

SoundFonts - General Information and Essential Troubleshooting

Summary:

- ✓ Introduction to Soundfonts and troubleshooting methods to improve its performance

What are SoundFonts?

SoundFont Technology is a technology that allow you to customize your instrument sounds for MIDI music playback or MIDI sequencing. Developed by Creative Labs and E-MU Systems, SoundFont technology allows the user to improve the sound quality of their MIDI playback by either loading a better sounding General MIDI (GM) wavetable sound-set, or loading new (non-GM) sounds for use in music composition and songwriting. It is used by many sound cards and software synthesizers.

A SoundFont bank (.SF2 or .SBK file) is essentially replacement instruments for the standard GM (General MIDI) instrument set. A General MIDI set (GM) has only 128 (0-127) instruments to choose from. SoundFonts allow custom instruments to play instead of the GM instruments.

Using SoundFonts:

To use SoundFonts in MIDI playback, you will need to load them into your sound card so your MIDI sequencer can access them. Some sequencers allow you to load SoundFonts right from the sequencer program. After you have loaded your SoundFonts into their respective banks you can then use a MIDI program message to access the sounds for each sequencer track. For specific information on how load and use SoundFonts, please refer to your sequencer program documentation or help file.

If you do not have a sequencer that supports SoundFont loading, you will need to load your SoundFonts directly into your sound card or software synth.

Displaying the Modulation Properties in Vienna SoundFont Studio 2.3

If you have a Sound Blaster Audigy 2 and are trying to get **Vienna SoundFont Studio** to show the **Modulator Properties**, follow the steps below to get this option to show.

1. Open Windows Explorer and browse to **C:\Program**

Files\Creative\SBAudigy2\SFBM.

2. Once in this folder, right click on the file **SFEDT32.DLL** and choose **COPY**.
3. Browse to the folder **C:\Program Files\Creative\Vienna**.
4. Right click on an empty spot and choose **PASTE**.
5. It will ask you if you would like to overwrite the existing file. Click **YES** to overwrite the existing file.

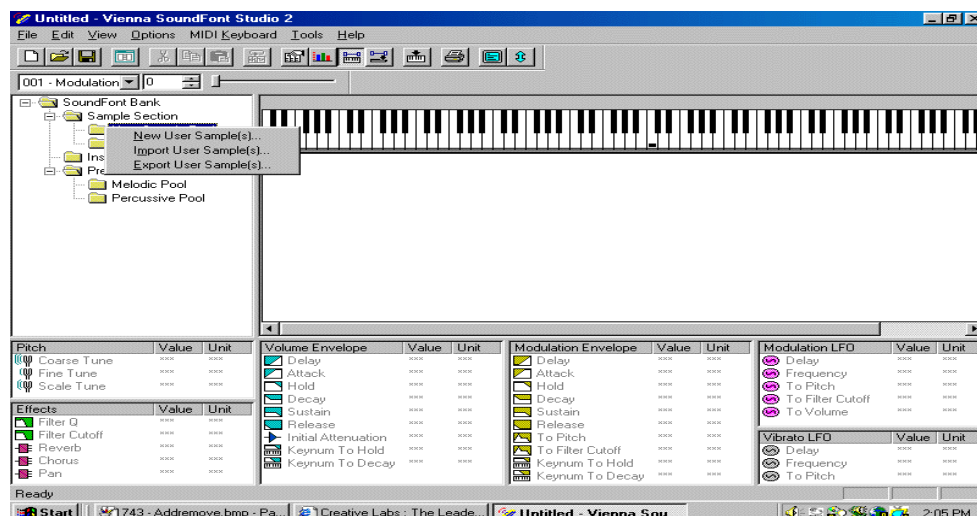
To access the **Modulator Properties**, right click on an instrument in the **Instrument Pool** and choose **Global Zone**. Right click on the Global Zone and choose **Modulator Properties**.

SoundFont Bank creation with Vienna SF Studio:

To create a SoundFont Bank, you should proceed as follows:

1. Import Wave Files

Right-click on the folder labeled **User sample pool** on the left hand side of Vienna. This will give you the option to import a new user sample. It will open a browser window in which you can select the wave files you wish to import (you can select more than one). Click the **Import** button. Notice that as it imports the files, you can rename them. It is not important to have the final name of the instrument at this stage. If the imported wave files are stereo, it will import a left and right channel separately signified by a **(L)** or **(R)** respectively. When you import them to the instrument pool make sure you have both left and right for stereo output.

