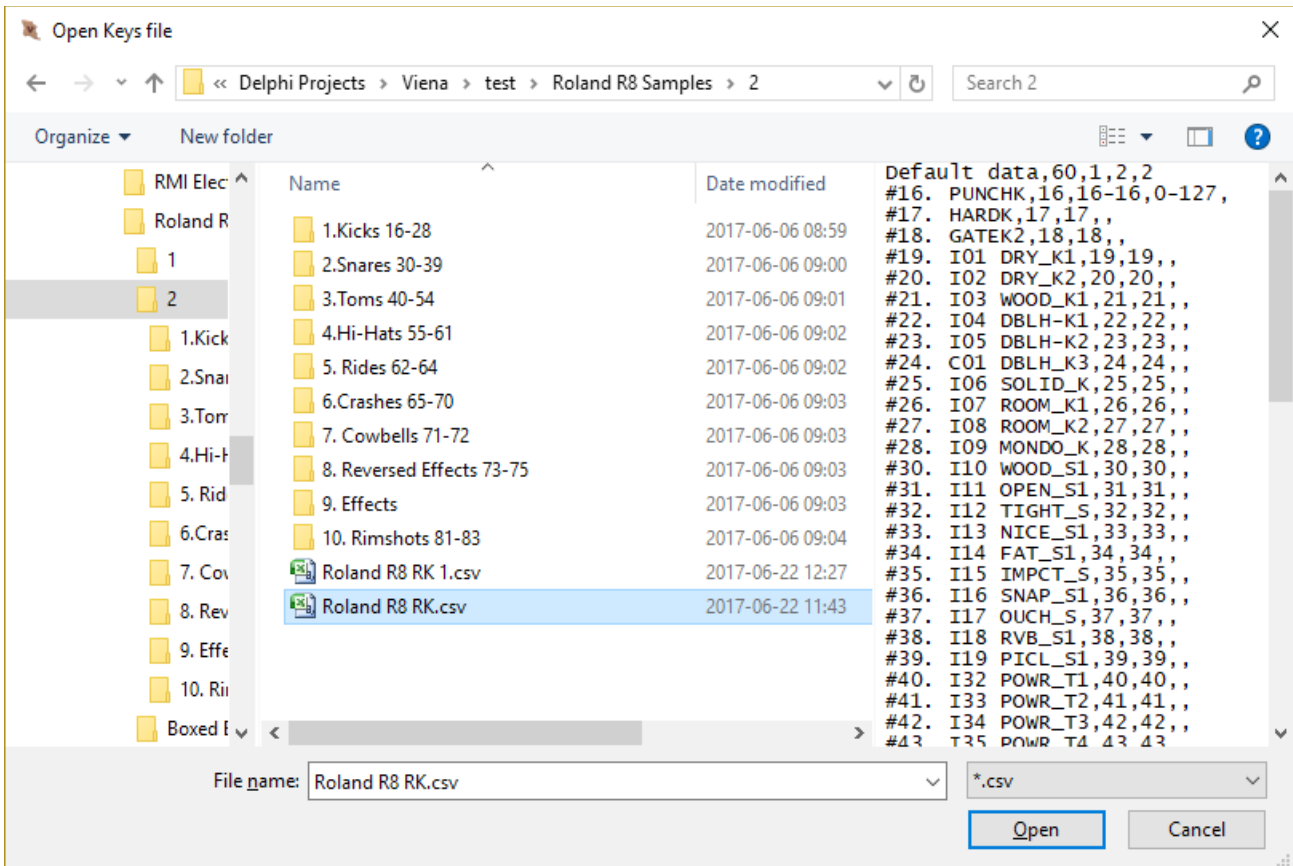
The first line in this file (cell A1) must read Default data. This row will contain information on what to do if there is missing information for a sample. The first value (B1) is the default root key – here it is set to 60, or middle C. Cell C1 can contain either 0 or 1. The value in cell C1 tells Viena to use the root key (if C1=1) or not (C1=0) to define the key range for the new split. Cells D1 and E2 are optional and can contain values defining the “width” of the key range. In this example both values are equal to 2 (0 is the default value for both D1 and E1). These values are used for the key range **only if C1=1**. For example, if the root key of a sample is 16 and C1=1, D1=2 and E1=2, then the key range for this split will be  $[16-2 - 16+2] = [14 - 18]$ .

