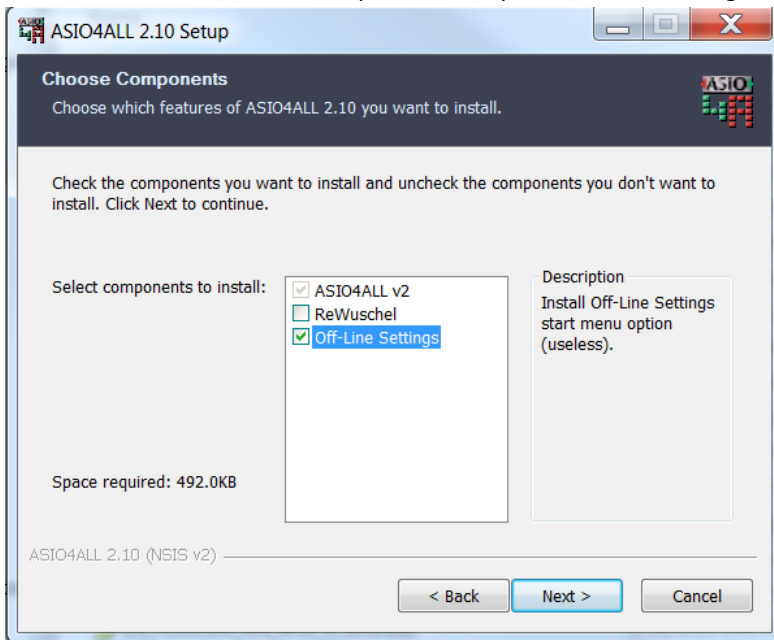


To use the LavryBlack AD11 and DA11 with ASIO compliant software, there is a “free” download available which can both make the WDM “devices” appear as an ASIO device and allow combining multiple devices into one “virtual” ASIO device.

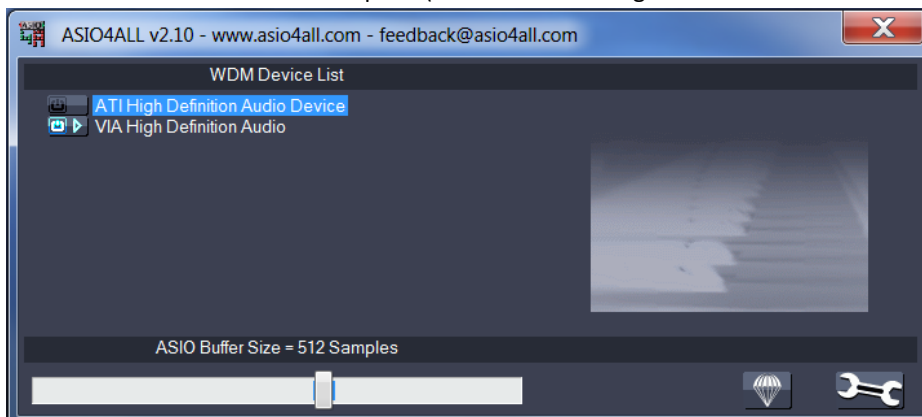
This is ASIO4ALL and it is available at: <http://www.asio4all.com>

Following a discussion of ASIO4ALL installation and settings, there are specific recommendations for **Reaper** (page 4), **Sonar X1** (Page 5), and **WaveLab** (page 7).

Basic Operation: During installation, it is recommended that the check-box to install the “Off-line Settings” is checked. This allows the ASIO4ALL control panel to be opened without having the recording or playback software running.