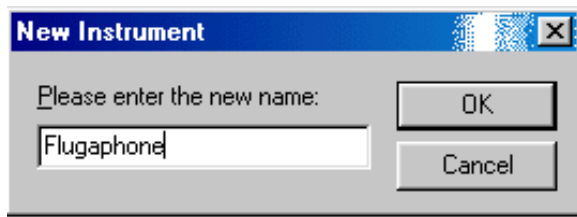


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2. Create New Instruments

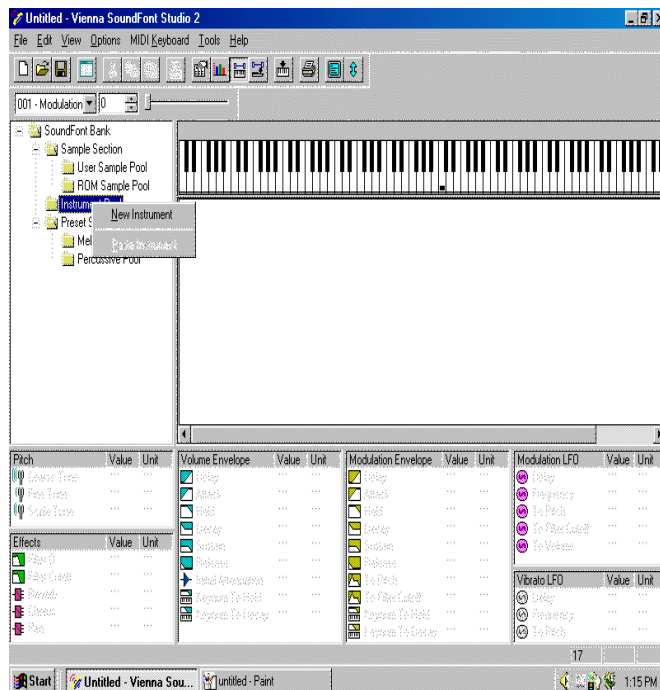
With the wave files in the **User sample pool**, you can start to generate instruments. At

this point the name is still unimportant, but it might be an good idea to group them by final instrument name. To do this, right-click on **Instrument Pool** and select **New Instrument**. This will give you a box for a name.



3. Name the New Instruments

Name the instrument accordingly. Select as many of the wave samples as you wish to be included in the instrument, and click **Add**. Once the instrument is created, you can adjust all the traditional events such as *delay*, *attack*, *hold*, *sustain* etc by selecting the part of the instrument to manipulate and clicking on one of the settings in the bottom window. Keep in mind that waves **(L)** and waves **(R)** are really on the left and right speaker. If you want to have both speakers, make sure the left and right part of the wave mapping are identically overlapped.