After the first row of Default data there are any number of rows containing sample data. Column A contains the name of the sample file. Note, you do not need to include the path nor the file extension if it is equal to “.wav”. Column B contains the root key, column C the key range (optional) and column D the velocity range (optional as well). In this example only the first sample has the velocity range defined. Note that if the range value covers only one single value you can enter it in the cell as this one single value. Thus, 17 in column C is the same as [17–17]. Remember that the values you can use in columns B, C and D must be in the range 0-127 and that middle C is equal to 60.

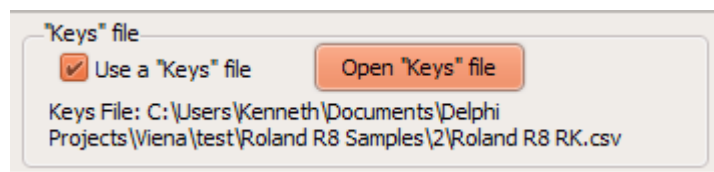
So in this example, the first sample is called "#16. PUNCHK". The Root Key for this sample is 16, key range is 16-16 and velocity range is 0-127 (all velocities, which is the default).

When you are done editing the file in the spreadsheet software, save it as a CSV and close the file. **Viena cannot open it if it is still open in the spreadsheet editor.**

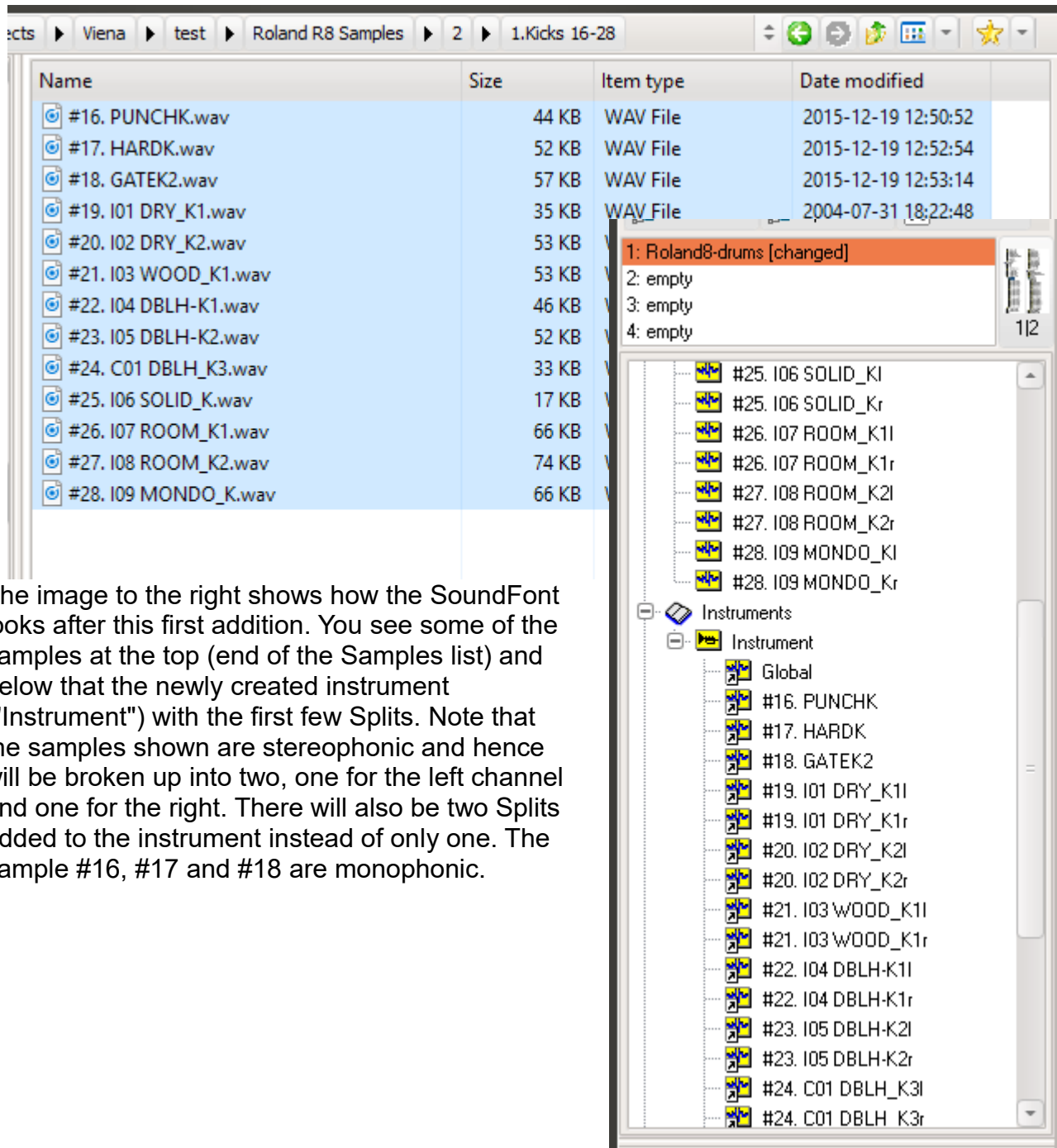
Press the "Open Keys file..." button to display a file open dialog, which lets you look for any suitable file (with the extension ".csv", or ".txt").



