CUBASE

VST
for Windows

Getting Started

Steinberg

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Introduction

Welcome!

In a few short years the world has changed. Once music making was strictly divided between those with access to professional studios, expensive equipment and other musicians, and those whose music making was confined to the realms of second rate equipment, limited funds and a good deal of dreaming.

We at Steinberg are pleased to be part of the continuing revolution that has broken down these barriers, allowing anyone with musical ambitions to realise their true musical potential.

The Cubase VST you now have in front of you, is our finest achievement to date. It embodies the experience of over ten years of Steinberg history. Whether you are a seasoned professional musician or someone starting out in music, Cubase VST provides the finest easy-to-use tools, and the best framework for your music.

Karl Steinberg   Manfred Rürup

About Cubase...

Now that you have Cubase VST, you belong to one of the largest music software user groups in the world. Cubase is a family of music software, ranging from the easy-to-understand package for the beginner to professional tools for the most demanding applications. That's the Cubase advantage, Cubase grows as you develop musically.

Cubase may come in different versions and on different computer types, but it's always a Cubase. What you learn now will be just as valid if you decide to change to another version or another type of computer. We developed a method of working with music software that has re-defined 'ease of use', and set the standard.

Cubase VST was created as a result of years of experience in both software engineering and listening to our users. The Cubase of today is a very different product compared to its first release. A major component of this continuing success story is your active involvement. We welcome suggestions and comments about Cubase VST and the direction it should take in the future. Also we are very pleased to see independent Cubase Clubs appearing all over the world. These create networks of expertise and advice which helps all Cubase users.

Cubase is used by Hollywood film composers, world class recording studios, audio-visual facilities, and – of course – every conceivable type of musician. We are very proud of this, and would like to thank you for becoming part of the Cubase family.

Your Steinberg Team.

How to find your way around the Manual and the On-line Help

The documentation for Cubase VST comes in several flavors:

The Installation booklet

This separate booklet describes how to install the program. This is the first item you should read.

Getting Started (this document)

This document is the on-line version of the printed Getting Started book. It contains the following:

- A Guided Tour in which you can find out about Cubase VST.
- Introductions to the various aspects of the program, allowing you to try out many of the possibilities.

In other words, this document is not a complete description of all the features of the program, but a good way to get started.

- **Getting into the Details.**
  This is the main documentation, containing detailed descriptions of Cubase VST parameters, functions and techniques. When we refer to the "Electronic Documentation" in this document, we mean the Getting into the Details document (if nothing else is stated).

- **Score Printing and Layout.**
  If you have the Score or Audio XT version of Cubase VST, the program includes a more advanced Score Editor. This editor is described in the Score Printing and Layout document.

- **MIDI Mixer and Mix Tracks.**
  Describes how to use the MIDI Mixer in Cubase VST to control levels and parameters in your MIDI instruments from within the program.

- **IPS.**
  This document describes how to use the Interactive Phrase Synthesizer.

- **Controlling Tape Recorders.**
  If you plan to use Cubase VST together with a multitrack tape recorder, this document contains information about how to do this, using Tape Tracks.

- **The Modules documents.**
  In the subfolder called "Modules" you will find a document about how to use Modules in Cubase VST, as well as separate documents for each Module that is included with your program version.

- **The VST Plugins documents.**
  In the subfolder called "VST Plugins" you will find documents describing each of the audio plug-in effects that are included with your program version.

So, what should I read?

- In either case, follow the instructions in the Installation booklet.
- Then, if you want to get acquainted with the program, read this document and refer to the electronic documentation whenever necessary.
- If you know you want to learn as much as possible about this program, you should make sure to read this document and all the included electronic documentation documents.

About the On-line Help

Cubase VST comes with Windows Help. There are several ways of bringing up the Help texts:

- **To see a list of topics in the Help file, select Contents from the Help menu.**

- **To get general information about a window or a dialog, press the [F1] key on the computer keyboard or click the Help button in the dialog.**
  A Help text is displayed, describing the current window or dialog box.

- **To get specific information about an item in a dialog box, click the Question mark on the window's title bar. Then click on the item you want to get information about.**

- **To get information about a menu item, pull down the menu, position the pointer over the item and press [F1].**
  A Help text is displayed, describing the selected menu item.

- **To get more information about how to use the Windows 95 Help, pull down the Help menu and select "Using Help".**

● Some items are described in detail in the On-line Help only!

How you can reach us

You can find us at the World Wide Web, at the following address:

www.steinberg.net

On the web site you can do the following:

- Find support information, answers to frequently asked questions, etc.
- Send email to our support personnel.
- Download the latest update of your program and demo versions of other Steinberg products.
- Communicate with other Steinberg users in the User Area.
- There are also sections for Education and Multimedia users.

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Guided Tour

What is Digital Audio?

"Audio" is any sound source that you can connect to the sound input of your PC audio card; a microphone, an electric guitar or similar. "Digital" we say because the computer converts the audio signal to numbers, which Cubase VST captures and stores on your hard disk. This convertion of sound into a stream of numbers opens up an enormous range of possibilities for creatively manipulating your recordings.

What is MIDI?

MIDI is a type of control information used with synthesizers. Let's explain this with an analogy: Your computer can send messages to a printer about how you want a page to look. The printer then takes care of converting this information to the actual "ink" on paper.

With MIDI the synthesizer works much like a "musical printer": the computer sends information to it, specifying which notes you want it to play, and it takes care of actually creating the audio.

One of the advantages of this technique is that a recording made with for example a piano sound can be played back with a harpsichord, brass or guitar sound, just by changing settings on the synthesizer.

General MIDI (abbreviated GM) is an additional specification for MIDI instruments. If an instrument or sound card is General MIDI compatible, it will have a common, wide ranging set of sounds built in (piano, bass, drums, brass, strings etc). If you create music with a General MIDI compatible instrument it can be played back on any other GM instrument and the music will sound more or less the same. This allows you to share your Cubase VST songs with other people, and even publish your works in a common data format, for example on the Internet!

Cubase VST also supports two extensions to the GM standard, called GS (Roland) and XG (Yamaha).

The Main Windows in Cubase VST

The Transport Bar

This is much like the transport control on any tape recorder. This is where you Play, Stop, "wind the tape" etc. But the Transport bar is also used for setting tempo, time signature etc.

These are used for defining where to start and end recording and what section to Cycle.

These fields show you the current Song Position in bars, beats and ticks (to the left) and in tine position format (to the right)

Activates the metronome.

Tempo and Time Signature

When you activate this, the program will cycle the section between the Locators.

These buttons are the equivalents of the transport controls on a regular tape recorder.

These indicators show MIDI In (recording) and Out (playback) activity.

The Arrangement

This is where you record and assemble your Songs.

Vertically, the Arrangement is divided into Tracks, letting you organise your recordings. You might use one Track for drums, another for bass, a third for main vocals, a fourth for vocal harmonies, etc.

Click in this column to Mute (silence) a Track.

This symbol indicates an Audio Track

This symbol indicates a MIDI Track

This symbol indicates a Drum Track

This symbol indicates a Mix Track

This button opens the Inspector

The Track List

The name of the Track. Double click to change.

The Track's channel

The active (selected) Track. Recording always happens on the active Track.

Arrange - Bridge

Solo   Sna

M	C	Chn	Track
	♦	any	Vocal 1
	♦	any	Vocal 2
	♪	1	flute
	♪	2	bass
	♪	3	bassoon
	♪	4	Licks
	♪	5	Horns
	♪	6	Strings 1
	♪	7	Strings 2
	♪	8	Ac Guitar
	♪	9	Tenor Sax
	＼	10	DrumKit
	♪	11	Organ
	↓↑		Mixer

The right part of the Arrangement is called the Part Display.

Time runs from left to right, as the ruler indicates.

The Song Position   The Left Locator   The Right Locator

| 8 ▾ | Quantize | 8T ▾ | Mouse | 0008.01.000 | Part Colors ▾ |

| 1 | ▼ | L 5 | 9 | R | 13 |

Vocal 1

Vocal 2

flute

bass verse

bassoon   bassoon

Licks 1   Licks 2

stabs   stabs 8va

Each recording you make appears in the Part Display as a box, called a Part.

- 15 -

The horizontal position shows you where in the Song the Part starts.
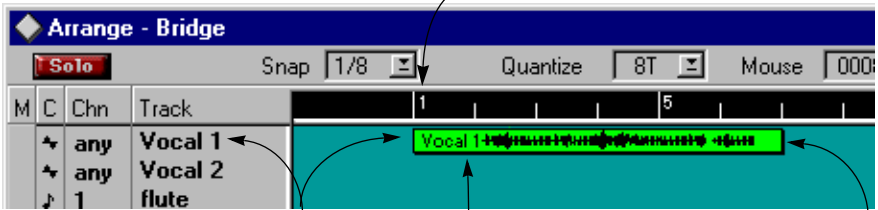
The vertical position of the Part shows you which Track it is on.

The width of the box shows you the length of the recording.

In the Part you will see a visual representation of the recording.

At the top of the Arrange window is a bar with various pop-ups and settings.

Click here to listen to the selected Track only

This note value is used for the Quantize function.

The mouse pointer's position in bars, beats and ticks.
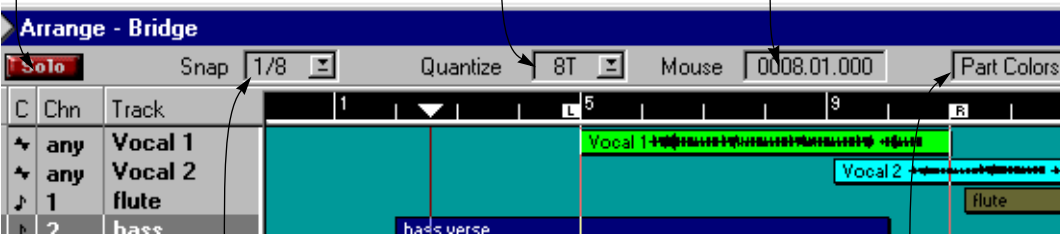
The "precision" for editing operations, like moves and splits

This pop-up is used to give different Parts different colors.

The Audio mixer windows

The Monitor Mixer window is where you mix your Audio Tracks, that is, adjust the levels (volume), stereo panning, effect sends, EQ, etc.

Mixer automation controls

Input level switch

Clip indicator

Insert Effect buttons

Mute and Solo buttons

Pan controls

Level fader

Level meter
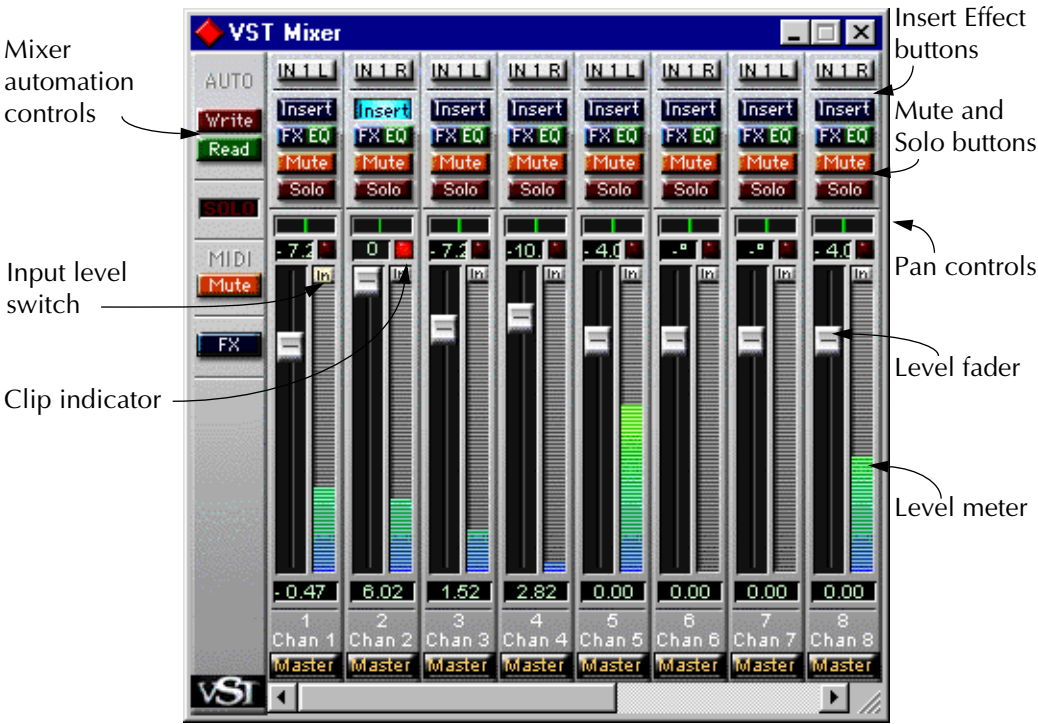
The final output is adjusted in the Master window:

Master Effect displays

Level faders

Level meters
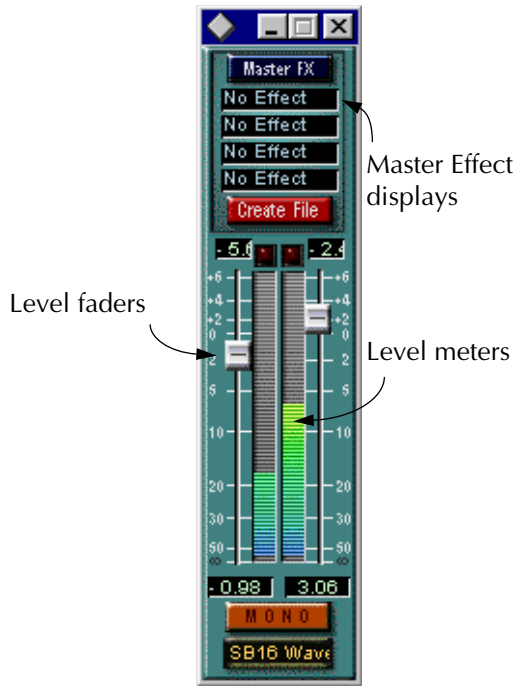
The EQ and Effect windows

For each audio channel in Cubase VST, you can have up to four bands of parametric equalization. Furthermore, each channel has four effect sends, which you can assign to four internal "effect processors" for adding reverb, chorus and other effects.

Effect sends   Equalizer section

The four Send Effects

Apart from the four send effects, which are common to all audio channels, you can have up to four different Insert Effects per channel. These are accessed via the Insert buttons in the Monitor Mixer window (see the picture on the previous page). There are also four Master Effects, which are inserted into the master output bus.

The GM/GS/XG Editor

This is one of the places where you can adjust the levels, panning and other parameters for the sounds created by your MIDI synthesizer. If you use MIDI instruments that are compatible with one of the standards GM, GS or XG, you can also use this editor to select sounds for each MIDI channel.
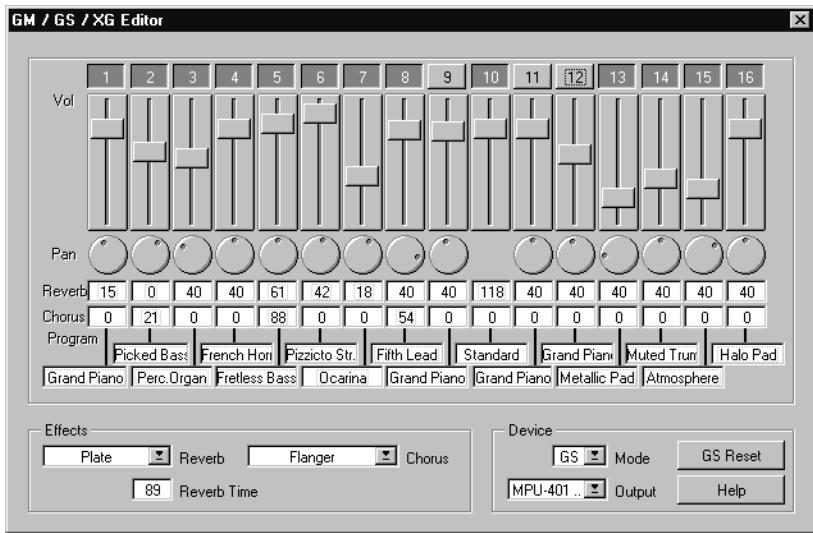
The Pool

This window lists all your audio recordings. It is also used to import audio files created in other programs, for use in Cubase VST.

This is a file containing an audio recording.

Use this menu to import Files created in other programs.

These are segments that play parts of the file.
By dragging segments into the Arrangement, you can use the audio file in your Song.

The Audio Editor

This is the window where you do the basic editing of your Audio Parts, moving and trimming start and end points of Audio Events, etc.
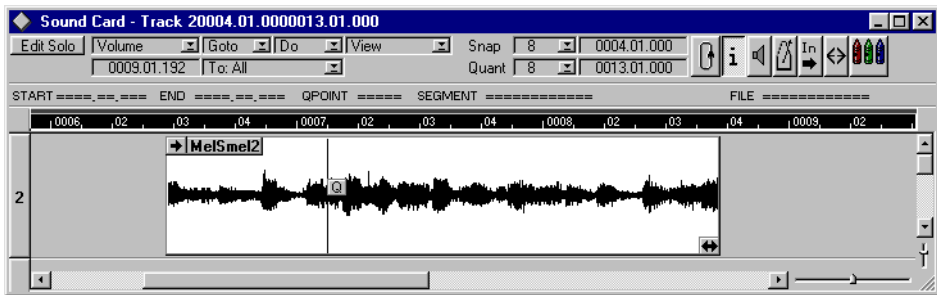
The Wave Editor

This window is for detailed editing and permanent alteration of the actual audio recordings.
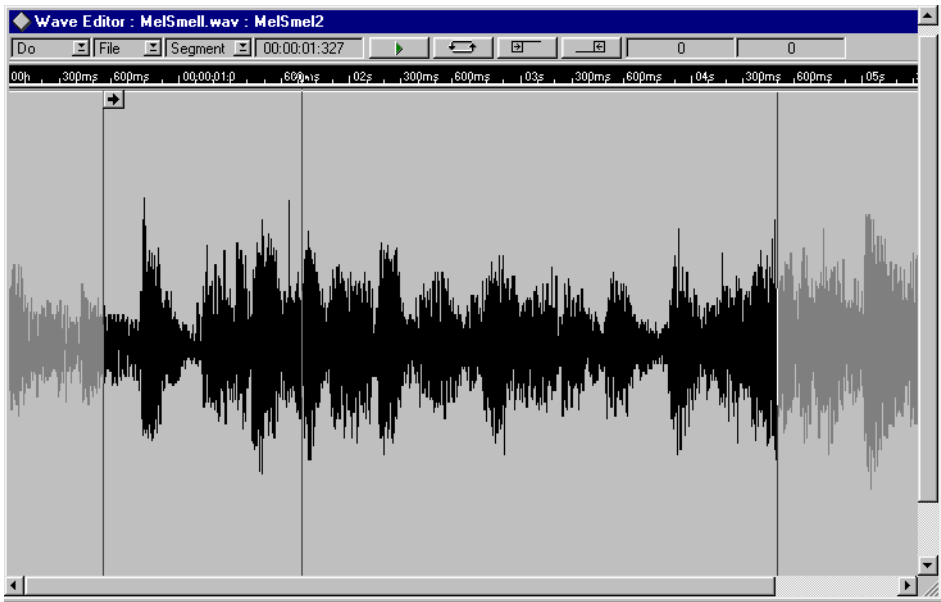
The MIDI Editors

There are four different editors for editing your MIDI recordings:

Key Edit

Notes

Continuous Events
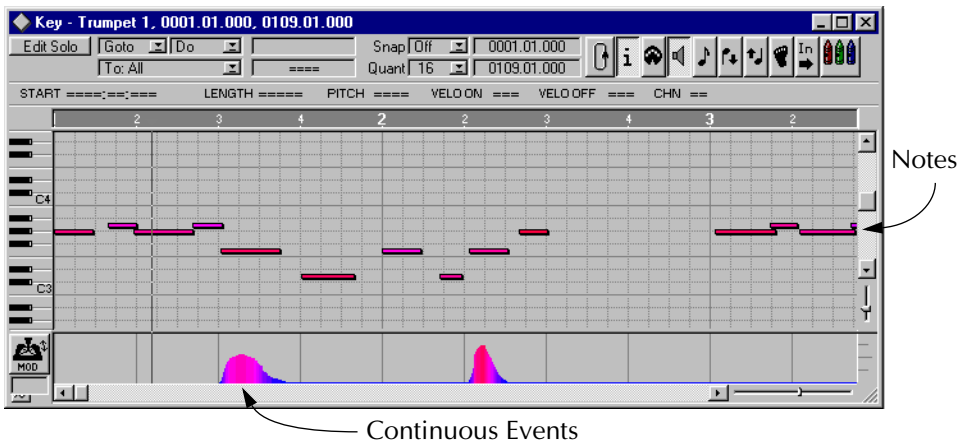
This editor consists of a "grid" with the notes shown as boxes. The pitch of a note is indicated by the vertical position, and the note length is indicated by the width of the box. This is the editor to use when you want quick graphical editing of notes and continuous controllers, such as modulation and volume.

