

Getting Started



Cubase • SX



PC
VERSION



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1

Introduction

Welcome!

Firstly, we would like to thank you for your choice of Steinberg's Cubase SX! This program represents a new generation in music creation and production software tools: more than 15 years experience with creating the tools musicians want to use and the absolutely latest technology are condensed into this all new Cubase SX.

With Cubase SX's forerunners Steinberg have proved that there is no need for expensive and constantly out-of-date dedicated audio hardware to create a very capable audio workstation: Cubase SX is not just equal to such systems, but one that can be better and certainly more flexible. Just to prove the point, Cubase SX comes complete with VST System Link allowing several computers to be linked together and actually perform as one fully integrated system. The idea of a maximum project size simply doesn't count anymore.

As you get acquainted with Cubase SX you will find many more advantages. Advanced, automated mixing facilities with support for VST 2.0 plug-ins and virtual instruments, and ASIO 2.0 compatible audio hardware. Extremely flexible multiple undo & redo, with the possibility to selectively remove or modify applied audio processing at any point in the undo history. Surround sound support and handling that makes other systems look like surround sound was an afterthought rather than an initial design goal.

Cubase SX is not only better than its want-to-be competitors; it's distinctly better. The Cubase SX team has already benefited from the input they receive from Steinberg users and will continue to do so. From this direct communication with the people actually using Cubase in their professional working lives or as music enthusiasts, a very clear picture emerges about in what direction Cubase SX will develop.

You are invited to join us in helping decide where we go next. Please visit the Steinberg web sites and give us your feedback and suggestions.

See you there – and be part of the SX thing.

The Steinberg Cubase SX team.

About the manuals and the HTML Help

The Cubase SX documentation is divided into four sections:

The Getting Started book

The book you are reading now covers the following areas:

- Computer requirements.
- Installation issues.
- Setting up your system for audio, MIDI and/or video work.
- A guided tour of the main Cubase SX windows.
- A quick start for users of previous versions of Cubase.
- An introduction to the most common procedures for recording, playing back, mixing and editing in Cubase SX.
- Basic concepts and terminology.
- A description of the general methods used when working in Cubase SX.

In other words, this book does not go into detail on any Cubase SX windows, functions or procedures.

The Operation Manual

This pdf document contains the main Cubase SX reference documentation, with detailed descriptions of Cubase SX operations, parameters, functions and techniques. You should be familiar with the concepts and methods described in the Getting Started book before moving on to the Operation Manual. You can reach this document via the Help menu from within Cubase SX, or through the Cubase SX Documentation subfolder on the Windows Start menu.

The HTML Help

Cubase SX utilizes HTML Help. The contents of the help basically mirror the complete Operation Manual text. There are several ways of bringing up the Help texts:

- To get information about the active window or a dialog, press [F1] on the computer keyboard or click the Help button in the actual dialog.
- Within a topic, related topics are sometimes directly accessible via clickable links.

Score Layout and Printing

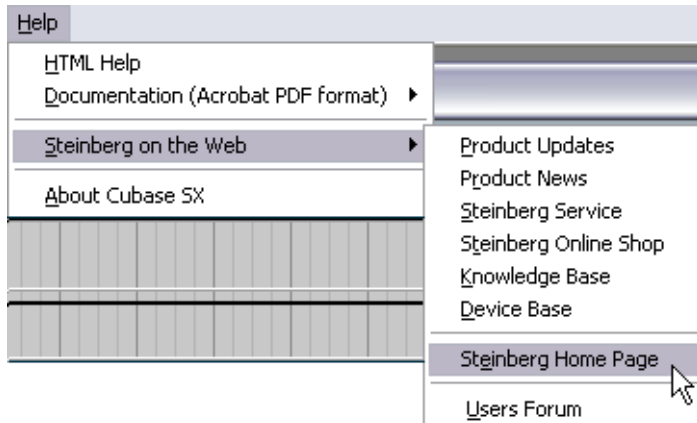
This pdf document covers the Score area of Cubase SX. You can reach this document via the Help menu from within Cubase SX, or through the Cubase SX Documentation subfolder on the Windows Start menu.

About the Acrobat pdf format

The Operation Manual and Score Layout and Printing documentation is provided in the Adobe Acrobat pdf format. An Acrobat installer is provided on the program CD.

How you can reach us

On the Help menu in Cubase SX, you will find items for getting additional information and help:



- On the “Steinberg on the Web” submenu you can find links to various Steinberg websites. Selecting one will automatically launch your browser application and open the page.
You can find support and compatibility information, answers to frequently asked questions, links for downloading new drivers, etc. This requires that you have a web browser application installed on your computer, and a working Internet connection.

2

Installation and Requirements

Requirements

To use Cubase SX, you need the following:

- A PC with either Windows XP or Windows 2000 installed.
A USB Port is also required.

For more details about the computer requirements, see below.

- Compatible audio hardware.
By audio hardware we mean a card capable of recording and playing back digital audio using your hard disk as a storage medium. It must also have an appropriate ASIO driver, see [page 16](#), or be Windows Multimedia compatible.

For MIDI

- At least one MIDI interface.
- At least one MIDI instrument.
- Any audio equipment necessary to listen to the sound from your MIDI devices.

Computer requirements

Hardware – PC

The absolute minimum requirements for running Cubase SX on a PC are as follows:

- A 500 MHz Pentium III with 256 MB of RAM or an equivalent AMD processor.
Recommended configuration for optimum performance: 1 GHz or faster Dual PIII/Athlon with 512 MB RAM.

RAM

Audio work requires a lot of RAM! In fact, there is a direct relation between the amount of available RAM and the number of audio channels that you can have running. As specified earlier, 256 MB is the minimum requirement, but as a general rule “the more the better” applies.

Hard disk size

- The size of the hard disk determines how many minutes of audio you will be able to record.
Recording one minute of stereo CD quality audio, requires 10 MB of hard disk space. That is, eight stereo tracks in Cubase SX use up at least 80 MB of disk space per recording minute.

Hard disk speed

- The speed of the hard drive also determines the number of audio tracks you can run. That is the quantity of information that the disk can read, usually expressed as “sustained transfer rate”. Again, “the more the better” applies.

Wheel mouse

Although a regular mouse will work perfectly fine with Cubase SX, we recommend that you use a wheel mouse, as this will speed up value editing and scrolling considerably. See [page 158](#) and [page 163](#).

Audio hardware

Cubase SX will run with audio hardware that meets the following basic specifications:

- Stereo.
- 16 bit.
- Support of at least the 44.1kHz sampling rate.
- Is supplied with a special ASIO driver, or a DirectX or Windows Multimedia compatible driver as described below.

About drivers

A 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 SX to use the audio hardware. For audio hardware, there are three different cases, each requiring different driver configurations:

If the audio hardware has a specific ASIO driver

Professional audio cards often come with an ASIO driver written especially for the card. This allows for communication directly between Cubase SX and the audio card. As a result, audio cards with specific ASIO drivers can provide lower latency (input-output delay), which is crucial when monitoring audio via Cubase SX or using VST Instruments. The ASIO driver may also provide special support for multiple inputs and outputs, routing, synchronization, etc.

Audio card-specific ASIO drivers are provided by the card manufacturers. Make sure to check the manufacturer's web site for the latest driver versions.

-
- If your audio hardware comes with a specific ASIO driver we strongly recommend that you use this.**
-

If the audio card communicates via DirectX

DirectX is a Microsoft “package” for handling various types of Multimedia under Windows. Cubase SX supports DirectX, or to be more precise, DirectSound, which is a part of DirectX used for playing back and recording audio. This requires two types of drivers:

- A DirectX driver for the audio card, allowing it to communicate with DirectX. If the audio card supports DirectX, this driver should be supplied by the audio card manufacturer. If it isn't installed with the audio card, please check the manufacturer's web site for more information.
- The ASIO DirectX Full Duplex driver, allowing Cubase SX to communicate with DirectX. This driver is included with Cubase SX, and does not require any special installation.

If the audio card communicates via Windows Multimedia system

If the card is Windows compatible, it can be used in Cubase SX. The card then communicates with Windows Multimedia system, which in turn communicates with Cubase SX. This requires two types of drivers:

- A Windows Multimedia driver for the audio card, allowing it to communicate with the Windows Multimedia system. This driver should be supplied by the audio card manufacturer, and is normally installed when you install the audio card.
- The ASIO Multimedia driver, allowing Cubase SX to communicate with the Windows Multimedia system. This driver is included with Cubase SX, and does not require any special installation.

Hardware installation

Installing the copy protection key – please read!

Included with the Cubase SX package, you will find a hardware key (sometimes referred to as a “dongle”) that is part of the Cubase SX copy protection scheme. Cubase SX will not run if this key isn’t installed properly. Please note the following important points:

❑ **The copy protection key should be plugged into the computer’s USB port *after* installing Cubase SX and restarting the computer!**

- The copy protection key should *not* be plugged in during the actual installation of Cubase SX, nor should it be plugged in at any time before Cubase SX is installed!

When the copy protection key is plugged into the USB port, Windows will automatically register it as a new hardware device and will attempt to find drivers for it – these necessary drivers won’t be there until Cubase SX has been installed and the computer restarted.

Installing the audio hardware and its driver

1. Install the audio card and related equipment in the computer, as described in the card’s documentation.
2. Install the driver for the card.

There are three types of drivers that could apply: card-specific ASIO drivers, DirectX drivers and Windows Multimedia drivers:

Specific ASIO driver

If your audio card has a specific ASIO driver it may be included with the audio card, but you should always make sure to check the audio card manufacturer’s web site for the most recent drivers. For details on how to install the driver, refer to the manufacturers instructions.

DirectX driver

If your audio card is DirectX compatible, its DirectX drivers will most likely be installed when you install the card (as with the Windows Multimedia driver). If you have downloaded special DirectX drivers for the audio card, you should follow the manufacturer's installation instructions.

Windows Multimedia driver

These drivers are normally included with all types of regular PC audio cards. Some are even included with Windows itself. Depending on whether the audio card is "Plug'n'Play compatible" or not, the installation of the card is done differently:

- If the card is "Plug'n'Play compatible", Windows will detect the card once it is plugged in, and ask for the necessary driver disks.
- If not, you need to use the "Add New Hardware" feature in the Control Panel to install the card and its drivers.
Refer to the documentation that comes with the card.

Should you have an audio card but no driver, please check the manufacturer's web site, or ask your music or computer dealer for help.

Testing the Card

To make sure the audio card will work as expected, perform the following two tests:

- Use any software included with the audio card to make sure you can record and play back audio without problems.
- If the card is accessed via a standard Windows driver, use the Media Player application (included with Windows) to play back audio.

Installing a MIDI interface/synthesizer card

Installation instructions for a MIDI interface should be included with the product. However, here's an outline of the necessary steps:

1. Install the interface (or MIDI synthesizer card) inside your computer or connect it to a "port" (connector) on the computer.
Which is right for you depends on which type of interface you have.
2. If the interface has a power supply and/or a power switch, turn it on.
3. Install the driver for the interface, as described in the documentation that comes with the interface.

It is likely that you will need a CD ROM or floppy disk supplied by the manufacturer of the MIDI interface.

Installing Cubase SX

Defragment the hard disk

If you plan to record audio on a hard disk where you have already stored other files, now is the time to *defragment* it. Defragmentation reorganizes the physical allocation of space on the hard disk in order to optimize its performance. It is done with a special defragmentation program. In Windows XP, for example, you might look for the “Disk Defragmenter” utility.

-
- It is crucial to the audio recording performance that your hard disk is optimized (defragmented). You should make sure to defragment regularly.**
-

Installing the files on the CD-ROM

The installation procedure puts all files in the right places, automatically.

1. Make sure that the hardware copy protection key is *not* plugged into the computer USB port.
2. Insert the Cubase SX CD-ROM.
3. A pop-up dialog appears automatically, containing three items: “Install”, “Browse this CD” and “Exit”.
If this dialog doesn’t appear, open the CD-ROM on the desktop, and double click the “Autorun.EXE” icon
4. To start the installation process, select “Install”.

A number of dialogs now appear:

- In one dialog you will need to fill in your name and the serial number of your Cubase SX copy, and click OK.
You will find the serial number on the registration card that comes with the Cubase SX package. Check the name and number in the confirmation dialog and click “Yes” if they are correct. Clicking “No” brings back the previous dialog.
5. Now the actual Cubase SX installation procedure starts.
A number of dialogs will appear, allowing you to select in which folder on your hard disk you want to install the program, etc. To advance to the next “page” in the installation procedure, click the “Next” button. The “Previous” button takes you back to the previous page.

- In one dialog you will be asked if you would also like to install earlier Cubase plug-ins. This is primarily intended to ensure compatibility with songs created with earlier versions, but will of course also give you a wider palette of plug-ins to choose from. You can either just select Yes or No and proceed, or click the Details button to select from a list where you can decide which plug-ins to install. At the bottom of the list there is an item named “Earlier Plug-ins”. If ticked, the plug-ins that came with versions prior to Cubase 5 will also be installed.
- 6. Finally, a dialog box informs you that the installation was successful and recommends you to restart your computer.
- 7. After restarting the computer, plug in the hardware protection key into the USB port.
If you are unsure over which port this is, consult the computers documentation.
- 8. The first time the copy protection device is plugged in, it will be registered as a new hardware device, and a dialog will appear asking you whether you would like to find drivers for the device manually or automatically. You should select to find drivers automatically.
The dialog closes.
- 9. You are now ready to launch Cubase SX!
Remove the CD-ROM and store it in a safe place.

This completes the installation of your Cubase SX program!

The items on the start menu

If you open the Windows Start menu, you will find a Cubase SX group on the “Programs” submenu. This contains the following items:

- **Documentation.**
On this submenu you can access the “Getting Started”, “Operation Manual” and “Score Layout and Printing” documentation in the Acrobat pdf format. These documents are also available on the Help menu from within the program.
- **ASIO DirectX Full Duplex Setup.**
This is where you make settings if your audio hardware uses DirectX for audio playback and recording.
- **ASIO Multimedia Setup.**
This opens a dialog with settings for the ASIO (Audio Stream Input Output) system, which handles audio recording and playback in Cubase SX, if you are using the ASIO MME driver. This dialog can also be opened from within Cubase SX. See [the chapter “Setting up your system”](#) in this book.
- **Cubase SX.**
This launches the actual program.

There may also be additional items (such as Readme files) available on the Start menu. Please read all such files before launching Cubase SX, since they may contain late information not included in the manuals.
- **LCC.**
This item shows all SyncroSoft protection devices and valid licences currently installed.

3

Setting up your system

Setting up audio

-
- ❑ Always make all connections with all equipment turned off!
-

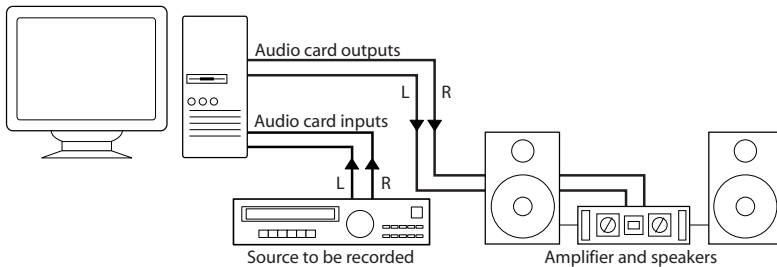
Connecting audio

Exactly how to set up your system is a very personal matter, the following connection diagrams should be taken as examples.

The audio connections below may be digital or analog, it doesn't matter.

Stereo input and output – the simplest connection

If you only use a stereo input and output from Cubase SX, you might connect your audio hardware directly to the input source, a mixer for example, and the outputs to a power amplifier and speaker.



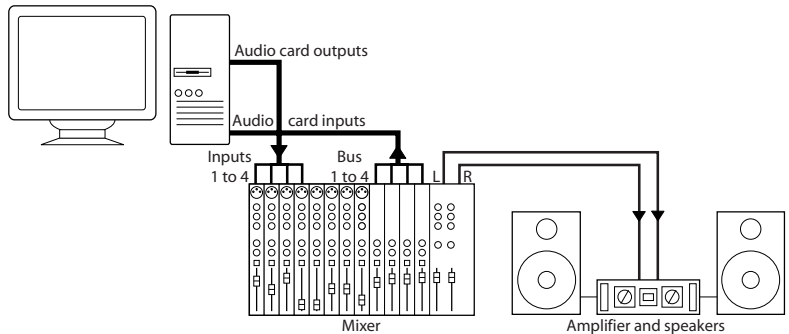
A simple stereo audio setup.

- **When connecting an input source (like a mixer) to the audio hardware, you should use an output bus or similar that is separate from the mixer's master output to avoid recording what you are playing back.**

Multi-channel input and output

Most likely however, you will have other audio equipment that you want to integrate with Cubase SX. This will require a mixer, preferably one with a group or bus system that can be used for feeding inputs on the audio hardware.

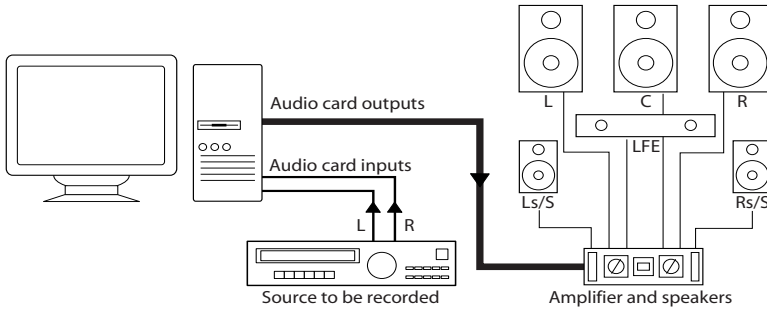
In the example below, four buses are used for feeding signals to the sound hardware's inputs. The four outputs are connected back to the mixer for monitoring and playback. Remaining mixer inputs can be used for connecting audio sources like microphones, instruments, etc.



A multi-channel audio setup.

Connecting for surround sound

If you plan to mix for surround sound, you could connect the audio outputs to a multi-channel power amplifier, driving a set of surround channels.



A surround sound playback configuration.

Cubase SX supports a number of surround formats. The example connection above will work for mixing both 5.1 and LRCS (ProLogic for example) where in this case the two surround speakers will be playing the same material (from the single surround channel). The only difference between the two formats in this aspect is the LFE channel, which is not used with LRCS.

Recording from a CD player

Most computers come with a CD-ROM drive that can also be used as a regular CD player. Normally, the CD player is internally connected to the audio hardware so that you can record the output of the CD player directly into Cubase SX. All routing and level adjustments are then done in the audio hardware setup application, described below.

- You can also grab audio tracks directly from a CD in Cubase SX (see the Operation Manual).

Word Clock connections

If you are using a digital audio connection you may also need a word clock connection between the audio hardware and external devices. Please refer to the documentation that came with the audio hardware for details.

-
- ❑ **It is very important that word clock synchronization is done correctly or there might be clicks and crackles in recordings that you make!**
-

Driver and helper application setup

The audio hardware setup application

Often, audio hardware has several inputs: a microphone input, line inputs, possibly digital inputs and a connection from the CD-ROM drive in your computer (see above).

With the audio hardware you should have received one or more small applications that allow you to configure the inputs of the hardware to your liking. This includes:

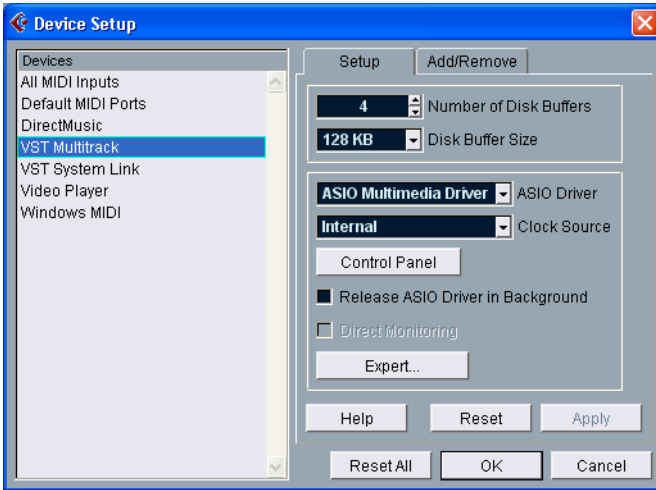
- Selecting which in/outs are active.
- Setting up word clock synchronization (if available).
- Turning monitoring via the hardware on/off (see [page 34](#)).
- Setting levels for each input. This is very important!
- Setting levels for the outputs, so that they match the equipment you use for monitoring.

For more details about your audio hardware setup application please refer to the documentation that came with the hardware.

VST Multitrack setup – Basic Settings

1. In Cubase SX, select Device Setup from the Devices menu and click on VST Multitrack in the list.

Make sure the “Setup” tab is selected.



The VST Multitrack panel in the Device Setup dialog.

2. Select your audio hardware from the ASIO Driver menu.
There may be several options here that all refer to the same audio hardware:

-
- ❑ **We strongly recommend that you access your hardware via an ASIO driver written specifically for the hardware, if available. If no ASIO driver is installed we recommend that you check with your audio hardware manufacturer if they have an ASIO driver available, for example for download via the Internet.**
-

3. Click the Control Panel button and adjust the settings as recommended by the audio hardware manufacturer.

The control panel that appears when you click this button is provided by the audio hardware manufacturer and not Cubase SX (unless you use DirectX or MME, see below). Hence it will be different for each audio card brand and model. The settings may include options for buffering, synchronization, digital input and output formats etc.