In the above File Open dialog the preview pane is enabled, so you see the contents of the file to the right. Press Open to return to the “Open audio file” dialog. The name of the “Keys” file is now shown. The file remains in use until you clear it from memory by pressing Cancel in the above "Open Keys file" dialog. Just unchecking “Use a Keys file” checkbox does **not** clear it from memory.

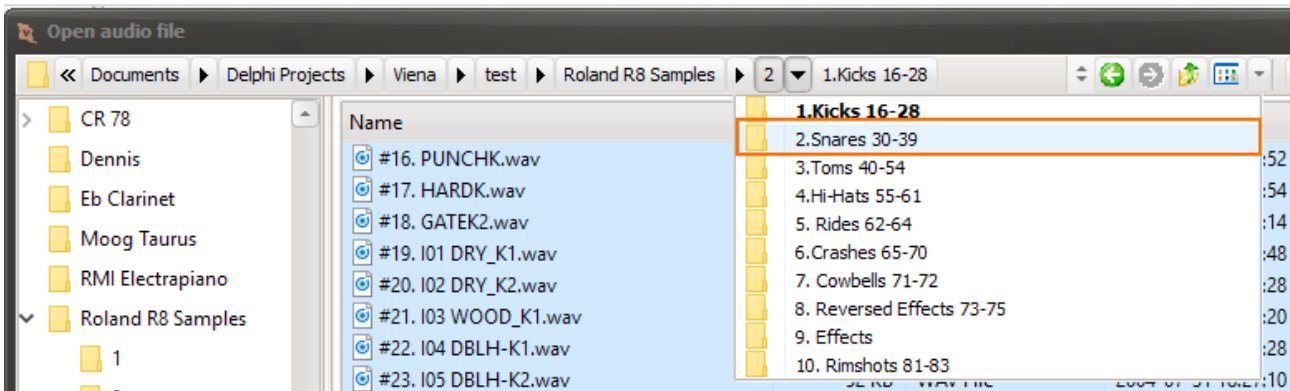


In this example the samples are divided into groups and stored in separate folders. Let's go to the first folder "1.Kicks 16-28", select all samples using the new button and press Open.