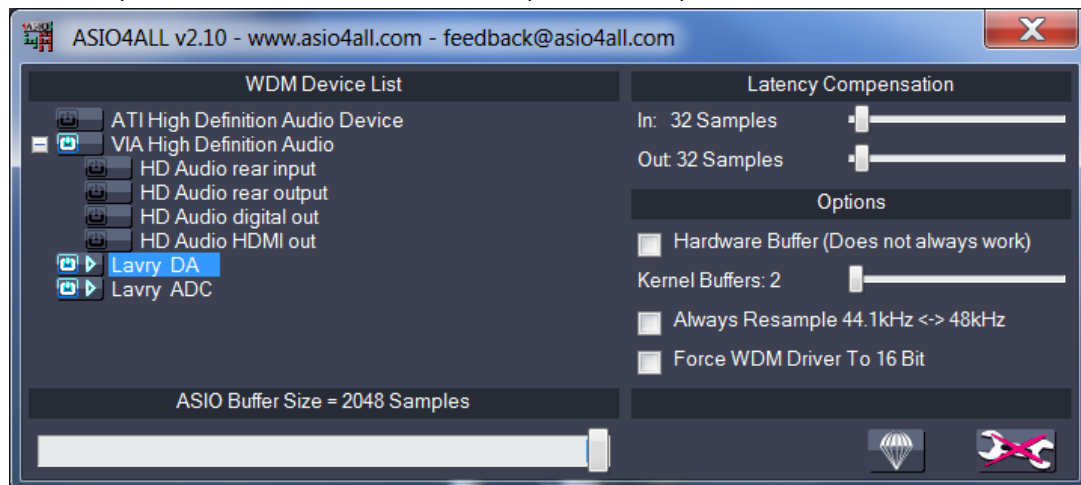


Once ASIO4ALL is installed, go to the START menu and click on the “ASIO4ALL Off-line Settings” icon to open the panel. Without the AD11 or DA11 connected, the first time the panel opens it will look like this example; where only the PC’s built-in audio is visible in the left pane (in this case “ATI High Definition Audio Device & VIA High Definition Audio):



The Panel is in “Simple Mode.” To open “Advanced Mode;” click on the wrench symbol in the lower right corner and the panel will change to show important settings.

If the Lavry AD11 and DA 11 are connected and powered, the panel should look similar to this:



In the left pane titled “WDM Device List”-

- When the “button” symbol next to the device is green (or “illuminated”), the device is “enabled” for use.
- If the green arrow appears next to the button, the audio engine for that device is running.

There are a number of important settings that are not visible in the simple mode. One is the Always Resample 44.1kHz <-> 48kHz; the default setting is with this box checked (function enabled!) The recommended setting is “un-checked” (function should be disabled).

The ASIO buffer setting in this and all following examples are not recommendations as this will vary from system to system and according to other factors like how many tracks are being played back, etc. It is up to the user to determine the best ASIO buffer setting for their application.

The optimum latency settings will also vary according to factors such as the sample rate and RAM buffer settings. The following information can be used as a “starting place” but it is up to the user to determine the optimum settings for their application:

The conversion delay of the AD11 from analog input to digital output using the XLR/AES output is:
 (“ms” = milliseconds):

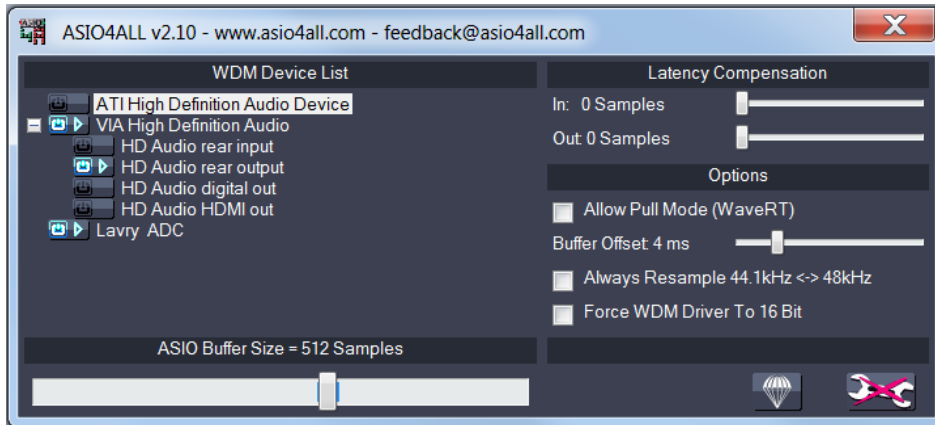
44.1 kHz	1.55ms
48 kHz	1.43ms
88.2 kHz	0.79ms
96 kHz	0.72ms

The conversion delay of the DA11 from digital input to analog output using the XLR/AES input is:

44.1 kHz	1.92ms
48 kHz	1.82ms
88.2 kHz	0.80ms
96 kHz	0.76ms

The other important difference between Simple and Advanced mode is that the devices in the left portion of the panel are “expandable” in Advanced mode.