Drum Edit

Drum Sounds

Notes
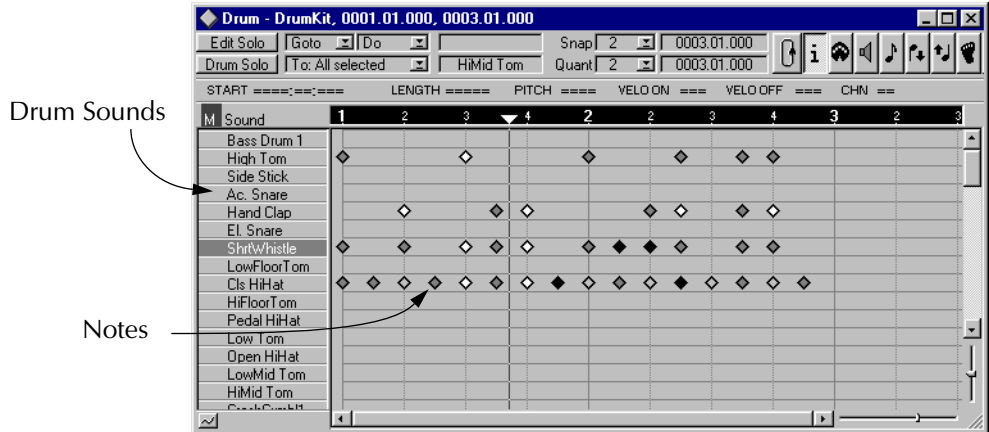
This editor is similar to Key Edit, but designed specially for editing drum and percussion Tracks. Each Drum Sound has its own row and settings, making it easy to create and change rhythm patterns.

List Edit
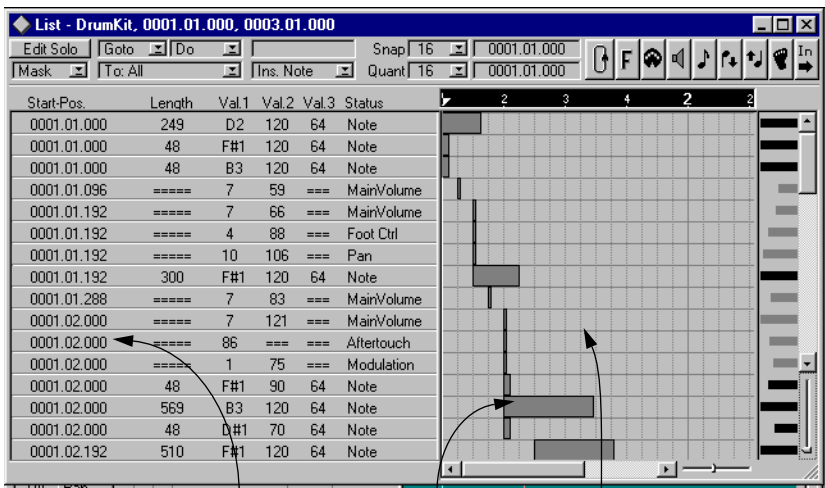
The Event List   MIDI Events   The Event Display

In this editor, all MIDI notes, controllers and other Events are shown in a list. You can move, insert and delete Events in the list and perform detailed editing of all values. List Edit is useful when you want absolute control over values and positions, or if you are a "computer type of person", used to numerical editing.

Score Edit
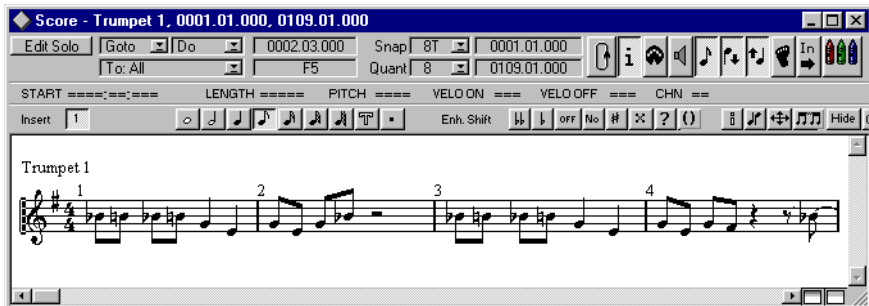
Here, the MIDI notes are presented as a musical score. Use Score Edit to make printed scores, or simply if you are used to working with musical notation.

3

Quick Start

About this Chapter

This chapter gives you a really quick introduction to Cubase. It is based on the Quick Start demo Song, included on the CD-ROM.

● We assume that a Windows compatible sound card has been already installed (as described in the Installation booklet) and tested as working with the Windows' Media Player.

Opening the Quick Start Song

1. Insert the Cubase CD-ROM disc into the drive.

2. Use the Explorer application to copy the folder Quick Start Song on the CD-ROM to your hard disk.

3. Open the Quick Start Song folder, on your hard disk, and locate the Cubase Song file with the same name. Double click on it.
Cubase launches, and the Song opens. What you see now is the Arrange window, the real focus of Cubase.

Playing Back

At the bottom of the screen you will find the *Transport Bar*. This is used to control playback, recording and many other functions, much like the controls on a regular tape recorder.

The transport controls.

1. Click the Play button, on the Transport Bar.
The Song starts playing. At this point, you will only hear the audio Tracks, that is, audio recordings stored on your hard disk as files. No MIDI is played at this point.

2. When you are done listening, hit Stop. Also try out Fast Forward and Rewind to see how you can move the Song Position (the vertical moving line in the Arrange window) to any point in the Song and start playback from there.

Muting and Soloing Tracks

As you can see, the Arrange window is divided into a number of Tracks. These are listed vertically. You can silence any number of Tracks, by using the functions Mute and Solo.

The Solo button   A Muted Track
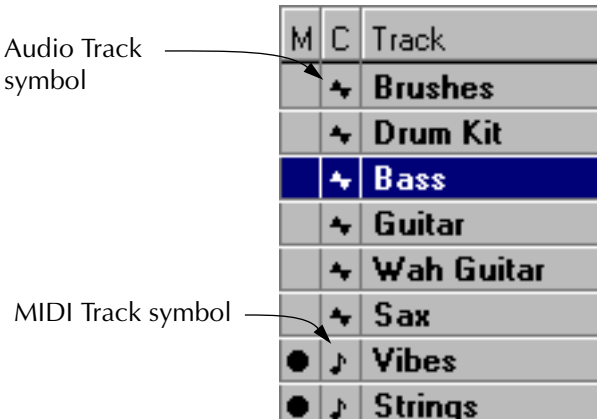
1. **Click in the "M" column in the Tracks list, for the Track Bass.**
   You will notice how the bass disappears from the music. Click again to get it back. What you just did was muting and unmuting a Track.

2. **Experiment with muting/unmuting Tracks but leave the Tracks Vibes and Strings muted for now.**

3. **Click on the name of the Track Bass.**
   The Track goes dark. What you just did, was *selecting* a Track. Selecting something means it is now the target for some operation you are about to perform.

This Track is selected

4. **Click on the Solo button, at the top of the Arrange window.**
   You will now hear only the selected Track. Solo can be thought of as a sort of inverse mute. Click Solo again to hear all the unmuted Tracks.

Activating the MIDI Tracks

The two Tracks at the bottom, called Vibes and Strings, do not play audio but MIDI. You can see this by checking the "C" column for the Track. The note symbol indicates that a Track is a regular MIDI Track whereas the waveform symbol indicates an audio Track.

Audio Track symbol ——————

MIDI Track symbol ——————

M	C	Track
	♦	**Brushes**
	♦	**Drum Kit**
	♦	**Bass**
	♦	**Guitar**
	♦	**Wah Guitar**
	♦	**Sax**
●	♪	**Vibes**
●	♪	**Strings**

To be able to play the MIDI Tracks you need to have an audio card with a synthesizer on it, or an external MIDI synthesizer connected to a MIDI Interface. If your synthesizer is not General MIDI compatible, you might still play the Tracks, and you will probably hear something, but it might not be the sounds we assume in this example.

1. **Make sure your synth is in its General MIDI compatible mode.**
   Most synths are on startup already in this mode.

2. **Click twice on the Stop button to move the Song Position to the beginning of the Song.**

3. **Unmute the two Tracks Vibes and Strings.**

4. **Activate playback.**
   You will now hear, from the MIDI synthesizer, some additional parts in some sections of the Song. If you don't hear anything, check the Output column for the MIDI Tracks and make sure they are set to the correct "port".

Changing the Sound of a MIDI Track

Now, let's try to make some changes to the sound and levels of the MIDI Tracks. The easiest way to do this (although there are others) is to use the GM/GS/XG Editor.

1. **Let the music keep playing.**

2. **Select "GM/GS/XG Editor" from the Edit menu.**
   A window with faders, knobs and other controls, opens. The 16 sections represent the 16 MIDI channels in your General MIDI instrument. The Vibraphone sound you are hearing is playing on channel 1 and the Strings on channel 2.
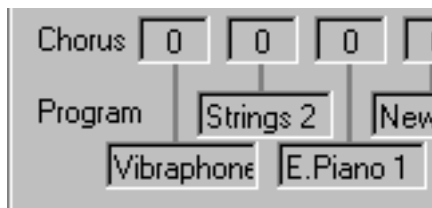
The text fields at the bottom of the window indicate the names of the sounds.

3. **Adjust the "Vol" faders for channels 1 and 2.**
   These faders transmit MIDI messages to your MIDI synth, instructing it to adjust the volume on these MIDI channels. If nothing happens, make sure that the Mode pop-up menu in the lower right corner of this window is set to "GM", and that the Output pop-up menu below it is set to the "port" that your General MIDI synth is connected to.

4. **Position the mouse over the Program selection item for channel 1.**

5. **Click with the mouse button.**
   A hierarchical Program menu appears.

6. **Select some sound from this menu.**
   The Vibes part will now play back with the sound you just selected instead. If nothing happens, this is because your instrument is not set up to receive the MIDI message *Program Change*.

7. **If you like, experiment with the other controls in this window.**

8. **When you are done, close the GM/GS/XG Editor.**

Setting the Levels of the Audio Tracks

Now that you've learned how to mix the MIDI Tracks, let's do the same for the audio Tracks.

1. Rewind the Song to the beginning and activate playback.

2. Select "Monitor" from the Audio menu.
The audio Monitor mixer appears. Here you can see, via the colored bar graphs, which *audio channels* are playing (in this example, each audio channel corresponds directly to an Audio Track, so that Track 1 plays back on audio channel 1, and so on).
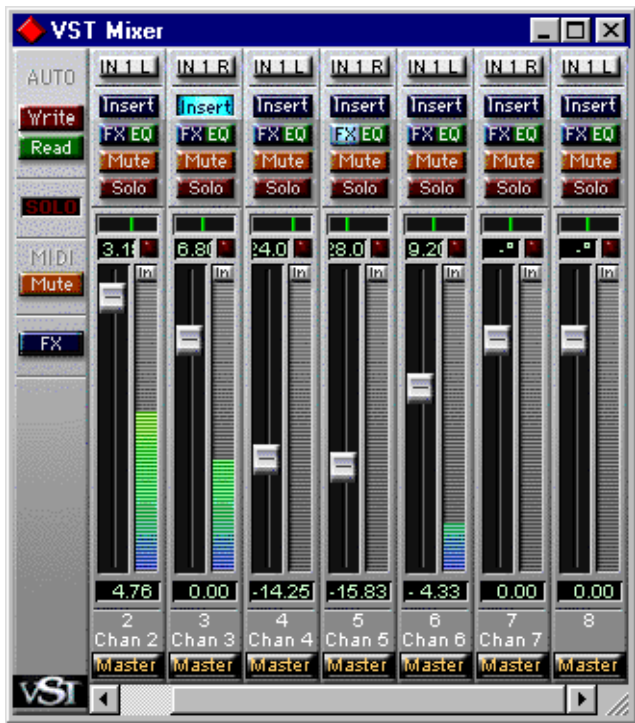
The Monitor window.

3. Use the channel faders to adjust the levels of the Tracks, as desired.

Adding an Effect

Now, let's add some audio effects to the Guitar Track. To hear what we're doing, let's Solo it first.

1. Locate Track Guitar, the one labelled "Chan 4" at the bottom, and click on its Solo button (at the top of the "channel strip").

2. Click on the same Track's FX button, located just above its Solo button.
The EQ and FX Send window for that channel appears. Essentially this is a mixer window with detailed settings for one channel only.

The effect settings in the EQ/FX window.

The section we are interested in now is the one to the far left, with the four blue knobs. These represent controls for the amount of effect for this audio channel. As you can see from the labels, there are four effect available.

1. Click on the On buttons for all four effects.

2. Use the knobs to add various amounts of each effect to the Guitar sound.
To do this, press the mouse button with the pointer over the knob, keep the button down and drag in a circular motion around the knob.

Drag in a circular motion around the knob.

3. When you are done, close the FX window, click the Solo button again to deactivate Solo and finally close the Monitor window.

Checking Out the Arrange Window Toolbox

So far you've been mixing and setting sounds. Now it's time to explore the possibilities of *editing* the music. This is mainly done in the Arrange window, using a graphical Toolbox that allows you to manipulate recordings.

As you have probably noted, the recordings on the Tracks are made up of Parts, small boxes that each represent a musical recording, regardless of whether it contains audio or MIDI. Editing in the Arrange window means manipulating these Parts.
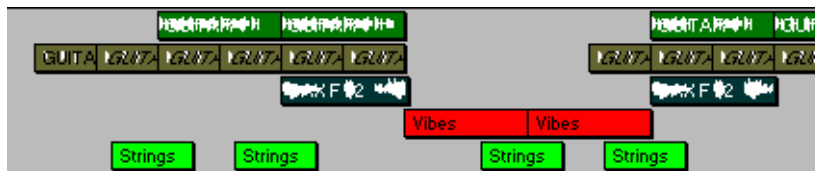
Parts in the Arrange window.

1. Position the pointer somewhere in the area where all the Parts are (the Part Display) and press the right mouse button.
A Toolbox appears.

The Arrange window Toolbox.

2. Select the Eraser Tool.

3. Click on one of the Parts.
It disappears - because you just erased it!

4. Select Undo from the Edit menu.
The Part comes back.

5. Select the pointer from the Toolbox.

6. Position the mouse pointer over any Part, press the mouse button and drag.
The Part moves. If you like, play back to hear the effect.

7. Select one Part. Then hold down [Shift] and click on more Parts, one after the other.
They all get selected and turn dark to indicate this.

8. Press the mouse button with the pointer over one of the selected Parts, and drag.
They all move together, as a block.

9. If you like, try out the other Tools.
The functions of the most common Tools are described in the chapter "Working in the Arrange window".

Checking the Contents of the Parts

The Arrangement is fine for block editing purposes, like repeating a chorus etc. However, there will be many instances when you will want to perform more detailed manipulations of your recordings. For this you use the various Editors.

1. **Double click on a Part on an *audio* Track.**
   The Audio Editor opens. This has a Toolbox and a number of controls, menus and settings all of its own. If you like, experiment with the possibilities.

2. **Close the Audio Editor.**

3. **Double click on a MIDI Part.**
   The Key editor opens. This is one of a number of MIDI editors, each one streamlined for a certain type of work.

4. **Again, experiment with the possibilities, if you like.**

5. **Close the Key editor.**

Closing Up

This finishes our quick tour of the demo Song. By now you are probably anxious to record something of your own. Proceed to the next chapter to get an introduction to the basic methods and concepts used in the program, and then get ready for a unique musical experience, using Cubase VST to realize your own musical inspirations.

● Apart from the Quick Start Song, there may also be other Demo Songs included on the CD-ROM. Use these to try out other features and get an impression of the full capacity of Cubase VST!

4

Basic Methods

Why you should read this Chapter

In this chapter, none of the actual features of Cubase VST are described. Instead, the chapter contains information about the general methods you need to employ when using Cubase VST, plus some useful terminology. These methods are the same in every part of the program, no matter if you are making a basic recording or using Cubase VST at its most advanced level. To make your work with Cubase VST as effective as possible, please take the time to read this chapter.

Using Tools

When you are working with Cubase VST, you need different tools in different situations. You may for example want to input notes or import audio using a Pencil tool, or delete notes using an Eraser tool. There are a lot of other tools as well.

Some examples of tools

About Toolboxes

The various tools used in certain situations, are gathered in Toolboxes. Each is essentially a "frame" containing an icon for each tool. Most of the windows in Cubase VST have their own Toolbox.
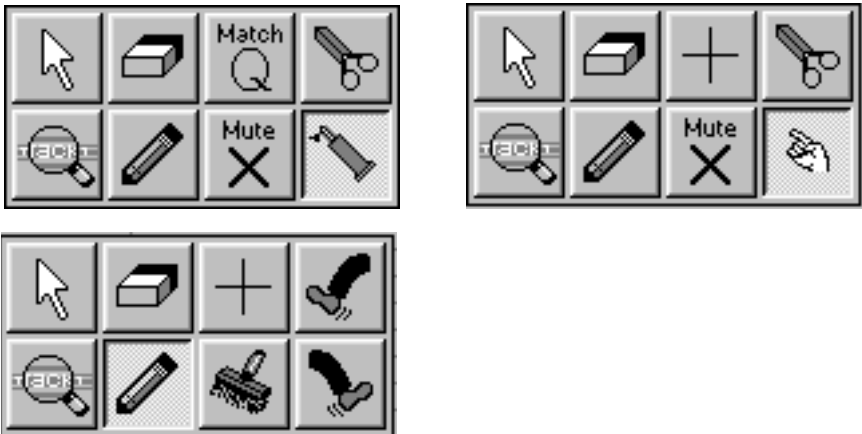
Some examples of Toolboxes

Selecting a Tool from a Toolbox

1. Press the right mouse button.
Make sure the pointer is not positioned over a numerical value field, as this will instead increase the value (see).