- The Control panels for the ASIO Multimedia and ASIO DirectX drivers are an exception, as they are provided by Steinberg. They are described in the HTML Help, opened by clicking the Help button in the respective dialog. See also the notes below.
- 4. If you plan to use several audio applications simultaneously, you may want to activate the option “Release ASIO Driver in Background”. This will allow another application to play back via your audio hardware even though Cubase SX is running. The application that is currently active (i.e. the “top window” on the desktop), will get access to the audio hardware. Make sure that any other audio application accessing the audio hardware is also set to release the ASIO driver so Cubase can use it when becoming the active application again.
- 5. If your audio hardware and its driver support ASIO Direct Monitoring, you may want to activate the Direct Monitoring checkbox. Read more about monitoring later in this chapter and in the Recording chapter in the Operation Manual.
- 6. Click Apply and then OK to close the dialog.

If you are using audio hardware with a DirectX driver

-
- If your audio hardware doesn't have a specific ASIO driver, a DirectX driver is the next best option.**
-

There is an ASIO DirectX driver available with Cubase SX, “ASIO DirectX Full Duplex”. This driver allows both audio recording and playback. However:

-
- To be able to take full advantage of DirectX Full Duplex, the audio hardware must support WDM (Windows Driver Model) in combination with DirectX version 7 or higher (8.1 recommended for Windows 2000 – see below). In all other cases, the audio inputs will be *emulated* by DirectX (see the HTML Help for the ASIO DirectX Full Duplex Setup dialog for details about how this is reported). Since using emulated inputs will result in higher latency, you may want to use the ASIO Multimedia driver instead, as this gives you some more possibilities to fine-tune the settings.**
-
- Windows 2000 users should use DirectX version 8.1. An installer is provided on the Cubase SX Program CD.**
-

When the ASIO DirectX Full Duplex driver is selected in the Device Setup you can open the ASIO Control Panel and adjust the following settings:

- **Direct Sound Output and Input Ports**

In the list to the left in the window, all available Direct Sound Output and Input Ports are listed. In many cases, there will only be one Port in each list. To activate or deactivate a Port in the list, click the check box in the left column. If the check box is ticked, the port is activated.

- **You can edit the Buffer Size and Offset settings in this list if necessary, by double clicking on the value and typing in a new value using the computer keyboard.**

In most cases the default settings will work fine. The audio buffer is used when audio data is transferred between Cubase SX and the audio card. Having a large buffer ensures that playback will occur without glitches. However, the time between the moment Cubase SX sends out the data and when it actually reaches on the output the "latency" will be longer.

- **Offset**

If a constant offset is audible during playback of Audio and MIDI recordings, you can adjust the output or input latency time using this value.

For more details about settings in the ASIO DirectX Full Duplex Control Panel, click the Help button in the dialog.

If you are using audio hardware with a Windows Multimedia (MME) driver

When you select the ASIO Multimedia Driver for the first time, the system will ask you whether you want to test the configuration. We strongly recommend that you perform this test. If it fails, or if you for other reasons need to make adjustments to your ASIO Multimedia configuration, click the Control Panel button to open the ASIO Multimedia Setup control panel included with Cubase SX. This control panel comes with an HTML Help describing the features and procedures.

About recording levels and inputs

When you connect your equipment, take care about the absolute operating levels of the various input options. Apart from the obvious difference in level and impedance of a microphone input, please take care over +4 dBV and -10 dBV connections.

It is very important to make sure you use the correct type of input on your audio hardware, or your recordings will either be distorted or unnecessarily noisy.

-
- ❑ **Cubase SX does not provide any input level adjustments, since these are done differently for each card. Adjusting input levels is either done in a special application included with the hardware or possibly from its ASIO Control Panel.**
-

About monitoring

In Cubase SX, Monitoring means listening to the signal being recorded while preparing to record or while recording. There are basically three ways to monitor:

External monitoring

External monitoring (listening to the input signal before it goes into Cubase SX) requires an external mixer for mixing the audio playback with the input signal. This mixer could be a stand-alone physical mixer or a mixer application for your audio hardware, if this has a mode in which the input audio is sent back out again (usually called “Thru”, “Direct Thru” or similar).

Via Cubase SX

In this case, the audio passes from the input into Cubase SX, possibly through Cubase SX effects and EQ and then back to the output. You then control monitoring via settings in Cubase SX.

This is useful for monitoring an input signal with effects added by Cubase SX. Keep in mind that the latency of your audio card drivers may delay the output (see [page 39](#)).

ASIO 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 SX. This means that the audio hardware’s direct monitoring feature can be turned on or off automatically by Cubase SX.

Monitoring is described in detail in the Recording chapter in the Operation Manual. However, when setting up, there’s one thing to note:

- 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.

Setting up MIDI

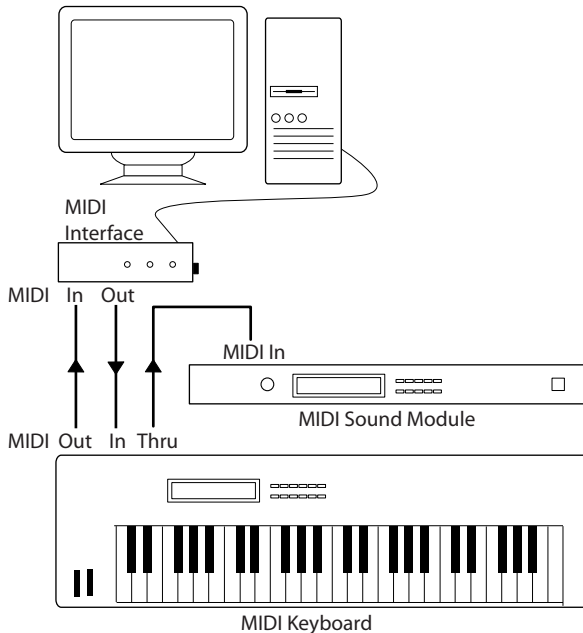
- ❑ **Always make all connections with all equipment turned off!**

This section describes how to connect and set up MIDI equipment. If you have no MIDI equipment you can skip this section.

Connecting the MIDI equipment

Below follows a description of a typical but small setup example. You might need or want to hook things up differently!

In this example we assume that you have a MIDI keyboard and an external MIDI sound module. The keyboard is used both for feeding the computer with MIDI messages for recording and for playing back MIDI tracks. The sound module is used for playback only. Using Cubase SX's MIDI Thru feature (described later) you will be able to hear the correct sound from the sound module while playing the keyboard or recording.



A typical MIDI Setup.

You might want to use even more instruments for playback. If you do, simply connect MIDI Thru on the sound module to MIDI In on the next instrument, and so on. In this hook-up, you will always play the first keyboard when recording. But, you can still use all your devices for providing sounds on playback.

-
- ❑ **If you plan to use more than three sound sources we recommend that you either use an interface with more than one output, or a separate MIDI Thru box instead of the Thru jacks on each unit.**
-

Setting up a default MIDI input and output

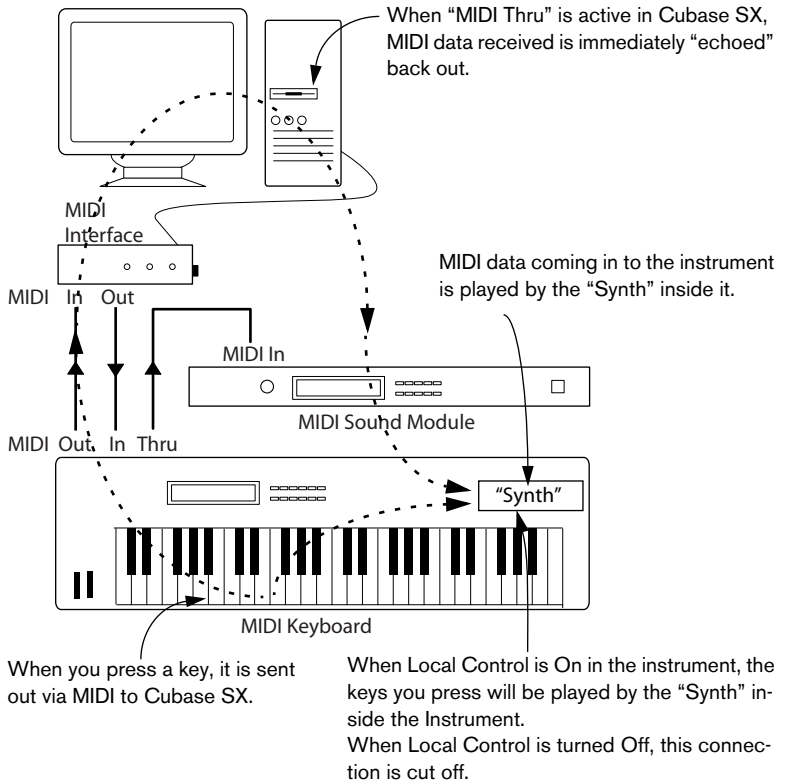
You may want to make sure that new tracks that you create are set to the desired MIDI ports. Proceed as follows:

1. In Cubase SX, select Device Setup from the Devices menu and click on Default MIDI Ports in the list.
Make sure the Setup tab is selected.
2. Use the two pop-ups to select an input and an output.
Now, newly created tracks will always use this input and output. However, you can later change this setting for each individual track in the Project window.
3. Click Apply and then OK to close the dialog.

Setting MIDI Thru and Local On/Off

In the “MIDI” section in the Preferences dialog (opened from the File menu), you will find a setting called “MIDI Thru Active” which can be enabled or not. This is related to a setting in your instrument called “Local On/Off” or “Local Control On/Off”.

- If you use a MIDI keyboard instrument, as described earlier in this chapter, MIDI Thru should be activated and that instrument should be set to *Local Off* (sometimes called *Local Control Off* – see the instrument’s operation manual for details). This will let the MIDI signal from the keyboard get recorded into Cubase SX and at the same time re-routed back to the instrument so that you hear what you are playing, without the keyboard “triggering” its own sounds.



- If you use a separate MIDI keyboard, that does not produce any sounds itself, MIDI Thru in Cubase SX should also be activated, but you don't need to look for any Local On/Off setting in your instruments.
- The only case where MIDI Thru should be *deactivated* is if you use Cubase SX with only one keyboard instrument and that instrument cannot be set to Local Off mode.
- Note that MIDI Thru will only be active for MIDI tracks that are record enabled. See the Recording chapter in the Operation Manual for more information.

Connecting a synchronizer

-
- ❑ **Always make all connections with all equipment turned off!**
-

When using Cubase SX with external tape transports you will most likely need to add a synchronizer to your system. All connections and setup procedures for synchronization are described in the Synchronization chapter in the Operation Manual.

Setting up video

-
- ❑ **Always make all connections with all equipment turned off!**
-

Cubase SX plays back video films (AVI, Quicktime or MPEG formats) using one of three playback engines: Video for Windows, DirectShow or Quicktime. This ensures compatibility with as wide a range of video hardware as possible. Generally there are two ways to play back video:

- Without any special hardware at all, using the computer CPU.
In this case, the “codec” is in software. While this will be fine in many situations it does put a limit on the size of the video window as well as the quality of the image.
- Using video hardware that for example connects to an external monitor.
This hardware must then have use a suitable codec and have the proper Windows drivers. Please visit the Steinberg home page for more information about video hardware support.
- If you plan to use special video hardware, install it and set it up as recommended by the manufacturer.
- Before you use the video hardware with Cubase SX, we recommend that you test the hardware installation with the utility applications that came with the hardware and/or the Windows Media Player application.

Optimizing audio performance

This section of the chapter gives you some hints and tips on how to get the most out of your Cubase SX system, performance-wise. Some of this text refers to hardware properties and can be used as a guide when upgrading your system. This text is very brief. Look for details and current information on the Cubase SX web site (see [page 11](#))!

Two aspects of performance

There are two distinct aspects of performance in respect to Cubase SX:

Tracks and effects

Simply put: the faster your computer, the more tracks, effects and EQ you will be able to play. Exactly what constitutes a “fast computer” is a science almost in itself, but some hints are given below.

Short response times (latency)

Another aspect of performance is response times. Latency is a phenomenon based on the fact that in a computer, audio has to be “buffered” (stored) in small chunks during various steps of the recording and playback process. The more and larger those chunks, the higher the latency.

High latency is most troublesome when playing VST Instruments and when monitoring through the computer, that is when listening to a live audio source via the Cubase SX Mixer and effects. However, very long latency times (several hundred milliseconds) can hamper other processes like mixing, since for example a fader movement will affect the audio noticeably late.

While Direct Monitoring and other techniques reduce the problems associated with very long latency times, a system that responds fast will always be more convenient to work with.

- Depending on your audio hardware, it may be possible to “trim” your latency times, usually by lowering the size and number of buffers. For details, refer to the audio hardware documentation, or, if you are using a DirectX or MME driver, the HTML Help.

System factors that affect performance

CPU and processor cache

It goes without saying that the faster the computer processor, the better. But there are a number of factors that affect the apparent speed of a computer: the bus speed and type (PCI is strongly recommended), the processor cache size and of course, the processor type and brand.

Cubase SX relies heavily on floating point calculations. When shopping for a processor, please make sure you get one that is powerful in calculating floating point arithmetics.

Hard disk and controller

The number of hard disk tracks you can record and play back at the same time also depends on the speed of your hard disk and hard disk controller. If you use E-IDE disks and controllers, make sure that the transfer mode is DMA Busmaster. You can check the current mode by launching Windows Device Manager and looking for properties of the IDE ATA/ATAPI Controller's primary and secondary channel. DMA transfer mode is enabled by default, but may be turned off by the system should hardware problems occur.

Audio hardware and driver

The hardware and its driver can have some effect on regular performance. A badly written driver can reduce the performance of your computer. But where the hardware driver design makes the most difference is with latency.

-
- ❑ **Again, we strongly recommend that you use audio hardware for which there is a specific ASIO driver!**
-

ASIO drivers written specifically for the hardware are more efficient than MME or DirectX and normally produce shorter latency times.

Making settings that affect performance

Choosing a driver for your audio hardware

As described on [page 30](#), it is recommended to install and use a standard ASIO driver if available for your specific hardware. Check the manufacturers web site for the latest drivers etc.

Making disk buffer settings

These settings can be found in the VST Multitrack panel in the Device Setup dialog (opened from the Devices menu). The two parameters “Number of Disk Buffers” and “Disk Buffer Size” govern how data is read and written from/to the hard disk.

When data is read from disk it is stored in a buffer. Since the computer has to fill the buffer at the same time as it is playing back data, there needs to be more than one buffer. The same is true for recording. You can adjust both the number of buffers used for each audio channel and their size.

With more and larger buffers, you will get smoother performance, since less computer processing power is “wasted” to accessing the hard disk (it can to some extent compensate for a slower processor). However, enlarging the values also raises latency and requires you to have proportionately greater amount of RAM.

Making control panel settings

In the control panel for your audio hardware you may also find buffer settings. Generally, the smaller the value for these, the lower the latency. On the other hand, working with small buffers can be demanding for the computer. If the audio hardware buffers are too small, the audio can be garbled or distorted.

The Expert settings

In the VST Multitrack panel you will find a button called “Expert...”. 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. Generally, they allow you to adjust how much processing power is used for recording and playing back audio. See the HTML Help for details.

Optimizing processor scheduling

To get the lowest possible latencies when using ASIO under Windows 2000 or XP (on a single CPU system), the 'system performance' has to be optimized for background tasks:

Windows 2000

1. Open the Control Panel from the Start menu and select System.
2. Select the Advanced tab and click the Performance Options button.
3. In the dialog that appears, select "Optimize performance for: Background services".
4. Click OK to close the dialogs.

Windows XP

1. Open the Control Panel from the Start menu and select System.
2. Select the Advanced tab and click the Settings button in the Performance section.
The Performance Options dialog appears.
3. Select the Advanced tab.
4. In the Processor Scheduling section, select "Adjust for best performance of: Background services"
5. Click OK to close the dialogs.

Related Information

ACPI vs. Standard PC mode

Windows 2000 users should consider the important information relating to audio performance as presented on the Steinberg Knowledge Base. The address is "http://service.steinberg.net/knowledge.nsf/show/acpi_kills_audio_performance".

4

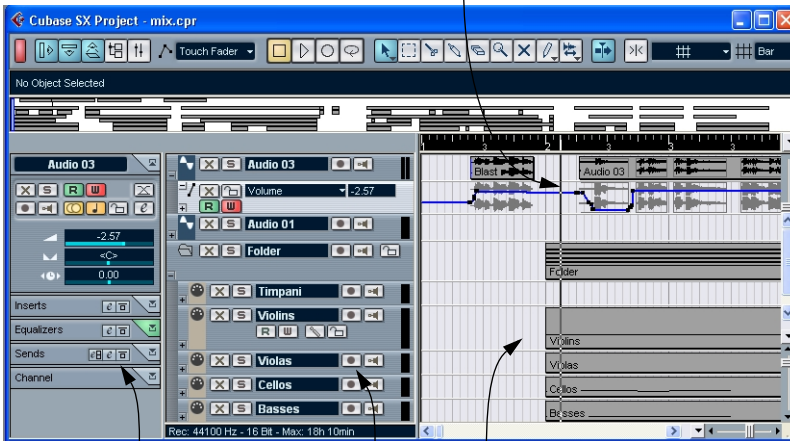
Guided Tour

The main windows in Cubase SX

The Project window

The Project window is the main window in Cubase SX. This provides you with a graphic overview of the project, allowing you to navigate and perform large scale editing. The Project window is divided vertically into tracks and has a time line going from left to right. Each project has one Project window.

The project cursor.



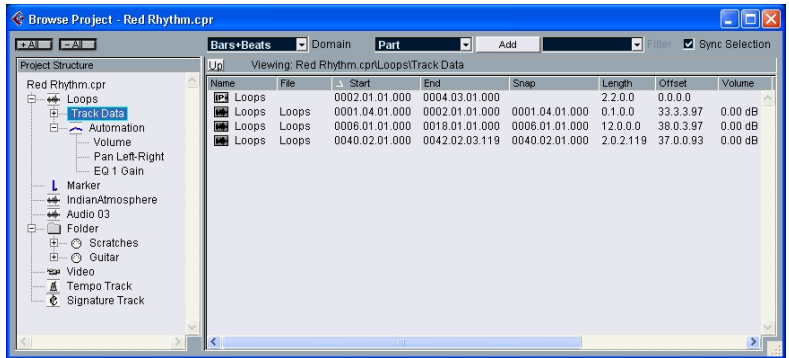
The area with various track settings to the left is called the Inspector.

The Track list with various track types.

The area to the right in the project window is called the event display. This is where you view and edit audio and MIDI events, automation curves, etc.

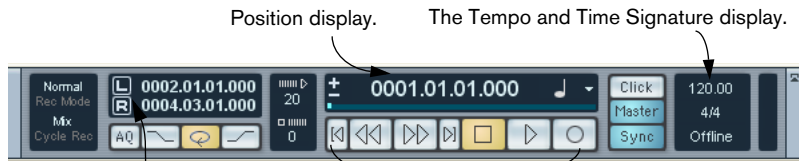
The Project Browser

The Project Browser provides a list based representation of the project. This allows you to view and edit all events on all tracks by using regular value editing in a list.



The Transport panel

The Transport panel features transport controls, much like those found on a conventional tape recorder. It can also be used for setting tempo and time signature, etc.



The Left and Right Locators are used for defining where to start and end recording and what section to cycle.

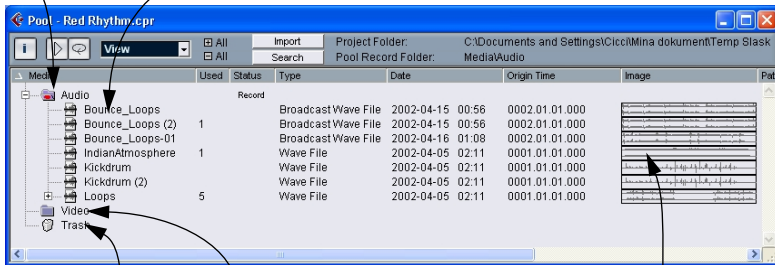
Transport controls.

The Pool

All files, audio or video, that belong to a project are listed in the Pool. There is a separate Pool for every project. In the Pool you can organize, convert and audition clips, amongst many other things.

Audio folder

Audio clips



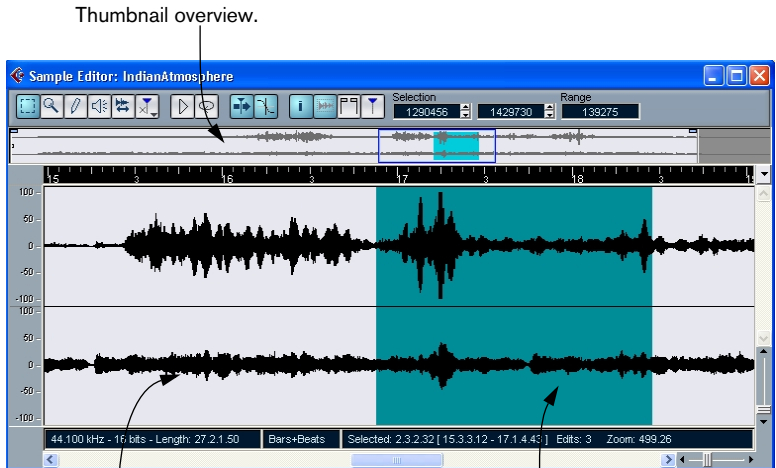
Trash folder

Video folder

Waveform image

The Sample Editor

In the Sample Editor you can view and manipulate audio, by cutting and pasting, removing or drawing audio data. By using the Offline Process History, you can undo changes or revert to the original versions at any point.



