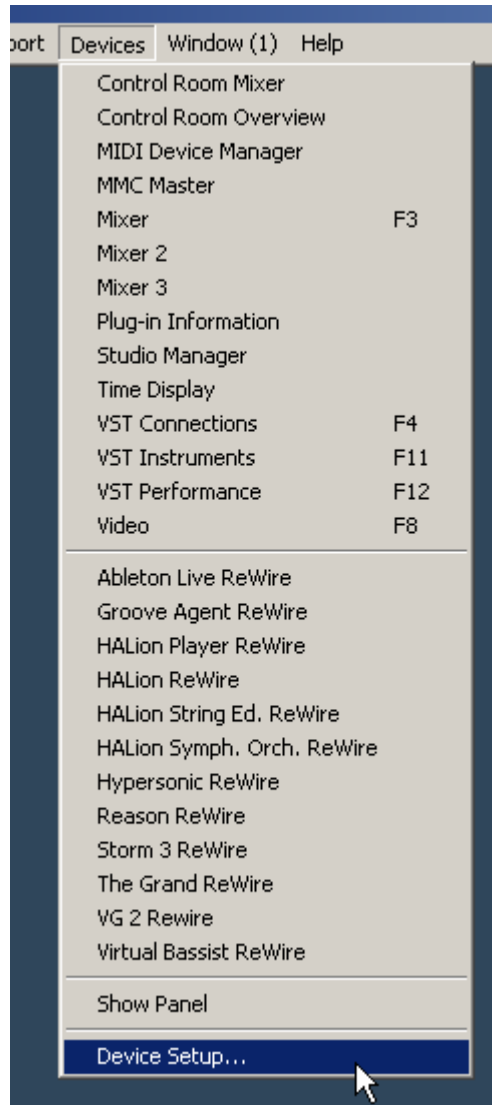


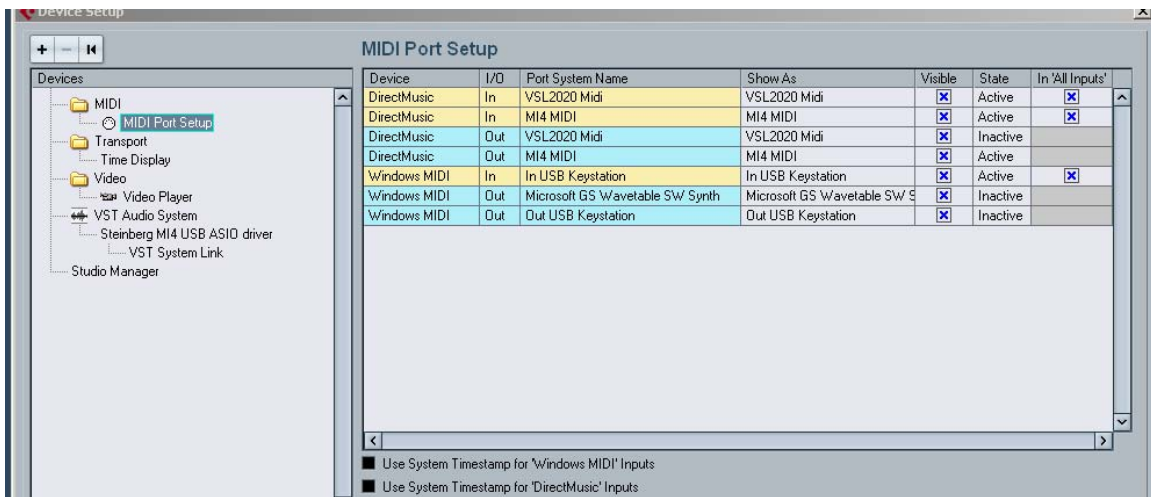
Cubase 4 Device Setup

The device setup window can be accessed by clicking on the Device menu and selecting Device Setup.



Once in the Device Setup window there is a Devices list along the left side of the window. By clicking on any of the listings in the Devices list you access a window to make settings for the given selection.

By selecting Midi Port Setup you can access all the settings for the midi system of your computer and Cubase.