In this example, the computer’s built-in sound appears as well as the AD11 (“VIA High Definition Audio”):



Please note how the output is enabled and the input is not enabled in the expanded portion of the VIA High Definition Audio section. This is important to avoid conflicts between the built-in audio and the AD11. In some cases, there can be conflicts between outputs as well; so it is recommended that *only* the necessary inputs and output be enabled. This example also illustrates how two different devices can be combined into one “virtual device” using AISO4ALL (the AD11 for input and the PC’s built-in output).

Before opening the recording software, it is recommended that the AD11 and/or DA11 be connected so you can check the Off-line ASIO4ALL control panel to verify that the AD11 and/or DA11 do appear and can be enabled.

Please Note- The off-line control panel can be useful to determine that the AD11 and other devices are available to the recording software; but be aware that opening the recording software will probably over-ride the settings made in the off-line control panel!

At this point it is recommended that first the off-line control panel is closed and then the recording program is opened.

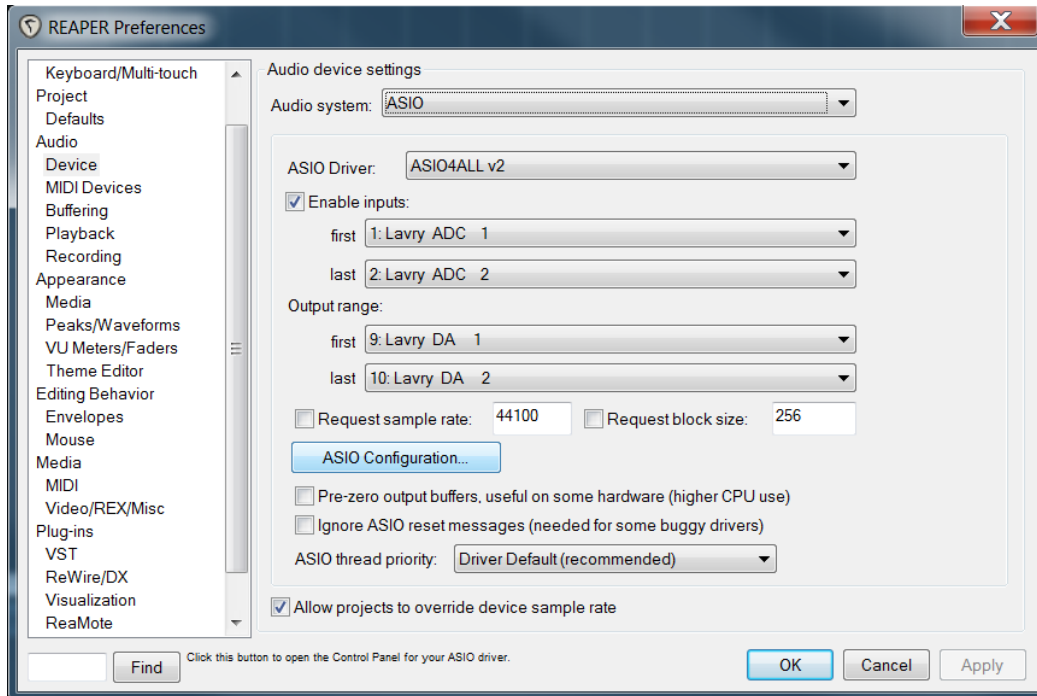
Within the recording program there is typically a “preferences” or “audio settings” control panel. First; ASIO must be selected as the type of interface and if there is more than one choice, ASIO4ALL should be selected as the ASIO driver. The Preferences or Settings dialog should contain a button to “launch the hardware control panel.” If ASIO4ALL is selected as the ASIO driver, the ASIO4ALL control panel will appear when this button is clicked. There may be other settings that need to be made to complete setup, such as routing channels or selecting clock sources; but it is recommended that the ASIO hardware control panel settings are made via the ASIO4ALL panel before making any other changes.

Please also remember that due to the nature of the USB interface, it is important to set the AD11 sample frequency to the same sample frequency as the recording program. If the DA11 is also connected; it will automatically adjust to the output sample frequency because ASIO4ALL bypasses the Windows SOUND control panel setting. In a similar manner; the Windows SOUND control panel sample frequency setting for the AD11 also has no effect as it is effectively bypassed.