Waveform view.

A selected range.

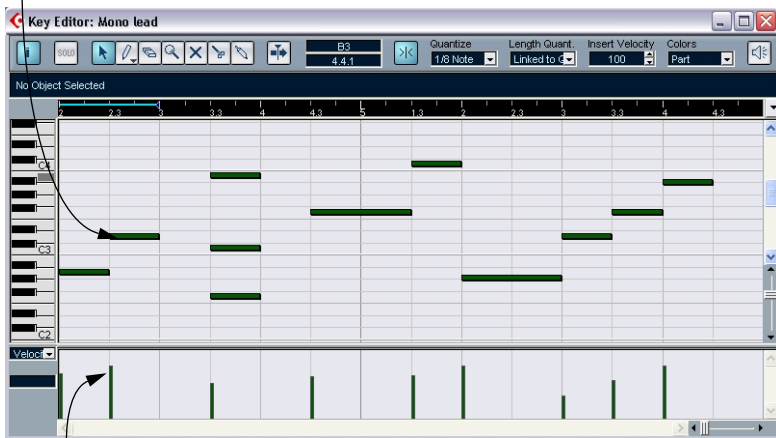
The MIDI editors

Editing MIDI data is done using the MIDI Editors. The following editors are available:

Key Editor

The Key Editor shows the contents of a single MIDI Part. The MIDI notes are represented by “boxes”, whose vertical position corresponds to their pitch.

This box represents a MIDI note.



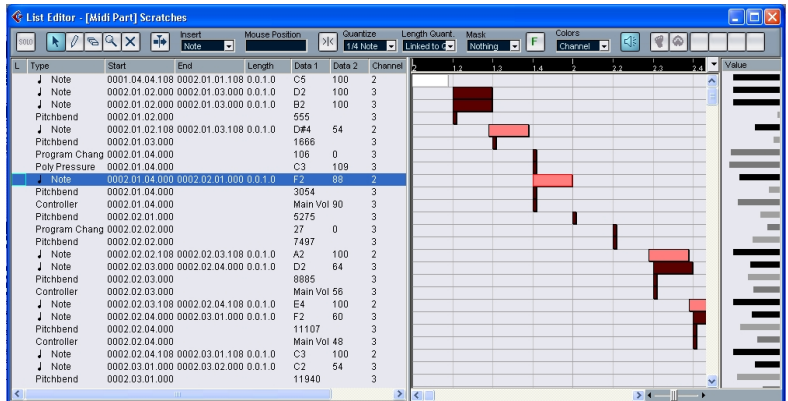
This section is called the controller display. It shows “continuous” MIDI Events (such as Controllers) or as in this figure, the velocity values of notes.

Score Editor



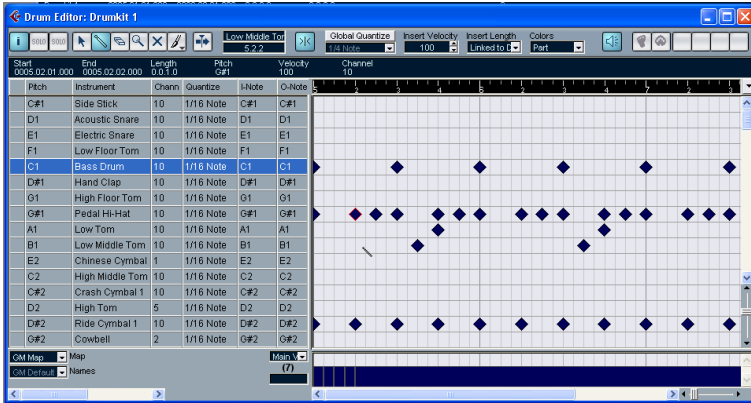
The Score Editor shows MIDI notes as a musical score and comes with advanced tools and functions for notation, layout and printing.

List Editor



The List Editor shows all events in a MIDI part as a list, allowing you to view and edit their properties numerically.

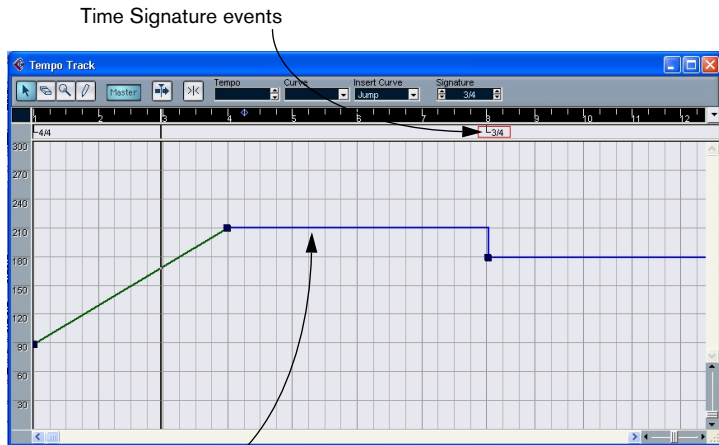
Drum Editor



The Drum Editor is similar to the Key Editor, but takes advantage of the fact that with drum parts, each key corresponds to a separate drum sound.

Tempo Track Editor

For each audio and MIDI track, you can specify whether it should use a musical or linear Time base. Tempo based tracks follow a tempo, which can either be fixed through the whole project or follow the Tempo Track. In the Tempo Track Editor you can draw curves that determine how the tempo will change over time.



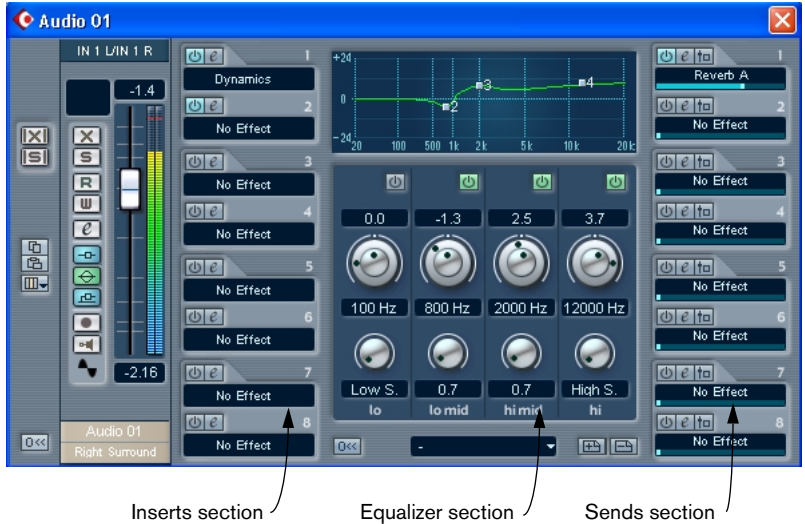
The Mixer

The Mixer is where you mix your audio and MIDI channels, that is, adjust the levels (volume), stereo panning, effect sends, EQ, etc.



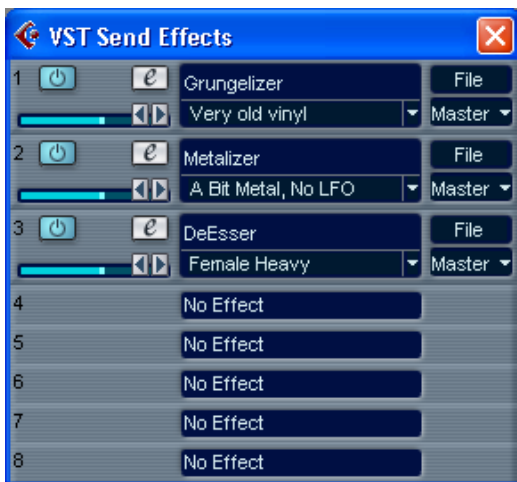
Channel Settings

The Channel Settings window is used for adding effects and EQ to individual audio channels. Each audio channel has its own Channel settings window.



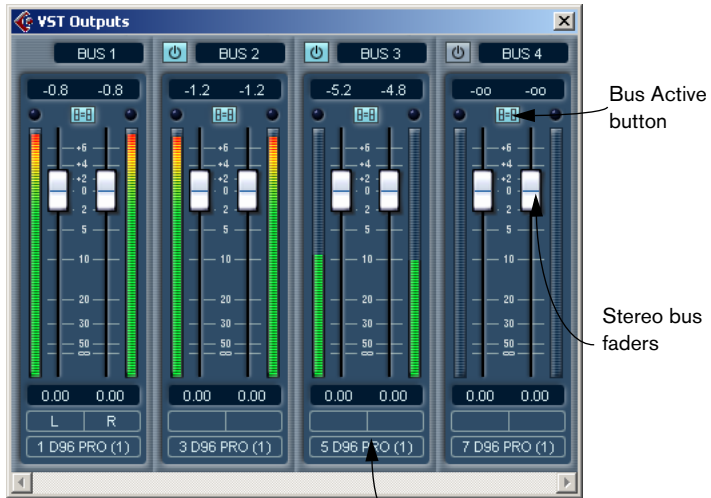
VST Send Effects

The VST Send Effects “rack” is where you select and activate Send Effects. There is a similar window for selecting and activating effects in the master output path.



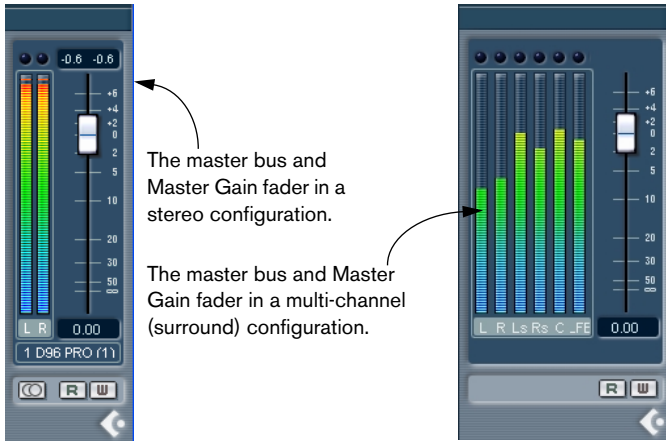
VST Outputs and Master Gain

In the VST Outputs window you can set the output level of each output bus. The number of buses depends on your audio hardware.



Bus output routing pop-up. This is where each output bus is routed to a physical output on the audio hardware.

The output level of the master bus is controlled with the Master Gain fader in the Mixer. The master bus may be in stereo or have several channels, depending on the chosen configuration. It is connected to the corresponding number of VST Output buses.



5

Quickstart for former Cubase users

Introduction

This chapter is intended as a quickstart for users that are familiar with previous versions of Cubase.

Firstly, we will outline some of the more basic concept differences between Cubase SX and earlier versions of Cubase, to help seasoned Cubase users to quickly find their way around in this new environment! Secondly, some of the main new features are also briefly described in this chapter.

-
- ❑ **You can import Songs and Arrangements created with previous versions of Cubase into Cubase SX. Before you attempt to do this, you should read through the section “Importing older Cubase files” in the Operation Manual – File Handling chapter.**
-

What is the fundamental difference?

Basically *everything* is new in Cubase SX. Cubase SX is not an updated Cubase version, it is completely redesigned. While this is mostly transparent to the user – the main working areas of the program are still very similar – there are still changes in how recorded files are handled, changes in terminology used, the main menu structure is different etc.

While this may be slightly confusing initially to users of previous versions of Cubase, the advantages will soon become very apparent. Once the basic concept differences have been overcome, we feel certain that you will never look back!

Songs and Arrangements

The basic concept of Songs and Arrangements is no longer used.

Instead, the native document format of Cubase SX is called a **project** (extension “.cpr”). All settings, file references etc. relating to the project are stored in the **project folder** which is designated when you create a project. You can have several open projects, but only one can be active at a time.

Can't I work with multiple Arrangements in the way I'm used to?

Of course you can. As several projects can share the same project folder, having different formats for Songs and Arrangements is redundant. Simply create new projects and designate them to use the same project folder.

For information about creating a project and the file and folder structure of a project, see [page 148](#).

Project window vs. Arrange window

Cubase SX's main working area, the **Project window**, is comparable to the 'Arrange' window in earlier Cubase versions. It allows real-time placement of audio, video and MIDI parts and performing of almost all primary editing tasks, including automation as well as giving an overview of the entire project. Please read [the chapter “Tutorial 4: Editing in the Project window”](#) for a tutorial covering the basic editing procedures in the Project window.

Audio related differences

Files and segments

Cubase SX uses different terminology for referencing audio files in a project. Please read through the section [Audio terminology on page 150](#) to familiarize yourself with the basic terms used in Cubase SX.

About audio channels

- You do not have to specify the number of audio channels to use in a project nor do you have to designate an audio channel to record on in Cubase SX.
You can simply create as many audio tracks you need in any project (limited only to what your computer can handle).
- In Cubase SX, an audio track and an audio channel is the same thing. All audio tracks will have a corresponding audio channel strip in the Mixer.

Recording audio

In former Cubase versions, recording normally happened on the selected track.

- In Cubase SX, you simply activate the Record Enable button for each track you wish to record on. How many you can record at a time depends on the number of activated inputs on your audio hardware. You can also set things up so that selected tracks are automatically record enabled.

Events/parts

In Cubase SX, audio events can appear directly on audio tracks in the Project window, with no need for audio parts. You can also put one or several audio events into an audio part – this is useful for grouping events together and e.g. moving them as one unit.

Dynamic events

There are no dynamic events for audio events anymore. Instead, please use the regular automation features to automate volume and pan. The Match Points feature in previous Cubase versions has been replaced by a comprehensive Hitpoint editing feature (see [page 64](#)).

Applying processing

In Cubase SX you can of course use plug-in effects in real time, just as before. But you can also permanently apply the effect processing to selected audio events which can be very useful. This is described in the Operation Manual chapter “Audio processing and functions”.

MIDI related differences

Recording MIDI

In former Cubase versions, recording normally happened on the selected track.

- In Cubase SX, recording happens on all tracks that are record enabled. You can also set things up so that selected tracks are automatically record enabled.
- The MIDI input can be set separately for each MIDI track in Cubase SX. The MIDI input was global for all tracks in previous versions of Cubase.

Setting MIDI Thru

To be able to play a connected MIDI instrument, MIDI Thru must be activated. This is activated either by record enabling the track or by clicking the Monitor button for the track.

Editing MIDI

In previous versions of Cubase, you could select a MIDI track in the Track list and open it in a MIDI editor. In Cubase SX, you need to select one or several parts on the track to be able to open a MIDI editor.

Play Parameters

Cubase SX features greatly extended real time processing of MIDI data. Cubase SX comes with a number of MIDI effect plug-ins, capable of transforming the MIDI output from a track in various ways. MIDI effects are described in the Operation Manual chapter “MIDI realtime parameters and effects”.

However, unlike the Play Parameters in previous Cubase versions, track parameters in Cubase SX cannot be applied to individual MIDI parts. Instead, they are always set up for complete MIDI tracks.

Drum tracks

There is no specific track class for drums. Instead, you can assign a drum map to any MIDI track – this gives you the same drum editing features as in previous Cubase versions.

Where’s the MIDI Track Mixer?

Mixing MIDI is done in the Track Mixer together with your audio channels. The MIDI channel strips are similar to the channel strips in the MIDI Track Mixer, allowing you to set levels, panning and other parameters for your MIDI tracks.

New features in Cubase SX

Here follows a brief outline of the main new features in Cubase SX:

Multiple Undo/Redo

Cubase SX offers wide-ranging, multiple Undo, allowing you to undo virtually any action you perform. See [page 172](#).

Edit History

The Edit History dialog allows you to undo or redo several actions in one go. This is described on [page 173](#).

Offline Process History

The Offline Process History allows you to remove and modify applied processing, and is different from the “regular” Undo in that you don’t have to undo processing functions in the order they were performed.

The Offline Process History is described in the chapter “Audio processing and functions” in the Operation Manual.

Graphic editing of automation events

Automation handling is greatly improved in Cubase SX. Automation events can be drawn graphically in the Project window. Each audio and MIDI track in the Track list has an automation track containing all parameters for the track. You can select which parameters to view and edit by opening subtracks for the automation track.

- You can of course also use normal “Write/Read” automation to record your actions just like in previous versions of Cubase.
- All effect control panels also feature Write/Read buttons. Each automated effect and VST Instrument will have its own automation track in the Track list, with subtracks for each parameter.

See the chapter “Automation” in the Operation Manual.

Surround sound

Cubase SX has integrated surround sound features with support for several formats. See the Operation Manual chapter “Surround sound” for descriptions.

Integration

The new graphic design in Cubase SX integrates the various windows in a much clearer way than before. For example, the Inspector, the Track list and the Track Mixer have many shared parameters, which all have the same style buttons. This allows you to make settings quickly and intuitively in whatever window you are currently working with.

Hitpoints

Hitpoint editing is a special feature of the Sample Editor. It allows you to create “slices” for drum or other rhythmic loops. A sliced loop can adapt to tempo changes without affecting pitch, amongst other things. This is described in the chapter “Working with hitpoints and slices” in the Operation Manual.

The previous system of tempo/time-based hitpoints for matching time and meter positions is no longer used.

VST System Link

VST System Link is a system for networking computers using VST software and ASIO hardware. This allows you to work with multiple computers (even cross-platform), and to dedicate certain tasks to different computers. You can run all VST Instruments on one computer, all audio tracks on another etc. See the Operation Manual chapter “VST System Link” for more info.

6

Tutorial 1: Recording and playing back audio

About this chapter

This chapter contains a step-by-step description of how to make a simple audio recording and play it back. The purpose is for you to try out some of the most common recording and playback features. However, you should make sure to read the Recording chapter in the Operation Manual before doing any “serious” recording, as there are a lot of settings, options and methods that are not mentioned here.

Before you start

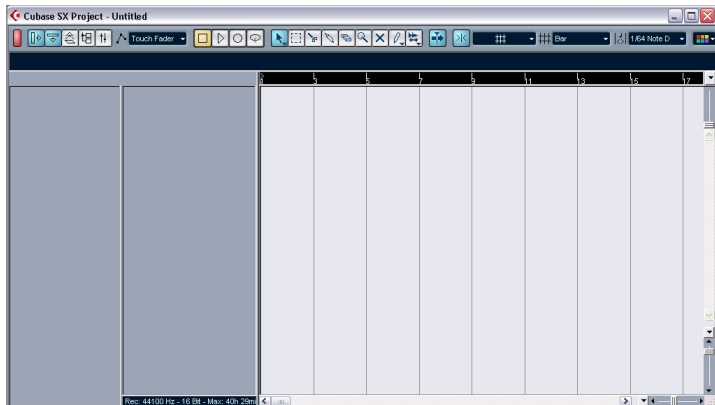
This chapter assumes the following:

- You have installed and set up your audio hardware.
- Your audio source (a mixer or tape recorder, for example) is properly connected to the inputs of the audio hardware.
- The outputs of the audio hardware are connected to some sort of listening equipment, allowing you to listen to the recorded audio during playback.
- You are monitoring your audio source externally.
That is, when you are recording, you listen to the audio source before it goes into Cubase SX. A typical setup would be to have an audio source connected to an external mixer, and feed the signal into Cubase SX via an auxiliary bus or send, while listening to the output of the mixer.
Note that this is just to make things simple in this chapter – there are various ways to monitor the signal through Cubase SX, as described in the Recording chapter in the Operation Manual.
- You have launched Cubase SX.

Creating a new project

Before you can start recording, you need a working environment – a project:

1. Pull down the File menu and select “New Project”.
A dialog appears, listing a number of project templates for various purposes.
2. Make sure the “Empty” item in the list is selected and click OK.
A file dialog appears, allowing you to specify a location for the project folder. This will contain all files related to the project.
3. Navigate to the desired location of the project folder, and select it by clicking OK, or click “Create” to create and name a new folder.
The project folder is created on disk, and an empty Project window appears.

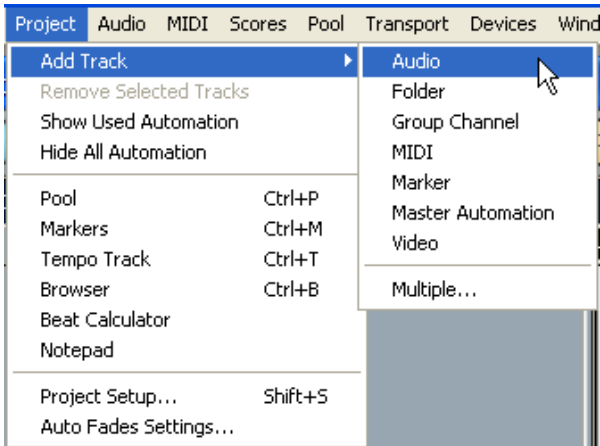


At this point, you can make various settings for the project, such as sample rate, resolution, etc. However, to keep things simple we will use the default settings for now.

The next step is to create an audio track to record on:

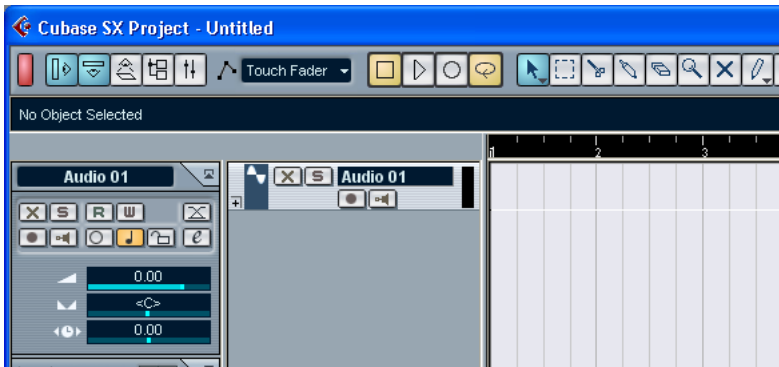
4. Pull down the Project menu and select “Add Track”.