2. The Toolbox appears.

3. Move the pointer to the tool you want to select, and release the mouse button.
The Toolbox disappears and the pointer takes on the shape of the selected tool.

Pop-Up Menus

Throughout the program you will select values from pop-up menus. These differ a bit from the regular "menu bar menus". Pop-up menus may be located anywhere in a window, and are not on a menu bar. But, selecting is done identically from all menus, pop-up or regular.

Press the mouse button with the pointer positioned on the small triangle...

...to pull down a pop-up menu.
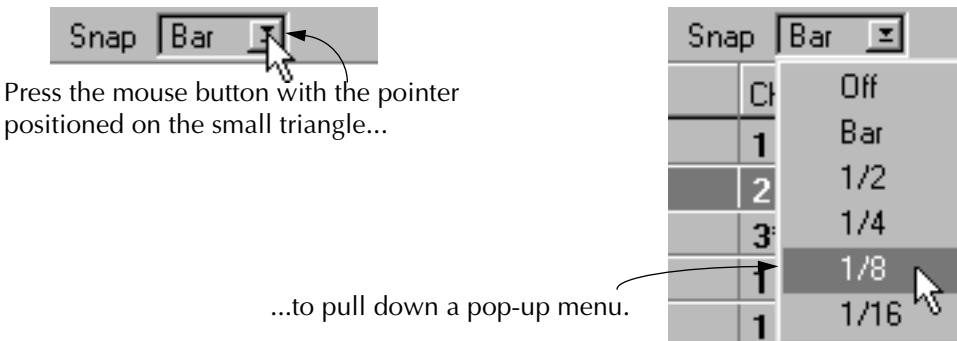
About Positions, Lengths and Resolution

Cubase VST works with a MIDI resolution of 384 fractions (or ticks) per quarter note. You will often work with position values in the Arrange window and in the MIDI editors. Positions in Cubase VST are displayed in one of two formats:

- **Meter Positions**
Meter Positions are divided into Bars, Beats (quarter notes) and Ticks. This is the most commonly used position format in Cubase VST.

0003.01.096

For example, if you place the Song Position pointer one sixteenth note into the third bar, the position will be displayed like this: "3.1.96" (third bar, first beat, 96th tick).

- **Time Positions**
Time Positions and lengths are shown as "hours: minutes:seconds:frames". How many frames there are to each second depends on the frame rate, as set in the Synchronization dialog box. See the "Synchronization" chapter in the electronic documentation.

00:00:00:00 ← The beginning of the Song, displayed as a Time position.

MIDI Note Lengths

MIDI Note lengths are always displayed as ticks. In the table below, some common note values are shown as ticks:

Note Value	Ticks	Note Value	Ticks
Whole note	1536	Eighth note	192
Half note	768	Eighth note triplet	128
Dotted Quarter note	576	Dotted sixteenth note	144
Quarter note	384	Sixteenth note	96
Dotted eighth note	288	Sixteenth note triplet	64

Setting Values

Different types of values

There are three basic kinds of values displayed in Cubase VST:

- "Normal" values.
- "Segmented" values, i.e. values divided into two or more "subvalues". Examples of these are positions, tempo, time signature, etc.
- Note Pitches.
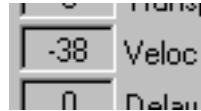
Some different values.

Changing values

There are several ways to change a value in Cubase VST:

- **Click on the value with the left or right mouse button.**
  The left button decreases the value, the right button increases it.
  For each click, the value changes one step. If you hold down [Shift] while clicking, the value will change in larger steps (often steps of ten).

- **Scroll the value up or down by pressing and holding down one of the mouse buttons with the pointer over the value.**
  The left button decreases the value and the right button increases it.
  If you hold down [Shift] while using the mouse, the value will scroll in larger steps (often steps of ten).

- **Hold down the [Control] key, click on a value and drag the mouse up or down with the button pressed.**
  The whole screen will act like an invisible scroll bar or fader, which you can use to change the value.

- **Double click on the value, type in a new value and press [Return].**

About changing "segmented" values

If you are using the mouse to change a "segmented" value such as a position or a decimal number, you can change any one of the "segments" individually. In a position value for example, you can change the bar, beat and tick values independently, just by positioning the pointer at the right numeral.

Clicking on the "Beats" value...
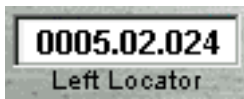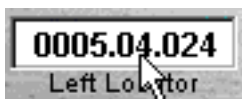
...will change this value only

If you are changing a segmented value by typing, you can use spaces, dots, commas or any character that is not a number, to separate the numerals. However, you don't have to type in all the numerals. If you just type in a single number, you will change the largest numeral in the segmented value, and all the lesser numerals will be set to their lowest values:

Double clicking on this value (Song Position)...

...brings up a value box.

If you type a single value and press [Return]...
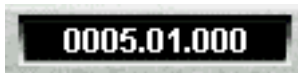
...the lesser numerals get their lowest values automatically.

About editing Note Pitches

If you are editing a pitch (note number) by typing, there are two ways of typing it: as a *note name* (a letter followed by a number and maybe a #-sign) or as a *MIDI note number* (a number from 0 to 127, where 0 is the lowest note).
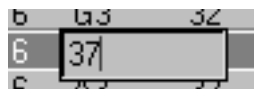
You may enter a MIDI note number, for example 37...
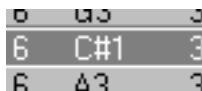
...but Cubase VST will display the name of the note (here C#1).

In some windows you also have the option to edit note pitches via MIDI:

1. Double click on the pitch value.

2. Press a key on a connected MIDI keyboard.
The value gets the pitch of the key you press.

3. Press [Return].

Naming

You can give names to Tracks, Parts and many other items in Cubase VST. To edit a name just double click on it. The text gets highlighted and you can type in the changes you want to make. You can use the arrow and [Backspace] keys, just as in any text-editing program.

Double clicking on the name...

...highlights it and makes it ready to edit.

Window Techniques

Cubase VST is a Windows 95 program, which means that you may move, resize, scroll and close windows using standard Windows 95 procedures. There are also a couple of special features:

Changing the Magnification

In the Arrange window and most of the editors, a small slider appears on each scroll-bar. The slider on the left/right scroll bar changes the horizontal magnification. The slider on the up/down scroll bar changes the vertical magnification. By dragging the slider to the right/downwards, you increase the magnification. Dragging the slider to the left/upwards will decrease magnification.

The vertical magnifying slider

The horizontal magnifying slider
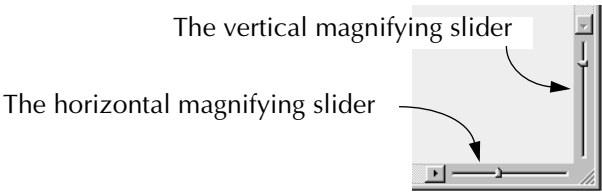
You can also change the magnification from the computer keyboard, using the following keys:

[G]	Decrease horizontal magnification.
[H]	Increase horizontal magnification.
[Shift]-[G]	Decrease vertical magnification.
[Shift]-[H]	Increase vertical magnification.

Dividers

Some of the windows in Cubase VST are divided into two or more sections. The "borders" between the sections are called Dividers. If you position the pointer on a Divider, the pointer takes on the shape of a hand. You can then click on the Divider and drag it in the direction of one of the sections. This way, you will shrink that section and enlarge the other.
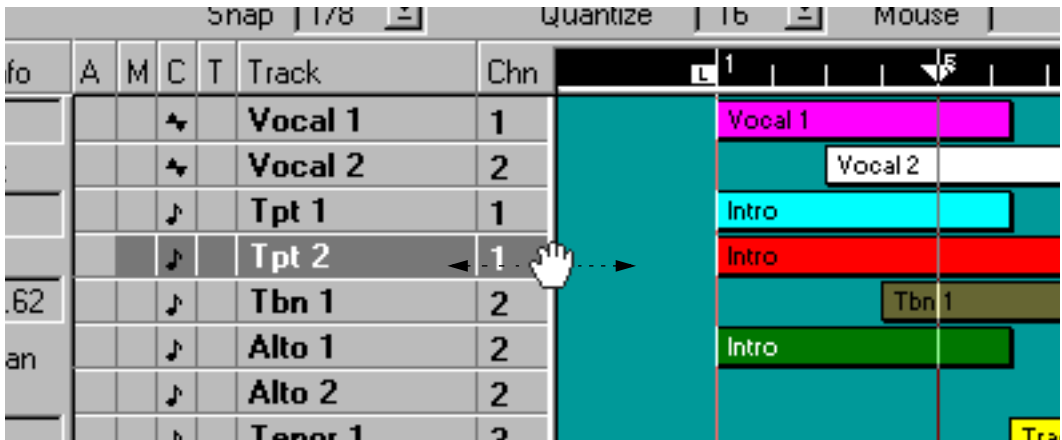
Dragging the Divider in the Arrange Window.

Using the Computer Keyboard

When you are working with Cubase VST, the computer keyboard has several different uses:

Transport Controls

The Transport functions (such as Play, Stop, Record and so on) can all be managed from the computer keyboard. The keyboard commands for these functions are mainly located on the numeric key pad to the right on the computer keyboard. See in this document.

● You can use the numeric key pad to control the transport functions, even if the Transport Bar is hidden or a dialog is open.

Keyboard Shortcuts

Many of the items in Cubase VST's menus have a computer keyboard equivalent - a "shortcut". These keyboard shortcuts generally use the keys to the left on the computer keyboard.

How Keyboard Commands are displayed in this Manual

The following list shows how the "special" keys on the computer keyboard are displayed in this manual.

In this manual:	On some keyboards:
[Shift]	⇧
[Alt]	Alternate
[Control]	Ctrl
[Tab]	⇥
[Return]	⏎
[Backspace]	⇐

When the text says something like "press [Control]-[T]" this means that you should hold down the Control key on the computer keyboard and press T once.

● Some key commands involve pressing two modifier keys, for example: "press [Control]+[Alt]-[T]". The "+" sign between the modifiers means that you should press the Control key and the Alt key *at the same time*, hold them down and then press T once.

Undo

Cubase VST has a very wide-ranging Undo function. This means that if you regret your last action, you can Undo it. This is very helpful when something doesn't turn out as intended. Remember that it is only the *last* action that can be undone.

You Undo an action by selecting "Undo" from the Edit Menu, or by pressing [Control]-[Z] on the computer keyboard.

Often the menu item Undo tells you what will be undone at any given moment. In this case, "Undo Delete" means the last deletion will be undone.

If you wish to "Undo the Undo", this is possible. The menu text changes to "Redo" after an Undo (for example "Redo Delete"). If the menu item is grey, nothing can be undone.

5

Setting up your System

Setting up Audio

● This chapter (and in fact the whole Getting Started book) assumes you are using one "standard" audio card, with analog stereo inputs and outputs.
If you have an audio card with several inputs and outputs, you find information about activating different Inputs and routing audio to different Outputs in the electronic documentation.
To get a grip on the basic audio procedures in Cubase VST, we recommend that you set up and connect your audio hardware so that it resembles a standard "two in/two out" card, and try out the possibilities described in this document. Then go on to learn about the Output Bus features as described in "The Input/Output Bus System" in the electronic documentation.

Connecting your system - Inputs and Levels

Example 1 – The simplest possible MIDI and Audio system

The simplest audio/MIDI system you can have is an audio card which also contains a MIDI synthesizer.
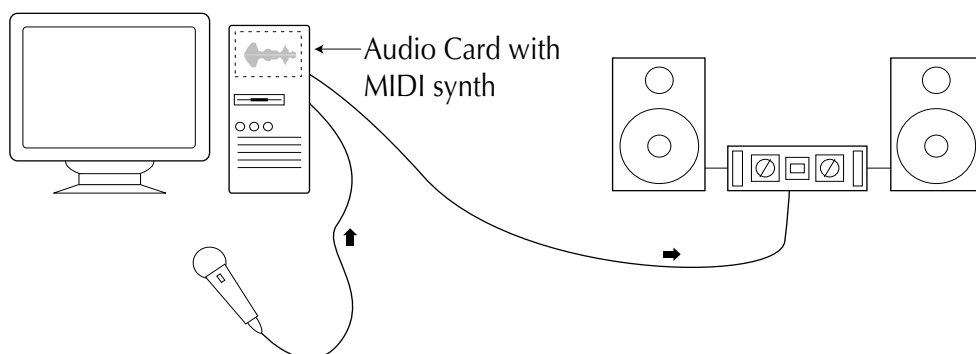
In this system, the microphone, plugged directly into the audio input on the card, is used to record audio. The stereo output on the card delivers both the output from the audio tracks (the material recorded with the microphone) and the output from the MIDI synthesizer on the card.

Example 2 – A Basic system including an External Mixer

Standard Windows audio cards often do not provide optimal audio quality for recording the output of a microphone.

To improve sound quality, it is often preferable to connect the microphone (or other device you plan to record onto audio Tracks) to an external mixer and then connect the audio output of that mixer to the audio card.

In addition to this, more advanced MIDI synthesizers are normally in external boxes. This means you have two audio sources that you want to hear in your speakers or headphones – the output from the audio card and the output from the synthesizer(s). Again, the solution is to connect it all to a mixer.

The picture below shows a setup that includes both these functionalities.
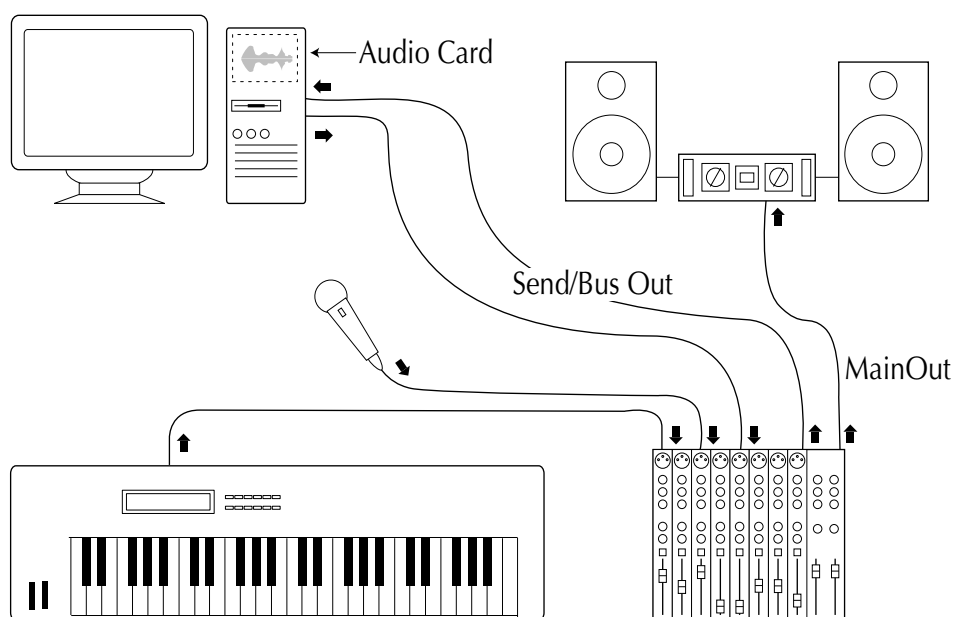
In the example above, a special output on the mixer called a "monitor send" or a separate "bus" is connected to the input of the audio card. This ensures you can separately control what gets recorded on an audio Track.

The main outputs of the mixer are connected to the speakers, and it is via this connection you are able to hear the output of the audio card and the synthesizers, blended to a final mix.

Naturally, there are endless variations on the above concept depending on the type of mixer, the sources to be recorded and the specification of the audio card. Contact your music dealer for help on configuring a system ideal for your specific needs.

Recording From a CD player

Most PC computers come with a CD-ROM drive that can also be used as a regular CD player. Normally, the CD player is connected via a special connector to the audio card so that you can record the output of the CD-player directly into Cubase VST.

The Sound Card Setup application

Normally, a sound card has several inputs: a microphone input, a stereo line input, possibly digital inputs and maybe a connection from the CD-ROM drive in your computer (see above).

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

- Selecting which in/outs are active.
- Turning monitoring via the card on/off.
- Setting levels for each input. This is very important!
- Setting Levels for the Outputs, so that they match the equipment you use for monitoring.

About Recording Levels and Inputs

When you connect your equipment, please remember that different types of devices deliver different types of audio signals.

- Microphones and electric guitars deliver low level signals. The term used is indeed "microphone level". These types of sources should always be connected to a microphone input.
- Mixers, synthesizers, tape recorders and many other devices deliver a stronger signal called a "line level signal". These should always be connected to a "line input".

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

● Cubase VST 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 card or possibly from an ASIO control panel, accessed from Cubase VST's Audio System dialog box.

About Monitoring

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

- **Via a Mixer**
  If you have the equipment connected to a mixer and then to the audio card, you can of course chose to listen to the connected equipment directly from the mixer. If you should chose this option or not depends on how advanced your mixer is.

- **Directly via the audio card.**
  In this case, the audio input on the card is connected directly to its output. You set this up with the mixer application that comes with the card.

- **Via Cubase VST**
  In this case, the audio passes from the input into Cubase VST and back to the output. You then control monitoring via settings in Cubase VST.

Which should I choose - "Card" or "Cubase" monitoring?

- **Monitoring via Cubase VST has the advantage that any effect and other settings you make in the program will also be apparent on the monitored signal, not only on recordings you have already made and play back.**
  This will not be the case if you use the card for monitoring.

- **Monitoring via Cubase VST has only one disadvantage: There is an unavoidable delay in the Monitor signal (the monitored sound will appear to be a little late). This is due to the way audio is handled on PC computers/audio cards.**
  Normally, audio card monitoring does not have this problem.

