Knowledge Base

Latency with virtual instruments and MIDI interface / keyboard

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When you use one of our MIDI interfaces together with a keyboard or one of our keyboard controllers to play a virtual instrument, the delay or latency you might experience depends on the audio interface or soundcard you use for playback. Latency is the time between hitting a key on your keyboard and the actual playback of the sound.

To use virtual software instruments (either standalone or as plugin inside a DAW software such as Cubase, Logic, GarageBand, Cakewalk, etc.) and play them in real time, you need a MIDI keyboard connected via a MIDI interface or directly via USB to your computer and a soundcard or audio interface to playback the sound that is generated by the virtual software instrument.

The audible latency is caused by the playback, not by the MIDI interface. Because of that it is a requirement that your soundcard or audio interface has a low-latency driver. This is often provided via an ASIO driver (for which your software needs to be ASIO compatible) under Windows or Core Audio support on the Mac. Windows also uses WDM or MME playback methods, however if the latency can be low in that case, depends on the used audio interface and driver being used.

The best solution to achieve low latency is to use a professional quality audio interface with low-latency drivers and to make sure the virtual instrument and DAW is correctly setup. All ESI audio interfaces provide such drivers. If you use the onboard soundcard of a desktop PC or PC notebook, you will usually not find such drivers. In many cases however, using an utility such as ASIO4ALL can solve the issue if your virtual instrument / DAW supports ASIO. This normally does not lower the latency to the same level a professional interface provides, but in many cases it is enough.

Also note: if you use the so-called Microsoft GS Wavetable synthesizer (which is integrated into Windows and not a virtual instrument or plugin provided as separate software) as MIDI output inside your DAW software, the latency usually cannot be reduced. This means that the Microsoft GS Wavetable synthesizer is acceptable to playback of MIDI data (as you won't really notice the delay then), but it cannot be used for realtime playback or recording of MIDI data from your keyboard or via your MIDI interface.