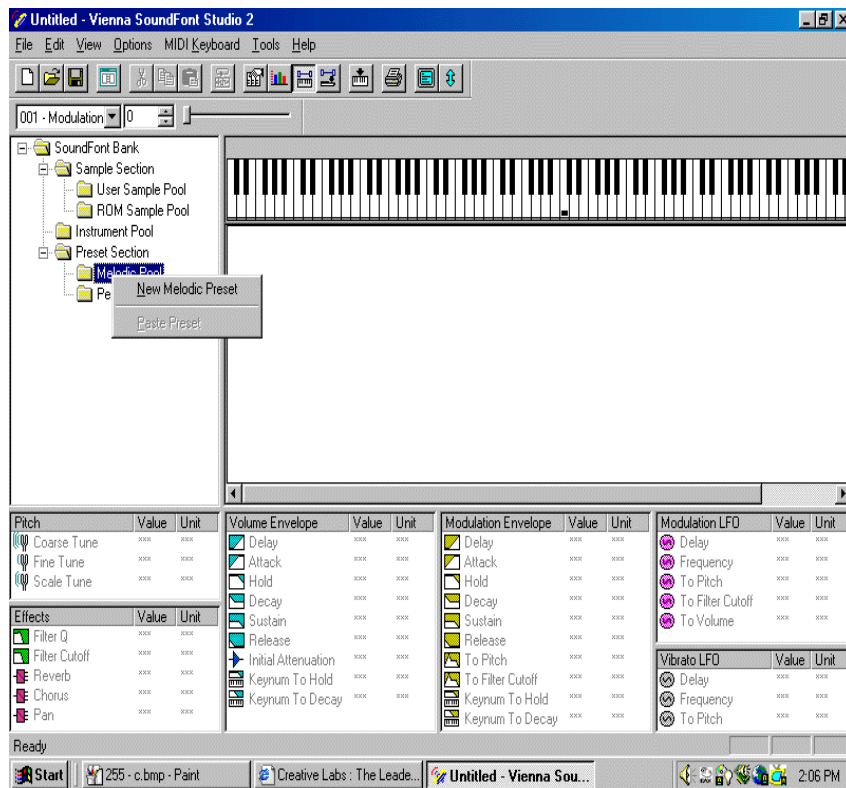


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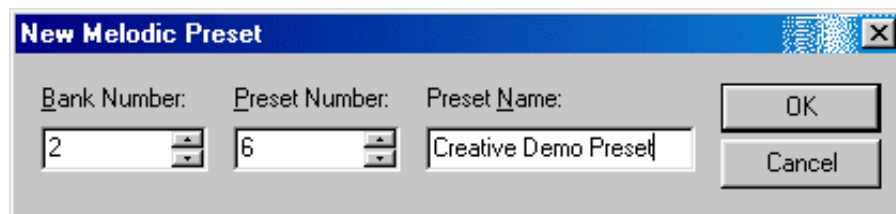
4. Melodic Pool

It is now time to enter the newly created instruments in the **melodic pool**. This pool is what you are going to actually see in other programs when using the SoundFont so name it accordingly. by right-clicking on **Melodic Pool** and clicking **New Melodic**

Preset, it will list options for Bank Number, Preset Number (instrument number), and Preset Name (instrument name). Set the instrument name as you like and repeat for any number of instruments.



[Click to enlarge](#)



5. Save and Convert

To Save or Convert the new SoundFont, click on File, then **Save As** and select the type you want; 2.x is default and recommended for Sound Blaster Live! users. Save the file in an easy to find location for later use.

6. Loading and using SF2 files

SoundFont files can be accessed in different ways. The first is through a Global Setting, which is recommended. It can also be selected in individual software programs, for example, Cakewalk Express version 8.0x and Cubasis

Loading SoundFonts via the Global Setting: Go to **Start, Programs, Creative, Sound Blaster Live, AudioHQ**. Click on the SoundFont icon. To load a new SoundFont, click on **Load** and browse to a directory where SF2 files are located,

highlight the desired SoundFont, then click on **Select**, the bank is now loaded and can be tested in programs such as Creative Keyboard.

Creative Keyboard: Once the SoundFont is loaded globally, you can audition the SoundFont with the Creative Keyboard located under within AudioHQ. To test a bank, click on Bank, then select User Bank. **User Bank** if it is one you created or the name of the bank if it is a commercial style. Then you can select **Instrument** and test it out over your MIDI keyboard.

Converting SoundFont Banks with SoundFont Player or Vienna SoundFont Studio

It is very easy to convert SoundFont Banks back and forth between the SoundFont 1.0 standard and the SoundFont 2.0 standard using either SoundFont Player or Vienna SoundFont Studio.

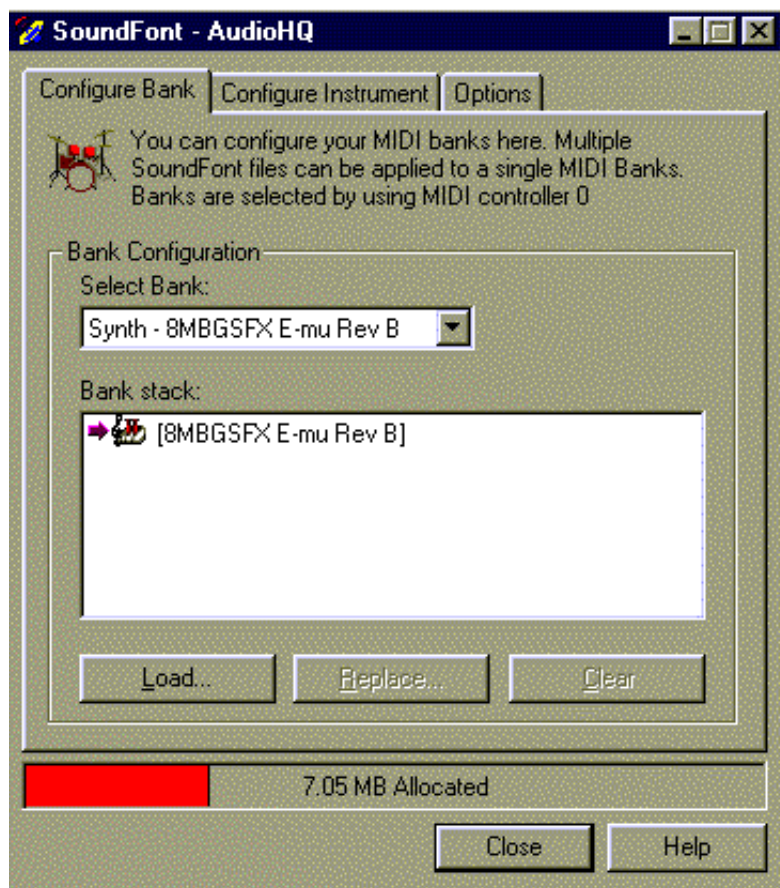
In either application, after you have loaded a SoundFont Bank, you can choose to save the Soundfont Bank as an Original soundfont bank or a Soundfont 2.0 bank. To do this, open the bank you wish to convert and click on File and choose Save As instead of Save. You can then select the desired format, version 1.0 or 2.0, to Save the file As and click Save. It should be noted that in most cases it is better to use version 2.0, as it is compatible with most current applications.