A submenu appears, listing the various types of tracks available in Cubase SX.



5. Select “Audio”.

An empty audio track appears in the Project window.

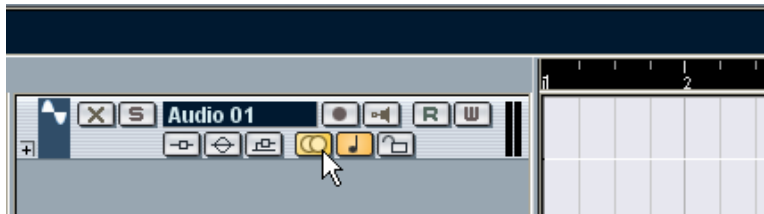


Preparing to record

Before you can start recording, there are some preparations to make:

Selecting stereo or mono

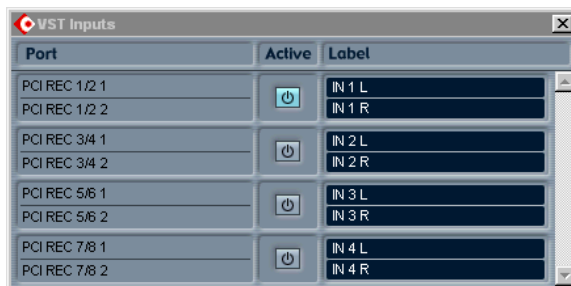
You need to decide whether you want the recording to be in stereo or mono. This is done by clicking the Stereo/Mono switch in the area to the left of the audio track.



- In this example, set the track to stereo by clicking the button so that it lights up and shows a double circle.

Activating and routing inputs

1. Pull down the Devices menu and select “VST Inputs”.
The VST Inputs window appears. This lists all audio inputs on your audio hardware, allowing you to turn inputs on or off.



2. Locate the input pair to which you have connected your audio source, and make sure its “On” button in the Active column is lit.
If not, click the button to turn the input on.

3. Close the VST Inputs window, and open the Mixer from the Devices menu.

This is Cubase SX's mixer window, used for setting levels, etc. The Mixer contains an channel strip for each audio, MIDI and group track in the Project window, so currently there will be a single stereo audio channel strip.



4. Pull down the Input pop-up menu at the top of the channel strip.
This is where you select which audio input should be routed to the audio channel for recording.



5. Select the input pair to which you have connected your audio source.
Your audio source is now routed to the audio channel, so that it can be recorded on the audio track.

Leave the Mixer window open for now.

Checking the input level

To avoid clipping, you need to check the input level before recording:

1. Click the “Record Enable” button next to the fader on the Mixer channel strip.

When the Record Enable button is lit, the level meter will show the input level (as opposed to the level of the playback signal).



Record enabling the track can be done in the Mixer (left) or in the Track list.

2. Activate your audio source.
You will see the level meters reacting.
3. Adjust the output level of your audio source so that the meters go as high as possible without going up to 0.0 dB.
Check the numerical peak level indicator above the meter in the channel strip.

Making the track ready for recording

1. Make sure the Transport panel is visible.
If not, pull down the Transport menu and select the "Transport Panel" item at the top.



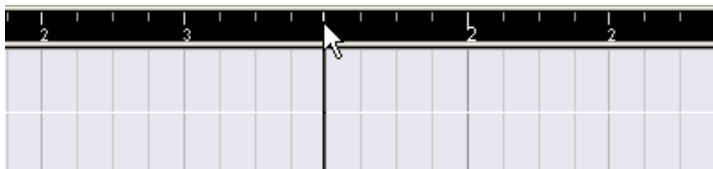
The Transport panel

2. Make sure the buttons on the Transport panel are set up like this:



If any of these buttons are lit, click on them to deactivate them.

3. Click in the ruler (the time scale area above the track in the Project window), at the position where you want to start recording.
When you click, the project cursor (the black vertical line) is automatically moved to the click position. In our example, recording will start from the project cursor position.



Setting the project cursor position in the ruler.

4. To set recording to start at the cursor position, pull down the Transport menu and make sure the item "Start Record at Left Locator" is deactivated (unticked).

You are ready to record!

Recording

1. Start recording by clicking the Record button on the Transport panel. The project cursor will start moving.
2. Play your instrument, etc. During recording, a rectangle will appear, covering the recorded area. This is the recorded audio event.
3. When you are done, click the Stop button on the Transport panel. Recording stops. Cubase SX will calculate a waveform image of your recording and display it in the audio event.



4. If you are done with recording, click the Record Enable button in the area to the left of the track, so that it goes dark.

Playing back what you just recorded

1. Move the project cursor to the beginning of the recorded audio event. This could either be done by clicking in the ruler, or by using the Rewind button on the Transport panel.
2. Click the Play button on the Transport panel. Your recording will be played back.
3. When you are done, stop playback by clicking the Stop button on the Transport panel.

Recording more events

At this point, you may want to continue recording audio, on the same track or on a new track.

Recording more on the same track

To record more audio on the same track, move the project cursor to a new start position and proceed as when you recorded the first time.

-
- ❑ **It is possible to record audio events that overlap each other, but only the visible events (the events at the top) will be heard when you play back.**
-

Recording a new audio track

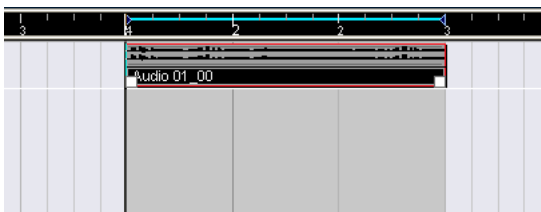
This example shows how to record a new audio track, while listening to the first recording.

1. Create a new audio track by using the “Add Track” submenu on the Project menu.
2. Decide whether you want the new track to be stereo or mono by using the Stereo/Mono switch in the area to the left of the track.
3. Pull down the Devices menu and open the Mixer.
As you can see, a new channel strip has been added to the Mixer.
4. Use the Input pop-up menu at the top of the channel strip to make sure that the correct audio input is selected for the new track.
If the audio source is another than the one you first recorded, you need to check the input level again – see [page 72](#).
5. In the Project window, record enable the new track by clicking its Record Enable button.
Make sure that the Record Enable button for the first track is disabled – otherwise you will be recording on both tracks at the same time.
6. Move the project cursor to the desired start position.
7. Activate recording by clicking the Record button on the Transport panel.
While you are recording, the first audio track is played back.
8. When you are done, click the Stop button on the Transport panel.

Playing back in a cycle

You could continue starting and stopping playback this way, moving the project cursor manually each time. However, if you want to try out some mixing features (see the “Mixing” chapter), it is more practical to have Cubase SX play back your recorded audio repeatedly, over and over again:

1. Click on the recorded audio event to make sure it is selected.
A selected audio event has a red border and blue handles at its beginning and end.
2. Pull down the Transport menu and select “Locators to Selection”.
This moves the left and right locator (two special Cubase SX markers) to the beginning and end of the selected audio event, respectively. In the ruler, the area between the left and right locator is indicated by a green line.



3. Click the Cycle button on the Transport panel so that it lights up.



4. Move the project cursor to the beginning of the recording and click Play.
Playback starts. When the project cursor reaches the end of the recording (the right locator), it will immediately jump back to the left locator and continue playback. When you're done, click the Stop button on the Transport panel.

7

**Tutorial 2: Recording and
playing back MIDI**

About this chapter

This chapter describes the basic operations for recording and playing back MIDI. For a full description of MIDI recording please see the chapter “Recording” in the Operation Manual.

Before you start

This chapter assumes that you have correctly connected your MIDI equipment according to the instructions in [the chapter “Setting up your system”](#) in this book.

This tutorial connects to the previous chapter, so if you followed the instructions there, you should now have recorded two audio tracks.

About MIDI Thru

The normal way to work with MIDI is to have MIDI Thru activated in Cubase SX, and Local Off selected in your MIDI instrument(s). In this mode, everything you play during recording will be “echoed” back out again on the MIDI output and channel selected for the recording track.

1. Pull down the File menu and open the Preferences dialog (MIDI page).
2. Make sure the option “MIDI Thru Active” is activated, and then follow the steps below.

Setting up for recording MIDI

Creating a MIDI track

To create a MIDI track, proceed as follows:

1. Pull down the Project menu, and select “Add Track”.
A submenu appears.
2. Select MIDI from the submenu.
A MIDI track is added to the Track list.

Setting the MIDI input

1. To set the MIDI input for a track, pull down the “in:” pop-up in the Track list and select an input.
The available MIDI inputs are shown. The items on the menu depend on the type of MIDI interface you are using etc. You can set the MIDI input independently for each track.



Click here to set the MIDI input.

- Record enable the MIDI track by clicking the corresponding button in the Track list.

MIDI Thru is automatically activated when the track is record enabled.



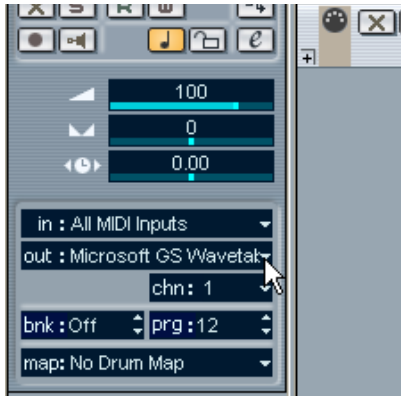
Record enabling the track in the Track list. This can also be set in the Inspector area to the left.

- Play a few notes on your MIDI instrument, and check the level meter in the Track list to make sure that the MIDI signal is received. If not, check that you have correctly set up your MIDI system, as described on [page 35](#).

Setting the MIDI output and channel

1. To set the MIDI output for a track, pull down the “out:” pop-up in the Track list and select the output to which you have connected your MIDI device.

The available MIDI outputs are shown. The items on the menu depend on what type of MIDI interface you are using etc.



Click here to set the MIDI output.

2. To set the MIDI channel for a track, use the MIDI “chn:” pop-up in the Track list.

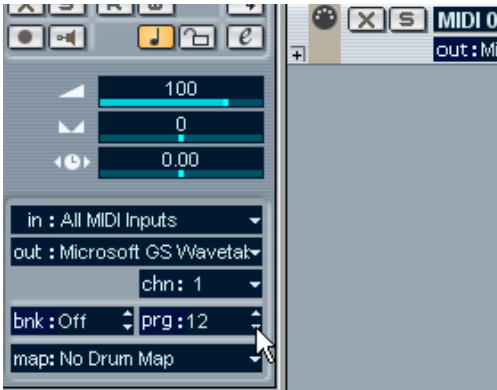
If you set the track to MIDI channel “ANY”, it will transmit MIDI on the channel(s) used by the MIDI input device (the MIDI instrument you play during recording).



Click here to set the MIDI channel.

Selecting a sound

- To select different sounds, you can send Program Change messages to your MIDI device using the “prg:” value field in the Track list.



Click here to select a Program number.

Program Change messages give access to 128 program locations. If your MIDI instruments have more than 128 programs, Bank Select messages (set in the “bnk:” value field) allow you to select different banks, each containing a number of programs.

- Play a few notes on your MIDI instrument to check that the selected sound program is correct.

Recording MIDI

1. Make sure the track is record enabled and correctly set up, as described in the previous section.
2. Make sure that Cycle and Punch In/Out is deactivated on the Transport panel.
3. To set recording to start at the cursor position, pull down the Transport menu and make sure the item “Start Record at Left Locator” is deactivated (unticked).
4. Place the project cursor at the position where you wish to begin recording.
For example, you could try recording a MIDI part together with the audio tracks that you recorded in the previous tutorial.
5. Activate Record on the Transport panel, and play a few notes on your MIDI instrument.
When you finish recording, a MIDI part containing MIDI events is created in the Project window.
6. If you are done with recording, click the record enable button in the area to the left of the track, so that it goes dark.

Playing back what you just recorded

1. Move the project cursor to the beginning of the recorded MIDI part.
This could either be done by clicking in the ruler, or by using the Rewind button on the Transport panel.
2. Click the Play button on the Transport panel.
Your recording will be played back.
3. When you are done, stop playback by clicking the Stop button on the Transport panel.

Playing back in a cycle

You could continue starting and stopping playback this way, moving the project cursor manually each time. However, it is more practical to have Cubase SX play back your recorded parts and events repeatedly, over and over again:

1. Click on the recorded MIDI part to make sure it is selected.
A selected MIDI part has a red border and white handles at its beginning and end.
2. Pull down the Transport menu and select “Locators to Selection”.
This moves the left and right locator (two special Cubase SX markers) to the beginning and end of the selected MIDI part, respectively. In the ruler, the area between the left and right locator is indicated by a blue line.
3. Click the Cycle button on the Transport panel so that it lights up.

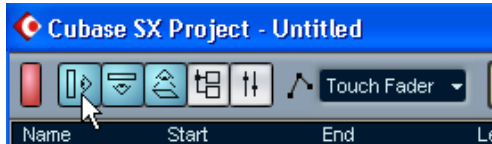


4. Move the project cursor to the beginning of the recorded part and click Play.
Playback starts. When the project cursor reaches the end of the recording (the right locator), it will immediately jump back to the left locator and continue playback. When you're done, click the Stop button on the Transport panel.

Transposing the MIDI track

Let's try transposing the MIDI track, using Track Parameters in the Inspector:

1. Make sure that the Inspector button on the toolbar is lit.



2. Select the MIDI track by clicking on it in the Track list. The parameters for the MIDI track is now shown in the Inspector area to the left.



3. Click on the Track Parameters tab in the Inspector.



Click here...



...to open the Track Parameter settings in the Inspector.

4. Click on the blue value line in the Transpose field in the Inspector.
A fader appears, allowing you to transpose the MIDI part up or down in semitones. You can also use the up/down arrows to the right in the value field to set transpose values.



Click here...



...to set a transpose value for the MIDI part.

5. Start playback to hear the transposed MIDI part.

8

Tutorial 3: Mixing

About this chapter

This chapter contains basic descriptions of the Mixer, and how to use the effects and automation in Cubase SX. The purpose is to introduce the basic elements involved when mixing audio and MIDI. However, for complete descriptions of these three areas, you should refer to the chapters “The Mixer”, “Audio Effects” and “Automation” in the Operation Manual, as there are a lot of settings, options and methods that are not mentioned here.

Before you start

-
- **Although MIDI tracks are also shown in the Mixer, and the basic mixer operations such as setting level and pan, using mute and solo and automation etc. are the same for both audio and MIDI channel strips, you should refer to the Operation Manual chapter The Mixer for descriptions of MIDI mixing specifics.**
-
- This chapter is a continuation of the previous two tutorials, so it is assumed that you have recorded events on two audio tracks, and a MIDI part.

Opening the Mixer

To open the Mixer, select it from the Devices menu.



The Mixer with two audio channels and one MIDI channel strip. To the right is the Master gain fader.

The Mixer window is similar in appearance to a conventional hardware mixer, with a level fader for each audio and MIDI channel strip. The Mixer will contain the same number of channels as the number of audio and MIDI tracks present in the current project. Beside each channel's level fader, there is a level meter which indicates the signal level of audio events on the corresponding audio track during playback. For MIDI tracks, the meters show velocity levels, not signal level.

Setting the level

1. With the Mixer window still open, activate Cycle playback (see previous tutorials).
Make sure that you have a Mixer channel playing back a signal in view.
2. Click on the level fader handle and drag down or up.
You will hear the volume of the playback signal being changed. The meters will also reflect the change of level for audio tracks. As MIDI channel strip meters indicate velocity levels of the MIDI events on the track, the meters will not change if you pull down the fader, but the volume will.

Setting pan

Pan sets the left/right position in the stereo field.

- Click on the blue line in the Pan control box above the fader, and drag to the left or right.
You will hear the stereo balance being changed.



Adjusting pan for one of the audio channels.

Using Mute and Solo



Each audio and MIDI channel strip has a Mute and a Solo button, allowing you to silence one or several channels. The following applies:

- The Mute button silences the selected channel.
Several channels can be muted simultaneously. A muted channel is indicated by a lit Mute button. To unmute a muted channel, click the Mute button again.
- The Solo button mutes all other channels, so you only hear the selected channel.
A soloed channel is indicated by a lit Solo button. Several channels at a time can be soloed. To unsolo a soloed channel, click the Solo button again.

Adding EQ to an audio channel

The Mixer parameters differ between audio and MIDI channels. EQ, for example, is not available for MIDI channel strips.

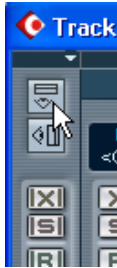
Equalization shapes the tone of a signal by boosting and/or cutting selected frequencies. To add EQ to an audio channel, proceed as follows:

1. Locate the leftmost panel in the Mixer (called the Common panel).

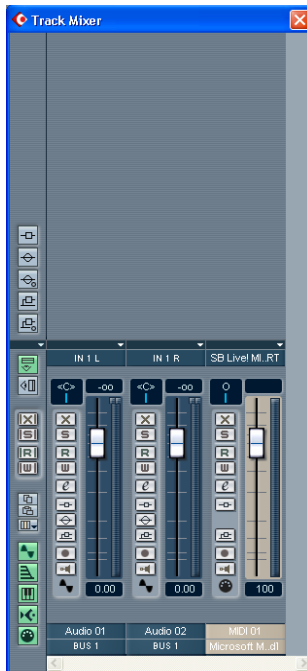


The Common panel

2. Click the button at the top of the Common panel so that it lights up. This opens a new area above the "normal" Mixer channel. For the time being, this expanded area is empty.



Clicking here...

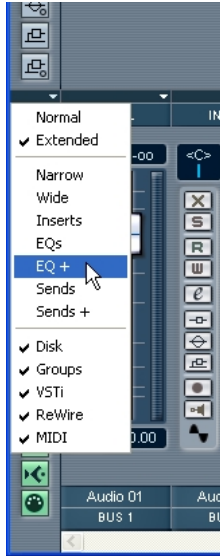


...opens the Expanded view of the Mixer.

3. Click the arrow pop-up in the middle of the Common panel, and select “EQ +” from the menu.



Click the View Options pop-up.



Select the “EQ +” item from the pop-up menu...



...to open EQ sections in the Expanded view of the audio channel strips.

4. Activate as many EQ modules as you need (up to four) by clicking the On/Off buttons.



Activating EQ modules.

5. Set the parameters for the activated EQ module(s) by using the knobs.
For each module, the outer ring of the dial sets the frequency, the inner ring sets the gain, and the small dial sets the Q parameter. See the Operation Manual chapter “The Mixer” for more details.

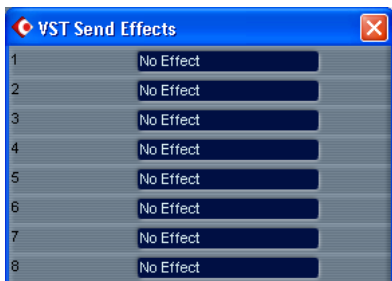
Adding audio effects

Send effects

When you use send effects, audio is routed through the effect processors via independent effect sends for each channel, just like on a “real” physical mixer.

Adding a Send effect

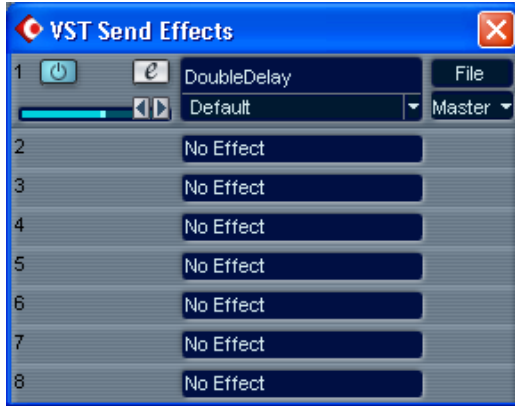
1. Pull down the Devices menu and select “VST Send Effects”.
An “effect rack” window appears, with eight slots, all empty.



2. Click in the black field for the effect slot at the top (in the area that says “No Effect”).
A pop-up menu appears, listing all available effect plug-ins. The effects are organized in subfolders according to the effect type.

3. Select “DoubleDelay” in the “Delay” subfolder.

The effect is loaded into the first effect slot. The lit on button indicates that the effect is activated, and the effects control panel is opened.



- You can make settings for the effect later by clicking the “E” button, but for now we will just use the default settings so you can close the control panel.

Activating Sends in the Mixer

Sends can be set up in the extended view of channel strips in the Mixer.

1. Click the arrow pop-up in the middle of the Common panel, and select “Sends +” from the menu.



Sends in the extended channel strip.

2. Click in the “No Effect” field and select “DoubleDelay” from the pop-up menu that appears.
The send is now activated, as indicated by the lit power button.
3. Start playback and turn the dial clockwise.
You will hear the effect being added to the channel being played back.

Automating a fader

Virtually every Mixer and effect parameter can be automated. Each channel has an automation track which is hidden by default. When you use Write automation the automation events that are generated are recorded on the corresponding channel's automation track. These events can be viewed and edited on automation "subtracks", one for each channel parameter that has been automated. Automation sub-track editing is described in the chapter "Automation" in the Operation Manual.