Setting up

- **If you want to use Cubase VST's monitoring, make sure any monitoring ("through") function is deactivated in the card's mixer application.**

- **If you instead want to use the card's monitoring, make sure this function is activated in the card's mixer application. Also select the Global Disable monitor option in Cubase VST's System dialog (found on the Audio menu).**

System and ASIO Settings

1. **Select "System..." from the Audio menu.**
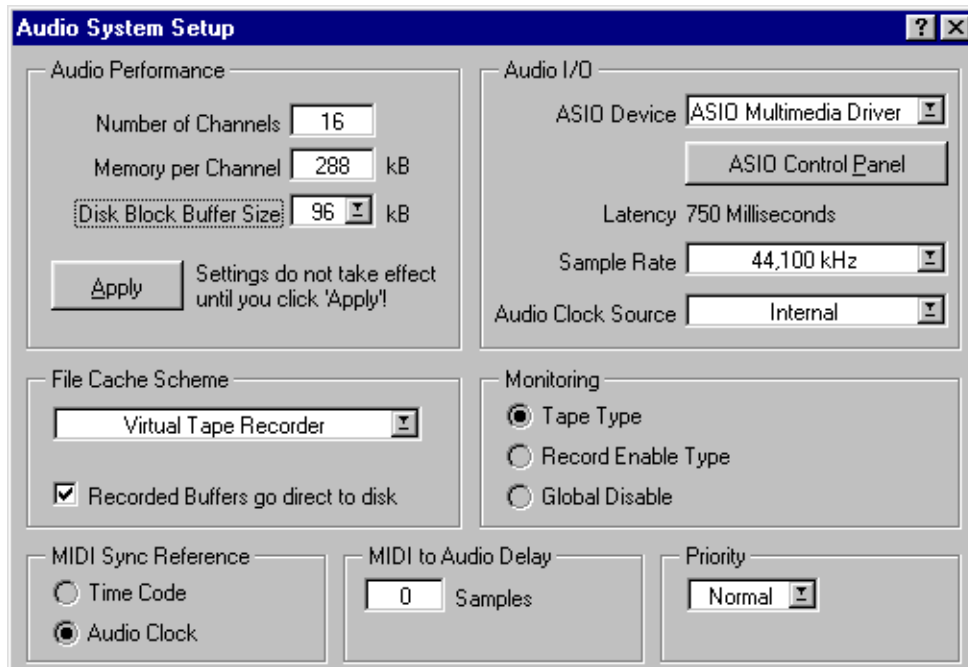
The System dialog.

2. **Make sure that "ASIO Multimedia Driver" is selected on the ASIO Device menu.**
   Again, this assumes you are using a regular Windows audio card. If you have a card for which there is a special ASIO driver, you should select that driver. See the electronic documentation for details.

3. **If required, adjust the Number of Channels in the Audio Performance section.**
   How many channels you will actually be able to use depends on your computer's processing power, the speed of the hard disk and other factors.

4. **Click Apply.**

5. **Click on the ASIO Control Panel button.**
   The ASIO Multimedia Setup panel appears. This is used to set up your audio card.
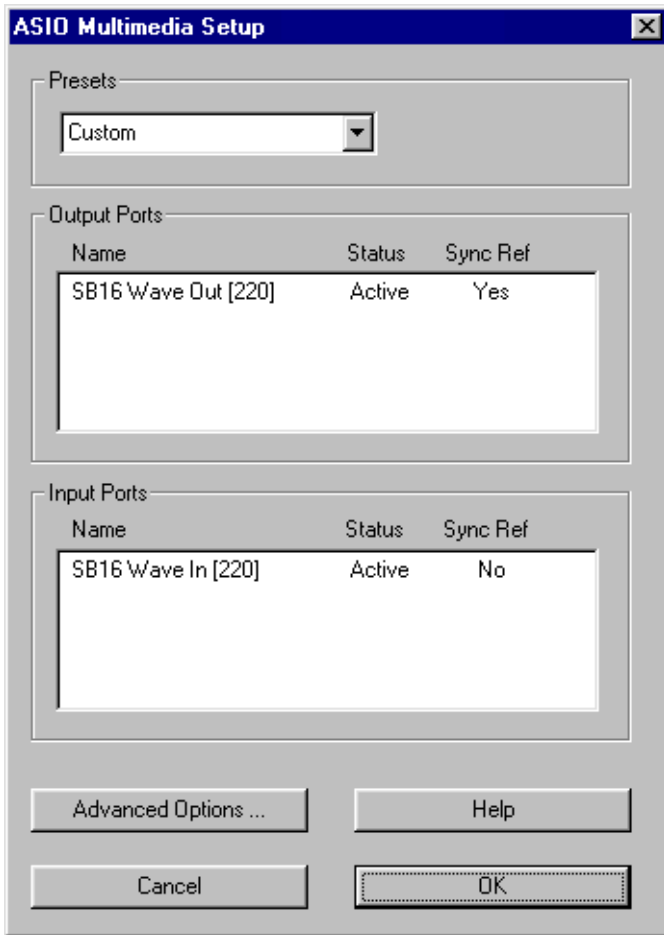
The ASIO Multimedia Setup panel.

6. **Pull down the Presets pop-up menu.**
   This contains pre-programmed setups for some common audio cards, but you can also add your own Presets here (see the electronic documentation).

7. **Select the Preset for your audio card.**
   There may be several Presets for a single audio card type. For example, you may be able to select a "half duplex" or a "full duplex" setup. "Full duplex" means that the card has the ability to record and play back at the same time, which is a great benefit. If your audio card supports this feature (see the audio card documentation), make sure to select the "full duplex" Preset.

8. **Close the dialog by clicking OK and then close the System dialog.**
   Once the settings are done, they are automatically saved together with the program.

If there is no Preset for your audio card

If you cannot find a Preset for your audio card model, you need to set up the card manually:

1. **In the ASIO Multimedia Setup dialog, click on the "Advanced Options…" button.**
A dialog with more settings appears.
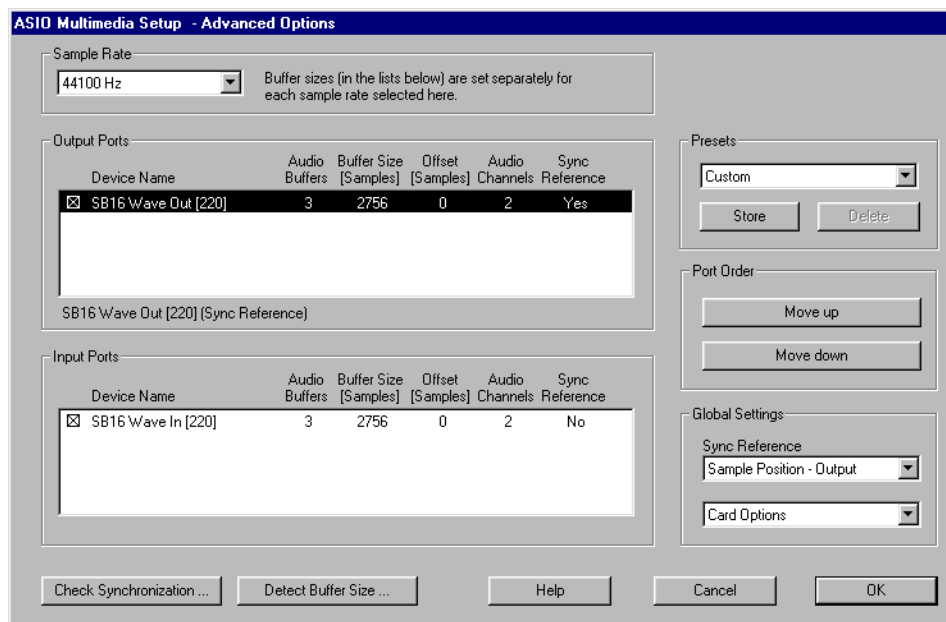
2. **Locate your audio card in the Output and Input Port lists and make sure the checkboxes to the left in both lists are activated for your card.**
If you have more than one audio card in the computer, only one should be active at this point. See the electronic documentation for info on more advanced options.

3. **If your card has the ability to record and play back at the same time ("full duplex"), make sure that this option is activated on the Card Options pop-up menu in the lower right corner of the dialog.**
If you are unsure about your specific card's ability, check its documentation.

4. **Click OK to close the Advanced Options dialog and the basic ASIO Multimedia Setup dialog, and finally close the System dialog.**
The settings are automatically saved together with the program, but you can go back later and save your Advanced ASIO Multimedia settings as a Preset (see the electronic documentation).

Enabling/Disabling Audio

On the Audio menu you will find a setting called Disable Audio, which allows you to disable all audio input and output. This feature is mainly for two situations:

- **When you only want to record and play back MIDI and don't want to waste processing power on the audio engine.**
  This allows the computer to use all its power for screen updates and MIDI playback.

- **When the computer you use is not powerful enough to run Cubase VST with the VST engine enabled.**
  Note the following:

- The setting is automatically saved in the Cubase VST preferences. This means that if you disable the Audio Engine, it will remain disabled until you enable it again.
- It is only CPU processing power that is preserved. The program will still use the same amount of primary memory (RAM) and disk space.
- All audio functionality is actually intact, it is only audio recording, playback and synchronization that are disabled. If you like, you can for example perform "silent editing" of audio in this mode.

Disabling audio on startup

- **To disable audio on startup, hold down [Shift] while launching Cubase VST.**

Setting up MIDI

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

Connecting the MIDI Equipment

The descriptions below describe four setup examples for small MIDI systems. You might need or want to hook things up differently!

Example 1A – Using the same Keyboard for recording and playback, via a separate MIDI Interface

1. **Connect the MIDI Out of the instrument to a MIDI In on the MIDI interface.**
If you have several, it doesn't matter which MIDI In you use. Cubase VST can record from all inputs on a multi-port interface.

2. **Connect a MIDI Out on the interface to a MIDI In on the instrument.**
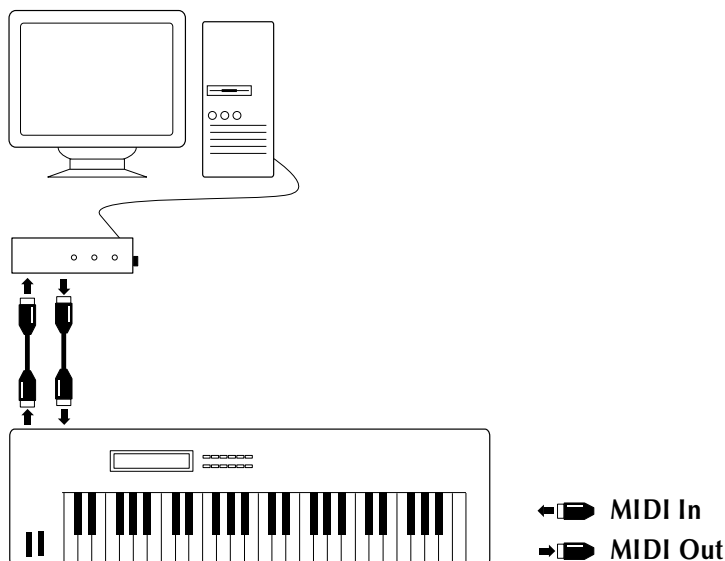
MIDI In
MIDI Out

Your MIDI interface may have more than one MIDI Out. Each MIDI port can address up to 16 different devices (or the 16 different voices in a multitimbral module). On smaller MIDI interfaces, the Outputs all carry the same information, so it doesn't matter which you use.

On larger, multi-port interfaces, the MIDI Outputs are all separate, that is, they carry *different* sets of the 16 midi channels. This allows Cubase VST to send MIDI data selectively to different MIDI channels on any of the available outputs. If you have a multi-port interface, you should connect the first output to your instrument, and use the following outputs if you need to connect more instruments.

Example 1B – Using a Keyboard with a built-in MIDI Interface

If your instrument has a built-in MIDI interface, no MIDI cables are needed, only a serial cable (see the instrument's documentation for cable specifications).

1. Make the connections with computer and instrument turned off.

2. Connect the cable between the serial port on the computer and the computer connection on the instrument.
Many instruments have a special switch that needs to be set for the computer connection to be active (see the instrument's documentation).

▬▶ Computer Connection
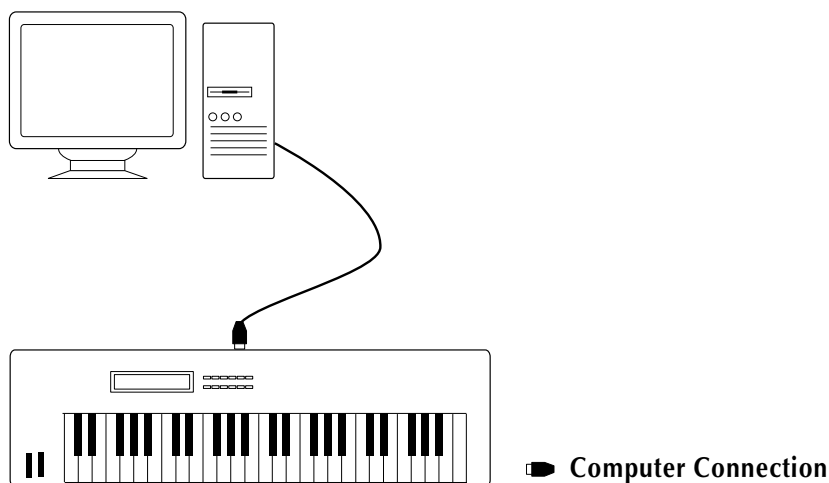
The connection above allows you to feed the computer with the signals from the keyboard, during recording. It also allows you to send MIDI signals from the computer to the instrument during playback.

Example 2– Using a separate Keyboard and Sound Module

If you have a separate MIDI keyboard, that produces no sound, and a sound module without keyboard, you should hook things up as in the picture below. Using Cubase VST's MIDI Thru feature (described later) you will still be able to hear the sound from the sound module while playing the keyboard and when recording.
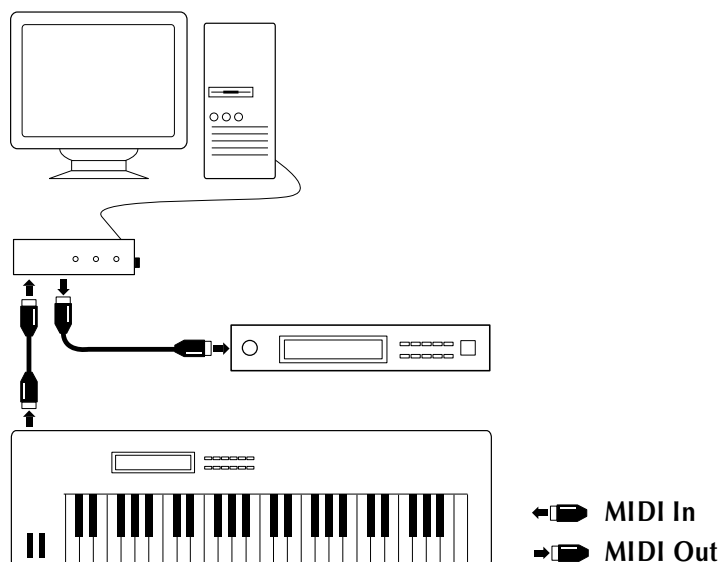
◀▬ MIDI In
▶▬ MIDI Out

Example 3 – Adding more devices using the MIDI Thru connectors on the instruments.

MIDI In
MIDI Out
MIDI Thru
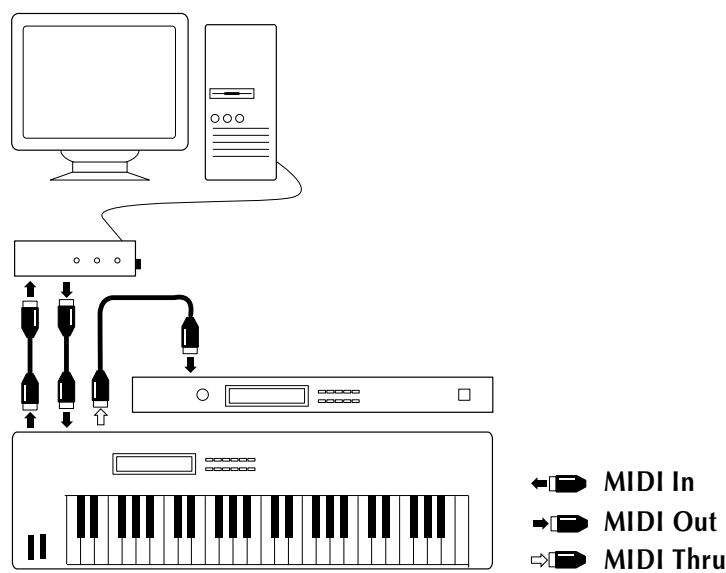
You might want to use more instruments for playback. Connect MIDI Thru on the first instrument to MIDI In on the next, and so on. In this hook-up, you will always play the first keyboard when recording. But, thanks to the Thru connection, you can still use all your devices for providing sounds on playback.

● 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.

Example 4 – Using a separate Keyboard and MIDI Card

If you have a card in your computer with a built in MIDI synthesizer, you don't need to make any MIDI connection to get Cubase VST to play back from the card. However, to be able to *record* MIDI data you need *at least* a separate MIDI keyboard, that produces no sound but only transmits MIDI signals. This should then be connected to MIDI In on the computer.

MIDI Synth
inside computer

MIDI In
MIDI Out
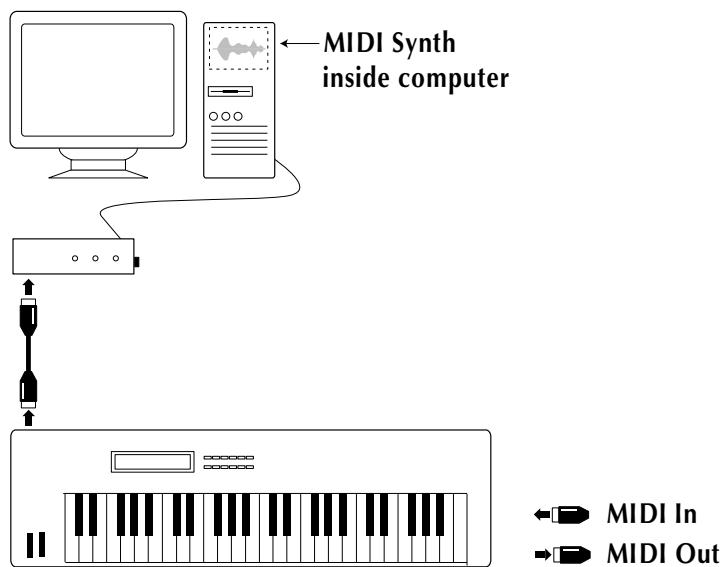
Setting up the Instruments

If you have a General MIDI, Roland GS or Yamaha XG compatible instrument, make sure it is set to its GM/GS/XG mode. If you have other types of instruments, set each Sound (Timbre, Part, Program, Patch) to receive on a different MIDI Channel.
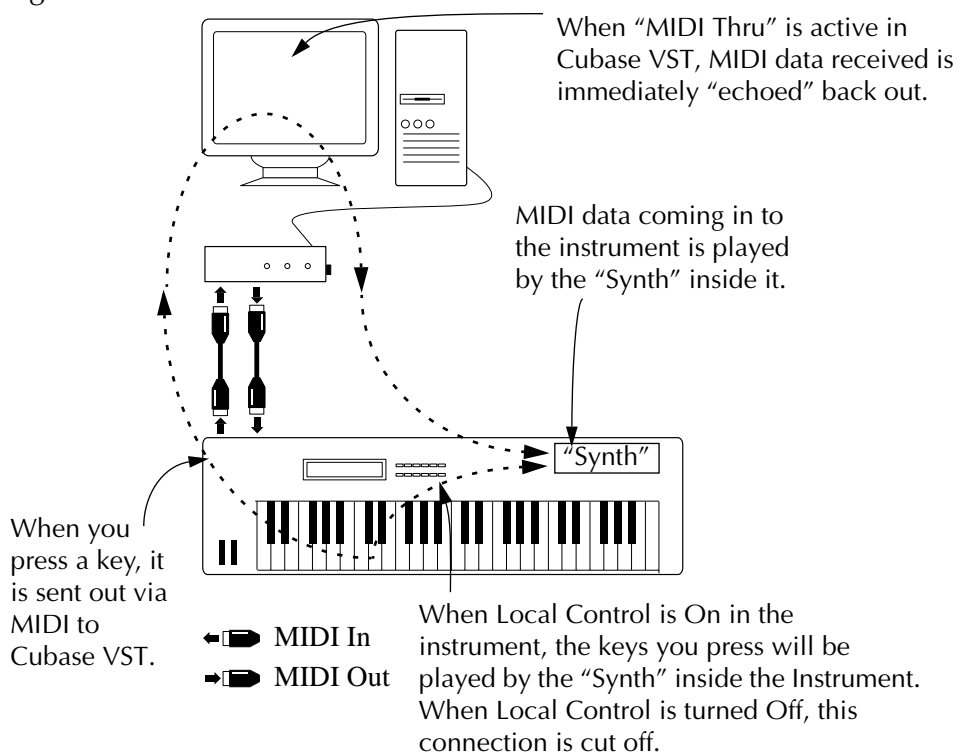
Setting MIDI Thru and Local On/Off

In the "MIDI Setup" dialog on the Options menu, you will find a setting called "MIDI Thru" 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 in Example 1 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 VST 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.