Further, the SoundFont Player will prompt you anytime you open a soundfont bank version 1.0 to convert it to 2.0. If you do so, it will not overwrite the original. It will merely add a version 2.0 bank of the same name with the sf2 extension.

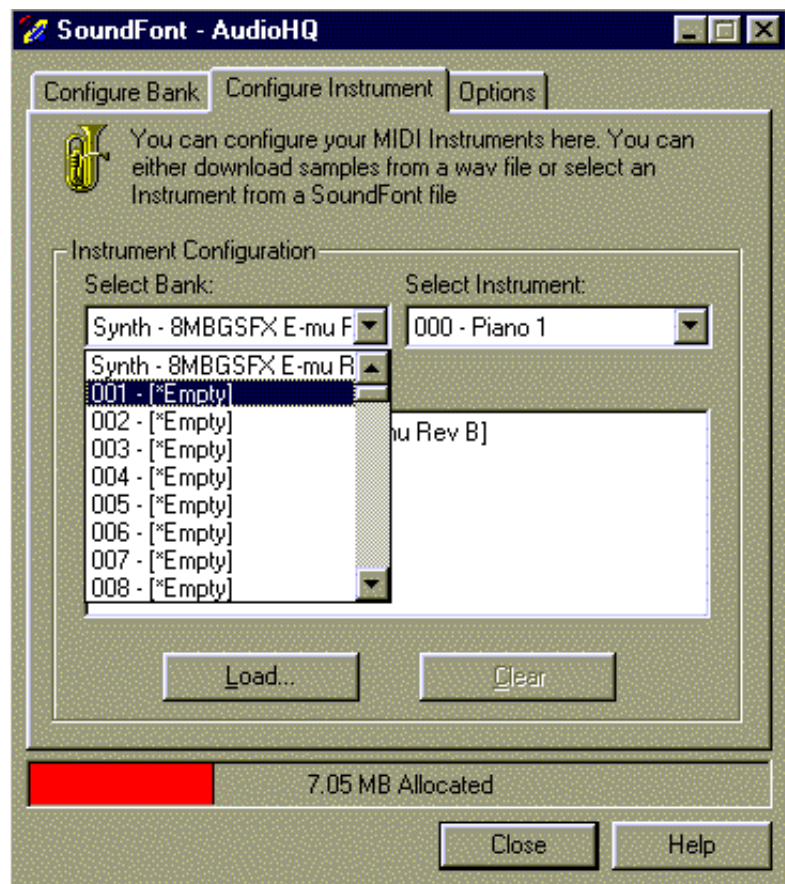
How to load SoundFonts in Cubasis VST Creative Edition

To use SoundFonts in Cubasis VST Creative Edition as shipped with some of Sound Blaster audio cards, follow the steps below:

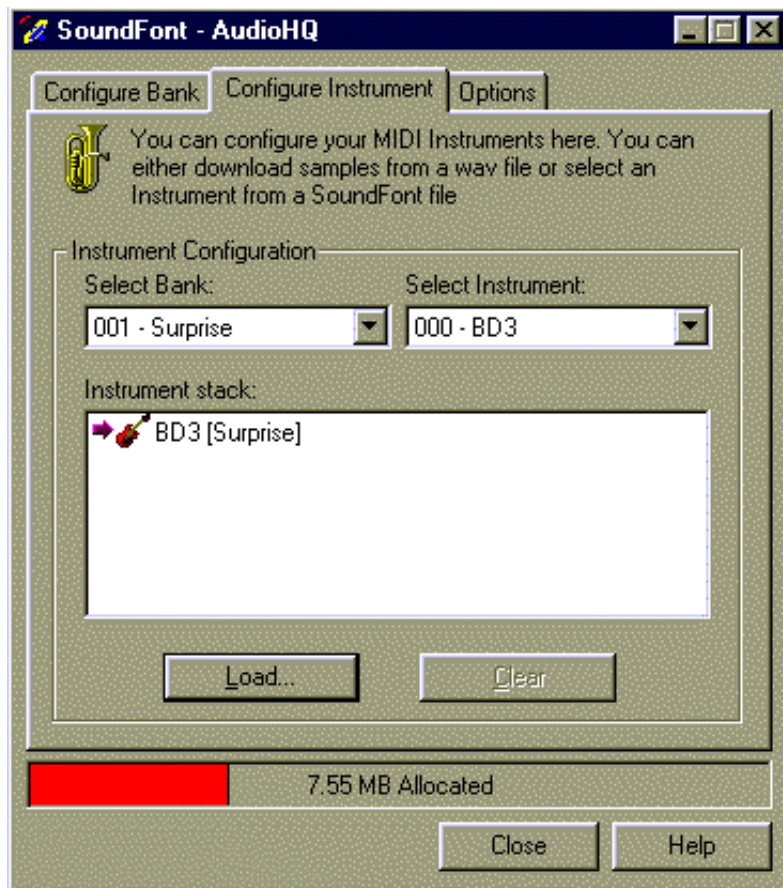
1. Load your soundfont in **Sound Font Control**. This can be accessed from the **Creative Launcher**.