Here are some specific examples for commonly used recording programs.

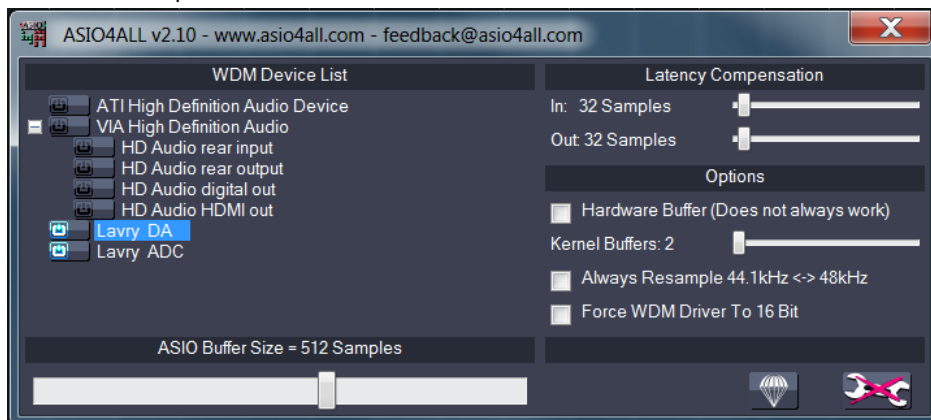
- 1.) Reaper- this page.
- 2.) Sonar X1 go to page 5
- 3.) WaveLab go to page 6

For example; here is the Reaper Preferences dialog with Audio Devices selected:



Please note the following:

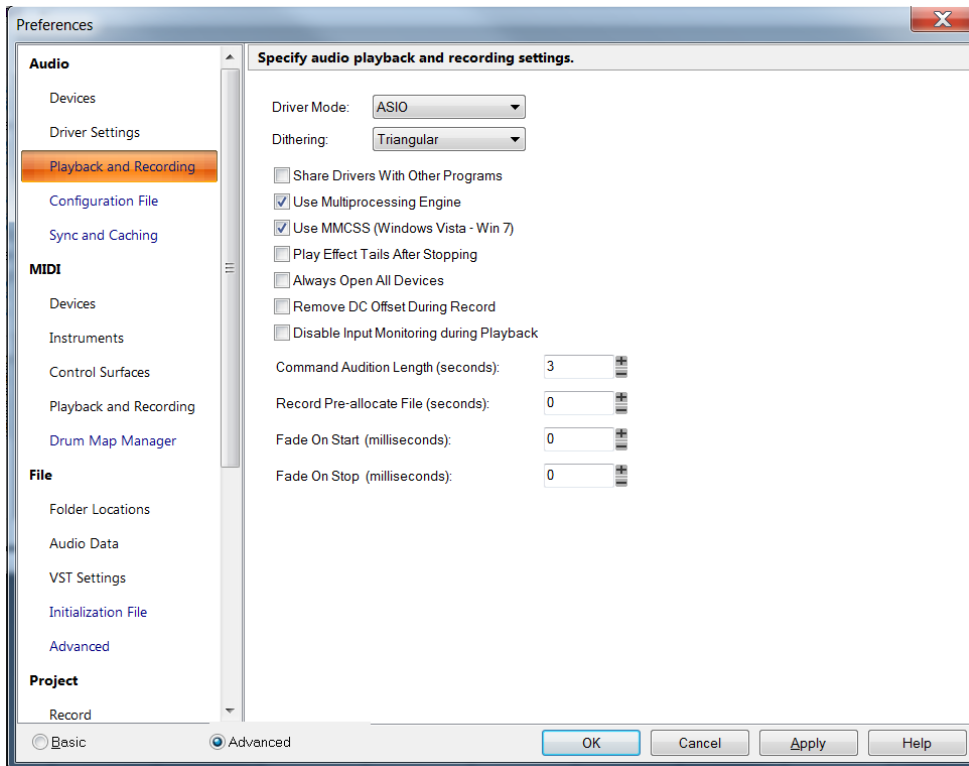
- 1.) The Audio System is set to “ASIO” at the top of the dialog.
- 2.) The ASIO driver is “ASIO4ALL.”
- 3.) The button used to open the ASIO4ALL control panel is labeled “ASIO Configuration” and if the AD11 and DA11 are connected, it should appear similar to this example. Please note that all of the other available audio inputs and outputs are disabled to prevent conflicts:



Please note: In Reaper, even though the Lavry DA and Lavry AD are “Enabled” (Button is green), they are not “Active” (no green arrow next to button) because the Audio Engine cannot run while the Preferences are open! This does *not* indicate that the AD11 and DA11 will not work properly after the Preference dialog is closed.