In the following section, we will go through the steps of automating a fader in the Mixer using Write/Read automation.

About Write/Read automation

There are separate Write (W) and Read (R) buttons for each channel in the Mixer.



The Write (W) and Read (R) buttons for a channel in the Mixer.

- If you activate Write for a channel, all mixer parameters you adjust during playback for that specific channel will be recorded.
- If you activate Read for a channel, all your recorded mixer actions for that channel will be performed during playback, just like you performed them in Write mode.

There are also global Read/Write buttons in the Mixer's Common panel, the leftmost panel in the Mixer.



- When Write All is activated, all Mixer actions you perform during playback (for all channels) will be recorded as Automation Events.
- When Read All is activated, all your recorded mixer actions for all channels will be performed during playback.

An example

For a quick step by step description of how to use Write/Read automation to automate a fader, proceed as follows:

1. Activate Write automation for a channel by clicking the “W” (Write) button.
The button lights up.
 2. Start playback.
 3. Move the channel fader up or down.
 4. Click Stop on the Transport panel, and go back to the position where you activated playback.
 5. Click on the Write button to deactivate Write mode.
 6. Click on the Read button so that it lights up.
Read mode is now activated.
 7. Start playback.
The Volume fader will now mirror the actions performed while in Write mode.
- To redo anything that was recorded, activate Write mode again, and start playback from the same position.
 - You may have Write and Read activated simultaneously, if you want to watch and listen to your recorded mixer actions while you’re recording fader movements for another mixer channel, etc.

9

**Tutorial 4: Editing in the Project
window**

About this tutorial

This tutorial describes some of the procedures for editing in the Project window. Typically, this is where you do the “large-scale” editing and re-arranging of events. Again, please note that this tutorial only describes some of the many functions in the Project window – for details and full descriptions, see the Operation Manual.

Preparations

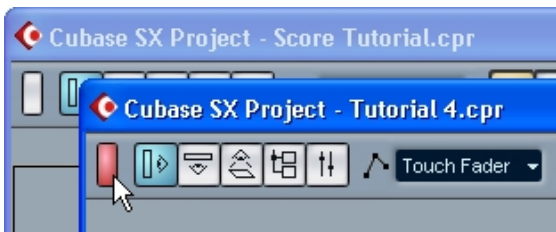
This tutorial is based on an existing file, included on the Cubase SX CD. If you have followed the previous chapters, you will have a project open with some recorded audio and MIDI material. You can either close that project or keep it open in the background – it doesn’t matter.

1. Insert the Cubase SX CD and open it for browsing.
2. On the CD, open the “Demo Projects” folder and locate the folder “SX Tutorial”.
3. Copy this folder to the computer’s hard drive (for example in the “My Documents” folder).
4. Open the copied folder and double click on the file “Tutorial 4.cpr”.
Whether the file name extension is shown or not depends on your computer settings.

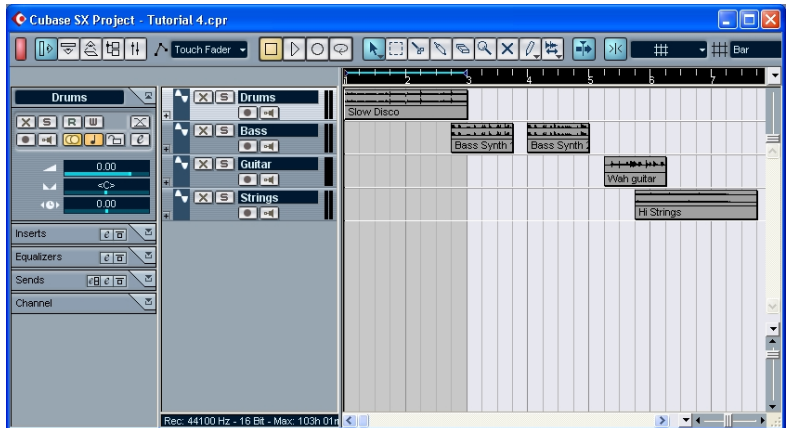
Now the “Tutorial 4” project opens in Cubase SX.

- **If you had another project open, make sure the Tutorial 4 project is at the front and click the Activate button in the upper left corner of the Project window so that it is lit (red).**

This indicates which project is active when you have several projects open.



Overview



As you can see, this project contains four audio tracks (drums, bass, guitar and strings) with a few events. Try playing back the project from the beginning!

Well, it's obvious that things are pretty disorganized here; the audio events do not fit together very well. The goal of this tutorial is to make some sense out of this, by editing in the Project window.

-
- While this tutorial describes editing audio events, most of these procedures can also be used for editing MIDI parts in the Project window. See the Operation Manual for details.
-

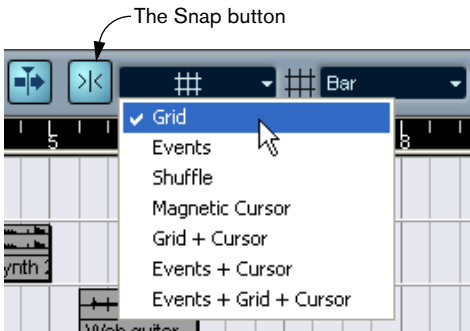
Moving and copying events

Let's start by making the events start at the same time:

1. Select the Arrow tool by clicking its icon in the toolbar.



2. Make sure the Snap button is activated and the Grid option is selected on the Snap pop-up menu:



Snap helps you find the correct positions when moving and editing, by making objects “magnetic” to certain positions (or to other objects). When the Grid option is selected and the Grid pop-up menu to the right is set to “Bar” as in the figure above, you can only move objects to the start of bars.

3. Click on the first Bass Synth event, and drag it all the way to the left. Now it will start at the same time as the “Slow Disco” drum event.
4. Drag the next Bass Synth event so that it starts where the first one ends.
5. In the same way, drag the Guitar event and the Strings event so that they start at the beginning too.
6. Move the project cursor to the start of the project and play back.

OK, that's much better, but there are still things to fix. For example, the Wah guitar event ends after one bar, while the other events last two bars. Let's add a copy of the guitar event:

7. Press [Alt], click the Wah guitar event and drag it one bar to the right. A copy of the event is created.

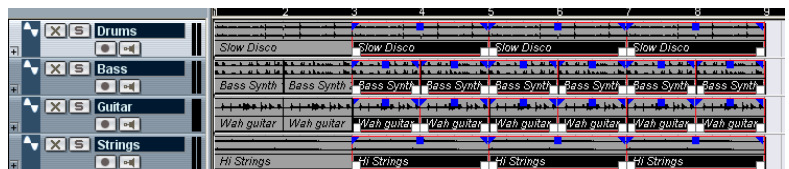


As you can see, the names of the Wah guitar events are shown in italics. This indicates that these are shared copies – they use the same audio clip.

So now we have a two-bar, slightly cheezy disco pattern. Now we could just activate Cycle playback and listen to these two bars over and over again. Instead we'll use the Repeat function:

8. Select all events by pressing [Ctrl]-[A] on the computer keyboard. This is the same as using the Select All function on the Edit menu. You can also select multiple events by [Shift]-clicking each event in turn or by dragging a selection rectangle around them with the Arrow tool.
9. Pull down the Edit menu and select "Repeat...". A dialog appears.
10. Set the "Count" parameter to 3 and click OK.

All events are repeated three times, for a total of four two-bar patterns. This is just the same as copying by [Alt]-dragging, but much quicker, especially if you need several copies after each other.



At this point, our song is eight bars long. It could use some variation!

Muting and erasing events

A quick way of adding variation is to remove stuff. We could for example let the different instruments appear gradually instead of all at the same time:

1. Select the Mute tool from the toolbar.



2. Click on the first two Bass Synth events, and then on the first two Hi Strings events.

They are “greyed out” indicating that they’re muted.

3. Start playback from the beginning.

Fine, now the bass appears at bar 3 and the strings at bar 5.

The Mute tool is very useful for trying out variations, etc. However, now that we’re sure that we want to remove those events, we might as well delete them for real:

4. Select the Eraser tool from the toolbar.



5. Click on the four muted events.

They are removed.

6. While you’re at it, remove the two first Wah guitar events too.



Splitting and resizing events

Well, maybe that wasn't such a good idea after all – it may have been better with some guitar from the beginning, but maybe with some variation. Here's an idea:

1. Pull down the Edit menu and select Undo.
The last deleted guitar event reappears.
2. Select Undo again.
The first guitar event appears.

Cubase SX has unlimited undo – you could go back all the way to the start of this tutorial by undoing your actions, if needed. However, we will only need one guitar event for this:

3. Select Redo from the Edit menu.
The first guitar event is removed again.
4. Select the Scissors tool from the toolbar.



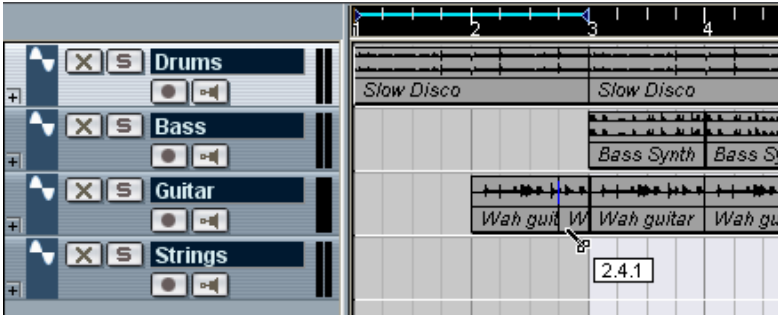
Now, the idea is to split the Wah guitar event into smaller sections, to vary them. However, currently you can only make edits at whole bar positions because the Snap Grid is set to “Bar”.

5. Pull down the Grid pop-up menu on the toolbar and select “Beat”.
Now you will be able to split or position events at each beat (quarter note) position.



- Click with the Scissors tool at fourth beat in the Wah guitar event (at the beat just before the start of bar 3).

The event is split into two; one three beat long and another one beat long. If you were to play back this section now, you wouldn't hear any difference, though.



- Select the Arrow tool again.
- Drag the first guitar event two beats to the left and play back.
Not too bad, but we could use a little more guitar in the second bar:
- Position the pointer in the lower left corner of the second guitar event (the one bar long event).
The pointer is shown as a double arrow, indicating that you can resize the event by dragging.
- Click and drag one beat to the left.

What you did was to resize the event. In effect, you make the event start playing earlier in the audio clip. Events could be viewed as "windows" looking into an audio clip – by resizing an event you get to see more or less of its clip.



OK, that brought some variation to the start of the "song".

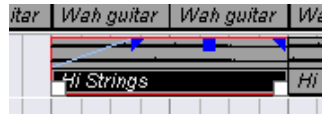
Adding a fade

The strings in bar 5 appear rather abrupt – they would benefit from being faded in:

1. Click on the first Hi Strings event with the Arrow tool.
The event is selected. The blue handles at the top are fade and volume handles.



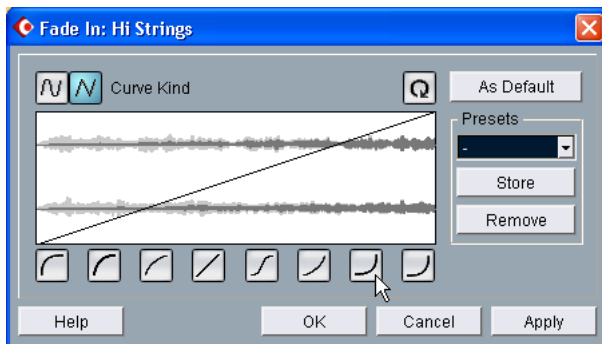
2. Click at the upper left handle and drag it to the right.
A thin blue line indicates the fade-in.



3. Play back to hear the fade.
You can adjust the length of the fade by dragging the handle.

It's not bad, but it would be even better if the fade-in was slower at the beginning and quicker at the end (i.e. more exponential).

4. To change the shape of the fade, double click on the fade line.
This opens a dialog in which you can adjust the fade settings:

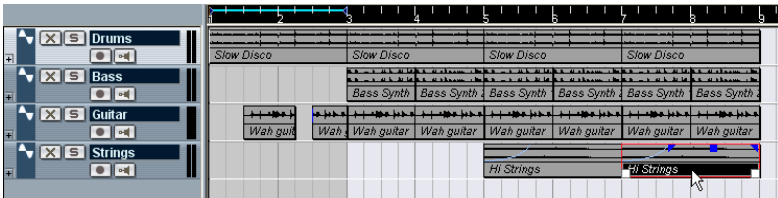


5. Click one of the buttons to the right below the curve display to get a more exponential fade curve.

- Click OK to close the dialog and play back the section again.

Now we would want the same fade to be applied to the second string event. While we could repeat the settings manually, it's probably easiest to copy the faded event:

- Remove the second string event by clicking it with the Eraser tool.
- Press [Alt] and drag the first string event two bars to the right. As you can see, the copied event retains the fade you created.



That concludes this tutorial!

Now you've tried some of the many editing features in Cubase SX's Project window. If you like, you could use your new skills to change the end of the eight-bar "song", which ends rather abruptly now. For example, you could apply fade-outs, resize events to make the different instruments end one by one, or create more copies to make the song longer. Or, you can move on to the next chapter, in which we'll take a look at VST Instruments.

10

**Tutorial 5: Using VST
Instruments**

About this tutorial

This tutorial shows you how to set up and use VST Instruments – software synthesizers (or other sound sources) that are contained within Cubase SX. For detailed descriptions of procedures and the parameters of the included VST Instruments, see the Operation Manual.

Preparations

Just like the previous chapter, this tutorial is based on an existing file, included on the Cubase SX CD.

- **Below, we assume that you have followed the previous tutorial and copied the “SX Tutorial” folder to your hard drive.**

If not, please see [page 108](#).

1. Close any open projects, by making their Project windows active and selecting “Close” from the File menu.

This is just to make things clear and avoid confusion – you can have several projects open in Cubase SX if needed.

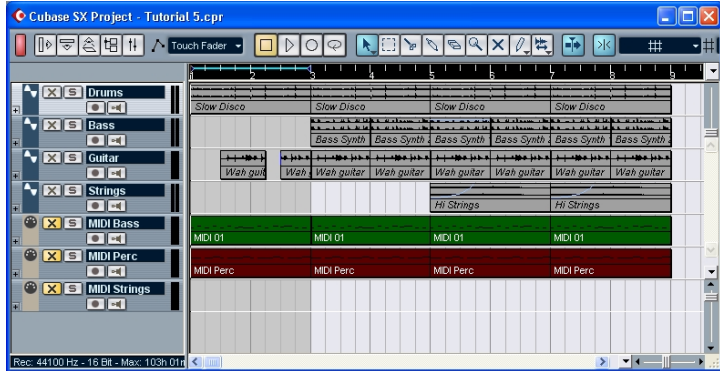
2. Pull down the File menu and select Open.

3. In the file dialog that appears, navigate to the “SX Tutorial” folder on your hard drive, select the file “Tutorial 5.cpr” and click Open.

- **At this point, a dialog may appear asking you to resolve missing MIDI outputs.**

This is because you probably don't have the same MIDI output configuration as the creator of this project had. However, just click OK to close this dialog for now.

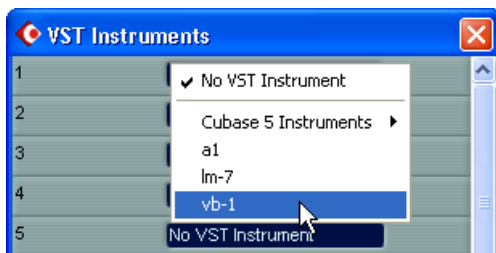
The “Tutorial 5” project opens. If you followed the previous tutorial, this will look oddly familiar... It’s the same eight-bar “song” that you created in tutorial 4, but with three extra tracks.



Activating a VST Instrument

The three tracks at the bottom of the track list are MIDI tracks, as indicated by the MIDI connector symbol in the track list. As you can see, one of the tracks is called “MIDI Bass” – our first goal in this tutorial is to replace the “Bass” audio track with a bass sound from a VST Instrument.

1. Pull down the Devices menu and select VST Instruments.
The “rack” that appears can contain up to 32 VST Instruments. However, the maximum number of instruments depends on your computer performance and the complexity of the instruments.
2. Click in the first VST Instrument slot.
A pop-up menu appears, listing the included VST Instruments.



3. Select “vb-1”.
The VB-1 virtual bass unit is loaded.
4. Make sure the “power button” to the left in the slot is activated (lit).
5. If you like, click the Edit (“e”) button in the slot to bring up the control panel for the instrument.
Since we cannot hear the instrument yet, there’s not much point in making settings though.



You can keep the control panel open or close it – it doesn't matter, as long as the VST Instrument is activated (power button is lit).

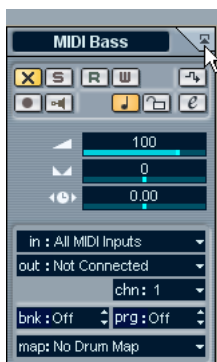
OK, so now we have activated a VST Instrument. Now you need to route a MIDI track to the instrument.

Routing

1. Go back to the Project window and select the “MIDI Bass” track by clicking in the Track list.
2. Make sure the Inspector is open.
The Inspector is the area to the left of the Track list. If it's not visible, click the Show Inspector button on the toolbar:



3. Make sure the top section of the Inspector is shown.
If not, click on the tab in the upper right corner of the Inspector:



The Inspector shows the settings for the selected track – in this case, the MIDI Bass track.

4. Pull down the “out:” pop-up menu in the Inspector.
This shows all available MIDI outputs, including any MIDI interfaces you have installed, any audio card-based synthesizers in your computer and all activated VST Instruments.
5. Select the VB-1 from the pop-up menu.
The track is now routed to the VB-1. This VST Instrument receives MIDI on any channel, so you don't have to care about the MIDI channel setting. However, some VST Instruments are multitimbral and can receive different MIDI data on several different channels – if that had been the case you would have had to set the chn setting properly.

Playing back

Now it's time to replace the audio bass with the VB-1:

1. Click the Mute ("X") button in the Track list for the "Bass" track.
This mutes (silences) the track.
2. Click the lit Mute button in the Track list for the "MIDI Bass" track so that it goes dark.
You have now unmuted the MIDI Bass track.
3. Start playback from the beginning of the song.

You should now hear the VB-1 play the bass line. You may have to adjust the volume so that the VST Instrument matches the audio tracks:

4. Pull down the Devices menu and select Track Mixer.
The Mixer window appears. As you can see, there are separate mixer channel strips for the four audio tracks, the three MIDI tracks and the VB-1.



The mixer channel strip for the VST Instrument.

5. Use the volume fader in the VB-1 channel strip to adjust the level of the bass line.

Adding another instrument

The next MIDI track is called “MIDI Perc” and contains a MIDI percussion pattern. This is an excellent opportunity to check out another of the included VST Instruments – the LM-7 drum machine:

1. Open the VST Instruments window from the Devices menu.
2. Pull down the pop-up menu for the next slot and select “lm-7”.
Make sure its On button is activated.
3. In the Project window, click the Mute (“X”) button for the MIDI Perc track so that it goes dark.
4. Select the track by clicking in the Track list.
5. Use the “out:” pop-up menu in the Inspector to route the track to the LM-7.
As soon as you activate a new VST Instrument, it is added to the list of available MIDI outputs in Cubase SX.

Now, let’s listen to the percussion track all by itself:

6. Click the Solo (“S”) button in the Track list for the MIDI Perc track.
All other tracks are muted (their Mute buttons light up).



7. Start playback.

Hmmm, all that can be heard is a lone cowbell – but the indicator in the Track list shows that many more MIDI notes are being played! The problem here is that the wrong program (drum set) is selected for the LM-7. For this track to play back properly, we should choose a percussion set. This could be done directly in the Inspector or the VST Instruments window, but let's check out the control panel for the LM-7 instead:

8. Click the Edit (“e”) button for the track in the Inspector (near the upper right corner).

Since the track is routed to a VST Instrument, this opens the control panel for the instrument. This way, you don't have to go via the VST Instruments window to make settings for a VST Instrument.



The LM-7 panel. The labels underneath the buttons show the available sounds in the selected program – not many percussion sounds here.

9. Pull down the pop-up menu at the top of the panel and select “Percussion”.
10. Start playback again.
That's more like it.

11. Go back to the Project window and click the lit Solo button for the track to turn off the Solo function.
All tracks are unmuted again – except the tracks that were muted from the beginning (Bass and MIDI Strings).
Again, you may want to adjust the volume of the LM-7. If you open the Track Mixer, you will find that a new channel strip has appeared – use the fader as before.

Playing a VST Instrument in real time

The next part of this tutorial requires two things:

- **That you have a MIDI keyboard or similar connected to a MIDI input on your MIDI interface.**
- **That you are using audio hardware with fairly low latency (see [page 39](#)).**
If the latency is too big, it will be almost pointless to try to play a VST Instrument in real time – the delay between when you press a key and when you hear the sound will be too large. If you're uncertain about your latency, just proceed with the steps below – you'll find out whether it's OK or not.

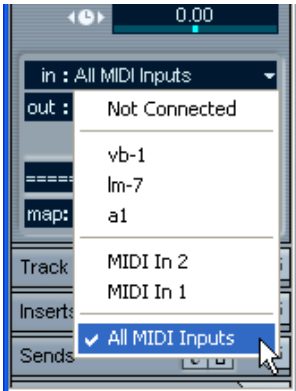
Now we'll make use of the third included VST Instrument: the a1 synthesizer. Here, we will use it with a string sound (replacing the "Strings" audio track) but you can of course choose another sound if you like.