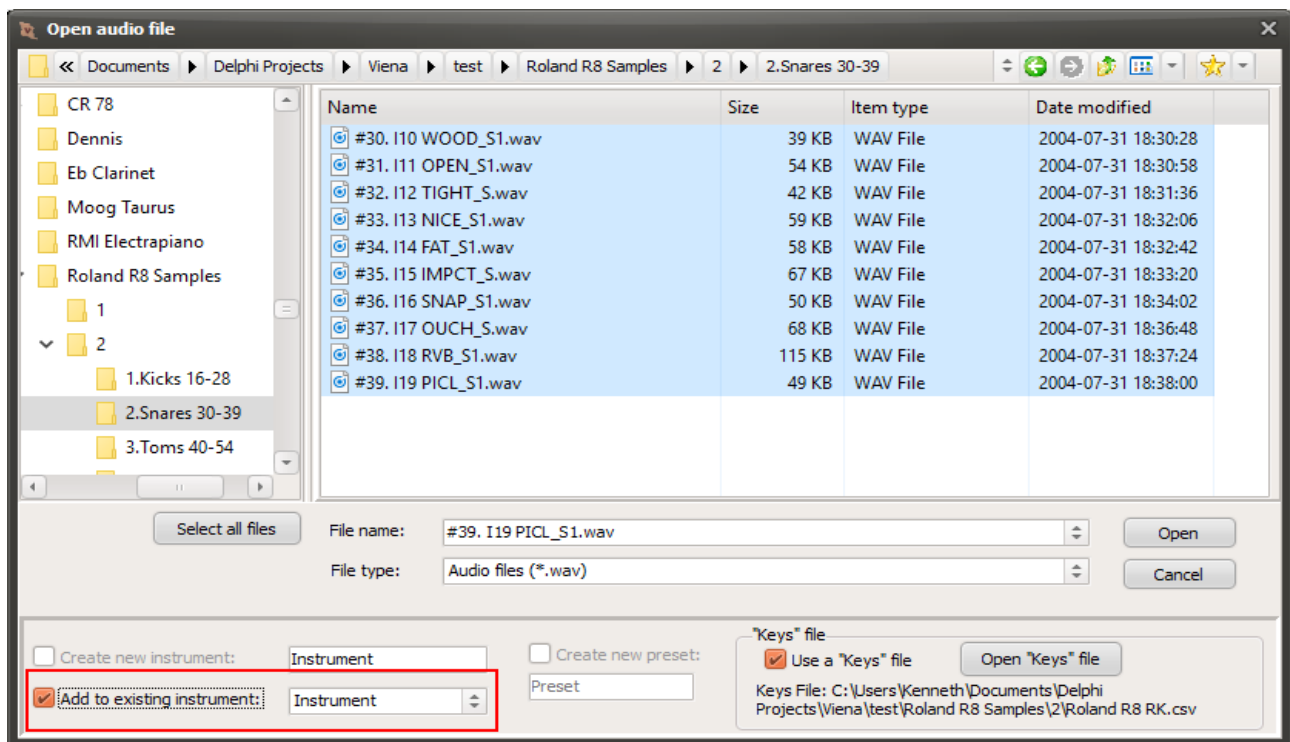


The image to the right shows how the SoundFont looks after this first addition. You see some of the samples at the top (end of the Samples list) and below that the newly created instrument ("Instrument") with the first few Splits. Note that the samples shown are stereophonic and hence will be broken up into two, one for the left channel and one for the right. There will also be two Splits added to the instrument instead of only one. The sample #16, #17 and #18 are monophonic.