Please note the following:

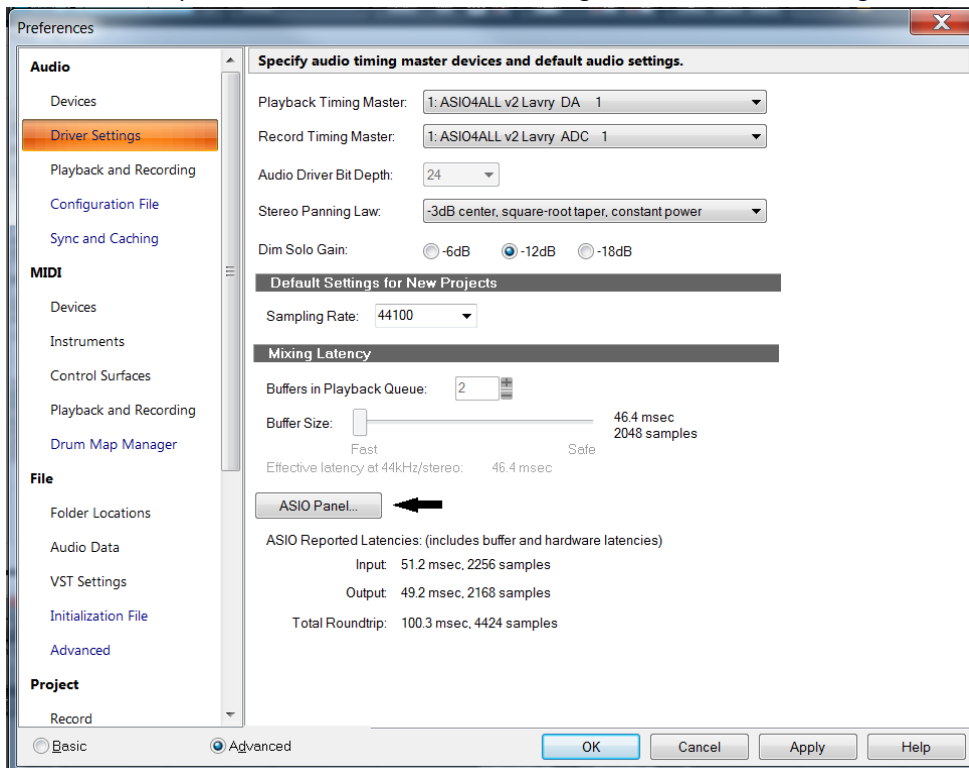
1.) The ASIO driver is set to “ASIO” in the Preferences Playback and Recording dialog:



2.) The Recording and Playback Timing Masters are ASIA4ALL devices in the Driver Settings dialog.

