

What is ASIO and how do I use it?

The Hercules DJ Consoles can operate in 2 different audio modes, selectable from the DJ control panel:



Each mode has a specific purpose:

- **WDM** (*Windows Driver Model*) is the standard audio mode to be used for all Windows applications (iTunes, movies, games, etc).

Although it is possible to use WDM with music and DJ applications, it remains quite limited and power hungry, so a better solution is required for better performances.

- **ASIO** stands for "**Audio Stream Input/Output**" and is a protocol that was developed by Steinberg® to allow applications to communicate directly with the computer's audio interface.

This method has many advantages:

- Low latency
- Reduced processor usage.
- Direct access by the application to all Inputs and Outputs.

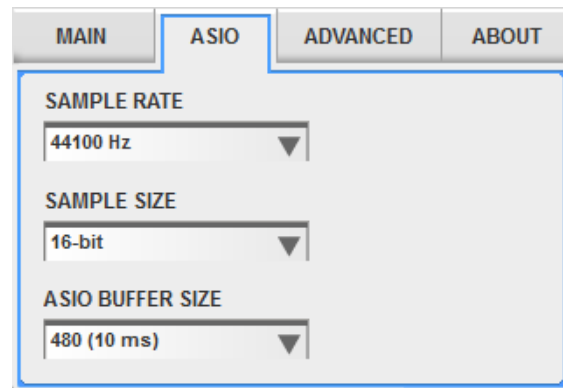
ASIO should be your first choice whenever you are using DJ or music programs that support this type of audio driver (such as **Virtual DJ**, **Traktor**, **FL Studio** or **Ableton Live** to name a few).



Understanding the ASIO driver configuration.

When you select ASIO as audio mode, you will gain access to the ASIO tab, which allow the driver to be configured.

Let's take a look at the ASIO settings and what they represent:



a) Sample Rate:

This determines the playback/recording frequency. You can select between **44 100 Hz (default value)** and **48 000 Hz**.

b) Sample Size:

The Sample size is directly related to the Sample Rate and represents the resolution of each sample. You can select between **16 (default)** and **24 bit**.

Some things to keep in mind:

- Most DJ software recommends using **44 Khz/16 Bit** as a default resolution.
- A higher resolution means a great audio quality, but also means the computer processor works harder.
- When using **24 bit, Input 3&4** of the console is automatically **disabled**.

When in doubt, it is recommended to leave these settings to their default values.



c) ASIO buffer size:

This is the most important setting, and the one you will need to modify in order to optimize the ASIO driver regarding your application.

As the name implies, this setting modify the length of the buffer between the audio application and the driver. This basically indicates how much audio and MIDI data can temporarily be stored while the computer is handling other tasks (displaying graphics on screen, reading and writing to the hard drive, etc).

In order to find the appropriate value, there are a few rules to remember:

- The smaller the value, the harder your computer has to work. A fast and powerful processor and a good amount of memory will obviously affect performances.
- If the buffer is **too small** and the data can't be passed on quickly enough, audio artifacts such as clicks and pops will become apparent.

In this case you would need to **increase** the buffer size to provide the driver with a little more headroom.

- If the buffer is **too big**, then a noticeable delay called **Latency** will be noticeable between the time an action is performed (ex: pressing Play) and the expected reaction (ex: the moment the song's playback actually starts).

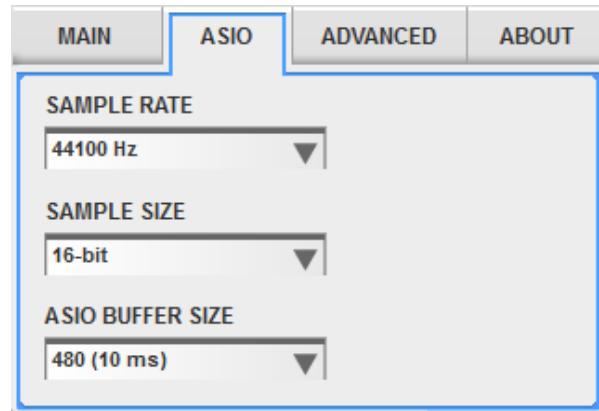
You would then need to **reduce** the buffer size

- There is no universal setting. A configuration that worked with one application may need to be modified for another program.
- As you start to get familiar with a software and begin to use features that require more processing power (such as effects, and video), it may be necessary to modify the buffer size to accommodate these new demands.

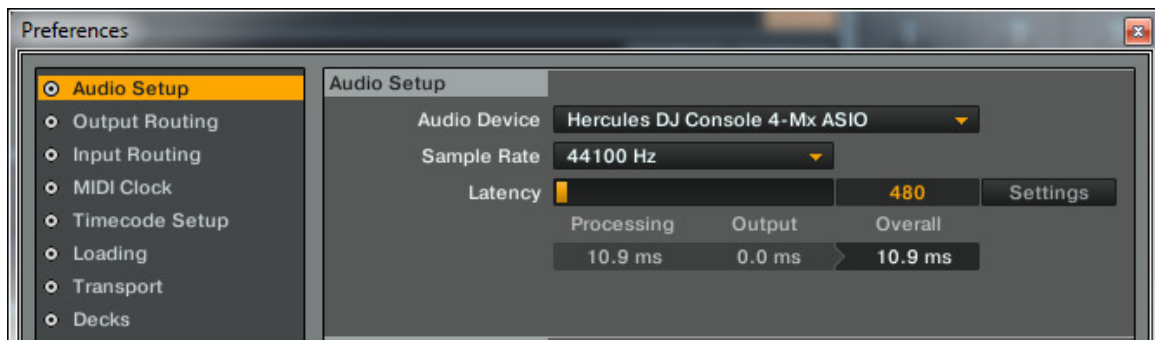


Let's put all this information into practice, using Traktor as an example. Your software may label parameters differently, but configurations remain usually similar:

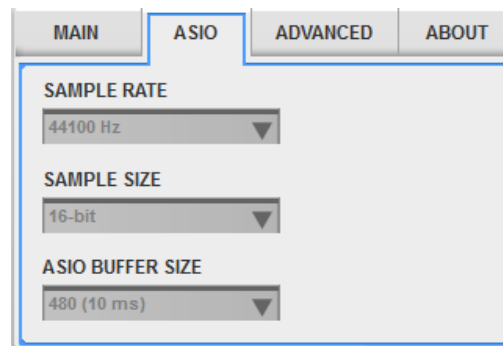
- 1- The DJ Control panel display the default ASIO configuration with a buffer size of **480 (10 ms)**, which is a good place to start.



- 2- Starting your application and selecting the console's ASIO driver as audio device, the configuration should reflect what was selected in the control panel.



Once the software "acquires" the ASIO driver, you will notice that the control panel ASIO parameters are no longer editable. This is perfectly normal, and indicates that the ASIO driver is currently in use.



- 3- Now that everything is correctly configured, use your software normally, and be aware of any audio artifact (clicks, pops) or latency. In either case you will need to modify the buffer size accordingly.
- 4- Close your application, which will release the ASIO driver and make the control panel editable again.

Change the ASIO buffer **by one step at a time** (either higher or lower, depending on the nature of the problem), then test your application again.

You will need to repeat this operation until you find the buffer size that is the most appropriate for your configuration.

Obviously, changing the buffer is not the solution to all problems. Many other factors can come into play to affect to performance of your computer. If after many trials you still encounter audio issues, please read our document explaining how to [optimize your computer when working with audio software](#).