1. Open the VST Instruments window from the Devices menu.
2. Pull down the pop-up menu for the third VST Instrument slot and select "a1".
Make sure its power button is activated.
3. In the Project window, mute the "Strings" track and unmute the "MIDI Strings" track, by clicking their respective Mute buttons in the Track list.
4. Select the MIDI Strings track.
5. In the Inspector, pull down the "out:" pop-up menu and select "a1".

This routes the track to the a1 synthesizer. However, now we also need a MIDI input, since you're going to play the VST instrument "live":

6. Pull down the "in:" pop-up menu and make sure the correct MIDI input is selected.

This should be the MIDI input to which your keyboard (or other controller) is connected. If in doubt, you can select the "All MIDI Inputs" option, in which case the track will accept MIDI from all available inputs.



7. Click the monitor button in the Track list for the MIDI Strings track, so that it lights up.

When the monitor button is activated, incoming MIDI is sent directly to the selected output – in this case the a1 synthesizer.

8. Try playing your MIDI keyboard.

You should hear the sound from the a1. However, you may not want to use the default, first sound:

9. Use the pop-up menu below the "chn:" setting in the Inspector to select a suitable synth sound.

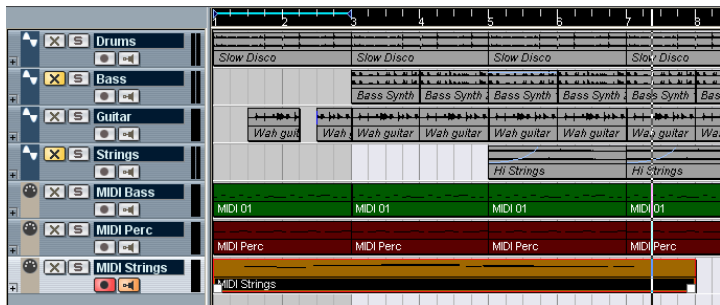
Since we're supposed to replace the Strings part, you may for example want to try the "Solina WMF" patch (under the PAD heading).

10. Start playback and play along!

Recording

When you've figured out something to play, it's time to record this. Recording for a VST Instrument is done just like "normal" MIDI recording:

1. Click the record enable button for the MIDI Strings track.
2. Pull down the Transport menu and make sure the "Start Record at Left Locator" setting is turned off.
When this is turned off, recording will start at the current project cursor position, which is probably the easiest method at this point.
3. Move the project cursor to where you want the recording to start.
4. Click the Record button on the Transport panel to start recording.
5. Play along with the background tracks.
6. When you're done, click Stop.
A MIDI part has been created on the MIDI Strings track.



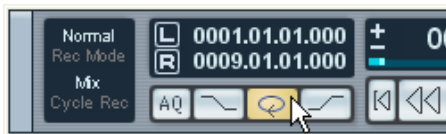
7. Play back to listen to your recording.
If you want to try again, select Undo from the Edit menu and proceed from step 3 above.
8. When you're done, click the record enable button for the track to deactivate it.

Making parameter settings

After you've recorded your synth or string part (and possibly adjusted its volume in the Mixer) you may want to adjust the actual sound as well. This can either be done by selecting another patch in the Inspector or VST Instruments window, or by using the synth parameters in the control panel for the a1.

First, you may want to set things up so that the whole piece plays back over and over again.

1. In the Project window, press [Ctrl]-[A] to select all events and parts.
2. Pull down the Transport menu and select "Locators to Selection". This moves the left locator to the start of the first event and the right locator to end of the last.
3. Make sure Cycle is activated on the Transport panel, and start playback. The whole "song" will now play back repeatedly.



Cycle activated on the Transport panel.

4. Click the Edit ("e") button in the Inspector for the MIDI Strings track, to bring up the a1 control panel.



5. While the music is playing, try adjusting the parameters by clicking and dragging the controls in the panel.
The a1 is laid out much like a traditional analog synthesizer. You may for example want to adjust the Cutoff and Resonance settings in the Filter section.

Automating the changes

Just like other Track Mixer and effect settings in Cubase SX, parameter changes for VST Instruments can be automated. Proceed as follows:

1. Stop playback and move the project cursor to the start of the project.
2. Turn off the Cycle button on the Transport bar.
This is simply a “safety measure” – if you record automation in Cycle mode, you may accidentally overwrite parameter changes you have made on a previous Cycle lap.
3. Click the Write (“W”) button at the top of the a1 control panel.
This adds a plug-in automation track for the a1 in the Project window.



A new plug-in automation track is created for the VST Instrument.

4. Start playback.
5. Adjust the parameters you want – create filter sweeps, add modulations, etc.
6. When you’re done, click Stop.
7. Deactivate the Write (“W”) button at the top of the a1 control panel.
8. Click the Read (“R”) button next to it.
This makes the VST Instrument “read” the recorded automation during playback.

9. Start playback from the beginning of the project.

You will now see the controls moving, replicating your recorded parameter adjustments.

That concludes the VST Instrument tutorial! If you're satisfied with what you recorded, you may want to save the project by selecting Save from the File menu.

11

Editing audio

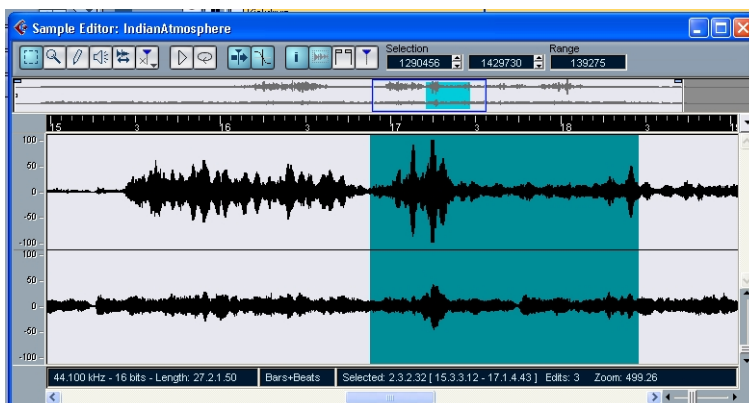
About this chapter

This chapter describes the basic procedures for editing audio in the Sample Editor and how to use the Process functions. For a full description of all settings, options and operations available, please refer to the chapters “The Sample Editor” and “Audio Processing and Functions” in the Operation Manual.

The Sample Editor

The Sample Editor allows you to edit audio, by cutting and pasting, removing, drawing or processing audio data. This editing can be called “non-destructive”, in the sense that you can undo changes or revert to the original versions at any point, using the Offline Process History (see [page 138](#)).

What is shown in the Sample Editor?

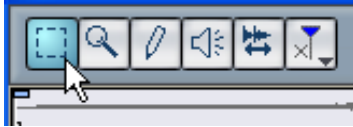


As described on [page 150](#), an audio event plays a section of an *audio clip*. When you open the Sample Editor for an audio event, it will display the waveform image of the corresponding audio clip. Above the waveform display is the thumbnail display, which provides an overview of the whole clip, with a blue rectangle corresponding to the section currently shown in the waveform display. You can navigate by dragging or resizing the blue rectangle in the thumbnail display.

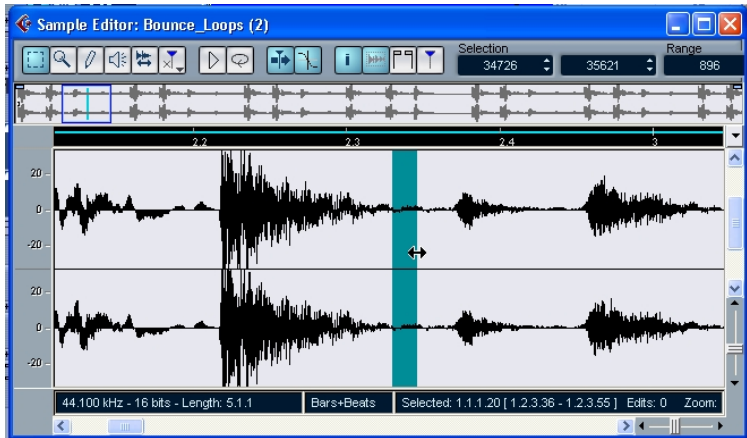
Editing audio in the Sample Editor - an example

This example describes how to remove a section of audio and insert it at another position, by using cut and paste in the Sample Editor:

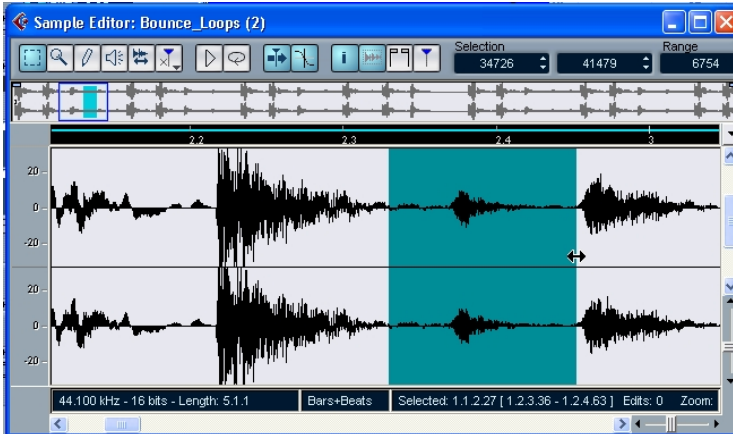
1. Open the Sample Editor by double clicking an audio event in the Project window.
2. Select the Range Selection tool by clicking its icon on the toolbar.



3. Select a section of the clip by clicking and dragging in the waveform display.

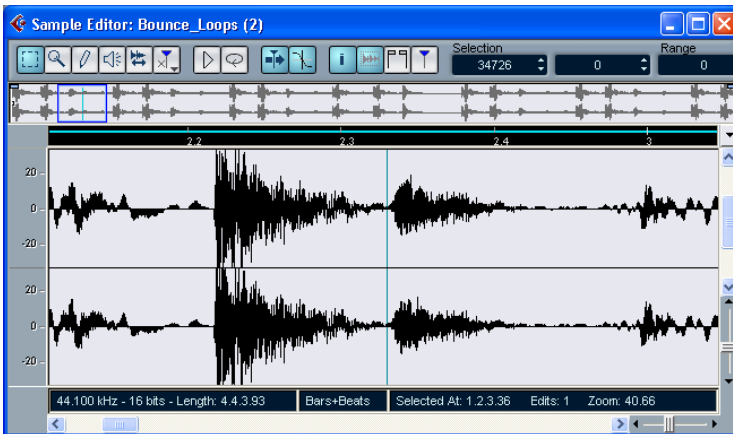


Click at the position you wish to start the selection and drag..



...to make a selection range.

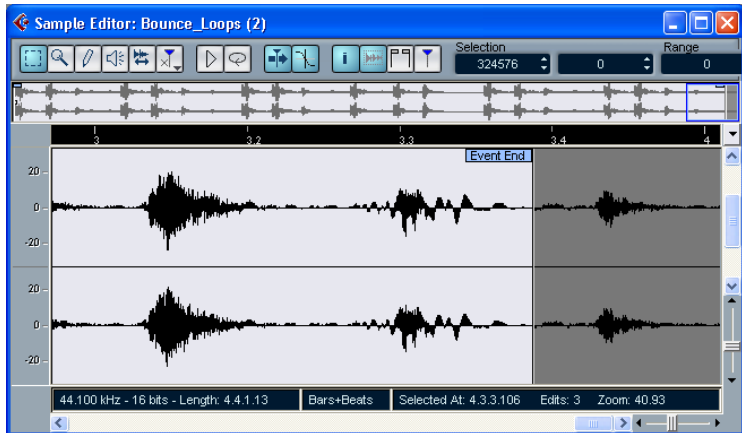
4. Release the mouse when the selection is complete.
You can adjust the selection by dragging its edges.
5. Select "Cut" from the Edit menu.
The selection is removed from the clip and moved to the clipboard.



The section to the right of the selection is moved to the left to fill out the gap.

Selecting “Paste” from the Edit menu will copy the data on the clipboard into the clip according to the following rules:

- If there is a selection in the editor, the pasted data will replace it.
 - If there is no selection (if the selection length is “0”), the pasted data will be inserted starting at the grey selection line.
The selection line can be placed at any position in the event by clicking with the mouse. The section to the right of the line will be moved to make room for the pasted material.
6. For this example, make the end of the event visible, either by using the scrollbar or by moving the blue rectangle in the thumbnail display, and click to place the selection line at the event end position.
 7. Now select “Paste” from the Edit menu.
The selection that was cut from the event is inserted at the position of the selection line.



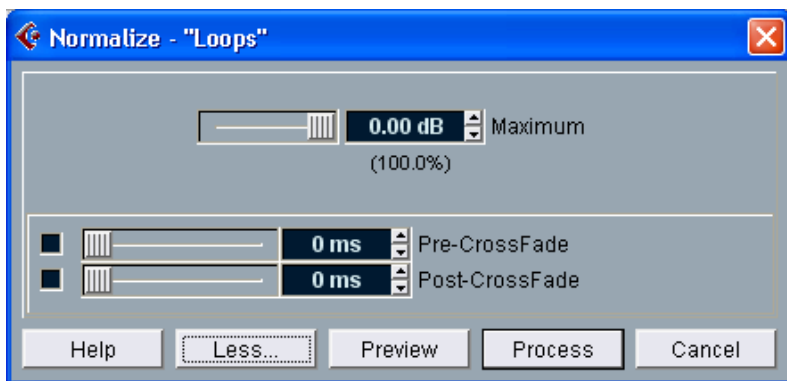
Processing audio

The Process submenu on the Audio menu contains a number of audio processing functions. The functions can be applied to selected audio events or clips, or to a selected range.

In this example, we will apply normalizing to a selected audio event. The Normalize function allows you to specify the desired maximum level of the audio. A common use for normalizing is to raise the level of audio that was recorded at too low an input level.

Proceed as follows:

1. Select an audio event by clicking on it with the Arrow tool in the Project window.
2. Pull down the Audio menu and select Process.
A submenu opens, containing all processing functions available.
3. Select “Normalize” from the submenu.
The Normalize dialog opens.



4. For this example, use the default “Maximum” setting of 0.00 dB.
- You can use the “Preview” button to listen to the result of the processing if you wish.
The processing will not be applied, just auditioned.
5. Click “Process” to apply the processing.
The audio event is normalized.

Applying an effect plug-in

As described on [page 100](#), you can add “real-time” effects in the Mixer. However, sometimes it is useful to apply an effect directly to an audio event or clip. This is done using the Plug-ins submenu on the Audio menu:

1. Select an audio event in the Project window.
In this example, we select the event that was normalized in the previous example.
2. Pull down the Audio menu and select Plug-ins.
A submenu appears, listing the installed effect plug-in folders. The effects are organized in these subfolders according to the effect category.
3. Select the “Flanger” effect from the Modulation subfolder.
The Flanger dialog appears.



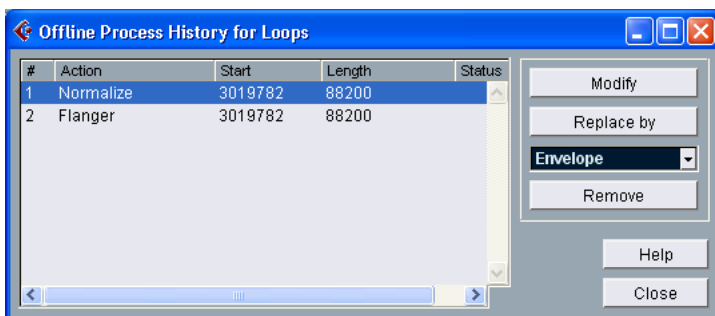
4. Use the parameters in the upper part of the dialog to set up the effect as desired.
Clicking the Preview button will let you audition the settings before actually applying the effect.
5. Click the “Process” button to apply the effect.

Using the Offline Process History dialog

The Offline Process History dialog allows you to remove or modify audio processing at any time. It is even possible to modify or remove some processing “in the middle” of the Process History, while keeping later processing! Whether this is possible or not depends on the type of processing performed, as described in the chapter “Audio Processing and Functions” in the Operations Manual.

In this example, we will remove the Normalize function, but keep the applied Flanger effect:

1. Select the audio event in the Project window.
2. Pull down the Audio menu and select “Offline Process History”.
The Offline Process History dialog appears. This contains a list of the processing functions applied to the audio clip, with the most recent operation at the bottom of the list.



3. Select the “Normalize” action by clicking in the list.
4. Click the “Remove” button.
You are asked whether you really want to remove the processing.
5. Click “Remove”.
The Normalize processing is removed, but the Flanger effect is kept.

12

Editing MIDI

About this chapter

This chapter describes the basic operations for editing MIDI in the Key Editor. For a full description of MIDI editing please refer to the chapter “The MIDI Editors” in the Operation Manual.

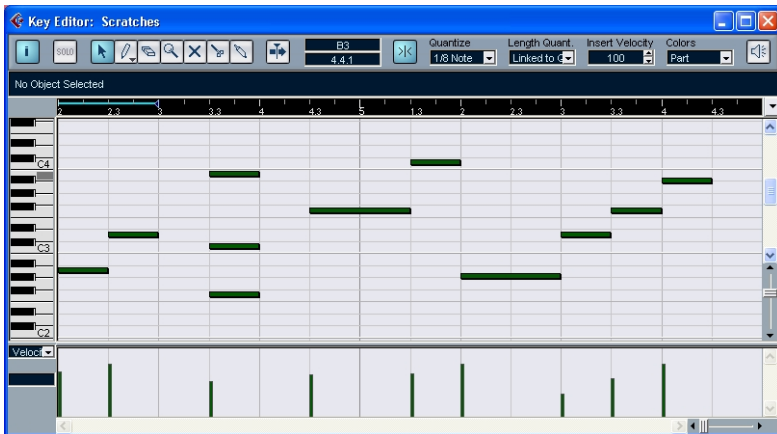
This chapter assumes that you have read the instructions in the chapter “Recording and playing back MIDI”, and have access to a recorded MIDI part.

Editing MIDI

Opening the Key Editor

- You open the Key Editor by double clicking a MIDI part in the Project window.

The Editor window shows the contents of a single part. You can have several editors open at the same time.



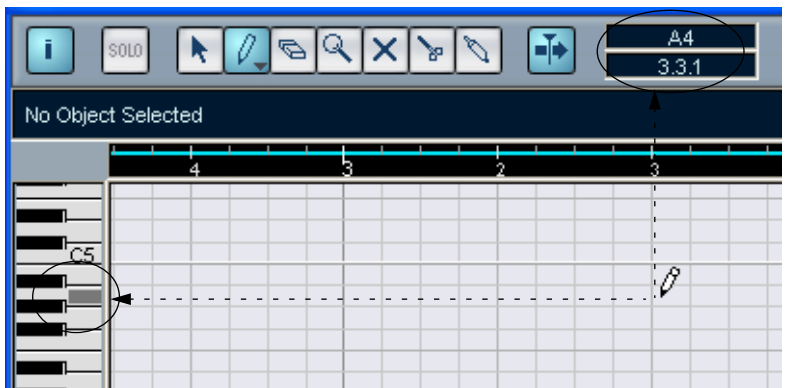
The Key Editor window.

- The note display is the main area in the Key Editor. It contains a grid, in which MIDI notes are shown as boxes. The width of a box corresponds to the note length, and the vertical position of a box corresponds to the note number (pitch), with higher notes higher up in the grid.

- The piano keyboard to the left serves as a guide for finding the right note number.
- The area at the bottom of the Key Editor window is the controller display, used for viewing and editing various values and events, such as velocity (see [page 145](#)).

Drawing events in the Key Editor

When you move the pointer in the note display, its bar position is indicated in the toolbar, and its pitch is indicated both in the toolbar and on the piano keyboard to the left. This makes it easy to find the right note and insert position.



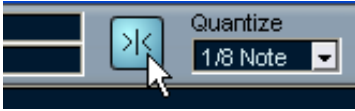
To insert new notes in the Key Editor, proceed as follows:

1. Select the Pencil tool.
2. Click at the desired time position and pitch (height).

A note is inserted with the following additional properties:

- If you just click once, the created note will get the length set on the Length Quant. pop-up menu on the toolbar.
You can create a longer note by clicking and dragging the pointer to the right with the mouse button pressed. The length of the created note will be a multiple of the Length Quantize value.
- The notes will get the Insert Velocity value set on the toolbar.
Velocity values are viewed and edited in the controller display, see [page 145](#).

About Snap



Snap activated on the toolbar.

The Snap function helps you find exact positions when editing in the Key Editor. It does this by restricting horizontal movement and positioning to certain positions. Operations affected by snap include moving, duplicating, drawing, sizing, etc.

- When the “Bars+Beats” display format is selected in the ruler, the Quantize value on the toolbar determines the snap value.
- When any time-based display format is selected in the ruler, editing snaps to the visible grid.

Selecting and moving events

To select events in the Key Editor window, proceed as follows:

1. Make sure the Arrow tool is selected.
If not, click on the Arrow icon in the toolbar.
2. To select a single event, click on it.
To select several events, use [Shift]-clicking or click and drag a selection rectangle.

To move events in the Key Editor window, proceed as follows:

1. If you want to move more than one event, select them as described above.
If you want to move a single event, you don't need to select it.
2. Click on one of the events with the Arrow tool and drag it to the desired position.
If snap is activated on the toolbar, this determines the exact position of the moved events.