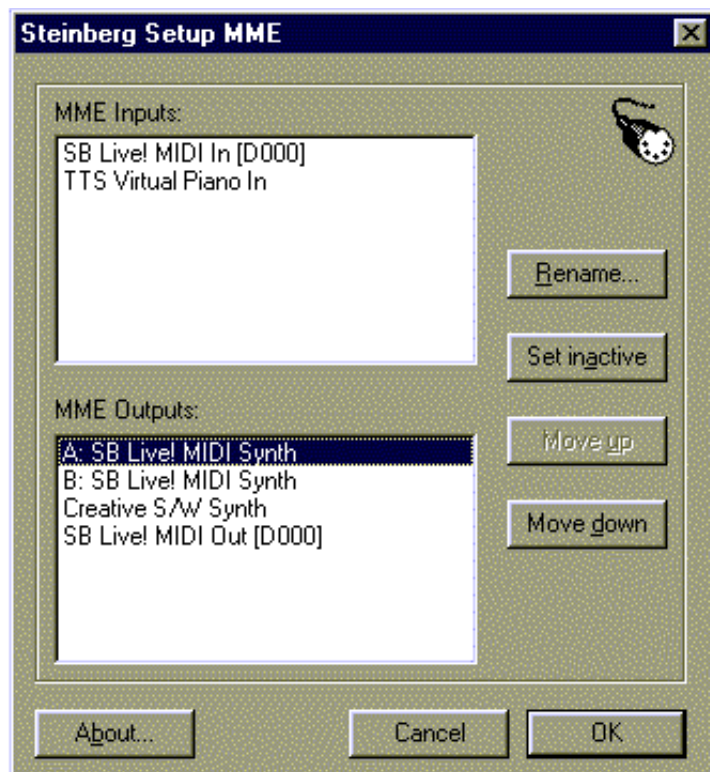
2. Click on the **Configure Instrument** tab above



3. Choose an empty bank, as in the screen shot above and click on **Load** then and browse to where your soundfont 2s are located. If they are located on a CD, it is advisable to copy them from the CD to the hard drive. **The Progress** bar at the bottom of the screen should reflect the fact that you have indeed loaded an SF2 file.



4. Notice the change when Surprise SF2 is loaded. Close the application. Go to **Setup MME**, located in the Cubasis VST Creative Edition program group and make sure the **SB Live Synth A** is at the top of the list.



5. Click on **OK** and then close **Setup MME**. Launch **Cubasis VST Creative Edition**, choose a **MIDI** track.



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6. Click with the the mouse in the **Bank** box and a list of soundbanks will be displayed, including your loaded banks. (In our case Surprise).



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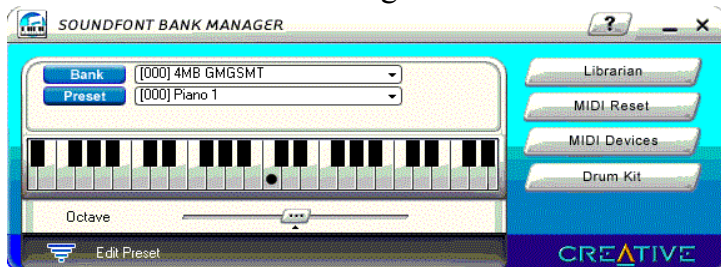
Your soundfont can now be used in your MIDI creation.

How to load and configure SoundFont Banks in SoundFont Bank Manager


If you are using Windows 2000/XP, and has difficulty loading a large SoundFont Bank, please see next section on how to increase SoundFont Cache.