- Device** In this column, the available Devices are listed (Direct Music, Windows MIDI, MIDI System).
- I/O** This column shows whether the port is an input or an output.
- Port System Name** This column shows the name for the port generated and used internally by the Operating System.
- Show As** In this column, you can specify how the Port name should be shown in the program. To change the name, click in the column and enter the new name.
- Visible** You can hide a MIDI port from view by deactivating it in the "Visible" column. Hidden ports won't show up in the MIDI pop-up menus in the program. If you attempt to hide a port that is used, you will be asked whether this is really what you want - note that doing so will disconnect the port!
- State** This column displays whether a port is active (used) or inactive (not used).
- In 'All Inputs'** When you record MIDI in Cubase, you can specify which MIDI input each recording MIDI track should use. However, you can also select the "All MIDI Inputs" option, which causes any MIDI data from any MIDI input to be recorded. This column lets you specify which inputs should be included when you select All MIDI Inputs for a MIDI track. This can be especially useful if your system provides several instances of the same physical MIDI input - by deactivating the duplicates you make sure only the desired MIDI data is recorded.

At the bottom of this window you have the option for using System timestamp for Windows Midi Inputs or Direct Music Inputs. If you are experiencing midi timing problems try activating the "Use System Timestamp" options. All MIDI interfaces timestamp their data before supplying it to the application. The application uses these timestamps to position incoming MIDI events in the sequencer. There may be situations

in which these timestamps are not in sync with the internal time information of the sequencer, so recorded MIDI events will not be positioned correctly (usually, they occur "too late"). When you activate this option, the sequencer ignores the MIDI timestamps provided by the interfaces (for Windows MIDI and Direct Music inputs, respectively) and generates new timestamps (using the actual system time) for all incoming MIDI data.

Time Display

The next listing in the Device Setup devices list is Time Display. This window allows you to make adjustments to the look of the Time Display window which can be accessed from the Devices menu of Cubase.

Video Player Setup

Windows Playback Method

This menu allows you to select one of three playback engines for viewing video in Cubase. Which one to select depends on your video hardware (consult the hardware documentation for compatibility details) and the format of the video files you want to work with. For the QuickTime playback method to be available, you must have QuickTime installed on your computer. A QuickTime installer is included on the Cubase DVD if required.

Video Properties (DirectShow Video)/Video Window (Video for Windows)

The options in this section depend on the selected playback method.

* When DirectShow Video or Video for Windows are selected, you can set the size of the Video display window in this section.

* When QuickTime is selected, you can make settings for the Video Output and Frame Offset.

Don't launch QuickTime on program start (Cubase only)

When this option is activated, QuickTime is not launched automatically every time you start the program. Depending on your system, activating this option can speed up the time it takes for the program to launch. You should only activate this option when you are not going to work with QuickTime video files.

Macintosh

QuickTime is always used as playback engine.

Video Output

This allows you to select the desired Video output and format:

* From the Output pop-up menu, you can choose to either play back video on the computer screen or - if your Macintosh is equipped with a FireWire port - on external video hardware. External video hardware can easily be connected and used via a

FireWire port, since Mac OS X features built-in support for the most common video formats (NTSC, PAL, DVCPRO).

*If FireWire is selected under Output, a number of different format options are available on the Format pop-up menu, allowing you to choose between various video formats and resolutions.

Frame Offset

Due to delays while processing DV video through the firewire port, the video image will be behind or later than the audio in Cubase. By using the frame offset parameter, you can compensate for this effect. Each hardware setup could have different processing delays so you must experiment to determine what value is appropriate. Usually, 7 frames is a good starting point. All values for the frame offset are positive and indicate how many frames the video will be delivered earlier in order to compensate for the processing time.

* Note that there is a difference in the frame offset in stop versus playback. Since the processing delay has no effect while stopped, you will not see the correct frame of video in stop mode. The same is true for Scrub and Edit Mode when trimming events and fades to picture. For these situations either switch to the Onscreen Window display or temporarily set the frame offset to 0 while performing these operations.

VST Audio System

In this dialog, you can make settings related to the VST engine, i.e. settings that have to do with how Cubase handles audio data. Note that you can also select the audio hardware device below the VST Audio System heading and make settings for this.

ASIO Driver

An ASIO (Audio Stream Input Output) driver is a piece of software that allows a program to communicate with a certain piece of hardware. In this case, the driver allows Cubase to use the audio hardware.

Mac

The following options are supported:

Mac OS X (Core Audio) drivers

These are drivers that allow the hardware to communicate with Mac OS X, and therefore with Cubase. Basically, if an audio interface works under Mac OS X, it can be used with Cubase.

Built-in audio controller

This is the built-in audio hardware of the Macintosh. Depending on your preferences and requirements, this may be sufficient for use with Cubase (although we recommend using multi-output audio hardware). Note though, that some Macintosh models have audio outputs but no inputs, meaning that you can play back audio but not record with the built-in audio hardware.

ASIO drivers

These drivers use Steinberg's ASIO protocol, which may provide special support for synchronization, routing, etc. (depending on the hardware and the drivers). Note that the ASIO drivers must be written specifically for Mac OS X. Mac OS 9.X ASIO drivers cannot be used.