About quantize

Quantizing in its fundamental form is a function that automatically moves recorded notes, positioning them on exact note values.

- Quantizing affects MIDI notes only (not other event types).
- In the Project window, quantizing applies to all selected parts, affecting all notes within them.
- In the Key Editor, quantizing applies to all selected notes. If no notes are selected, all notes will be affected.

Here follows a simple step by step example of using the quantize function:

1. Let's say you have recorded a series of eighth notes, which you have opened for viewing in the Key Editor. As shown in the illustration below some of them have ended up slightly beside the exact eighth note positions.

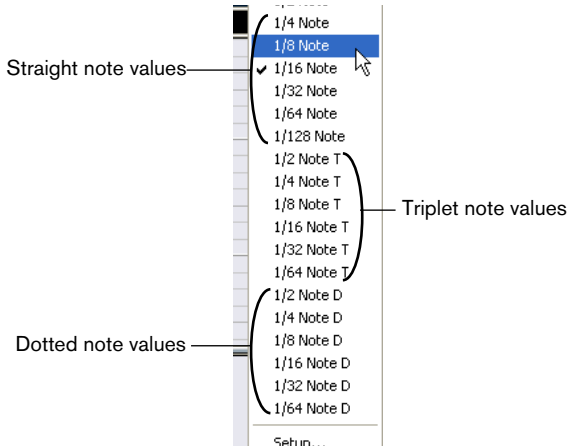


Now there are two basic ways you can proceed:

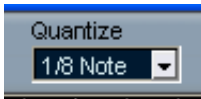
- To quantize all notes in the part, no notes need to be selected.
- To quantize separate notes in the part, select them. Only the selected notes will be quantized.

In this example, we have chosen to leave all note events in the part unselected.

- Open the Quantize pop-up menu on the toolbar.
The menu contains three main categories of note values, Straight, Triplet and Dotted.



- For this example, select straight 1/8 Note quantize from the menu.



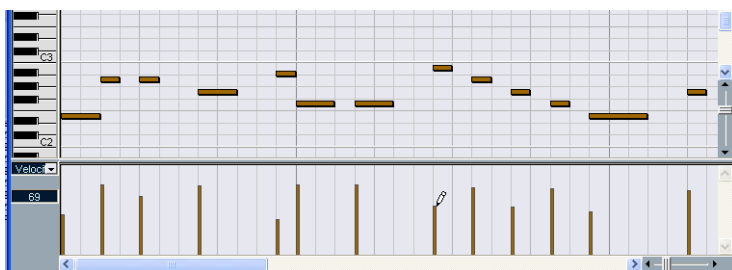
- Select "Over Quantize" from the MIDI menu.
This quantizes the MIDI notes according to the Quantize pop-up menu setting.



Editing velocity in the controller display

The Key Editor controller display is used for viewing and editing various values and events. The controller display shows one event type at a time.

- If you click the arrow to the left of the controller display, a pop-up appears allowing you to select what event type you wish to view. For this example, select “Velocity”.
- When “Velocity” is selected for viewing, the controller display shows the velocity of each note as a vertical bar.



Velocity events in the controller display.

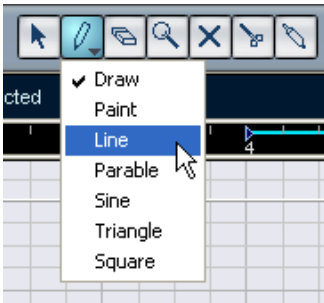
- To change the velocity of a single note, click on its velocity bar with the Pencil tool, and drag the bar up or down. If there are several notes on the same position only the velocity value of the selected note is changed. If there is no note selected the velocity values for all notes on this position will be changed. While you drag, the current velocity value is shown in the display to the left.
- To change the velocity values of several notes, you can either draw a “velocity curve” with the Pencil tool or use the Line tool to create a velocity ramp.

An example

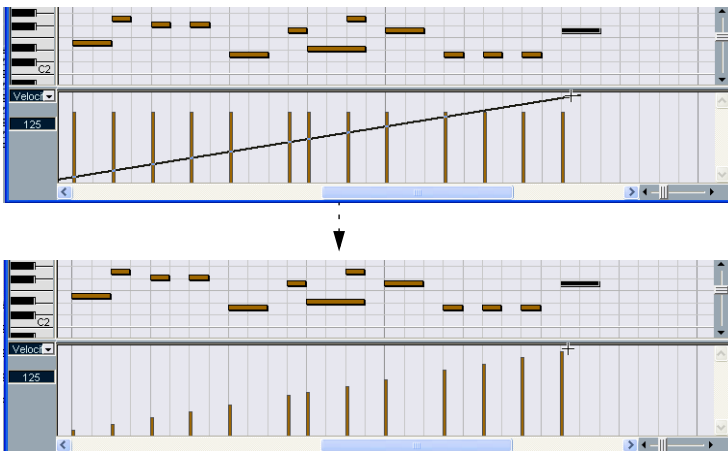
In the following example we will create a velocity ramp using the Line tool:

1. Add some notes in the note display by using the Pencil tool.
2. Select the Line tool from the pop-up menu that appears by clicking on the Pencil tool icon.

The other tools available on this pop-up menu are described in the Operation Manual.



3. Click where you want the ramp to start, move the pointer to where you want the ramp to end and release the mouse button.
When the mouse button is released, the velocity values will be scaled according to the ramp curve.



13

Basic Cubase SX concepts

About this chapter

This chapter describes the basic “building blocks” and terminology in Cubase SX. Please take your time to read this chapter thoroughly before moving on!

The project

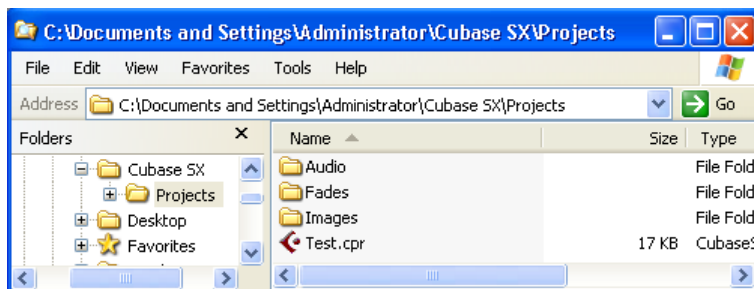
The native document format of Cubase SX is called a project. Before you can start recording, playing back or editing you always have to create a new project, or open a saved project file from disk. There can be several projects open at the same time, but one is always the active project.



Two Project windows in Cubase SX. The project “on top” is the active project, as indicated by the lit red indicator in the upper left corner of the window.

About the file and folder structure

A project file has the extension “.cpr” and is always associated with a project folder on your hard disk. Several projects can share the same project folder (which is practical if you have several versions of your project, for example).



Typically, a project folder is structured like this.

- The **Audio** folder contains audio files referenced by the project. It is also possible for the project to refer to audio files elsewhere on your disk(s), but having all audio files in the project's Audio folder makes the project easy to move and archive, and is a good safety measure.
- The **Edits** folder contains audio files created automatically by editing and processing operations in Cubase SX. As a rule, you shouldn't touch the files in this folder. To remove unused edit files, it is better to use the Cleanup function, as described in the Operation Manual.
- The **Fades** folder contains audio files created by fade and crossfade operations in Cubase SX.
- The **Images** folder contains waveform images for the audio files in the project.
- The project file itself contains all references to audio and video files, along with playback information, MIDI data and settings for the project (such as sample rate, frame rate, etc.).
- Video files are never automatically copied to the project folder. This is because video files are often very large, and it doesn't make sense to copy them into different project folders. However, nothing stops you from creating a Video folder inside the project folder and storing your video files there.
- You may also find additional files in the project folder. For example, Cubase SX's Auto Save feature stores backup copies of the project file in its project folder.

Audio terminology

When you record audio in Cubase SX, this is what happens:

- An **audio file** is created on the hard disk.
- In Cubase SX, an **audio clip** is created. The audio clip refers to the audio file on disk.
- An **audio event** is also created in Cubase SX. This plays back the audio clip.

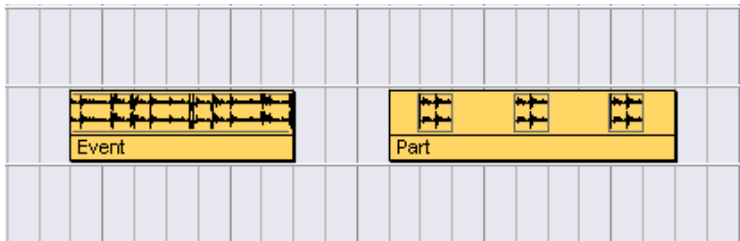
There are good reasons for this long chain of references:

- The audio event is the object that you place on a time position in Cubase SX. If you make copies of an audio event and move them to different positions in the project, they will still all refer to the same audio clip. Furthermore, each audio event has an Offset value and a Length value. These determine at which positions in the clip the event will start and end, i.e. which section of the audio clip will be played back by the audio event. For example, if you resize the audio event, you will just change its start and/or end position in the audio clip – the clip itself will not be affected.
- The audio clip does not necessarily refer to just one original recorded file! For example, if you apply some processing to a section of an audio clip, this will actually create a new audio file that contains only the section in question. The processing will then be applied to the new audio file only, leaving the original audio file unchanged. Finally, the audio clip is automatically adjusted, so that it refers both to the original file and to the new, processed file. During playback, the program will switch between the original file and the processed file at the correct positions. You will hear this as a single recording, with processing applied to one section only. This feature makes it possible to undo processing at a later stage, and to apply different processing to different audio clips that refer to the same original file.

Audio tracks, parts and channels

For an audio event to be played back in Cubase SX, it has to be placed on an **audio track**. This is similar to a track on a multi-track tape recorder, and allows you to view the event and move it along the timeline. You can place any number of audio events on an audio track, but only one at a time can be played back. You can have a virtually unlimited number of audio tracks, although the number of tracks you can play back at the same time depends on your computer performance.

Even though audio events can be placed directly on audio tracks, sometimes it is convenient to gather several audio events into an **audio part**. This is simply a “container”, allowing you to move and duplicate several audio events as one.



An event and a part.

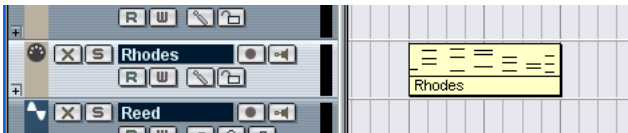
Each audio track has a corresponding **audio channel** in the Mixer. This is much like a channel on a hardware mixer, allowing you to set levels and panning, add EQ and effects, etc.

MIDI terminology

When you are recording MIDI (or entering MIDI data manually in an editor), **MIDI events** are created. For example, each note you record is a separate MIDI event, and if you record the movement of a modulation wheel or other controller, a large number of densely spaced events are created.

MIDI events are always placed in **MIDI parts**. These are “containers”, allowing you to move or copy a number of MIDI events (e.g. a recorded MIDI melody line) as one item.

MIDI parts are placed on MIDI tracks. For each **MIDI track** you can specify on which MIDI output and MIDI channel its MIDI events should be played back. This allows you to have different tracks play back different sounds, in the same or different MIDI instruments.



A MIDI part on a MIDI track. The black lines in the part indicate MIDI events.

Video terminology

- When you import a video file from disk into a Cubase SX project, a **video clip** is created that refers to the file.
- A **video event** is then created, referring to the video clip. Video events can be moved, copied and resized without affecting their video clips.
- For a video event to be played back, it has to be placed on the **video track**. There can only be one video track in a Cubase SX project.

The video support in Cubase SX is described in its own chapter in the Operation Manual.

14

Basic Methods

About this chapter

This chapter contains descriptions of the general methods and procedures used in Cubase SX. As this information applies to all parts of the program and all ways of working, please take time to read this chapter before continuing with the Operation Manual.

Using menus

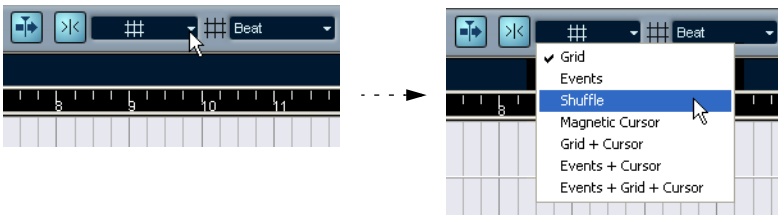
Main menus

The menus in the main Cubase SX menu bar are always available, regardless of which window is active. However, menu items that are not relevant in the current window may be greyed out. You select items from the main menus following the standard procedure of the operating system.

Pop-up menus

Pop-up menus can be found throughout the program and are often used for selecting options or values. A pop-up menu is indicated by a small arrow in a field showing the currently selected option/value.

- To bring up the pop-up menu, click the arrow. Selecting is done as with regular menus.



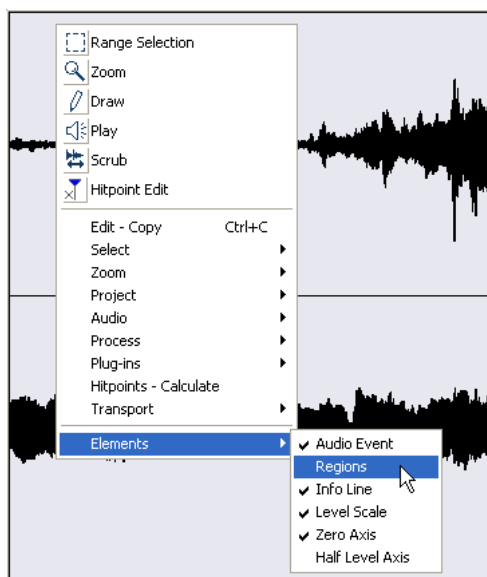
Selecting from the Snap pop-up menu.

The Quick menu

In Cubase SX, clicking the right mouse button will bring up a contextual pop-up menu. Some areas have special context menus with functions or settings that only apply to the corresponding area (for example, right-clicking in a ruler brings up a pop-up menu with display format options).

However, right-clicking in the main area of a window brings up the Quick menu. As a rule, the Quick menu contains:

- The tools (provided that the window has tools).
See [page 156](#).
- The most relevant menu items from the main Cubase SX menus.
- Settings that are specific for the window.
For example, in the Sample Editor the Quick menu contains settings for which elements should be displayed in the waveform display.



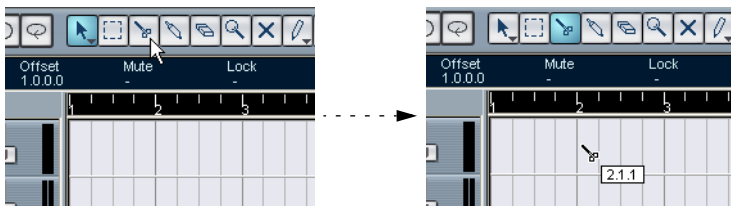
The Quick menu in the Sample Editor.

Using tools

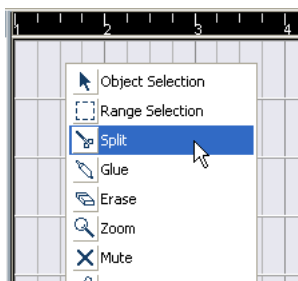
Editing in Cubase SX is largely done with the various tools. Typical examples are selecting and moving events with the Arrow (Object Selection) tool, drawing with the Pencil tool, deleting with the Eraser tool, etc. There are different tools for different windows.

Tools can be selected in three ways:

- By clicking the corresponding tool icon on the toolbar.
When you click a tool icon, the pointer takes on the shape of the corresponding tool.



- By using the Quick menu.
As described on [page 155](#), clicking with the right mouse button in the main area of a window brings up the Quick menu. The tools will be listed (along with their corresponding icons) at the top of the menu – to select a tool, simply select it from the menu.



- By using key commands.
By default, the keys [1] - [0] on the alphanumeric part of the keyboard are used, so that pressing [1] selects the leftmost tool and so on. You can also use key commands to step between the tools on the toolbar. By default, pressing [F9] selects the previous tool and pressing [F10] selects the next tool.
-
- The uses and purposes of the tools in the different windows are described in the corresponding chapters of the Operation Manual.**
-

About tool tips

If you position the pointer over a tool icon (or any other icon or button in Cubase SX), a label will appear after a moment, informing you of the function of the icon or button.

- This feature can be turned off by deactivating the option “Show Tips” on the User Interface page in the Preferences dialog (accessed from the File menu).

Changing values

Throughout the program you will encounter various value fields that can be edited. These can be divided into three categories: position values, regular numeric values and names.

Editing position values

Depending on the selected display format (see the Operation Manual), position values in Cubase SX are usually divided into several “segments” (the exception being the “Samples” display format, in which values are edited as regular numeric values). Two examples:



If the “Seconds” display format is selected, positions are shown as “hours:minutes:seconds.milliseconds”.



If the “Bars+Beats” display format is selected, positions are shown as “bars.beats.sixteenth notes.ticks” (with 120 ticks per sixteenth note).

Each value segment can be edited separately, in one of the following ways:

- Point at the upper or lower edge of the segment and click. Clicking at the upper edge will raise the value of the segment one step, clicking at the lower edge will lower the value.

- Point and click directly on the value segment, type a new value and press [Return].

- If you are using a wheel mouse, point at the value segment and use the wheel to raise or lower its value.

Generally, we recommend that you use a wheel mouse, as this speeds up editing in many areas in Cubase SX.

You can also edit the whole value (all segments) by double clicking and typing in a new value. Note:

- To separate the value segments, you can use spaces, dots, colons or any other character that isn't a number.
- If the "Bars+Beats" display format is selected, and you enter a value with less than four segments, the largest position value segments will be affected and the program will set the lesser segments to their lowest values.

For example, if you enter "5.3", the position will be set to "5.3.1.0".

- If one of the frame based display formats (all formats called "fps" or "dfps") is selected, and you enter a value with less than four segments, the smallest position value segments will be affected and the program will set the larger segments to their lowest values.

For example, if you enter "2:5", the position will be set to "0:0:2:5".

- If the "Seconds" display format is selected, value editing works as with the frame based formats, with one addition: The smallest value segment (milliseconds) is considered to be the decimal part of the seconds segment.

This means that if you enter "2:50", the position will be set to "0:0:2:500", rather than "0:0:2:050".

Editing regular numeric values

Numeric values other than positions are edited by clicking the value and editing numerically from the computer keyboard.

In the Preferences dialog on the File menu (User Interface – Controls page) you can specify what should happen when you click on a value field. The “Value Box/Time control” item contains the following options

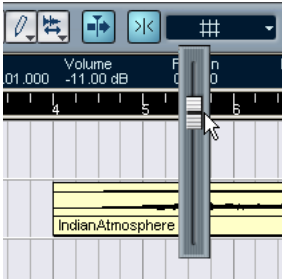
Option	Description
Text Input on Left-Click	In this mode, clicking a value box will open it for editing by typing.
Increment/Decrement on Left/Right-Click	In this mode you can click with the left or right mouse button to decrease or increase the value, respectively. To edit values by typing in this mode, please double-click.
Increment/Decrement on Left-Click and Drag	In this mode, you can click and drag up or down to adjust the value (much like dragging a vertical fader). To edit values by typing in this mode, please double-click.

- In the Inspector and elsewhere in the program you can find blue value sliders – click and drag to adjust the value.



- For some values, you can hold down [Alt], click on the value and keep the mouse button pressed to display a value slider.

This allows you to scroll the value by dragging up or down with the mouse button pressed. When you release the mouse button, the value slider is hidden.



Adjusting the event volume setting on the Info line.

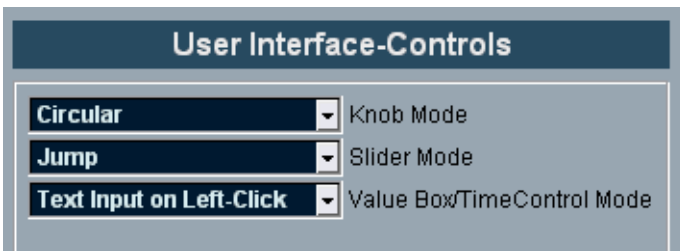
- These values can also be edited using a wheel mouse: point at the value and use the wheel to raise or lower it.

Editing names

To edit a name, click on it, type a new name and press [Return] (or click outside the name field).

Using knobs and sliders

In the VST audio windows, most parameters are shown as knobs, sliders and buttons, emulating real-world hardware interfaces. For knobs and sliders, you can select the desired way of making adjustments in the Preferences dialog (User Interface–Controls page):



Knobs

The Knob Mode pop-up menu contains the following options:

Option	Description
Circular	To move a knob, you click on it and drag in a circular motion, much like turning a “real” knob. When you click anywhere along the knob’s edge, the setting is immediately changed.
Relative Circular	Works like the “Circular” option, but clicking does not automatically change the setting. This means you can make adjustments to the current setting by clicking anywhere on a knob and dragging, without having to click on the exact current position.
Linear	To move a knob, you click on it and drag up or down with the mouse button pressed – as if the knob were a vertical slider.

Sliders

The Slider Mode pop-up menu contains the following options:

Option	Description
Jump	In this mode, clicking anywhere on a slider will make the slider handle instantly move to that position.
Touch	In this mode, you have to click on the actual slider handle to adjust the parameter. This reduces the risk of accidentally moving sliders.
Ramp	In this mode, clicking anywhere on a slider (but not on the actual handle) and keeping the mouse button pressed, will cause the handle to move smoothly to the new position.

Selecting objects

Selecting Cubase SX objects such as audio and MIDI events is generally done with the Arrow tool, according to standard selection procedures.