To load a soundfont bank in Windows 98/98 SE/Me/2000/XP, follow the procedure below.

- Go to Start, Programs, Creative, then click on your Sound Blaster audio card, and select Soundfont Bank Manager.



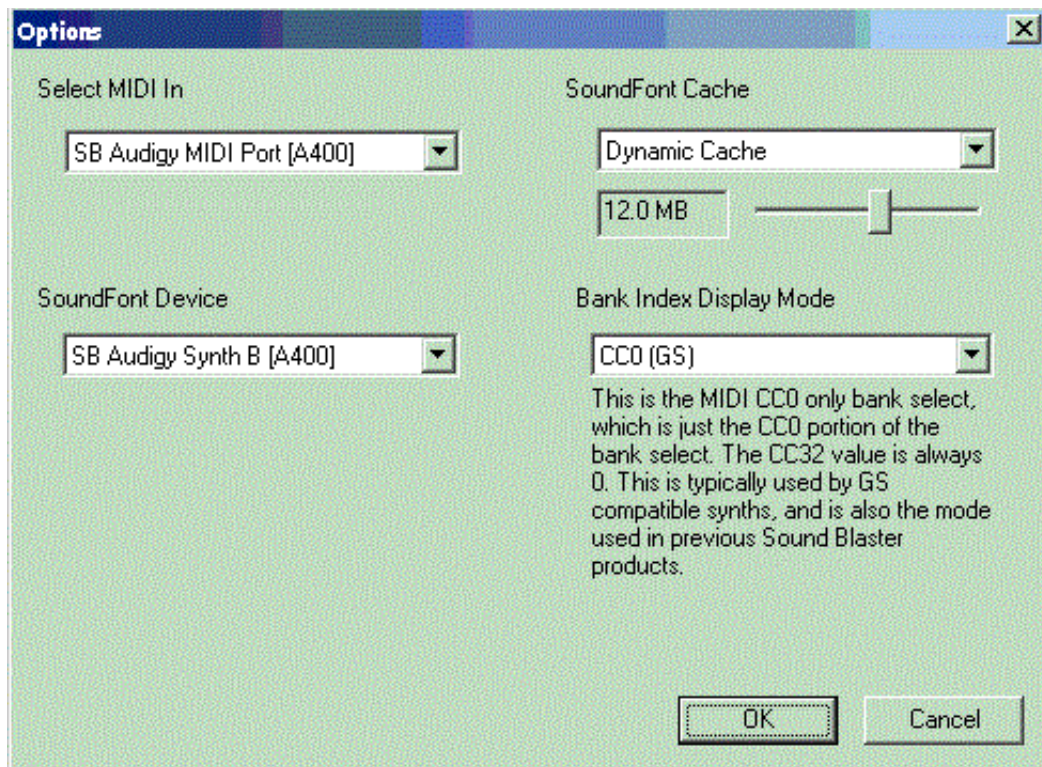
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- Click the **Bank** button. The **Configure Bank** dialog box appears.
- Click the **Select Bank** drop-down button , and select a bank location to configure.
- Click the **Load** button to add a SoundFont bank to an empty or occupied location.
- If the desired space already contains a bank, and you want to load a new bank in its place, highlight the bank and click the Replace button.
- If you want to remove a bank, highlight the bank and click the Remove button
- Click the OK button to finish configuring your banks.

To adjust the SoundFont Cache and edit the system registry

When trying to load a large SoundFont bank, some users may encounter an error message. Click the **OK** button. To resolve the issue, try to increase the SoundFont Cache, or edit modify the operating system's registry settings to alter the set memory limit.

- To increase the SoundFont Cache, from the main interface, click the **MIDI Devices** button. The **MIDI Devices** Option dialog box appears. Drag the SoundFont Cache slider to the right to increase the SoundFont Cache memory limit. Alternatively, increase your system's memory by adding more RAM.



- If you still cannot load a large bank after altering the Soundfont Cache, you will need to modify your operating system's registry settings to alter the set memory limit. This can, however, alter your operating system's performance. **Remember to make a copy of your system's registry settings before proceeding.**
- **Do not** alter your operating system's registry settings unless you need to load a large bank.
 - Using Windows Explorer, search and locate the Windows folder.
 - Double-click the regedit.exe file. The **Registry Editor** window appears.
 - On the left panel, search and locate the HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Session Manager\Memory Management\ folder.
 - On the right panel, double-click the **PagedPoolSize** file. The **Edit DWORD Value** dialog box appears.
 - In the **Value data:** box, type **0xFFFFFFFF**, and then click the **OK** button.
 - Restart your computer.
 - Launch Creative SoundFont Bank Manager, and reload the necessary SoundFont banks.