Windows

There are three general types of drivers:

"Special" ASIO drivers

Audio hardware with multiple inputs and outputs, special synchronization facilities, etc., normally comes with an ASIO driver written especially for the hardware. If your audio hardware comes with a special ASIO driver we strongly recommend that you use this.

The ASIO Multimedia driver

If an audio hardware model is Windows compatible, it can also be used in Cubase. In that case, a driver called "ASIO Multimedia" can be used.

DirectX driver

DirectX is a Microsoft "package" for handling various types of Multimedia under Windows. Cubase supports DirectX, or to be more precise, DirectSound, which is a part of DirectX used for playing back audio. If your audio card has a DirectX driver, you can use DirectX instead of the Windows Multimedia system to play back audio, although recording is not possible. This driver is also included with Cubase and does not require any special installation.

Release Driver when Application is in Background

If this option is activated, it will allow another application to playback via your audio hardware even though Cubase is running. The application that is currently active (i.e. the "top window" on the desktop), will get access to the audio hardware.

Input and Output Latency

In the top section of this dialog page, the total input and output latency values for all your audio hardware are displayed. "Latency" is the amount of time it takes for your system to respond to whatever messages are sent to it. High latency when playing a VST Instrument for example results in a noticeable delay between when you press a key and when you hear the sound of the VST instrument.

Normally you will not need to touch these settings, but if you run into problems with audio playback you should investigate whether changing these settings will help you.

Advanced Options

Audio Priority

When you run Cubase there are several processes fighting for access to processor time in your computer. This parameter allows you to determine which processes should have priority. Select an option depending on the character of your recordings:

Setting	Description
Low	In this mode all non-audio processes, such as MIDI timing, screen updates etc. get top priority. If you don't use much audio (especially audio processing such as effects and EQ) you could try selecting this option.
Normal	In this mode, non-audio processes and audio playback get roughly equal priorities. Try this mode if you find that audio playback stutters in "Low" mode.
High	In this mode, which is the default mode, audio precedes MIDI in priority. Normally, this should not affect the MIDI timing, but if you have very "busy" MIDI recordings, the timing may suffer somewhat.
Very High	This mode gives maximum priority to audio, which means that the MIDI timing may suffer and the user interface may seem more sluggish. Select this mode if you use a lot of audio Effects and EQ, and not much MIDI material.

Disk Preload

This is the amount of audio data that is loaded into RAM prior to starting playback. The purpose of this is to ensure smooth playback.

Lower Latency

When this is activated, the mixing will happen at the time the driver calls the VST engine for the next audio data block to be delivered. This results in lower latency at the risk of overloading the machine. If you get playback problems such as pops and clicks, make sure this option is turned off.

Multi Processing

This option is only available if there's more than one CPU in the computer. If activated, Cubase will automatically distribute the processing evenly between all CPUs, for optimum performance.

"Adjust for Record Latency" and "Record Shift"

You may experience that audio material you record end up in a displaced position, too early or too late. The reason for this happening is often one of the following:

Your audio hardware reports an incorrect Input latency value in its communication with Cubase.

Your system has a high Output latency and you're recording with input monitoring through an effect plug-in, which in itself has an inherent latency.

This means there will be a delay between when you play something and when you actually hear it. In such a situation, you may often instinctively play "ahead of time", in an attempt to compensate for the perceived delay. However, since Cubase features automatic plug-in compensation, meaning that plug-in delays are compensated for to maintain sync and timing, the audio you record will end up in the wrong position (too early).

You can compensate for the above by adjusting these two parameters:

By deactivating "Adjust for Record Latency", you instruct Cubase not to use its plug-in delay compensation feature.

If you change the Record Shift value, the position of recorded audio will automatically be shifted by the corresponding number of samples (up to 100000). Positive values shift the position forward, and negative values shift the position backward.

Set to Defaults button

This resets all parameters in the "Advanced Options" section to the default settings.

VST ASIO Device Setup

This page allows you to make settings for the selected audio hardware device. The following info and settings are shown:

Control Panel

Clicking this opens the Control Panel for the selected ASIO driver. Here you can make various settings relating to your audio hardware. The available settings depend on the installed hardware, so please refer to the documentation that came with the audio hardware for information.

Input and Output Latency

Listed here is the latency for the selected audio hardware. Latency is the amount of time it takes for your system to respond to whatever messages are sent to it. High latency when playing a VST Instrument for example results in a noticeable delay between when you press a key and when you hear the sound of the VST instrument.