When "MIDI Thru" is active in Cubase VST, MIDI data received is immediately "echoed" back out.

MIDI data coming in to the instrument is played by the "Synth" inside it.

When you press a key, it is sent out via MIDI to Cubase VST.

◀▦ MIDI In
▶▦ MIDI Out

When Local Control is On in the instrument, the keys you press will be played by the "Synth" inside the Instrument. When Local Control is turned Off, this connection is cut off.

• If you use a separate MIDI keyboard, that does not produce any sounds itself, as in Example 2, MIDI Thru in Cubase VST should also be activated, but you don't need to look for any Local On/Off setting in your instruments.
• The only situation where MIDI Thru should be *deactivated* is if you use Cubase VST with only one keyboard instrument and that instrument cannot be set to Local Off mode.

Checking your MIDI Setup

1. Play your MIDI keyboard.

2. Check the "In" indicator on the Transport Bar so that you are sure that Cubase VST receives MIDI data.

3. If you have Thru activated, the "Out" indicator should indicate Output of data.

When this lights up, Cubase VST is transmitting MIDI data.

When this lights up, Cubase VST is receiving

4. Make sure you hear the instrument that you are playing.
If not, check your MIDI connections and Cubase VST's MIDI Thru setting. Also check the audio equipment and audio connections.

5. If you listen to the sound of the same instrument as you are playing, make sure the sound from the instrument doesn't sound "thin" or "flanged".
If it does, you have probably not set the instrument to Local Off. This means that every key you press is played twice, once directly on the instrument and once via MIDI.

Saving the settings

The Audio Hardware Setup settings are automatically saved by Cubase VST. Any other settings you have made you will want to save, so that you don't have to redo them each time you launch Cubase VST:

1. Pull down the File menu and select "Save As...".

2. Click on the "Song" file type selector.

3. Make sure you save in the same folder as where you have your Cubase VST program.

4. Type in the name "DEF.ALL" (make sure you type the name exactly like that, but without the quotes of course!).

5. Click Save.
Now the next time you launch the program, the basic Song settings you just saved will automatically be loaded (see page 241).

Preparations done! Where do I go next?

There are basically two things we suggest you do:

- **Read through the rest of this document and try out the different possibilities as you go along.**

- **Read the sections of the electronic documents that interest you, to get more detailed information about each section of the program.**

6

Recording Audio

Preparations

Selecting a Sound Source

Before you begin recording, you have to select which sound source to record. You may for example have a microphone connected, as well as some kind of line level instrument or mixer, and the audio output of an internal CD drive. Depending on which audio card you use, you may be able to make this selection from inside Cubase VST, by clicking the ASIO Control Panel button in the Audio System dialog (see page 45). For many audio cards, however, the input source selection and other settings are made in a small, separate application program included with the audio card. See the documentation for the audio card.

● A standard stereo audio card often allows you to mix several input sources. However, if you plan to record a single sound source, we recommend that you turn down or deactivate the other sources, to avoid unnecessary noise.

Activating Cubase VST Inputs

Cubase VST allows you to use audio cards with several Inputs and route different Inputs to different audio channels. This Getting Started book however, assumes you are using a "basic" 2 in/2 out audio card (or, if you have a larger audio card, that you are using the two first Inputs only). Still, you need to make sure that these Inputs are activated before you attempt to record anything:

1. **Pull down the Audio menu and select Inputs.**
   The Input window appears:

The left column contains the available "physical" Input ports (in this case there are two Inputs). The fields in the right column show the names that will be used for each Input throughout the program. The middle column contain an indicator for each input pair, showing which Inputs are active.

2. **Make sure that the indicator in the middle column is lit.**
   If not, click on it so that it lights up. This shows that the Inputs are active.

3. **Press [Return] on the computer keyboard to close the Inputs window.**

● Read more about the Inputs in the chapter "The Input/Output Bus System" in the electronic documentation.

Choosing a Sample Rate

Before you can start recording you have to set the sample rate for the Song:

1. Open the System dialog (on the Audio menu).
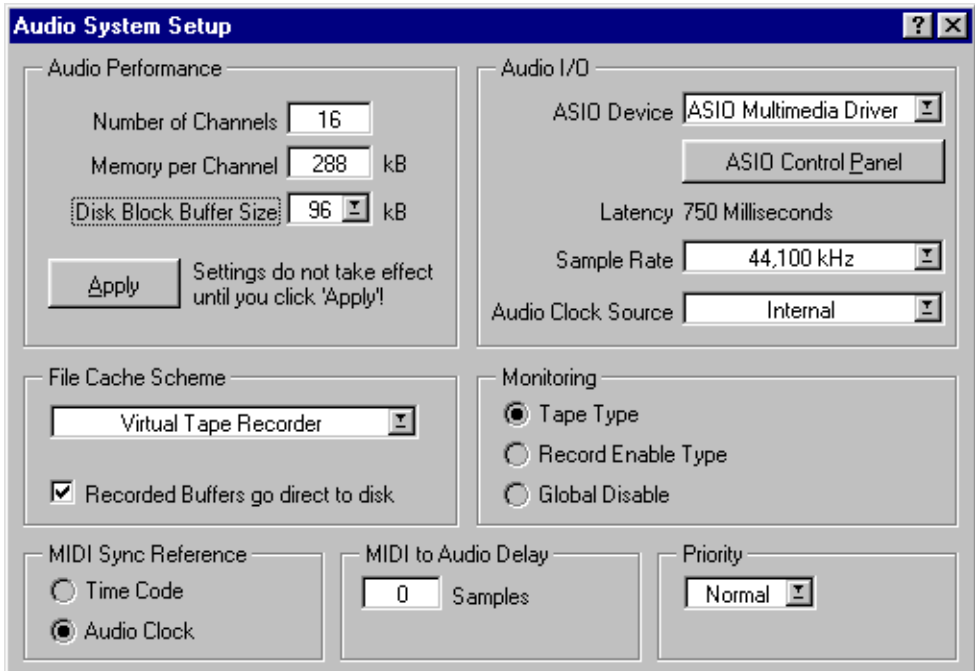
2. Use the Sample Rate popup to select a sample rate.
This setting determines the audio quality of your recordings. The higher the value, the better the quality, but when you raise the value, each recording also uses up more disk space and computer processing power. For recordings where the audio quality is important, 44100 Hz is the most common sample rate. For multimedia purposes, or in situations where you want to keep the audio files reasonably small, 22050 Hz may be a better choice.
Please note that some audio cards might only support a limited number of sample rates (see the card's documentation for details).

● This setting is done once and for all for the whole Song. You can not make some recordings at one sample rate and others at some other sample rate.

---

3. Close the dialog by clicking OK.

Once the settings are done, they are automatically saved together with the program.

Setting a tempo and time signature for the Song

Before you start you should decide for a tempo and time signature. These are both adjusted on the Transport bar:

The tempo determines the "speed" of the music. The number is in beats (quarter notes) per minute.

For now, we recommend you leave the Cycle deactivated.

For now, make sure Master is <u>not</u> activated on the Transport bar.

The time signature determines the overall "feel" of the beat. 4/4, for example is often used in rock and pop. 3/4 is used for waltz.

Tempo tip

A good way of setting the tempo is to activate playback and adjust the tempo on the Transport Bar while listening to the metronome (Click) that is generated on each beat (quarter note). For the metronome to be heard, you need to make sure that the Click button on the Transport bar is activated:

Click activated on the Transport Bar.

● If you start playback with Click activated and still cannot hear the metronome, you need to adjust the settings in the Metronome dialog on the Options menu (use the Online Help to find out about the parameters and options in the dialog).

Selecting and setting up a Track

Before you select a Track to record on, it is necessary to understand something about audio channels and how Cubase VST handles mono and stereo recordings:

- All audio is played back via *audio channels.* The maximum number of audio channels is determined by the settings in the Audio System dialog and your computer/hard disk performance.

- Each audio channel can play back one mono audio recording at a time.

- Stereo recordings play back on two audio channels, one for each "stereo side". A stereo channel pair always consists of an odd channel and the next even channel (eg. channel 1+2, 3+4, etc).

- Channels that are used in stereo pairs cannot be used for mono recordings.

For more information on audio channels, see the chapter "How Cubase VST handles Audio and MIDI" in the electronic documentation.

Set up a Track for recording as follows:

1. Select an Audio Track by clicking on its name field in the list.

An Audio Track.

- **If you don't have any empty Audio Tracks in your Arrangement, you need to create one, for example by using the Create Track item on the Structure menu.**
  To make sure the Track is an Audio Track, position the mouse in the "C" column for the Track, pull down the pop-up menu and select "Audio Track".

2. Set the Track's channel (Chn) to the audio channel you plan to record on.
   If this is the first Audio Track you record on, select 1. Generally, you should avoid using a channel already used by another Track, since each channel only can play one recording at the time.
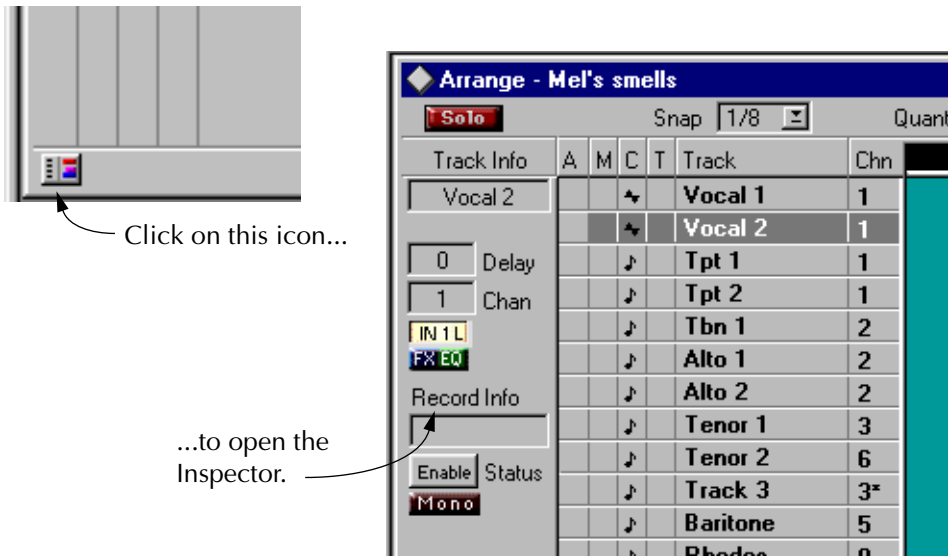

The "any" channel setting is explained in the electronic documentaion. For now, select a "normal" channel number.

● If you plan to make a stereo recording, you need to select an odd channel number.

3. Open the Inspector.
   This is done by clicking on the Inspector icon below the Track list.

Click on this icon...

...to open the Inspector.

4. Decide if you want the recording to be mono or stereo by using the Mono/Stereo switch in the Inspector.

The label on the switch (Mono/Stereo) indicates which mode is currently selected for the Track. But the switch also indicates whether it is possible to switch mode or not:

The Track is set to Mono. You can switch to Stereo by clicking on the button.

The Track is set to Stereo. You can switch to Mono by clicking on the button.

The Track is set to Mono and cannot be switched to Stereo. This is either because the Track is set to an even channel, or because the next channel is already used for a mono recording.

The Track is set to Stereo and cannot be switched to Mono. This is because there is already a stereo recording on the Track.

If you select Stereo for a Track, it will use the audio channel you set in step 2 above for the left side of the stereo recording, and the next channel for the right side. These two channels are then reserved for stereo use, so that no mono Track can be set to any of these channels. For more information about this, see the chapter "How Cubase handles Audio and MIDI" in the On-line documentation.

5. Double click on the Track name, type in a new name for the Track and press [Return].

Now you need to make sure that the correct inputs are selected for the audio channel(s) you have selected:

6. Pull down the Audio menu and select Monitor.
The Monitor mixer window opens.

7. Locate the "mixer strip" for the audio channel(s) you have selected for recording.
There is one mixer strip for each audio channel (the value you set in the Chn column for the Track on page 62 in this chapter). At the top of the strip, you find a button with the name of the Input selected for the channel.

8. Hold down [Control] and click on the Input button to pull down a pop-up menu with the available Inputs.
In this example, we assume that you are using a "regular" audio card with stereo inputs, but you may also have more advanced audio hardware with several inputs.

9. Select the Input to which your sound source is connected.
If you have selected Stereo above, you need to select different Inputs for the two audio channels.

10.Go back to the Arrange window and click on the Record Enable button in the Inspector, to make the Track and its selected audio channel ready for recording.
If this is the first time you enable audio recording in the Song, you will be asked to select a folder for storing your recorded audio files.

Selecting a folder for your Audio Files

When you enable recording for the first time in a new Song, a file dialog box will appear, asking you for a folder for your audio files. The folder you select will be used to store all audio files recorded for the Song. If you have the opportunity, we recommend that you store your audio files on a separate hard disk.

• **If you want to change folder during the session, you can do this at any time by selecting "Select Audio File Folder" on the File menu.**
This opens the same file dialog, letting you select a new folder, which will be used from that point on.

Monitoring

As described on , you can monitor via Cubase VST or directly via the audio card.

If you monitor via Cubase VST, and Record Enable a Track, monitoring is usually automatically activated for that audio channel. This means that you will hear the audio source connected to the channel input, when in Stop mode and when actually recording.

• **You can also turn "Cubase" monitoring on and off manually, by clicking on the Input button in the Monitor window or in the Inspector.**

● If you cannot get monitoring in Cubase VST to work at all, pull down the Audio menu, select System, and check if the Global Disable monitor option is selected (if this function is enabled, Cubase VST will not provide monitoring at all). Select Tape Type monitoring, exit the System dialog and try turning monitor on in the Inspector again. The other monitoring options are described in the Online help.

Checking the Input Levels

Digital recording (as in Cubase VST) is different from analog recording when it comes to recording levels. Whereas with analog recording it is often perfectly acceptable to let the "needle hit the red" (record at levels actually higher than the system can reproduce accurately), this is *not* true when it comes to digital recording.

The term used here is *headroom*. The headroom is the difference in level between the signal you record and the maximum level the system can handle. When the signal increases, the headroom diminishes towards 0 dB (decibels).

When the signal is stronger than the system can handle - when you exceed the available "headroom" - in a digital recording system, *hard clipping* occurs, which results in clearly audible and very unpleasant distortion. To avoid this, you should use the Input meter function in the Monitor window to accurately check the recording levels, and then adjust the input level in one of the ways described in step 4 below.

1. **Pull down the Audio menu and select Monitor.**
   The Monitor Mixer window opens.

2. **Click the "In" button above the level meter for the recording channel to activate the Input meter function.**
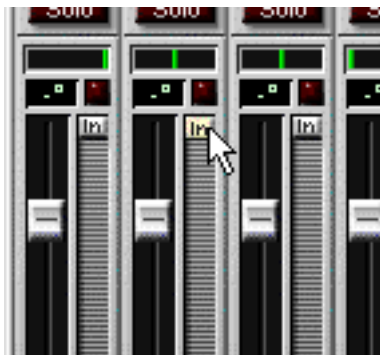
   In this mode, the meter shows the signal level at the input selected for the audio channel.

• **If you are making a stereo recording, activate the "In" buttons for both channels in the stereo pair.**

3. Sing or play the connected instrument and check the meter and the numeric level display above the fader.
The level should be as high as possible, without ever clipping (exceeding 0dB).

Clipping is indicated by the red clip light above the "In" button. To reset the clip indicator, click on it.

4. If needed, adjust the recording level in one of the following ways:
- Adjust the output level of the sound source or external mixer.
- Use the audio card's own application program to set the input levels, if this possibility is provided (see the documentation for the audio card).
- Click the ASIO Control Panel button in the Audio System dialog in Cubase VST and adjust the input level in the control panel that appears.
This requires both that your audio card supports the ASIO Control Panel function, and that there are input level settings in the control panel for the card.

5. When you are done, click on the "In" button again.
When the button is *deactivated*, the meters show the *output* level of each audio channel.

6. While you are in the Monitor Mixer window, you may want to adjust the output level of the monitored channel.
Use the volume fader for the channel to set a comfortable listening level.

Performing the first recording

Setting start- and end-points for the recording

There are several ways to start and end recordings. In this example, recording will start at the position of the Left Locator and end at the Right Locator (for more info about this, see page 81).

To position the Locators, Simply click on the ruler - the left mouse button sets the Left Locator to where you clicked, the right button sets the Right Locator.
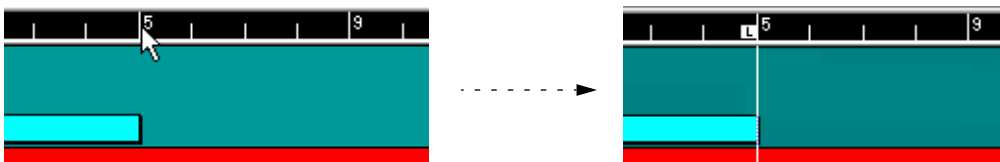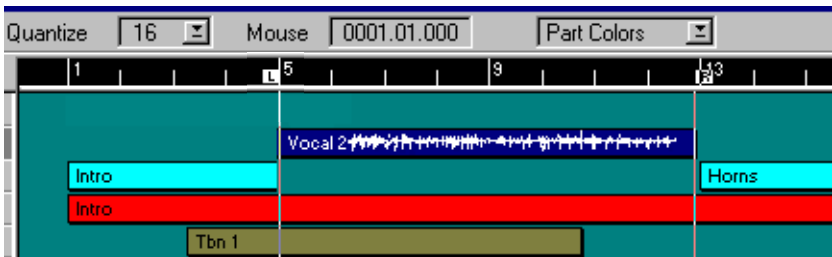
Recording

1. Make sure the buttons on the Transport Bar are set up like this:

2. Click the Record button.

3. After the two bar count-in, start performing.
Recording will automatically be deactivated when you reach the Right Locator, if you don't hit Stop before that.