How to load SoundFont Banks in both Synth A and Synth B in Cakewalk Sonar

The Sound Blaster Live!, Sound Blaster Audigy, Sound Blaster Audigy 2 and Sound Blaster Audigy 2 ZS cards have two hardware based **MIDI Synth: Synth A and Synth B**, each with 16 MIDI channels. To utilize all 32 MIDI channels, it is necessary to load SoundFont banks, either same or different SoundFont files for both of them.

To load SoundFont Banks with a Sound Blaster Live, Sound Blaster Live! 5.1, or Sound Blaster Audigy card, go to **AudioHQ** in Control Panel, then click on

SoundFont. Click on the **Options** tab, and select **SB Audigy Synth A (or similar)**, then click the **Configure Bank** tab and load each of the desired SoundFont files. Repeat the procedure for SB Audigy Synth B (**or similar**).

To load SoundFont Banks with a Sound Blaster audigy 2 card, go to Start, Programs, Creative, Sound Blaster Audigy 2, then click on SoundFont Bank Manager. Click on MIDI Device, select Synth A, then load the desired SoundFont banks; repeat the procedure for Synth B.

In addition, if you are loading different SoundFont banks in Synth A and Synth B, make sure that the Bank numbers do not overlap.

To use the SoundFont files loaded in both Synth A and Synth B under Cakewalk Sonar, open a new or existing project in Sonar, click on the **Option** tab, then select **MIDI Devices**. Under the **Outputs** window, make sure you have "Synth A" and Synth B selected.

Click on the **Options** menu again, select **Instruments**. You will notice that all channels in **Synth A** are linked to **SoundFont Device**, and all channels in **Synth B** are linked to **Default**. To trick Sonar to use the SoundFont loaded in Synth B as well, select all channels in the entire window on the left (hold the shift key, then select the channels), then click on SoundFont Device on the right. Cakewalk Sonar will display the SoundFont list for Synth A on Synth B. This means if you loaded different SoundFont files for Synth A and Synth B, you will need to remember the instruments in the Synth B by bank and preset numbers.

Click on **Options** menu, then click on SoundFont, click on a Bank number, then click on Attach, and attach a desired SoundFont file to the specific Bank. Make sure that the bank numbers match that for SoundFont loaded in the Sound Blaster software (AudioHQ or SoundFont Bank Manager).

Finally, make sure that **Bank Select Method** is set to Controller 0. To do so, in the Track View, right-click on the track number, select Track Properties, and verify that Bank Select Method is set to Controller 0.

For more information on Cakewalk Sonar, please refer to www.cakewalk.com.

How do I use the drum kit from the SoundFonts of my sound card?

When creating SoundFont banks, one has many options on how to arrange the banks. If you are sorting through massive banks to find the instrument then it is best to group similar instruments together. The use of drum kits and percussive pools take this a step further.

The use of a percussive beat is more often than not the ground work for a new track. Thus, the drum instruments see a lot of use. It makes sense that these instruments are set in an easy to access location. When using the percussive instruments it is common to not find one particular type of drum in each instrument like other types of instruments such as the slap bass. Instead you have what is called a Drum Kit.

Drum kits are often constructed in programs like Vienna SoundFont studio. Programs like this one give you the ability to correspond the sounds you want to individual keys of the keyboard and save them as an instrument or a bank. To do so, samples of the desired drum sounds are moved to the sample pool or in this case, given the special name Percussive Pool. In reality, it is just a location that you know you will find samples of percussive sounds. After sorting through the percussive pool, the user can then pick out what sounds they wish to include in their drum kit. They then add the samples as desired and save the bank.

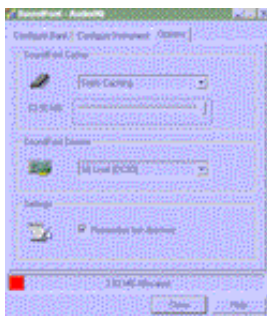
In the General MIDI standard, the Drum kit has the bank ID of 128 and uses MIDI channel number 10. Some sequencing programs may have special links or shortcuts to these locations making it advantageous to place the drum kit as such.

What is the maximum SoundFont size for the Sound Blaster cards?

For the Sound Blaster Live!, Sound Blaster Live! 5.1 series, the maximum size of SoundFont is 32MB, despite the fact that the Soundfont Cache slider in **AudioHQ - Soundfont** displays half the amount of your system RAM.



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For the Sound Blaster Audigy, Sound Blaster Audigy 2, Sound Blaster Audigy 2 ZS

series, the maximum size of SoundFont is limited only by the system memory.