Next step is to go back to "Add Samples". In the file open dialog we will now need to switch to the next folder, "2.Snares 30-39":

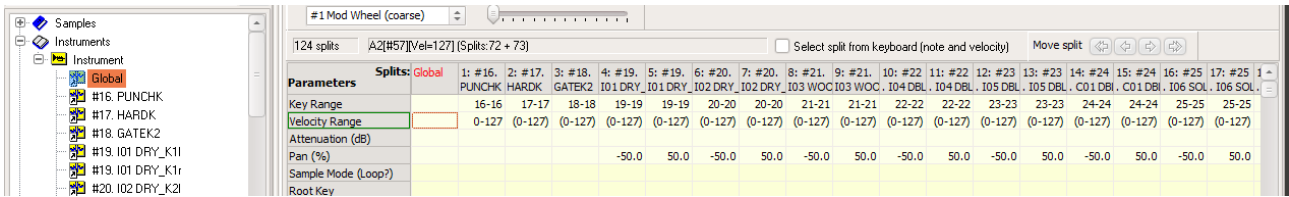


Again, select all samples. Before pressing Open you want to change one thing. We do not want to create a new instrument again for these samples, but we want to add them to the instrument we have already created. Thus we will check the checkbox labelled "Add to existing instrument:" If there were more than one instrument in this SoundFont we would also need to select the instrument from the drop-down list. Also notice that the Keys file is still in use. (Leaving the "Create new Instrument" box check will make Viena ask if you want to add the samples to the previously created instrument or actually create a new one with the same name – which is allowed.)

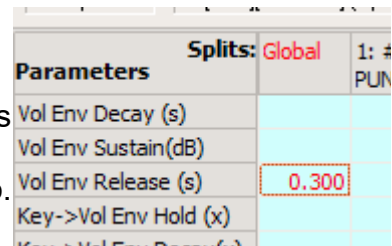


In the next eight steps the remaining samples are added.

If you have coded the data in the “Keys” file correctly you end up with an instrument almost ready to be used:

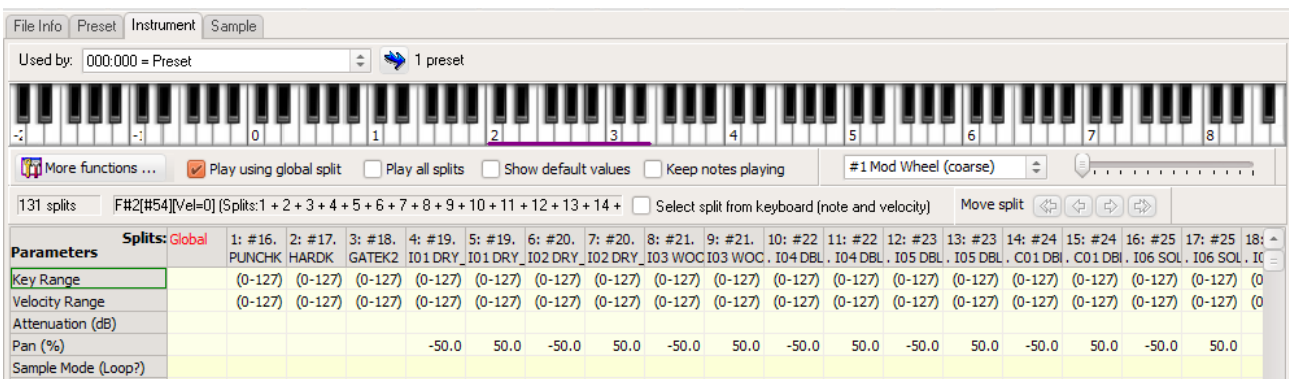


As you can see from this image, the splits have been assigned key regions. The first split (not the Global) has also been assigned a velocity range, although this was not required as it is equal to the default range. The final small task is to set the Volume Envelope Release value to something greater than zero. For a percussion sound a small number is okay, for example 0.3 sec.