4. When you are done, press Stop.
The program will now calculate an image file so that a waveform can be displayed in the program. Depending on the length of your recording, this may take a few seconds, during which a dialog box shows the progress of the calculation.

The program has now created an audio file in the folder you selected on page 65. The file will appear in the Pool (a window containing a list of all audio used in the Song, see page 150). In the Arrange window, a Part is created between the start and end points of the recording. The Part contains an audio segment, which in turn plays back the whole audio file you just recorded.

- **A segment is a piece of an audio file. Read more about audio files and segments in the chapter "How Cubase handles audio and MIDI" in the electronic documentation.**

Listening to the Recording

1. **To hear what you just did, use the Transport Controls to move back to the beginning of the recording and click Play.**

2. **Stop when you are done.**

If you don't like what you just recorded

There are two ways you can get rid of a recording that you are not satisfied with:

Using Undo

If after recording you select Undo from the Edit menu, the Part you just created will disappear and you can record again. However, the audio file still resides on the hard disk and there is a segment for it in the Pool (see page 151 for details). You can always later delete unused segments and files, so this is nothing to worry about.

Deleting the Part

The other option is to manually delete the Part and then record again on the Track.

- **If you delete the Part as you would with a MIDI Part, it disappears, but the segment and the audio file are not deleted (just as when you use Undo, see above).**

- **If you select the Part, hold down [Control] and press [Backspace], a dialog appears, asking you if you also want to delete the audio file. To do this, click OK.**
  This is the method to choose if you are sure you permanently want to delete the recording.

Recording more on the same Track

To record more on the same Track, proceed as follows:

1. Move the Left Locator to the next position where you want to start recording.
This can be at a "free" area on the Track, or at some place where something is already recorded, as described below.

2. Make sure the Right Locator is to the right of the Left Locator. If it isn't, please move it.
Move the Right Locator by clicking in the ruler with the right mouse button or by changing the value in the Right Locator box on the Transport Bar.

● You cannot activate recording if the Locators are positioned in "reverse order".

3. Activate recording just as you did the first time on the Track.
A new file is automatically created.

About overlap

When you record again, where something has already been recorded on the Track, you will get a new Part which overlaps the previous one(s). However, when you play back, only the Parts that you can actually *see* are played back. Generally: One audio channel can only play back one audio file at the time.

Recording the Next Track - Overdubbing

Recording the next Track is done just as with the first. Here follows a summary of the steps:

1. Select another audio Track and make sure it's set to another audio channel.

2. Set up the Locators and activate recording.

Now, the previously recorded Tracks will play back and you are able to record the new Track as an overdub.

7

Basic MIDI Recording

About this chapter

In this chapter, you will learn how to make a basic MIDI recording.

This chapter assumes the following:

- That you have connected a MIDI keyboard (or other controller) and some kind of MIDI sound source. As described in the examples in the chapter "Setting up your System", this could be a MIDI keyboard with a built-in sound source, or any combination of a MIDI controller and a sound module, external or built-into the audio card in the computer.
- That the MIDI sound source you use is General MIDI compatible and set to its General MIDI mode.
- That you are already familiar with Audio Recording as described in the previous chapter.

● If your instrument is not General MIDI compatible, you will not be able to select sounds from the Program pop-ups in Cubase VST (see). However, the actual recording procedure will be the same.

Tempo, Time Signature and Click

If this is your first recording in a new Arrangement, set up the time signature, tempo and Click as described on in this document.

Selecting and naming a Track

Tracks with a note symbol in the "C" column are for MIDI recording. An Arrangement can contain an unlimited number of MIDI Tracks.

1. **Select a Track by clicking on its name in the list.**

- **If you don't have any empty MIDI Tracks in your Arrangement, you need to create one, for example by using the Create Track item on the Structure menu.**
  To make sure the Track is a MIDI Track, position the mouse in the "C" column for the Track, pull down the pop-up menu and select "MIDI Track".

2. **Double click on the Track name, type in the name you desire and press [Return].**

Setting MIDI Channel and Output

Setting the MIDI Channel in the Instrument

Most MIDI synthesizers can play several sounds at the same time, each on a different MIDI Channel. This is the key to playing back several sounds (bass, piano etc.) from the same instrument.

Some devices (such as General MIDI compatible sound modules) always receive on all 16 MIDI Channels. If you have such an instrument, there's no specific setting you need to make in the instrument.

On other instruments you will have to use the front panel controls to set up a number of "Parts", "Timbres" or similar so that they receive on one MIDI Channel each. See the manual that came with your instrument for more information.

Setting the MIDI Channel and Output in the Track List

1. **Set the Chn column for the Track to the same MIDI Channel as you just setup to use on the synthesizer.**

2. **Drag the Track List Divider all the way to the right, to reveal the Output column.**

Dragging the Divider...

...reveals the Output column
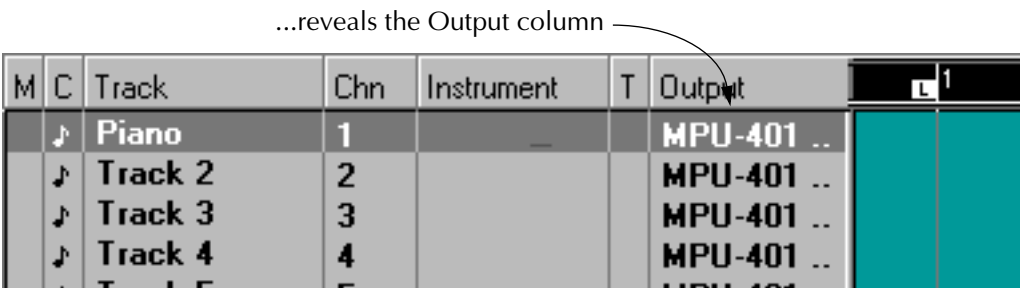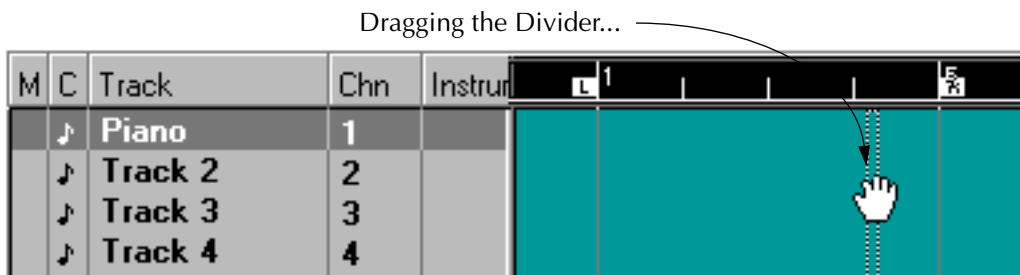
3. Make sure the Track you plan to record on is set to the MIDI Output that the synthesizer is actually connected to. If it isn't, pull down the Output menu for that Track and select the desired MIDI Output.
If you only have one standard MIDI interface, that is limited to 16 MIDI Channels, then this setting is probably correct as it is. If you for example have a standard MPU compatible interface installed, this should say something like "MPU-401".

Clicking in the Output column
brings up a pop-up which lists
the available MIDI Outputs
plus an item called MROS.

Selecting a sound and setting levels

When you play your keyboard, you should now hear the sound that the instrument plays on this MIDI Channel (the Track's "Chn" setting).

To select a sound and adjust its level, proceed as follows:

1. Pull down the Edit menu and select "GM/GS/XG Editor".
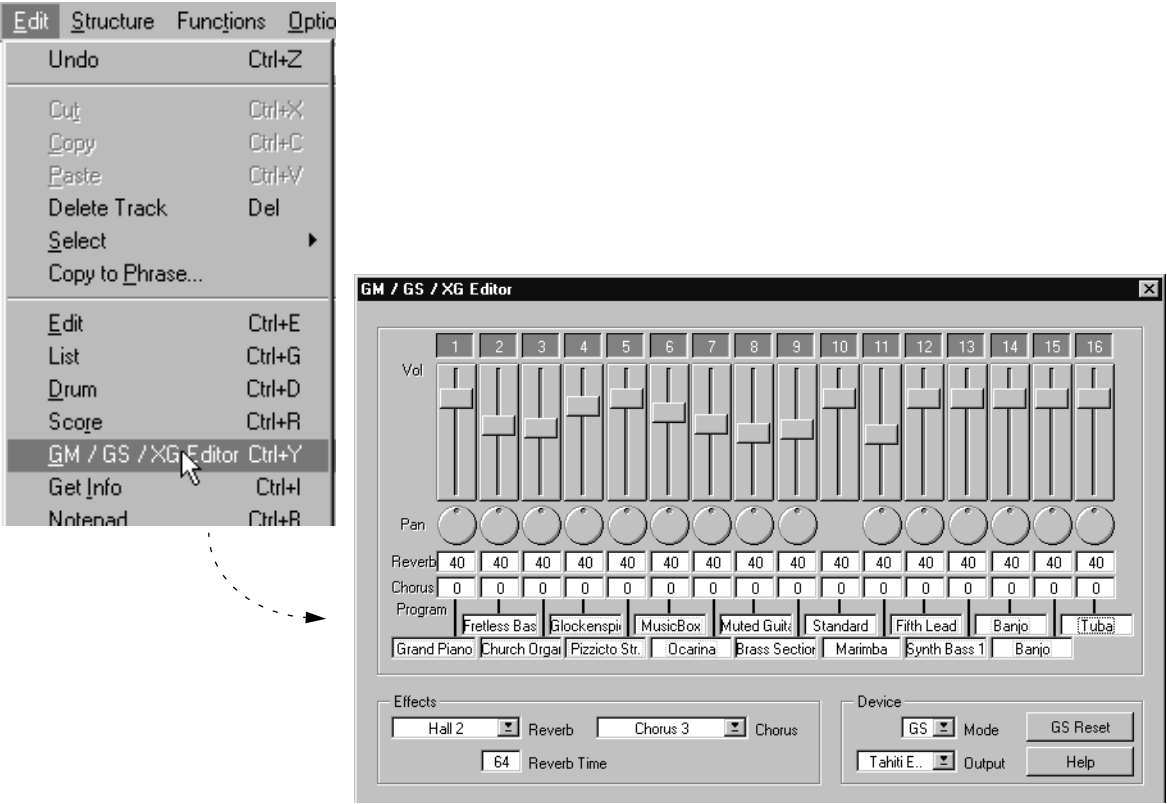
A window with 16 sections of controls, one for each MIDI Channel, appears.

2. Locate the Device section in the lower right corner of the window.

3. Use the Mode pop-up to select GM, GS or XG Mode.
Select the mode that is appropriate for your instrument.

4. Pull down the Output pop-up and select the MIDI Output port that your instrument is connected to.

5. Locate the channel section corresponding to the MIDI Channel you have chosen.

6. Press the mouse button with the pointer over the "Program" box at the bottom of the channel section.

7. Use the hierarchical menus to select a sound.

8. Play the keyboard to try out the new sound.

If you don't get the desired sound, this could have many causes:

• The Output of the GM/GS/XG Editor is not set to the MIDI Output that your instrument is connected to. Check the Output popup menu in the Device section.
• Your instrument is not set to its General MIDI (or GS/XG) mode. Make sure the correct mode is selected on the Mode pop-up in the Device section, and then click the button to the right (labelled "Reset" or "GM On/Off" depending on the selected mode), to set the instrument to its GM/GS/XG mode.
Please note that when GM is selected, the button (labelled "GM On" or "GM Off") is used to switch the instrument in *or* out of GM mode. Click on the button to send the command that is *currently shown on the button* to your instrument. In other words, to activate GM mode, click on the button until it says "GM Off".
• Your instrument is not set up to react to MIDI *Program Change* messages. Consult the documentation for the instrument you are using.
• Your instrument isn't General MIDI compatible. In this case, you should set the Mode pop-up in the Device section to "Off" and try selecting sounds for each MIDI channel manually on the instrument instead.

9. Adjust the "Vol." fader for the channel to adjust the volume of the sound, if desired.

10.Close the window.

Verifying the Settings

Now when you play your keyboard you should hear the right sound in the synthesizer (and only that sound). If not, check the following:

• Is the Track set to the correct MIDI channel?
• Is the Track set to the MIDI Output the instrument is connected to?
• Do you have MIDI Thru enabled in Cubase VST?
• Do you have Local Off activated in your instrument (if needed and/or available)?
• Do you have the correct sound selected in the synthesizer?

Recording

1. **Set start and end points using the Locators, and decide if you want a Click or not, just as when recording audio.**
   If you pull down the Options menu and select "Metronome..." you can select whether you want an audio click from the computer ("Beep") or a MIDI click, or both. The MIDI click settings are described in the On-line help.

2. **Click the Record button.**
   By default, you will get a two bar count-in. This can be changed in the Metronome dialog.

3. **Perform the recording and press Stop.**
   A Part appears.

   You can now listen, Undo or record more on the same Track, just as with Audio Tracks.

About overlap and the Overdub/Replace switch

MIDI Tracks are different from Audio Tracks when it comes to overlapping Parts. When you record again, where something has already been recorded on the Track, the result is determined by the setting of the Overdub/Replace switch on the Transport Bar:

Overdub

In this mode, the new recording is simply added to whatever was on that Track before. When you play back, you will hear both recordings. This can be used creatively when you are recording in Cycle mode, as described in .

Overdub Mode is probably the safest way to record. If you add too much music, you can simply remove it later by editing (see the chapter "An Introduction to MIDI Editing"). Up until now, we have assumed that this switch was in Overdub mode.

Replace

In this mode, whatever you record replaces what was previously on the Track. Replace mode is probably the best choice if you have made a mistake and wish to correct it by recording something new.

Recording different types of MIDI Messages

There are a few facts about the recording of some types of MIDI messages that can be useful to know. If you don't know too much about MIDI you may not understand everything below. Later when you have gained a more thorough understanding, come back and read this information.

Notes

In MIDI, when you press and release a key on your synth or other MIDI keyboard, a Note On (key down) and a Note Off (key up) message are sent out.

The MIDI note message also contains the information which MIDI Channel was used. Normally, this information is overridden by the MIDI Channel setting for the Track. For more information about this, see the chapter "How Cubase handles audio and MIDI" in the electronic documentation.

Continuous Messages

Pitch bend, AfterTouch and Controllers (like modulation wheel, sustain pedal, volume etc.) are considered as MIDI continuous Events (as opposed to the momentary key down and key up messages).

About recording Continuous Messages

If you move the Pitch Bend wheel on your synthesizer while recording, this movement gets recorded together with the key (Note On and Note Off messages), just as you'd expect.

But the continuous messages can also be recorded after the notes have been recorded (or even before). They can also be recorded on Tracks separate from the notes they belong to.

Say for instance that you record one or several bass Parts on Track 2. If you now set another Track, like Track 55, to the same Output and MIDI Channel as Track 2 you can make a *separate* recording of just Pitch Bends for the bass Parts. This means that you activate recording as usual and only move the Pitch Bend wheel during the take. As long as the two Tracks are set to the same Output and MIDI Channel it will appear as if the two recordings were made at the same time.

Program Change Messages

Normally, when you switch from one Program to another on your keyboard (or whatever you use to record), a number corresponding to that Program is sent out via MIDI as a Program Change message. These can be recorded on the fly with the music, recorded afterwards on a separate Track, or manually entered in one of the Edit windows. You can also enter Program Change messages in the Inspector.

System Exclusive Messages

System Exclusive is a special type of MIDI message used to send things that only make sense to a unit of a certain make and type. Every major MIDI manufacturer has its own Sys Ex identity code. Sys Ex can be used to transmit a list of the numbers that make up the settings of one or more sounds in a synth. System Exclusive can be recorded just as any other messages and can be edited in List Edit.

This is discussed in more detail in the chapter "System Exclusive Handling" in the electronic documentation.

● You can prevent Cubase VST from recording certain types of MIDI data, by using the Input Filter function. This is described in the chapter "Filtering and Mapping MIDI data" in the electronic documentation.

8

Recording Methods

About Punch In and Out

Those of you who have used multi-track tape recorders know about a technique called Punching In. This is when you activate recording while the tape is rolling. If you for example have made a mistake in the middle of a chorus, you can play back from the beginning of the chorus and just before the flawed section, punch in and replace that section with a new performance.

Punch Out is when you deactivate recording without stopping playback. If – in the example above – the chorus is followed by a verse which is perfectly OK, you would punch out at the end of the chorus so that you don't record anything on the verse.

In Cubase VST there are two ways to Punch In and Out: Manual and Automatic:

Automatic Punch In
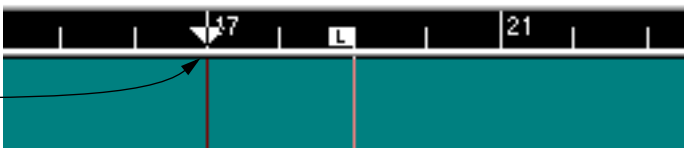
1. **Select a Track and set it up as necessary (as with any other recording).**

2. **If you are recording MIDI, decide if the new recording should replace what is currently on the Track (Replace mode) or if you want to add to it (Overdub mode).**
   This is done with the Rec Mode switch on the Transport Bar, as described in the previous chapter.

3. **Set the Left Locator at the position where you want recording to be activated.**

4. **Move the Song Position to some point before the Left Locator.**
   This can for example be done by using the Transport buttons (Rewind, Fast Forward etc) or by changing the value in the Song Position box on the Transport Bar. More info on .

5. **Click on the Punch In button on the Transport Bar so that it is activated.**
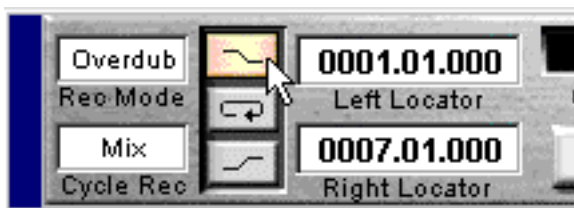
6. Activate playback.

Now, when the Song Position reaches the Left Locator, recording is automatically activated, as you can note by observing the Record button on the Transport Bar.
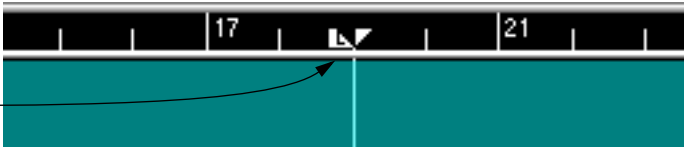
1. Set the Song Position...
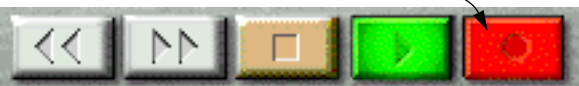
2. Activate playback...