SoundFont banks still loading after being cleared from system memory:

The Sound Blaster Live!, Sound Blaster Audigy, Sound Blaster Audigy 2 and Sound Blaster Audigy 2 ZS cards have two hardware based MIDI Synth: **Synth A** and **Synth B**, each with 16 MIDI channels.

A SoundFont bank could be loaded into both **Synth A and Synth B** by default. When unloading all SoundFont Banks from your system memory, it is necessary to go to both **Synth A** and **Synth B** and unload Sound Font Bank for both synths.

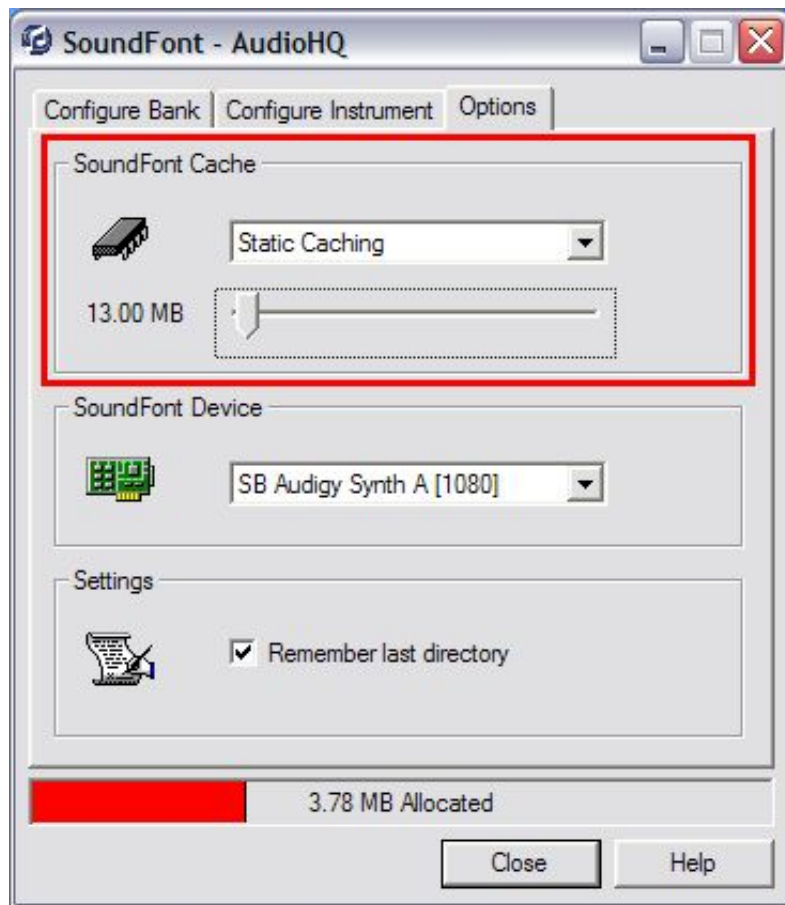
Error 'Out of Memory' in SoundFont Manager

The memory bar on the main panel of the player is not actually an indication of the amount of memory consumed or allocated to SoundFonts. It is only a reference as to how much total system RAM is being used by your system. Thus it is possible even when the meter does not indicate low memory, to run out of preset memory.

If you experience this problem, try allocating more memory to SoundFonts in AudioHQ by selecting **Start - Programs - Creative - Sound Blaster Live!/Audigy - Audio HQ**. Double click on **SoundFont** then click on the **Options** tab. Adjust the memory allocation. Try setting the static caching bar further to the right of the meter.

Alternatively, if you have loaded entire SoundFont banks only for a few instruments, try clearing out the instruments you do not need. Clearing the preset memory and starting again may also correct this. If that fails to correct the difficulty, you may need to reduce the size of the bank.

Note: The maximum size of soundfont which the Sound Blaster Live! can use is half the system RAM up to a maximum of 32MB.



The following Creative soundcards support SoundFont: (depends on the availability of Soundfont Bank manager on the Support site)

- X-Fi Titanium HD
- X-Fi Titanium
- X-Fi Fatal1ty
- X-Fi Elite Pro
- X-Fi Platinum
- X-Fi Xtreme Music
- X-Fi Xtreme Gamer
- X-Fi Xtreme Gamer Fatal1ty Pro Series
- X-Fi Platinum Fatal1ty Champion Series
- X-Fi Titanium Fatal1ty Professional Series
- X-Fi Titanium Fatal1ty Champion Series
- X-Fi Titanium Professional Audio PCI Express

Note: For older sound cards such as Live! or Sound Blaster Audigy, you can go to [Creative Download Page](#) to download SoundFont Manager that is compatible with your operating system.