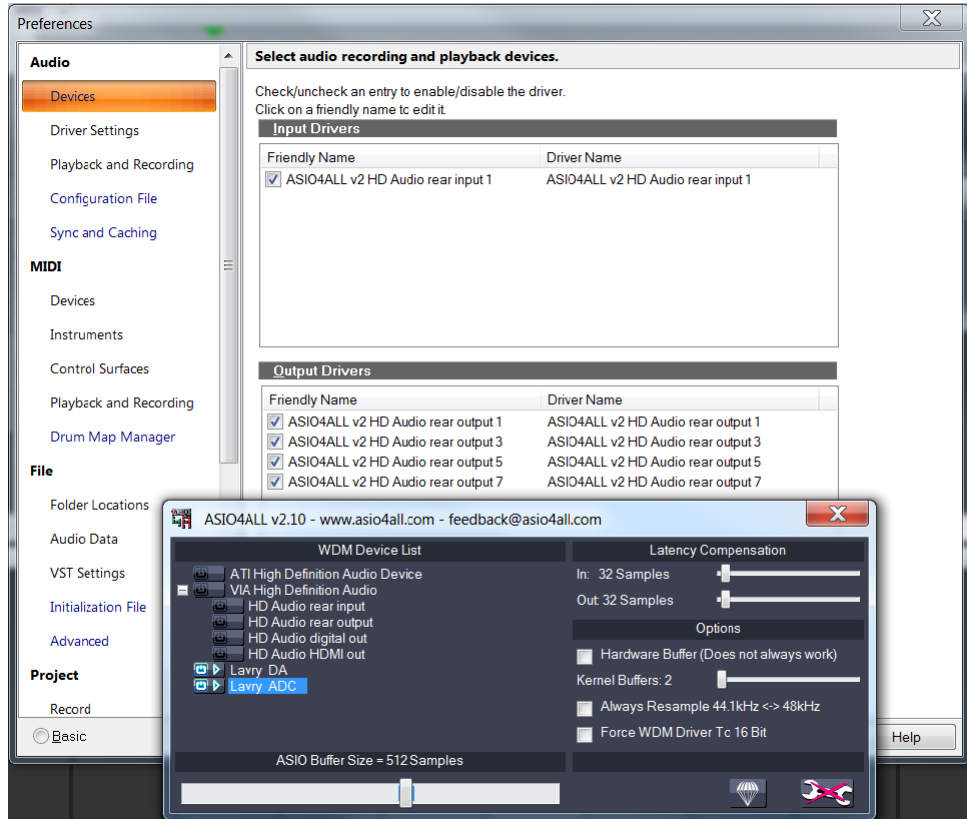
3.) The button used to open the ASIO4ALL control panel is labeled “ASIO Panel.”

Here is an example of the Sonar X1 Preferences dialog with Audio Driver Settings selected:

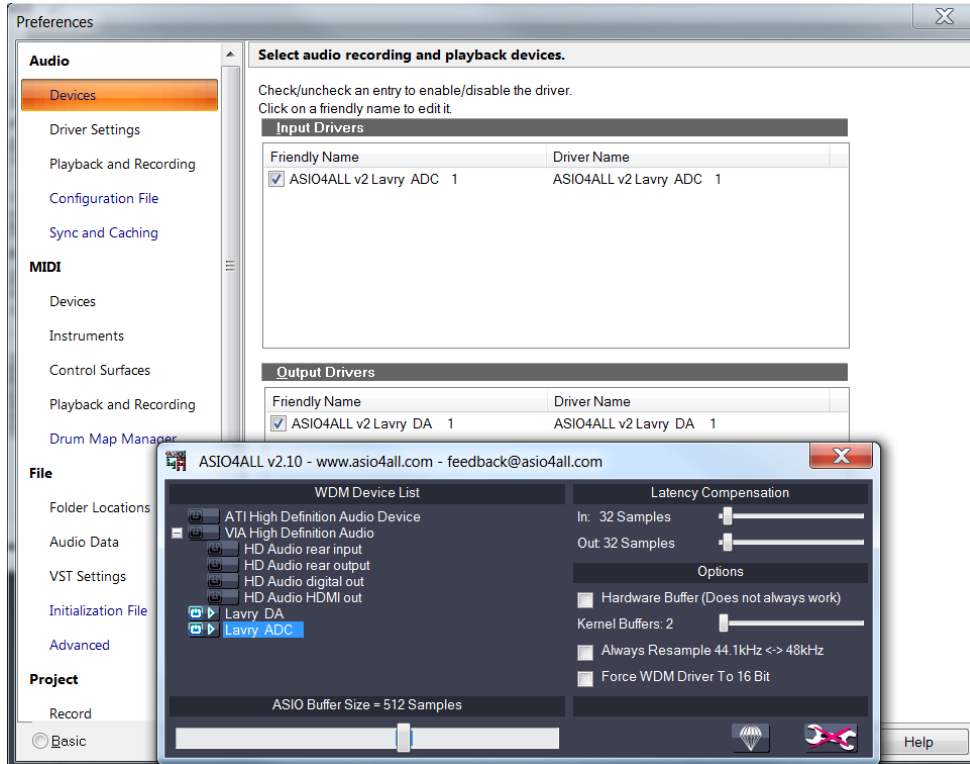


It may be necessary to close and re-open Sonar for the changes to appear in the Preferences Audio Devices or Audio Driver Settings dialogs after the Input and Output devices are changed in the ASIO Panel (ASIO4ALL Control panel).