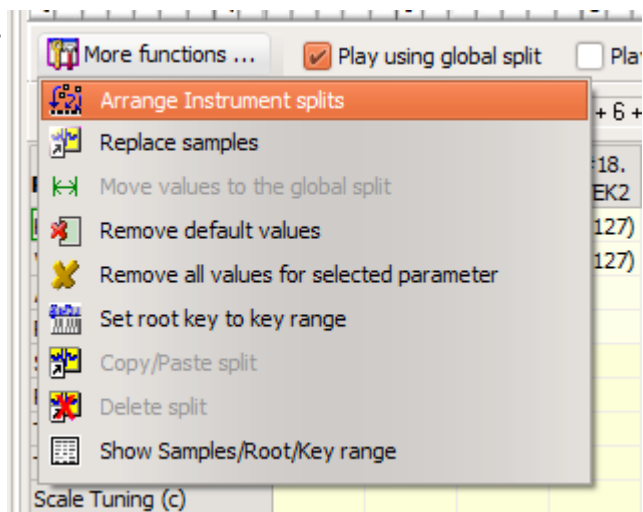
## 2. Using only part of the capability of the “Keys” file feature

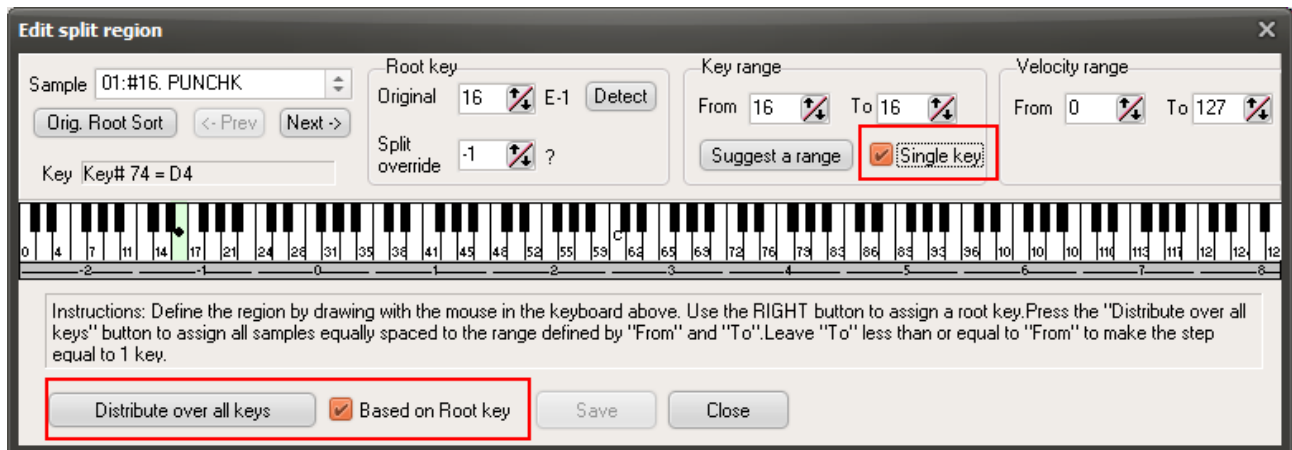
Next, we can have a look at what you would have done if the “Keys” file had contained only samples and root keys - **not** any range values or any “Default data” In this case the above splits table would look like this:



Each key range is set to the default range 0-127 so playing on any key would make all sounds play together. You must now yourself distribute the splits over the keys.

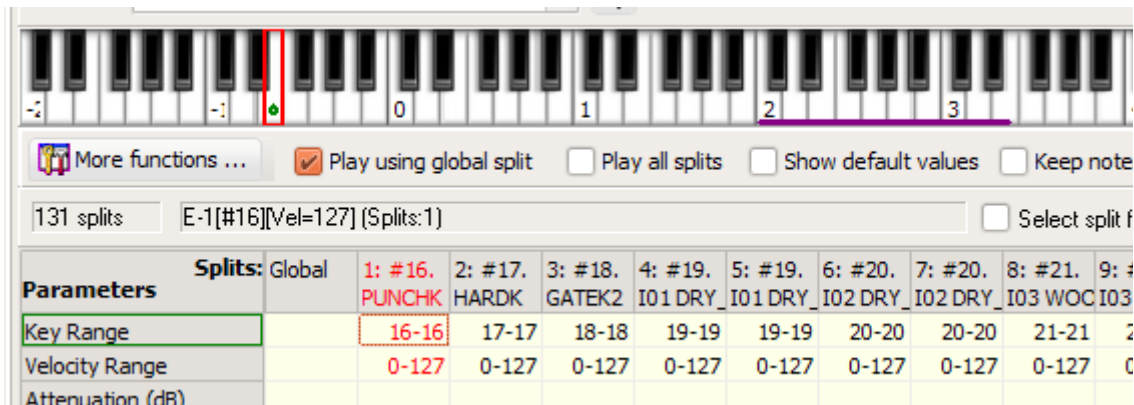
To the left, above the Parameters column you find a button, “More functions...”, with a number of useful tools. The first one is called "Arrange Instrument splits". Select this to open a new window:





This is a tool you can use anytime to distribute samples over the keys in the keyboard. The tool may look pretty intimidating and can be tricky to use the first few times. To the top left you have the list of samples (note that stereo samples will be listed as one). You can go through this list one by one and manually assign the samples to a Key and Velocity range. Or, you can use the tool "Distribute over all keys" (in the selected "Key range", top right). In the case of a percussion Preset each percussion sound should be assigned to only one key. Thus the checkbox "Single key" is checked. Now comes the use of the root keys in the "Keys" File. If you have this file, **OR**, if the samples themselves contain the root key, **OR**, if you have done the full work of manually assigning the root key to each sample, then you can check the box labeled "Based on Root key". Now you are ready to press "Distribute over all keys". In this case the range you have selected in Key range has no impact. Each sample will be assigned to exactly the root key.

Here you see the results:



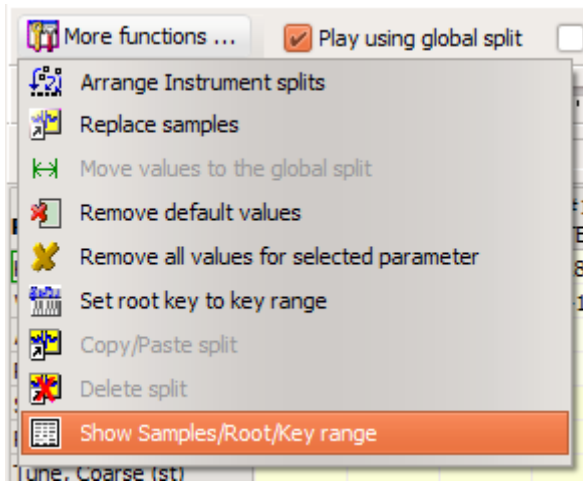
The final small task is again to set the Volume Envelope Release value to something greater than zero.

That's it. Now save the file.

**Last, but not least:** You can use the new function "Show Samples/Root/Key range" to



inspect the splits for any instrument and save the data as a CSV file for later use:



Samples and Splits

Nr	Sample	Root	Key range	Vel range
1	#16. PUNCHK	16	16-16 / E-1-E-1	0-127
2	#17. HARDK	17	17-17 / F-1-F-1	0-127
3	#18. GATEK2	18	18-18 / F#-1-F#-1	0-127
4	#19. I01 DRY_K1l	19	19-19 / G-1-G-1	0-127
5	#19. I01 DRY_K1r	19	19-19 / G-1-G-1	0-127
6	#20. I02 DRY_K2l	20	20-20 / G#-1-G#-1	0-127
7	#20. I02 DRY_K2r	20	20-20 / G#-1-G#-1	0-127
8	#21. I03 WOOD_K1l	21	21-21 / A-1-A-1	0-127
9	#21. I03 WOOD_K1r	21	21-21 / A-1-A-1	0-127
10	#22. I04 DBLH-K1l	22	22-22 / A#-1-A#-1	0-127
11	#22. I04 DBLH-K1r	22	22-22 / A#-1-A#-1	0-127
12	#23. I05 DBLH-K2l	23	23-23 / B-1-B-1	0-127
13	#23. I05 DBLH-K2r	23	23-23 / B-1-B-1	0-127
14	#24. I06 DBLH-K2l	24	24-24 / C0-C0	0-127

Root key \* = split override

**Save as CSV file** Close