Clock Source

What is available here depends on your audio hardware. There could be options like "Internal" which would typically refer to the clock in the installed audio hardware, and "External" or "Digital" which would typically refer to the clock of another digitally connected device. There is also the possibility that no options are available here, because these are instead set in the Control Panel for the audio hardware.

Direct Monitoring

If your audio hardware is ASIO 2.0 compatible, it may support ASIO Direct Monitoring. In this mode, the actual monitoring is done in the audio hardware, by sending the input signal back out again. However, monitoring is controlled from Cubase. This means that the audio hardware's direct monitoring feature can be turned on or off automatically by Cubase, just as when using internal monitoring. This item is greyed-out if not available. If you want to use the external monitoring via your audio hardware, make sure the corresponding functions are activated in the card's mixer application.

Audio Buffer Size (Mac)

The Audio Buffer is used when audio data is transferred between Cubase and the audio card. Having a large buffer ensures that playback will occur without glitches. However, a larger buffer will also introduce larger latency. Latency is the time between the moment when Cubase sends out the data and when it actually reaches the output.

VST Inputs and Outputs

In the lower part of this page, the available input and output ports on your audio hardware are listed.

You can rename a port by clicking in the "Show As" column and typing in a new name.

It's a good idea to give your ports names related to the context rather than hardware-specific names. For example, if you are working in 5.1 surround format, you should name your ports "left", "right", "center", etc. - this makes it easier to move your projects to another system (provided that the same port naming is used there).

You can disable a port in the "Visible" column.

Disabled ports won't show up in the VST Connections window when you are making bus settings. If you attempt to disable a port that is already used by a bus, you will be asked whether that is really what you want - note that this will remove the port from the bus!

VST System Link setup

This is where you set up and activate VST System Link, by which means you can connect several computers in a "network", having them work together as one large system. The text below describes only the contents of this dialog, for details about how to connect, set up and use VST System Link, please refer to the Operation manual!

The dialog contains the following items:

Active checkbox

This is where you activate VST System Link. Before you do this, you should have connected the computers digitally and checked the connection. You should also have used the ASIO Input and Output pop-up menus below to specify which channel should be the networking channel.

R and T indicators

These flash when your computer Receives data from another computer or Transmits data.

Self Test

This can be used for testing the digital input and output connections, to verify that the computers communicate properly. When activated, Cubase will transmit signals from the computer to the other computers in the network. The R and T indicators will flash, and the Device List will show a summary of transmitted signals, received signals and errors.

Active ASIO Ports for Data only

Normally, the VST System Link information is sent on one audio channel, using one bit - thereby making it possible to use the remaining bits for regular audio transfer. However,

if you are sending MIDI via VST System Link and there are huge amounts of MIDI data at once, there is a small possibility that you might run out of bandwidth on your VST System Link network. This will manifest itself by notes "choking" or timing becoming erratic.

If this happens, you can devote more bandwidth to MIDI by activating this option. When this is active, the VST System Link information will be sent on the entire channel instead of just one bit. This gives you 16 times the bandwidth you had before, more than enough for all the MIDI you could ever hope to use. The downside is that you can no longer use this ASIO channel for audio transfer (do not connect it to a speaker!).

ASIO Input and Output

This is where you select which channel should be used for VST System Link input and output. One bit on that channel will be used for transferring VST System Link information, leaving the remaining bits available for audio. For example, if you are using a digital audio connection with 24 bit resolution, the audio on this channel will be 23 bit.

Online

Activating this puts the computer Online - it will receive transport and time code signals and its sequencer application can be started and stopped by remote control. If it is Off-line it can only be started from its own keyboard - it is effectively an independent machine, although it is still on the network.

Note that any computer can control any and all of the others - VST System Link is a peer to peer network and there is no absolute "Master" computer.

However, most users do like to think of one machine as the Master (in a one person / two computer network, this would be the machine you actually sit behind most of the time).

Offset

This setting allows you to adjust whether one machine should play back slightly ahead of or behind the rest. This is normally not needed, but occasionally with some hardware you may find that the lock is a few samples off. In that case you can adjust the lock with the Offset value. Normally you could leave it set to 0 - it will most likely be what you want.

MIDI Ins and Outs

This is where you specify how many MIDI input and output ports you need for VST System Link communication. A typical use of MIDI in VST System Link would be to have one computer run VST Instruments, and send MIDI via VST System Link to "play them" from the other computers.

Device list

This lists all computers detected on the VST System Link network, including this. The list shows the name of each computer along with an arbitrary number, used internally for identification. It also shows whether each computer is Online or not.