3. When the program reaches the punch in point...

4. Recording is automatically activated!

7. Record.

8. Terminate recording either by stopping or by Punching Out (see below).

Manual Punch In

1. **Select a Track and set it up as necessary (as with any other recording).**

2. **If you are recording MIDI, use the Rec Mode switch to decide whether the new recording should replace what is currently on the Track or add to it.**

3. **Make sure Automatic Punch In on the Transport bar is *not* activated.**

Punch In deactivated.

4. **Move the Song Position to some point before the position where you want to Punch In.**

5. **Activate playback.**

6. **When you reach the right position, click on the Record button or press [*] on the numeric key pad.**

7. **Record.**

8. **Terminate recording either by stopping or by Punching Out (see below).**

About punching in on long notes

When you activate recording in Cubase VST, already recorded notes are never cut off, they will play to their end just as they did before you started this recording. This is true regardless of the Record mode chosen (Overdub or Replace).

About punching in on Controller or Pitch Bend data

Watch out when punching in and out on recordings with Pitch Bend or Controller data (modulation wheel, sustain pedal, volume etc), since this may lead to strange effects (hanging notes, constant vibrato etc).

If you for instance punch out with the sustain pedal on your synthesizer down, you have instructed the program to keep the notes hanging, since the release of the pedal has not been recorded. During playback, Cubase VST may clean up Pitch Bend, Modulation and Damper pedal and Channel Pressure at the end of each Part, taking into account what happened in earlier Parts. But, the way Continuous MIDI messages behave is still something to be aware of.

Automatic Punch Out

1. Set the Right Locator to the position where you want recording to be terminated.

2. Click on the Punch Out button on the Transport Bar so that it is activated.
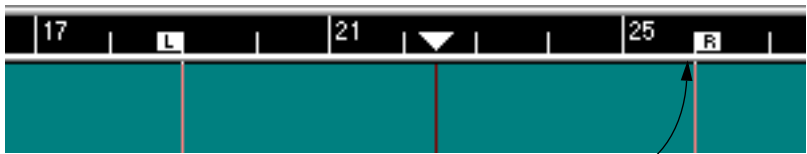
The Right Locator positioned

Punch Out activated

3. Now, recording is automatically deactivated when the Song Position reaches the Right Locator.

Activate recording.

When the Song Position reaches the Right Locator...

Recording is automatically deactivated, but playback continues.
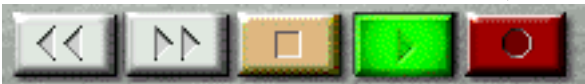
You can of course combine automatic Punch In and Out for a totally automated recording.

Manual Punch Out

1. **Activate recording in any way you like.**
   You might for example combine manual Punch In and Out to fix an error in an otherwise good performance.

2. **When you reach the right position, click on the Record button or press [*] on the numeric key pad.**

3. **If you like, Punch in again and record some more.**

4. **When you're done, Stop Cubase VST.**

About the Cycle

Cubase VST can play back and record in a Cycle – a loop. You decide where the Cycle starts and ends by setting the Left and Right Locators. When Cycle is active you can repeatedly listen to a section of the Arrangement, and record, adding more on each lap etc. Cycled playback is also convenient when editing and when making adjustments in the Inspector.

Setting up the Cycle

1. Set the Left Locator to the position where you want the Cycle to begin.

2. Set the Right Locator to the position where you want the Cycle to end.

3. Click on the Cycle button on the Transport Bar so that it gets activated, or press [÷]on the numeric key pad.

Set up the Left and Right Locator...

...and activate the Cycle.

Playing back the Cycle

When you play back with Cycle activated, the section between the Locators gets repeated indefinitely.

You can use any and all functions while the program is playing back. This fact allows you to use Cycled playback for a number of things, many of which you will learn about later in this manual:

- Rehearse a part before recording.
- Mute Tracks and Parts to try out variations on an Arrangement.
- Concentrate editing in the Audio and MIDI editors to a certain section of the Song.
- Make adjustments in the Inspector, apply Quantizing etc, to fine tune levels and grooves.
- Make settings in the Mixer, add EQ and Effects to Audio Parts.
- Make adjustments to the sounds in your MIDI instruments or try out a Track with another sound.
- etc, etc.

Recording in Cycle Mode

● The basic Cycle recording procedure is the same for MIDI and Audio Tracks. However, the results are different, as described on page 91 in this chapter.

From the Left Locator

1. Set up the Cycle and activate the Cycle button.

2. Set up a Track to record on.

3. If you are recording MIDI, select a Record Mode (Overdub or Replace) with the switch on the Transport Bar.
This is described on .

4. Click the Record button.

5. After the count-in, start playing.

6. Keep playing on each lap of the Cycle until you are satisfied.
If you are recording MIDI, see the Cycled Recording Modes and Functions described below.

7. Stop Cubase VST or punch out manually.

From Before the Cycle

1. Set up the Cycle and activate the Cycle button.

2. Set up a Track to record on and select a Record Mode (Overdub or Replace).

3. Activate automatic Punch In on the Transport Bar.

Punch In activated. ⟍

4. Set the Song Position to some point before the Cycle.

5. Activate playback.

When Cubase VST reaches the Cycle, recording is automatically activated.

6. Keep playing on each lap of the Cycle until you are satisfied.
See the Cycled Recording Modes and Functions described below.

7. Stop Cubase VST or punch out manually.

● If you Punch In manually before the Cycle, the Cycle is automatically turned off!

Punching In and Out in the Cycle

Once you are in the Cycle you can punch in and out manually as many times as you wish without stopping in between. Simply click the Record button or press [*].

About Recording Audio in the Cycle

If you are recording Audio in Cycle mode, the following happens:

During the entire recording, only one Audio file is created. However, this is split up into a number of Segments (one for each lap) which are "stacked" in the Audio Editor. Since the Segments are all on the same Track, this normally means that only one of them will play back (the first "take" you recorded, since this is the top one in the Audio Editor). However, you can use this feature to assemble a "perfect" take from all the different Segments, by cutting out the best pieces of each Segment and putting them together. This is described in the chapter "The Audio Editor" in the electronic documentation.

• **None of the Cycle modes and Functions used when recording MIDI (described on the following pages) have any relevance to audio recording.**

About Recording MIDI in the Cycle

Basically, MIDI Cycle Recording can either be used to add new data for each lap (overdub) or replace previously recorded data. However, there are a lot of special modes and functions available when recording MIDI in the Cycle:

Switching Tracks while recording

You can record on more than one MIDI Track while in the Cycle:

1. **Set up a few MIDI Tracks that you wish to record on. Also set up the instrument(s) so that they play the right sounds on these MIDI Channels.**
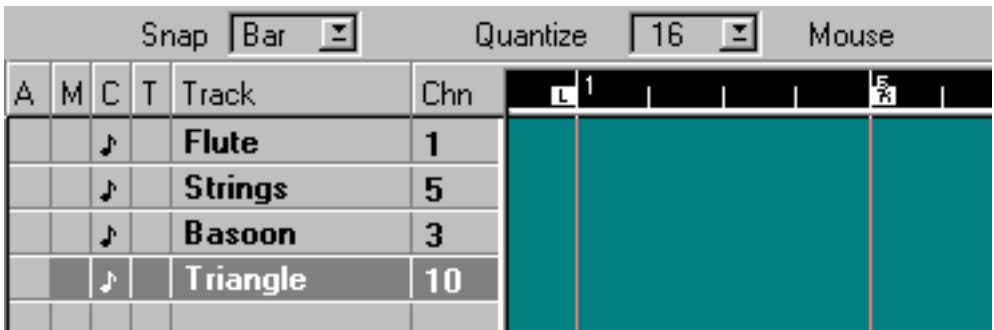
A few Tracks set up for recording a four bar groove.

2. **Enter recording in Cycle mode.**
   Record on the first Track.

3. **Without stopping, select a new MIDI Track in the Track list or use the [↑] and [↓] keys to step through the Tracks.**
   Selecting a new Track set to a different MIDI Channel and maybe Output, automatically routes your playing to the new sound.

4. **Record on this second Track as with the first.**

5. **Keep recording on different Tracks until you are satisfied.**
   See the Cycled Recording Modes and Functions described below.

6. **Stop Cubase VST or punch out manually.**

Recording Sys Ex data in the Cycle

There is nothing that prevents you from Cycled recording of Sys Ex data (see the chapter "System Exclusive Handling" in the electronic documentation), although this can lead to serious confusion. In plain English: don't, if you're not absolutely sure of what you are doing.

Cycle Recording Modes

Switching Modes

On the Transport Bar you will find a small box labelled "Cycle Rec". This is used to select one of three "behaviours" when recording in Cycle Mode.

The Cycle Rec Mode Switch

You can select any of the modes prior to, or during, recording.

● As always when you record, the regular Record Mode switch (Overdub/Replace) determines what happens with any MIDI data that is already on the Track *before* you start Cycle Recording. For an explanation of the relation between the Record Mode and the Cycle Recording Mode, see page 97 in this chapter.

Mix Mode

In Mix mode, everything you record is added to what was recorded before. This is the preferred mode if you for example are building up a rhythm pattern in Cycle mode. You can start with the hi-hat, add bass drum on the second lap, snare on the third etc.

Record some notes on the first lap...

Whatever you record on the following lap(s) is simply added to the existing notes

Punch Mode

In this mode Cubase VST automatically punches in the moment you play anything on a lap. Proceed as follows:

1. **Select Punch Mode.**

2. **Start Recording in a Cycle.**

3. **If you make a mistake in the middle of the Cycle, simply wait until you reach the correct position on the next lap, and start playing again.**
   What was previously recorded from this point to the end of the Cycle is replaced with what you play now.

4. When you have a recording you're happy with, you can turn off Punch mode, Stop or Punch Out.

Record some notes on the first lap...

Whenever you start playing on an upcoming lap, your new recording will replace the notes from that point and onwards.

Normal Mode

The name Normal mode refers to the way Cubase VST behaves during normal (as opposed to Cycled) recording. This allows you to record afresh on the Track each time you enter the Cycle.

1. Decide if you want to overwrite earlier recordings on the Track or not, by selecting a Record Mode (Overdub or Replace).
See .

2. Select Normal Cycled Recording Mode.

3. Record something on a lap.
You will not hear what you recorded, on the next lap(s).

4. If you'd like to redo the recording, simply try again on any upcoming lap.
Everything you recorded on earlier laps is automatically deleted.

5. When you have a performance you like (a complete recording on a lap), stop recording or switch to another Cycled Recording Mode.

Record some notes on the first lap...

If you play anything on any of the upcoming laps, it will totally replace your earlier recording.

● Please note: a complete lap is only kept when the recording is stopped some time during the next lap.

Cycle Recording Functions

These functions are found on a pop-up menu that appears when you press the mouse button with the pointer over the "Cycle Rec" text on the Transport bar, *while recording in Cycle mode*.
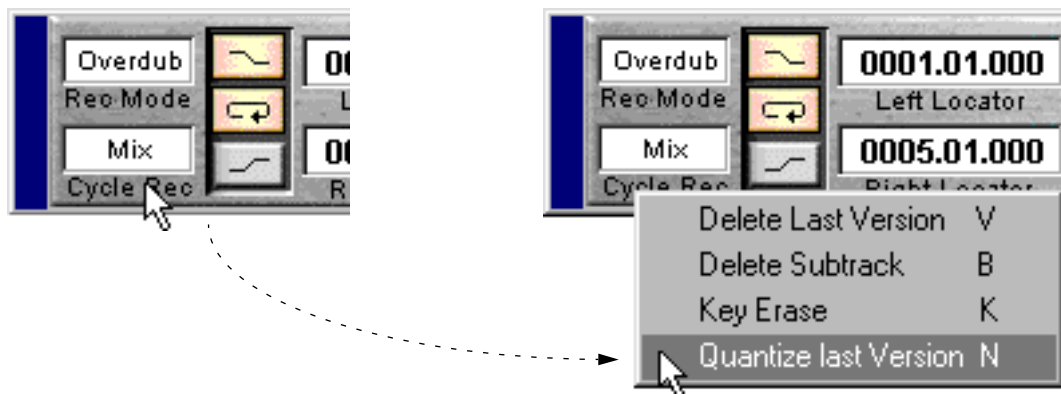
Delete Last Version

If you just made a mistake on the last lap, proceed as follows:

• **While recording, select Delete Last Version from the pop-up menu or press [V] on the computer keyboard.**

This erases your last recording. It doesn't matter if you didn't play anything for several laps, the last lap *that you recorded anything on* is erased.

Delete Subtrack

If you make a mistake and don't wish to keep anything of what you've just recorded, proceed as follows:

• **While recording, select Delete Subtrack or press [B] on the computer keyboard.**

The Part is cleared (but not deleted) and you can instantly start inputting music again, without leaving Record mode.

Key Erase

To erase all notes played with a certain key, or keys, proceed as follows:

1. **While recording, press and hold the relevant keys on the synth keyboard.**

2. **Select Key Erase from the pop-up menu or hold down [K] on the computer keyboard.**

Quantize Last Version

Quantizing is a function you can use to let the computer correct imprecisely played notes to the next correct timing position, defined by you. Quantizing is not irrevocable, it can always be undone unless you specifically "freeze" your Quantize. Cubase VST provides several different Quantize options, described on page 208.

If you want to Quantize everything you recorded on the last lap, proceed as follows:

1. Select a Quantize note value by using the Quantize pop-up at the top of the Arrange window.

The Quantize pop-up
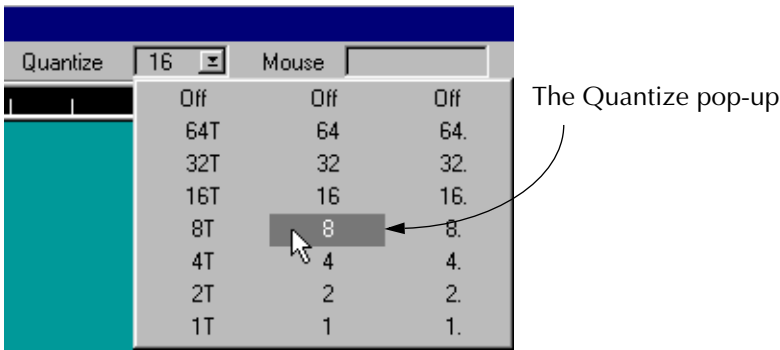
2. Select Quantize Last Version or press [N] on the computer keyboard.

Just as with Delete Last Version, it doesn't matter if Cubase VST has played back the Cycle several times since you last played anything, the last lap *you recorded anything on* is Quantized anyway.

About Cycled MIDI Recording and the Overdub/Replace Switch

As described on page 78, the Overdub/Replace switch is used to decide if what you record now is added to whatever was on the Track before or whether it should replace the existing recordings.

The same is true for Cycled Recording:

- If Overdub is selected, everything you record is added to what was previously on the Track.
- If you select Replace mode, everything you record during *one recording pass* (the time from which you activate recording until you deactivate it again) replaces what was previously on the Track.
- The Cycle recording Modes and Functions described on the previous pages *only apply to what is recorded during one recording pass.* For example, the special Cycle Punch Mode does not delete any notes recorded on the Track before, only notes that were recorded in the Cycle this time.

1. Let's say you have a Part already recorded.
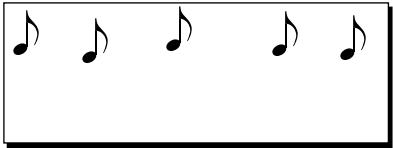
2. You activate Cycled recording in Overdub Mode to add more notes.
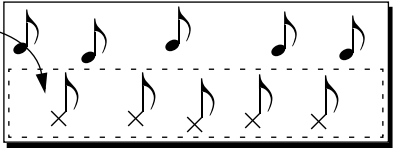
3. If you now use the Cycle Mode Punch function, you will only replace the notes recorded during the Cycle recording pass. The previously recorded notes are not affected.
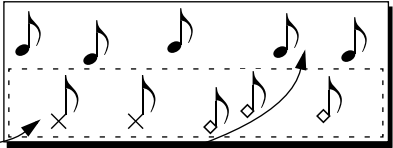
About Multi Recording

For both audio and MIDI, Cubase VST allows you to record on several different channels or Tracks at the same time. There are several uses for this:

- **You can record several players playing "live" at the same time.**
  For this to be possible with audio recording, you would need an audio card with at least as many separate inputs as there are players.

- **You can record a MIDI instrument that transmits on several MIDI channels simultaneously.**
  In this case you could either simply record on one Track, and set the MIDI Channel to "Any", in which mode the Track will play back each recorded Event on the MIDI Channel it was transmitted on. Or, you could use Multi Track recording, to automatically record different MIDI Channels on different Tracks.

- **You can record MIDI and audio at the same time.**
  The "Any" Channel setting and the Multi Track Recording methods are described in the chapters "How Cubase handles Audio and MIDI" and "Multi Track Recording" in the electronic documentation.

9

Playback, Tempo and the Transport Bar

The Transport Bar

Below, you will find a brief description of what each control on the Transport Bar is used for:

Activates Punch In

The Overdub/Replace switch
(see page 78)

Record start point, Punch In
point and beginning of Cycle

0005.01.000

Overdub

Rec Mode

0001.01.000

Left Locator

Handle
(move)

Mix

0005.01.000

Cycle Rec

Right Locator

Switches between the
three Cycle Recording
modes (see page 93)

Activates
Punch Out

Cycle
On/Off

Punch Out point
and end of Cycle

Song Position
(Meter format)

Position Slider

Song Position
(Time format)

0001.01.000

Left Locator

0005.01.000

00:00:12:00

AQ

Click

Sync

0005.01.000

Right Locator

Rewind

Fast Forward

Stop

Play

Record

Activates automatic
quantization during record

Tempo

Time Signature

00:00:12:00

AQ

80.000
04/04
Tempo/Sig

Out

Indicates MIDI
In/Out activity

Click

Sync

Master

In

Turns the Metronome
On/Off

Activates synchronization
to other equipment

Turns the Master
Track On/Off

Hiding and showing the Transport Bar

To hide the Transport Bar, select "Hide Transport" on the Windows menu, or press [F12] on the computer keyboard. To bring it back, select "Show Transport" from the Windows menu or press [F12] again.

When the Transport Bar is hidden, you can still access all its functions via the computer keyboard. See below for a list of Transport Bar key commands.

Moving the Transport Bar

You can put the Transport Bar anywhere you want it, by dragging the handles.

The Numeric Key Pad

The numeric part of the computer keyboard is used for many Transport Bar operations. Some of these are described in more detail later in this chapter.

