

Windows MIDI Port Limits, SongFrame and Chirp

Every now and then one of our customers will tell us that SongFrame complains about an Internal MIDI ports issue after it is launched. The problem is usually related to the fact that the user has many MIDI interfaces on his system already, and without knowing it he has used up the available number of MIDI ports - leaving SongFrame and its underlying MIDI Loopback driver none to work with.

This document reviews the limitations in the various versions of the Windows operating system on the number of MIDI Ports a user can have installed on his or her system. This is important and related to the use of both the Tanager AudioWorks SongFrame and Chirp software products, since both make use of a MIDI Loopback Driver called LoopBe30 to communicate MIDI data both internally and externally.

The fact that Windows limits the number of MIDI devices any system can have is very poorly documented; only a few MIDI interface manufacturers provide any written insight to the issue. Microsoft's web site as well as their MSDN developer library are also absent of any detailed information.

Here's the summary on the topic. Windows 2000 had a 10 device interface limit for MIDI Input and MIDI Output devices. Windows XP initially continued this limitation, and through various Service Pack releases eased the restriction from 10 to 16, then eventually 32 ports. Microsoft Vista in theory has no limits on the number of MIDI ports you can install - but if the Vista driver is really just XP driver code, then it may not take advantage of Vista's new-found freedoms.

For those of you running XP who have a number of MIDI interfaces, now you know why you sometimes cannot "see" all of them in your DAW recording or sequencing applications - you may simply have over-taxed your OS's ability to show them to you.

What is worse - the limits are registry-based - which means that plugging a USB MIDI interface into a different physical USB port may install a duplicate driver - and it is the count of these driver instances in your registry that is limiting your ability to add more ports. If you had 4 USB ports on your PC, then in theory if you plugged that interface into each port at some time (not unheard of!) then you might be "using up" 4 of your 10 available devices. It also may not matter if you unplug it - depending on the device and driver it may still debit the total number of new ports you can add.

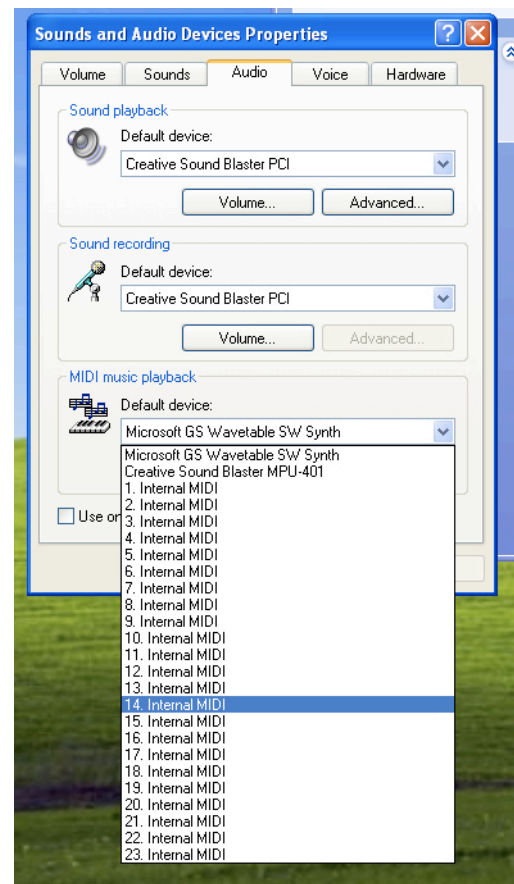
Because registry cleaning is a scary endeavor for most mortal PC users, M-Audio offers a free download called MIDIFix which will clean out a Windows XP user's registry of all MIDI driver entries - but then you have to re-install the drivers for all of your current MIDI interface gear and start over again. This utility is available here:

<http://www.m-audio.com/index.php?do=support.drivers&k=driver&s=8&o=%20Windows+XP&f=84>

For those of you brave enough to attempt a registry fix by hand - there are a few articles that show you how. I like Craig Anderton's the best available here:

<http://www.eqmag.com/article/fixing-windows-xp/aug-07/30616>

OK you ask, what does this all have to do with my ability to run SongFrame? Because if your current collections of MIDI interfaces/drivers have exhausted the available number of MIDI Ports, the LoopBe30 MIDI Loopback driver installed along with SongFrame will be starved of ports to provide our application. LoopBe30 is utility provided under license by Tanager AudioWorks from Nerds.de. It installs a number of "virtual" MIDI ports - think of them in the same way as hardware ports - on your PC. It allows programs to send MIDI information to other programs without using an actual MIDI interface or cable. SongFrame makes use of 3 ports - one each for the Chords Track, MIDI/Melody Track and Drum Track respectively. The latest version of SongFrame installs 4 ports of LoopBe30, but earlier versions installed as many as 23 ports. (LoopBe30 is capable of installing up to 30 ports - but the same rules and limits apply to each of these ports just as the hardware devices we have been discussing.) So - lets say you had (2) 8-port MIDI interfaces already installed on your system, plus the ubiquitous Microsoft GS Wavetable Synth. Maybe you also have a sound card with a MIDI port on it. Each of these uses up a port - so far we are up to 16+1+1 = 18. If you are on a version of XP limited to 16 ports - you probably can't see all of these already if you try looking. In XP, go to **Control Panel -> Sounds and Audio Devices** and click on the **Audio** tab.