- Clicking on an object selects it (and deselects any previously selected objects).
- Holding down [Shift] and clicking on an object selects it without deselecting any other objects.
- You can also create a selection rectangle by clicking in an empty area and dragging with the mouse button pressed.
All objects partially or totally enclosed by the rectangle will be selected.
- If an object is already selected, you can use the left and right arrow key on the computer keyboard to select the previous or next object, respectively.
Holding down [Shift] and using the arrow keys allows you to select the previous/next object without deselecting the current object.

□ **There are several additional ways to make selections in the different Cubase SX windows. These are described in the corresponding Operation Manual chapters.**

Zoom and view techniques

Scrolling the view

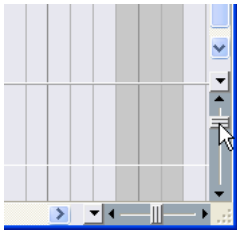
If the active window isn't large enough to show all its contents, you can scroll the view by using the standard window scroll bars. However, if you are using a wheel mouse, there are two additional ways to scroll:

- Rolling the wheel will scroll the view vertically. If you hold down [Shift] and use the wheel, the view will be scrolled horizontally. Just make sure not to point at a value field, as this will edit the value instead.
- If you aim in the main area of a window, click the wheel and keep it pressed, the pointer takes on the shape of a hand. You can now scroll the view freely by dragging the mouse horizontally and/or vertically.

Zooming

All windows that contain graphical displays can be zoomed horizontally and vertically. While some windows have special zoom functions (see the respective chapters in the Operation Manual), a few methods are commonly available:

Using the zoom sliders



At the lower right corner of all zoomable displays, you will find two zoom sliders.

- To zoom in horizontally, drag the horizontal zoom slider handle to the right.

- To zoom in vertically, drag the vertical zoom slider upwards.
There is one exception to this: in the Project window, dragging the vertical zoom slider upwards will decrease the height of Tracks (in effect, zooming out). See the chapter “The Project Window” in the Operation Manual.
 - Clicking on a zoom slider will move the handle to the click position, instantly changing the magnification.
-
- ❑ **If the project cursor is visible when you zoom in or out horizontally, the magnification will be “centered on the cursor”. In other words: if possible, the project cursor will remain in the same position on screen.**
-

Using the Magnifying Glass tool



You can use the Magnifying Glass tool to zoom in and out horizontally, using the following methods:

- Click once to zoom in one step.
Zooming will be centered on the click position.
- Double click (or press [Alt] and click) to zoom out one step.
- Draw a zoom rectangle by pressing the mouse button, dragging the pointer and releasing the mouse button.
The view will zoom in horizontally, so that only the area enclosed in the zoom rectangle is visible.

Using the Zoom submenu

At the bottom of the Edit menu, you will find a Zoom submenu with various zoom functions. Exactly which items on the submenu are available depends on the currently active window.

- The Zoom submenu is also available as a separate menu item on the Quick menu.

- As with any menu item, you can specify key commands for the functions on the Zoom submenu, for quick access. Key commands are set up in the Key Commands dialog on the File menu, described in a separate chapter in the Operation Manual.

Zooming in the ruler

If the option “Zoom while Locating in Time Scale” is activated in the Preferences dialog (Transport page), you can use the rulers for zooming. This allows you to quickly zoom in or out on a certain position, without having to select a special tool:

1. Click in the ruler and keep the mouse button pressed. The project cursor is automatically moved to the click position. If you don't want to move the cursor, press [Shift] and click in the ruler instead.
2. Drag down to zoom in (horizontally) or drag up to zoom out. Zooming will be centered on the project cursor.

Zooming in the overview

By clicking the Show Overview button on the toolbar, an extra pane appears under the toolbar, the project overview line.



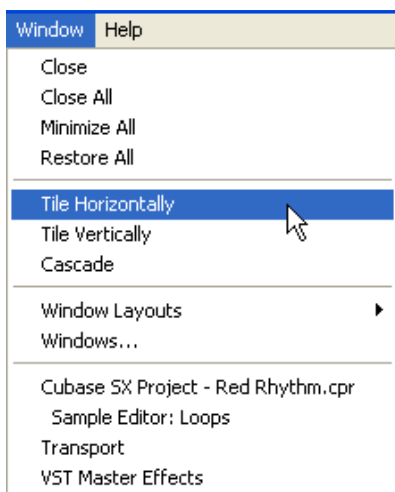
Show Overview button.

In the overview line, events and parts on all tracks are displayed as boxes. You can use the overview line to zoom in or out, and for navigating to other sections of the project. This is done by moving and resizing the track view rectangle in the overview line:

- The track view rectangle indicates the section of the project currently displayed in the event display.
- You can zoom in or out vertically by resizing the track view rectangle. Resizing is done by dragging the edges of the rectangle.
- You can drag the track view rectangle to view other sections of the project. The number of tracks shown will not change.

Window handling

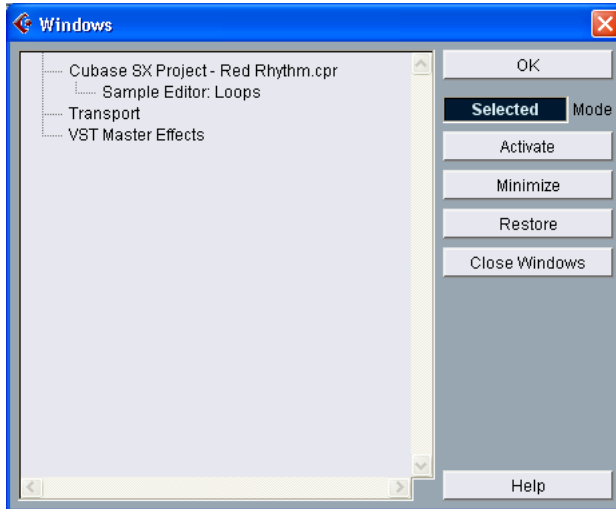
Generally, Cubase SX windows are handled according to the standard procedures. However, the Window menu contains some functions that make work quicker and easier:



Menu item	Description
Close	Closes the currently active window. If this is a Project window, you will close the current project.
Close All	Closes all windows, including all open projects.
Minimize All	Minimizes all windows.
Restore All	Restores all minimized Cubase SX windows.
Tile Horizontally/Vertically	Arranges the open windows next to each other on screen.
Cascade	Arranges the open windows in a partially overlapping pattern.
Window Layouts	See page 169 .
Windows...	See page 167 .
The open windows list	Selecting a window from the list at the bottom of the menu brings it to front.

The Windows dialog

By selecting “Windows...” from the Window menu, you open the Windows dialog. This allows you to manage the open windows in various ways.



The display to the left lists all open windows, hierarchically arranged (so that editors and other windows that belong to a certain project are listed under the corresponding Project window). To the right are various window functions. To use one of the functions, proceed as follows:

1. Click in the field below the OK button to select one of the selection modes:

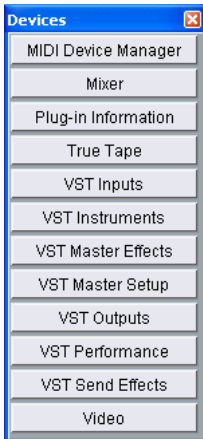
Mode	Description
Selected	Only the windows selected in the list will be affected.
Cascaded	The selected windows will be affected, along with all their “under-windows”. Typically, if a Project window is selected in the list, all open windows belonging to that project will be affected.
All	All windows will be affected, regardless of the selection.

2. If you selected the “Selected” or “Cascaded” modes, select the desired windows by clicking in the list.
As usual, you can select multiple items by holding [Shift] or [Ctrl] and clicking.
3. Use the buttons to the right to activate (bring to front), minimize, restore or close the specified window(s).
Closing a window will also remove it from the list.
4. When you are done, click OK to close the dialog.

The Devices panel

If you like, you can manage devices from a central Devices panel:

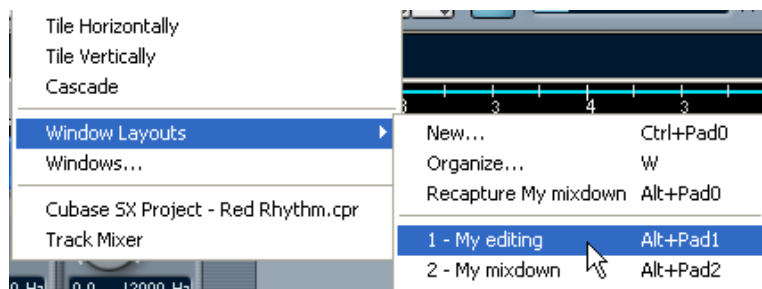
1. Pull down the Devices menu and select “Show Panel”.
The Devices Panel appears.



2. To display a closed or hidden window, click on its button in the Devices panel.
3. Clicking the button again will close the window.

Working with window layouts

A configuration of windows for the active project is called a “window layout”. By storing different window combinations as window layouts, you can quickly switch between different working modes. You may for example want as large as possible a Project window when you are editing, whereas you may want the Mixer and Effect windows open during mixdown. Window layouts are listed and managed on the Window Layouts submenu on the Windows menu.



Editing the active window layout

There is always one layout active, even if you haven't saved any. To make changes to the active window layout, proceed as follows:

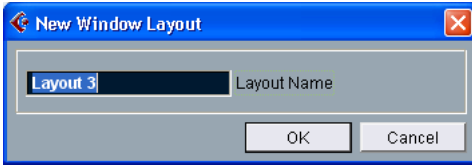
- Make the desired changes to the window configuration. This may include opening, closing, moving and sizing windows, and adjusting zoom and track height.

The changes are automatically stored for the active layout.

Creating a new window layout

1. Set up the windows you want to include in the window layout. This may include opening, moving and sizing windows, and adjusting zoom and track height.
2. Pull down the Window menu and open the Window Layouts submenu.

3. Select “New...”.



4. In the dialog that appears, enter a name for the window layout.
5. Click OK.
The window layout is stored and will appear on the Window Layouts submenu. It will now be the active layout.

Activating a window layout

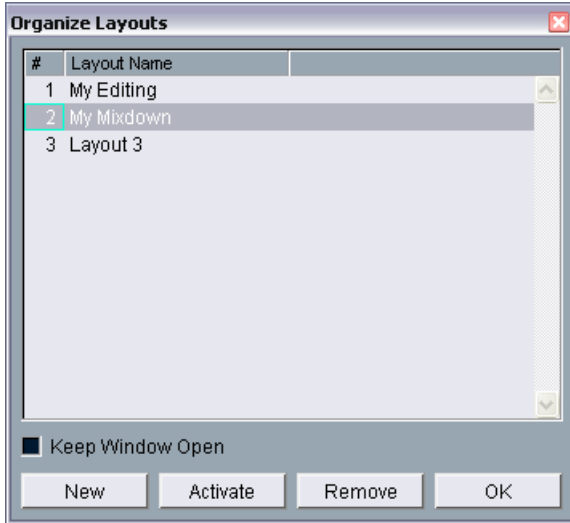
1. Pull down the Window menu and open the Window Layouts submenu.
 2. Select the window layout from the list on the submenu.
The windows are closed, opened, moved and/or resized according to the stored window layout.
- You can also activate any of the first nine window layouts using key commands.
By default, this is done by pressing [Alt] and the corresponding key on the numeric keypad ([Alt]-[1] selects Layout 1, and so on).

Recapture layout

This allows you to change or replace a stored layout: Set up the windows the way you want them and select Recapture Layout. In the dialog that appears, enter the name of the layout you want to replace and click OK.

Organizing window layouts

If you select “Organize...” from the Window Layouts submenu, a dialog opens, listing all available window layouts.



- To rename a window layout, double click its name in the list and type in a new name.
- To create a new window layout based on the current window configuration, click the New button.
The new layout appears in the list allowing you to adjust its name and properties.
- To activate a layout, either select it and click the Activate button, or double click in the number column to the left.
The layout is activated and the dialog is closed (unless the “Keep Window Open” checkbox is ticked).
- To remove a window layout, select it in the list and click the Remove button.
The layout is removed from the list.
- To close the dialog, click the OK button.
Note that you can continue working in other windows with the Organize Layouts dialog open.

Undo

There are two ways to undo operations in Cubase SX: by using “regular Undo” and by using the Offline Process History.

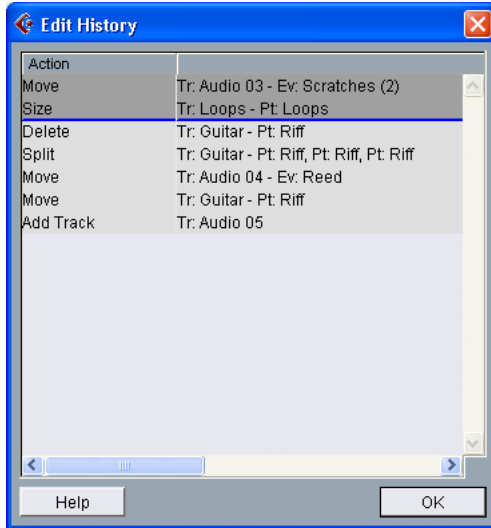
- The regular Undo can be applied to virtually all actions you perform, in multiple levels.
It is accessed by using the “Undo”, “Redo” and “History” items on the Edit menu, as described below.
- The Offline Process History allows you to remove and modify applied processing, and is different from the “regular” Undo in that you don’t have to undo processing functions in the order they were performed. The Offline Process History is described in the chapter “Audio Processing and Functions” in the Operation Manual.

The Undo and Redo commands

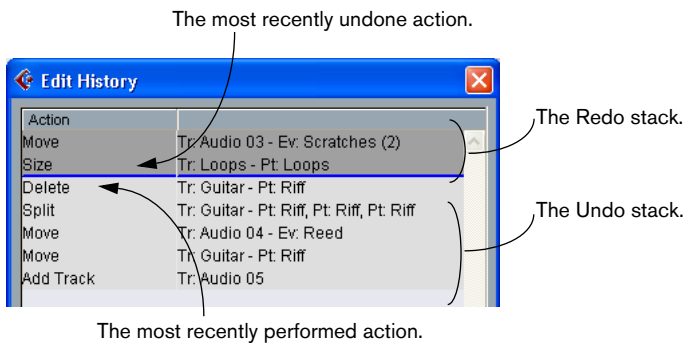
Cubase SX offers wide-ranging, multiple Undo, allowing you to undo virtually any action you perform.

- To undo the last performed action, select Undo from the Edit menu, or use the corresponding key command (by default [Ctrl]-[Z]).
If you select Undo again, the previously performed action will be undone, and so on.
 - To redo the last undone action, select Redo from the Edit menu or use the corresponding key command (by default [Ctrl]-[Shift]-[Z]).
Undone actions will be available for Redo until you perform another action (at which point the “Redo stack” is cleared – see below).
-
- You can specify how many levels of Undo should be available with the “Maximum Undo” setting on the User Interface page in the Preferences dialog on the File menu.**
-

The Edit History window

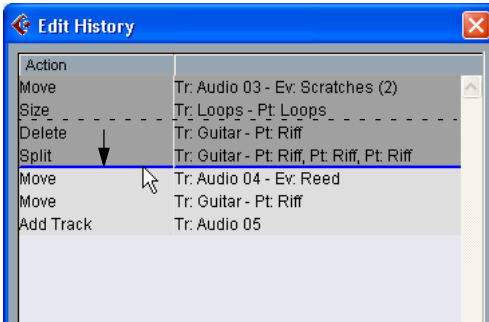


Selecting “History...” from the Edit menu opens the Edit History window. This contains a graphic representation of the “Undo stack” (the performed actions, with the most recent action at the top of the stack) and the “Redo stack” (the undone actions, with the most recently undone action at the bottom of the stack). The two stacks are separated by a divider line.



The Edit History dialog allows you to undo or redo several actions in one go, by moving the divider between the Undo stack and the Redo stack (in essence, moving actions from the Undo stack to the Redo stack, or vice versa):

1. Click on the divider line and drag it up or down.
Drag up to redo actions, drag down to undo them.



In this case, the Delete and Split actions will be undone (and moved to the Redo stack).

- You can also click directly between two items in the list, instantly moving the divider line.
 - When you move the divider line by dragging or clicking, the actions are immediately undone or redone.
The changes are reflected in all open Cubase SX windows.
2. When you're finished, click OK to close the dialog.
-
- The Undo and Redo stacks are cleared when you close a project.**
-

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Shortcuts & key commands

About this chapter

Most of the main menus in Cubase SX have key command shortcuts for certain items on the menus. In addition, there are numerous other Cubase SX functions that can be performed via key commands.

These are all factory default settings, but can be customized if you like (see the chapter “Key commands” in the Operation Manual for details).

Below, the default key commands are listed according to category.

File commands

Commands	Keys
New	Ctrl+N
Open	Ctrl+O
Close	Ctrl+W
Save	Ctrl+S
Save New Version	Ctrl+Alt+S
Save As	Ctrl+Shift+S
Quit	Ctrl+Q

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Commands	Keys
Mixer	F3
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VST Inputs	F5
VST Send Effects	F6
VST Master Effects	F7
Video	F8

Transport commands

Commands	Keys
Show/hide Transport panel	F2
Start	Enter
Stop	Pad 0
Start/Stop	Space
Record	Pad *
Rewind	Pad -
Fastwind	Pad +
Return to Zero	Pad .
Cycle on/off	Pad /
Auto Punch In on/off	I
Auto Punch Out on/off	O
Play Selection Range	Alt+Space
Locate Next Event	N
Locate Previous Event	B
Locators to Selection	P
Locate Selection	L
Loop Selection	Shift+G
Nudge Up	Ctrl+Pad +
Nudge Down	Ctrl+Pad -
To Left Locator	Pad 1
To Left Locator	Shift+1
To Right Locator	Pad 2
To Right Locator	Shift+2
To Markers 3 to 9	Pad 3 to 9
To Markers 3 to 9	Shift+3 to 9
Locate Next Marker	Shift+N
Locate Previous Marker	Shift+B

Commands	Keys
Set Left Locator	Ctrl+Pad 1
Set Left Locator	Ctrl+ 1
Set Right Locator	Ctrl+Pad 2
Set Right Locator	Ctrl+ 2
Set Marker 3 to 9	Ctrl+Pad 3 to 9
Set Marker 3 to 9	Ctrl+3 to 9
Input Position	Shift+P
Input Left Locator	Shift+L
Input Right Locator	Shift+R
Insert Marker	Insert
Metronome (Click) on/off	C
Sync Online on/off	T

Editing and editor commands

Commands	Keys
Undo	Ctrl+Z
Redo	Ctrl+Shift+Z
Cut	Ctrl+X
Copy	Ctrl+c
Paste	Ctrl+V
Delete	Del, Backspace
Select All	Ctrl+A
Select None	Ctrl+Shift+A
Autoscroll on/off	F
Snap On/Off	J
Duplicate	Ctrl+D
Open	Ctrl+E
Repeat	Ctrl+K
Lock	Ctrl+Shift+L

Commands	Keys
Unlock	Ctrl+Shift+U
Cut Time	Ctrl+Shift+X
Delete Time	Shift+Back
Paste Time	Ctrl+Shift+V
Paste at Origin	Alt+V
Split Range	Shift+X
Insert Silence	Ctrl+Shift+E
Split at Cursor	Alt+X
Move to Cursor	Ctrl+L
Solo	S
Mute	M
Record Enable	R
Quantize	Q
Mute Events	Shift+M
Unmute Events	Shift+U
Mute/Unmute Objects	Alt+M
Open Score Editor	Ctrl+R
Open/Close Editor	Return
Left selection side to Cursor	E
Right selection side to Cursor	D
Show/Hide Inspector	Alt+I
Show/Hide Infoview	Ctrl+I
Show/Hide Overview	Alt+O

Audio editing commands

Commands	Keys
Crossfade	X
Find selected in Pool	Ctrl+F
Adjust Fades to Range	A

Nudge, select and navigate

Commands	Keys
Nudge Start Left	Ctrl+Left
Nudge Start Right	Ctrl+Right
Nudge End Left	Alt+Left
Nudge End Right	Alt+Right
Navigate/Select Left	Left
Navigate/Select Right	Right
Navigate/Select Up	Up
Navigate/Select Down	Down
Add Left	Shift+Left
Add Right	Shift+Right
Add Up	Shift+Up
Add Down	Shift+Down

Zoom commands

Commands	Keys
Zoom In	H
Zoom Out	G
Zoom to Selection	Alt+S
Zoom to Event	Shift+E
Zoom Full	Shift+F
Zoom in Tracks	Alt+Down
Zoom Out Tracks	Alt+Up
Zoom Out Tracks	Ctrl+Up
Zoom Tracks Exclusive	Z
Zoom Tracks Exclusive	Ctrl+Down

Tool commands

Commands	Keys
Previous Tool	F9
Next Tool	F10
Select Tool	1
Range Tool	2
Split Tool	3
Glue Tool	4
Delete Tool	5
Zoom Tool	6
Mute Tool	7
Draw Tool	8
Play Tool	9
Drumstick Tool	0

Project menu commands

Commands	Keys
Open Pool	Ctrl+P
Open Markers	Ctrl+M
Open Master Track	Ctrl+T
Open Browser	Ctrl+B
Project Setup	Shift+S

Window Layout commands

Commands	Keys	Categories
New	Ctrl+Pad 0	Window Layout
Recapture	Alt+Pad 0	Window Layout
Organize	W	Window Layout
Layout 1 to 9	Alt+Pad 1 to 9	Window Layout

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