Please note in this example how the Lavry DA and ADC are selected and running in the ASIO4ALL control panel but Sonar Preferences still show the built-in VIA High Definition Audio for Input and Output Devices. Simply "clicking" APPLY in the Sonar Preferences dialog will *not* have the same effect as Saving, Closing, and Re-Opening Sonar X1.



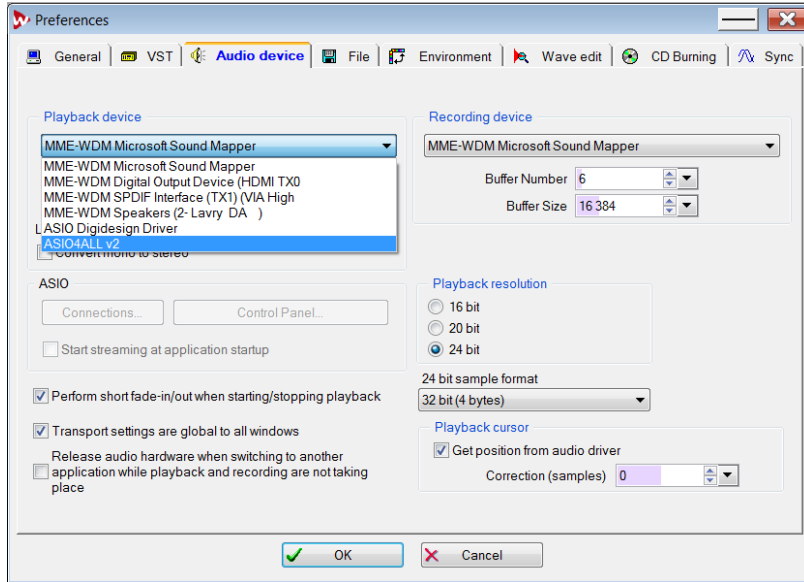
Here is the Preferences Audio Devices Dialog after Saving, Closing, and Re-Opening Sonar:



Here are examples showing WaveLab's Preferences Audio device tab.

Please note the following:

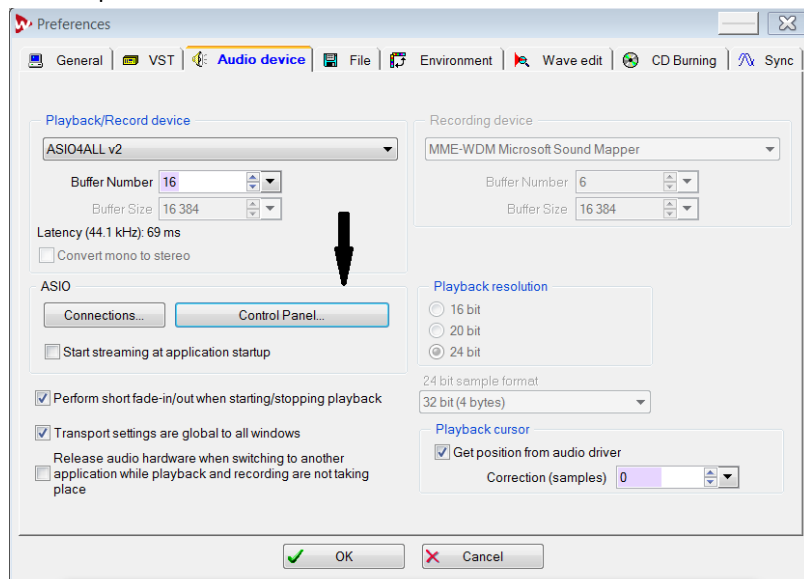
1.) The Audio System is set to "ASIO" by selecting the ASIO4ALL driver from the "Playback device" drop-down list:



2.) The "Playback device" heading changes to "Playback/Record device" after the ASIO4ALLv2 driver is selected.

3.) The button used to open the ASIO4ALL control panel is labeled "Control Panel:"

Please note that in WaveLab the Lavy DA and ADC are both enabled and running while the dialog is open.



DA