This is a great way to see just how many MIDI ports are available and

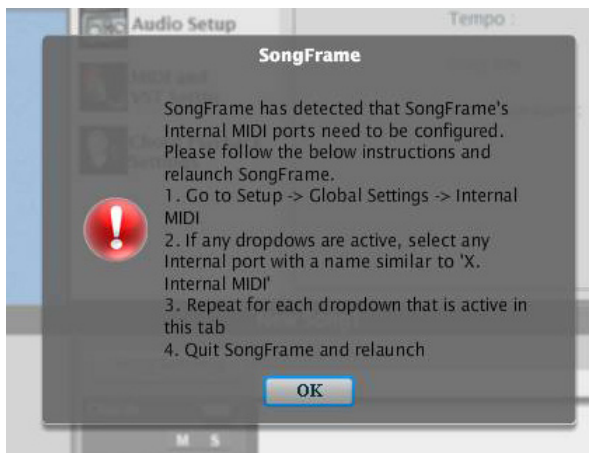
which ones will show up in your application - including SongFrame. This particular computer has Win XP with Service Pack 3 installed - it has a 32 port limit. We have the MIDI port from our sound card as well as the Microsoft GS Wavetable synth taking up 2 ports, and we have all 23 ports of LoopBe30 we installed available - clearly within limits. (*LoopBe30 labels its ports "X. Internal MIDI"*.)

As we add external MIDI devices or other loopback drivers (such as Hurchall's Maple or MIDI Yoke) this list will change. Some drivers will show all their ports and force LoopBe to scale back on its port count. Some MIDI interface drivers are "power state" aware and once the interface is powered off, the ports disappear from the list. Others appear no matter what the power state of the interface is. Some software packages install their own internal MIDI ports, using up potential slots. The conclusion - every system is different, and it is impossible for us to provide a "care and feeding" manual for your particular setup.

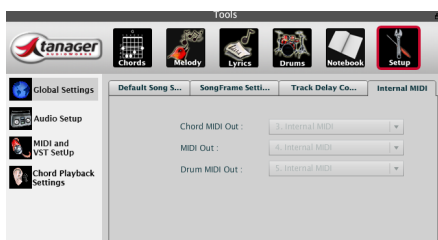
The bottom line - SongFrame requires at least 3 ports to be available in order to run - period. If you are missing any LoopBe30 port assignments, then you'll hear no sound from that particular track -ever. If you are also using the Tanager AudioWorks Chirp Virtual MIDI Keyboard, you'll need a LoopBe port for that as well.

Suggested Fixes:

- Power off all unused MIDI interfaces and reboot your PC. Check the Audio tab under Control Panel -> Sounds and Audio Devices to see if doing this frees up at least 3 ports labeled "X. Internal MIDI." If it does, then launch SongFrame - you might get a warning that looks like:



- Follow what it tells you to do - go to the Internal MIDI Tab under Setup -> Global Settings and assign a unique "Internal MIDI" port to each of the 3 boxes (tracks) there. Once you do that, those boxes will gray out as shown:



- Quit SongFrame and re-launch it - you shouldn't get the warning any more. Go to the Setup -> Audio tab and choose an audio input and output, then go to the Setup -> MIDI and VST devices tab and choose a MIDI device (use the Microsoft GS Wavetable synth) for each track for now.
- Click on the Chords tool and click the Play button to the left of any chord in the grid - you should hear the Chord sound. Click on the Drums tool and do the same for a drum pattern in the grid - it should play as well. You're all set to use SongFrame now.

References and Links

- EQ Magazine Website, article by Craig Anderton, <http://www.eqmag.com/article/fixing-windows-xp/aug-07/30616>.
- RME, article by Matthias Carstens (2002), http://www.rme-audio.de/en_support_techinfo.php?page=content/support/en_support_faq_10entryd
- M-Audio MIDI Fix Utility, <http://www.m-audio.com/index.php?do=support.drivers&k=driver&s=8&o=%20Windows+XP&f=84>
- Cakewalk Forum Entry - <http://forum.cakewalk.com/tm.asp?m=139835&mpage=1&key=midi%2Cport%2Climit&anchor>
- Microsoft MSDN Website entry - <http://msdn.microsoft.com/en-us/library/ms790394.aspx>
- LoopBe30 - <http://www.nerds.de/en/loopbe30.html>