Cycle On/Off ——————————————————————— Record

Go to—
last Stop

Go to —
Cue Point

Lower Tempo

Raise Tempo

Go To —
Right Locator

Go To —
Left Locator

Play

Stop ——————
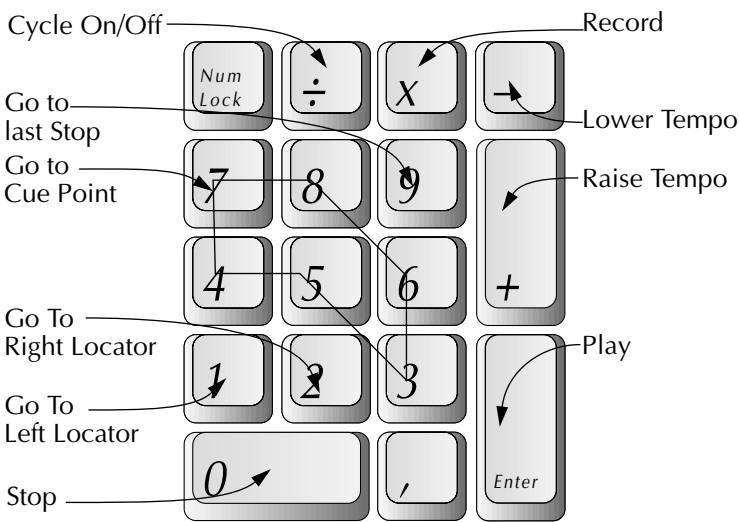
In addition to this, the Page Up and Page Down keys function as Fast Forward and Rewind.

If you have a computer without a numeric key pad, some transport commands are still available from the regular keyboard (the picture shows American key caps):

Cycle On/Off   Record   Play
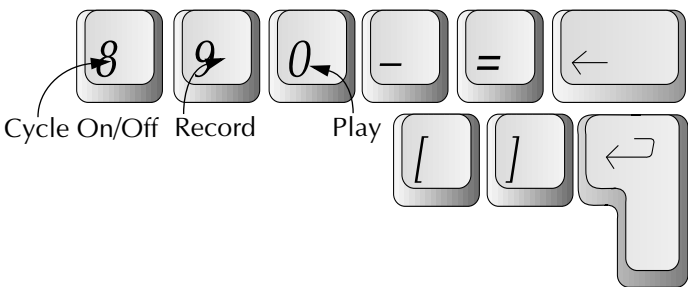
The Space bar also functions as Stop button.

Basic Tempo and Time Signature Handling

Transport Bar and Master Track Tempo

There is actuallya choice of two sources for Cubase VST's tempo:

- When the song uses a steady tempo throughout, you can turn off the Master button and simply set the right tempo directly on the Transport Bar. The tempo can be adjusted at any time, even while playing back.
- When the song contains tempo changes, you need to use the Master Track, (which is Cubase VST's tempo Track but also more!). For those tempo changes to actually "happen" on playback, the Master button on the Transport Bar must be activated. This is all discussed in the chapter "The Master Track" in the electronic documentation.

The Tempo setting on the Transport Bar is used.

The Tempi set on the Master Track are used and shown on the Transport Bar.

Setting the Transport Bar Tempo

The tempo on the Transport Bar is adjusted like any other value (see page 37 in this document). The value is in BPM (Beats Per Minute). The integer and fraction part can be adjusted separately, if needed.

Setting the Song and Time Position

Using Fast Forward and Rewind

The Song Position can of course be moved using Fast Forward or Rewind. If you hold down [Shift] while clicking the button, Rewind/FF is much faster.

Rewind   Fast Forward
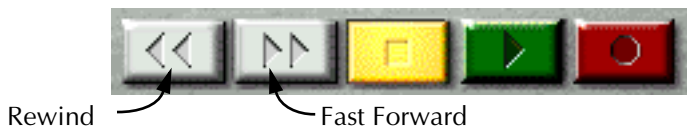
By double clicking in the Ruler

If you double click somewhere in the ruler, the Song Position Pointer is moved there.

Double-click in the ruler...   ...to move the Song Position Pointer.
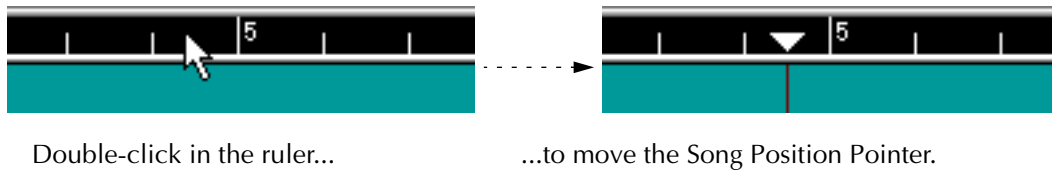
By using the Position Slider

The position slider is located on the Transport Bar. Drag the handle or click directly somewhere on the line to move the handle there.

The range of the slider relates to the length of your Arrangement. This means that if you drag the slider all the way to the right, the Song Position will appear at the end of the last Part.

Dragging the Position Slider.

About the Snap Value

When you change the Song Position in the ruler or by using the position slider, something called "the Snap value" helps you find exact positions quickly. It does this by limiting the possible points for positioning, to Bar, half note, quarter note, etc. Snap can of course also be set to Off.

The Snap value is set with the Snap pop-up at the top of the Arrange window.

Value	Description
Off	Any position can be used.
Bar	Movement is restricted to exact bar lines.
1/4 to 1/16	Movement is restricted to the selected note value.

 If Snap is set to Bar...
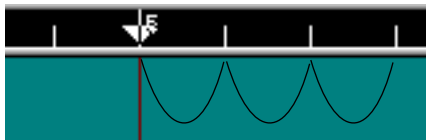
 ...Parts can only be dragged to exact bar lines.

 If Snap is for example set to 1/4...
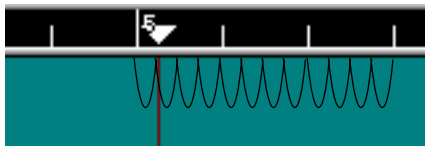
 ...Parts can be put on any quarter note position.

Changing Position values on the Transport Bar

You can adjust the Meter or Time Position values on the Transport Bar, as described in the chapter "Basic Methods". The Song pointer is moved accordingly.

Making relative Position changes

If you double click on either position value and enter a new one, preceded by a "+" or "–" character, the song position is moved relatively.

Double click...

...enter a value preceded by + or – ...

...and the value gets added to the existing position.

Returning to the beginning of the Song

If the Song is stopped and you click the Stop button again (or press [0] on the numeric key pad), the following happens:

- The Song Position is moved to the Left Locator.
- If the Song Position is already at the Left Locator or to the left of it, the Song Position is moved to the beginning of the Song.

This means that you can always click twice on the Stop button to return to the beginning of the Song.

Going to the left side of the window

If you press the [Home] key on the computer keyboard, the Song Position pointer is moved to the left side of the window.

Going to the last Stop Position

If you press [9] on the numeric key pad, the Song Position moves to the place you last stopped at.

Moving to the Locators

- If you press [1] on the numeric key pad, the Song Position is moved to the Left Locator.
- If you press [2] on the numeric key pad, it is moved to the Right Locator.

Using Cue Points

Cue points are used to quickly locate to any position. If you for example often find yourself jumping to the beginning of the first chorus, set up that position as a cue point.

Programming Cue Points

1. **Set the Song Position to where you want the Cue Point to be.**

2. **Hold down the [Shift] key and press any of the keys [3] to [8] on the numeric key pad.**
   The key is now programmed with that position.

Locating to Cue Points

If you press any of the keys [3] to [8] on the numeric key pad, the Song Position is moved to the position programmed for that key.

Cueing

● This feature only works with MIDI Tracks.

Cueing is when you fast forward through the music while playing it. You might have done this on a tape recorder. The big difference with Cueing in Cubase VST is that the music is played back with normal pitch.

1. **Click and hold down the right mouse button with the pointer over the Fast Forward button.**

2. **To change the speed of cueing, drag the mouse left/right while keeping the mouse button pressed.**

Locators

Setting the Locators by clicking in the Ruler

1. Set the Snap value.
The Snap value restricts the positions you can move the Locator to, as with the Song position, see page 104.

2. Click somewhere in the ruler with the left mouse button, to move the Left Locator.
The Locator appears at that position. To move the Right Locator, click with the right mouse button.

Click with the left mouse button...   ...to position the Left Locator.
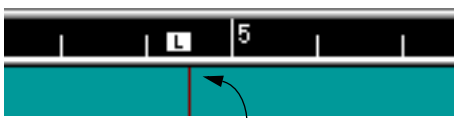
Setting the Locators on the Transport Bar

You can also adjust the Left and Right Locator position by changing the numerical values in the Locator boxes on the Transport Bar.

Making relative Position changes

Just as with positions (see page 105 in this document) you can double click and enter a new value, preceded by a "+" or "–" character. When you hit [Return] the Locator is moved relatively.

Setting the Locators by selecting Parts

You can adjust the Locator positions to the range of the currently selected Part(s).

1. Select the Part(s) by clicking on it/them.
If the range includes several Parts, hold down the [Shift] key while selecting.
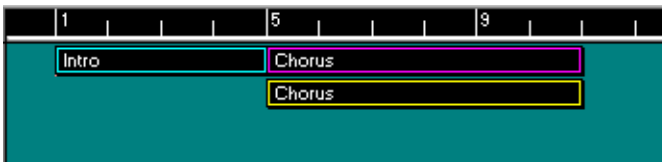
2. Hold down the [Alt] and [Ctrl] keys and press [P].
The Locators are positioned around the selected "block".
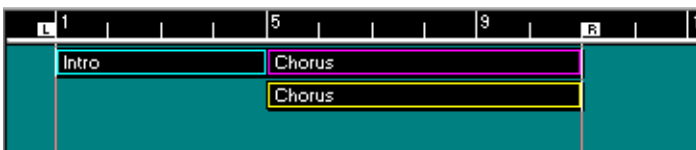
Pre-programming Locator Pairs

If you find yourself moving the Locators back and forth between the same positions all the time, you can pre-program some Locator combinations for instant recall:

1. Set up the Locators as desired.

2. Hold down the [Shift] key on the computer keyboard.

3. Press one of the Function keys [F2] to [F11] on the computer keyboard.
That key is now programmed with the current settings of the Locators.

Recalling Locator Positions

• **Press the desired function key ([F2] to [F11]).**
The Locators are moved to the memorized positions.

Using Time Positions in the Rulers

If you'd like to use Cubase VST as a time based program, rather than a meter (tempo) based one, you can change the position indicators in any window, as follows:

1. Locate the Mouse Position box.
In the Arrange window this is located on the Status Bar (the area directly above the ruler).

2. Click once in the box.
Now the ruler and the Mouse Position box change to show time positions instead of meter positions.

Meter Positions — The Mouse Position box
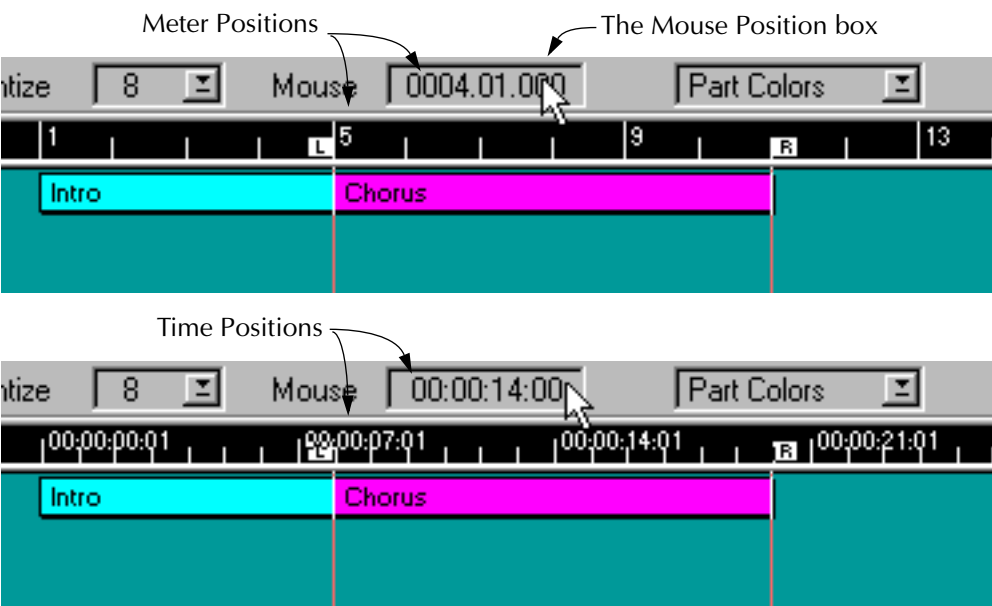
Time Positions

3. To switch back to meter positions, click again.

● Please note that even though you have switched to time positions, Snap is still on and relates to meter positions. You might want to set Snap to "Off" when using time positions.

10

Working in the Arrange window

About Tracks, Parts and arranging

A Cubase VST Arrangement is roughly structured in three "levels": Several *Tracks*, each containing a number of *Parts* which in their turn contain *Events* (audio recordings, MIDI notes, etc). This chapter is about Arrangement editing - in other words, the re-arranging of the larger building blocks, Parts and Tracks. This is done in the Track List and in the right part of the Arrange Window, the area called the Part Display.
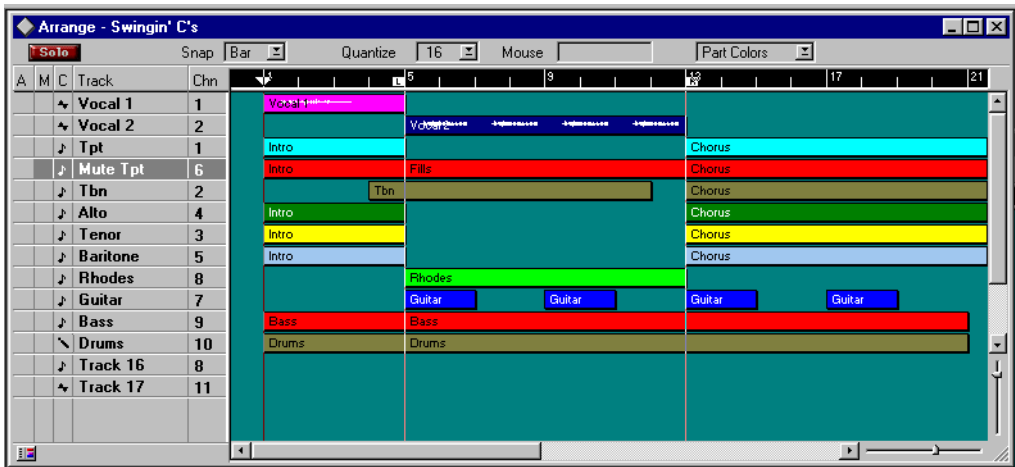
An Arrangement with the Track List to the left and the Part Display to the right.

You can have up to 16 Arrangements in the same Song. How to create, open, close and set aside Arrangements is described on .

What can I do with Tracks?

The Track is one of the most basic concepts in Cubase VST. Every time you record something in Cubase VST, the recorded material is placed on a Track. You can have thousands of Tracks in each Arrange window, and you can easily move or copy material between Tracks (if the Tracks are of the same kind - see Track Classes,).

The most obvious reason for putting the recorded material on different Tracks, is perhaps that you want to organize your music like an "ensemble" with one Track for each orchestral Part, or "musical instrument". But there are also many other advantages of working with many Tracks.

Creating Tracks

Create a new Track when you want to add another "layer" to your recording. You might for example want to add another "instrument", or make room for an alternate version of a part in your music. There are several ways to create a new Track:

By using the Mouse

Double clicking in an empty part of the Track List...

...creates a new Track.

By using the Structure Menu

Selecting Create Track from the Structure menu will make a new Track appear at the bottom of the Track List. You may also use the keyboard short-cut [Control]-[T] to accomplish the same thing.

About Track Classes

As already mentioned, there are several different types of Tracks in Cubase VST. When you create a new Track, it will get the same Class as the previously selected Track, but you can change this later if you wish (see).

Naming Tracks

If you start with an empty Arrange Window (with no Tracks), and create a new Track, it gets the name "Track 1". Next time you create a New Track, this gets the name "Track 2" and so on. You can rename a Track at any time, simply by double clicking on its current name in the Track List, and typing in a new name.

Selecting Tracks

If you want to record on a Track, change settings for it or perform an operation that affects a whole Track, the Track has to be selected for Cubase VST to "understand" which Track you wish to direct the action to. The selected Track is also called the "active Track".

This Track is selected (active).
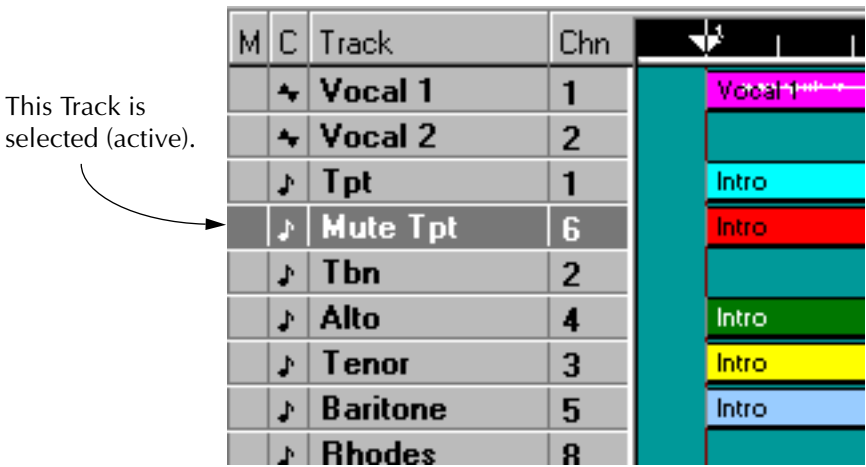
There are several ways to select a Track:

- **Click in the name field of the Track you want to select.**
- **Use the [↑] and [↓] keys on the computer keyboard to select the Track above/below the currently selected.**
- **Press [Ctrl]+[Alt]-[T] on the computer keyboard, and type in the number of the Track you want to select (counted from the top of the Track List).**

Changing the order of the Tracks

You can rearrange the Tracks in the list like this:

1. Press the mouse button with the pointer on the Track you want to move. The pointer takes on the shape of a hand.

M	C	Track		
	♪	Oboe		
	♪	Arco		Intro
	♪	String Pad		Intro
	♪	Flute		
	♪	Triangle		Intro
	♪	Horns		Intro
	♪	Track 7		Intro

2. Drag the Track with the mouse button pressed. A dotted outline shows you where the Track will be placed.

M	C	Track		
	♪	Oboe		
	♪	Arco		Intro
	♪	String Pad		Intro
	♪	Flute		
	♪	Triangle		Intro
	♪	Horns		Intro
	♪	Track 7		Intro

3. When you release the mouse button, the Track is moved to its new position.

M	C	Track		
	♪	Oboe		
	♪	Arco		Intro
	♪	Flute		
	♪	Triangle		Intro
	♪	Horns		Intro
	♪	String Pad		Intro
	♪	Track 7		Intro

● All the Parts on the Track are moved with the Track.

Duplicating Tracks

You may make a copy of a Track and all Parts on it.

1. Position the pointer on the name of the Track in the Track List.

2. Hold down [Alt] on the computer keyboard and press the mouse button.

3. Drag the outline of the Track to an empty field in the Track List.

4. Release the mouse button.
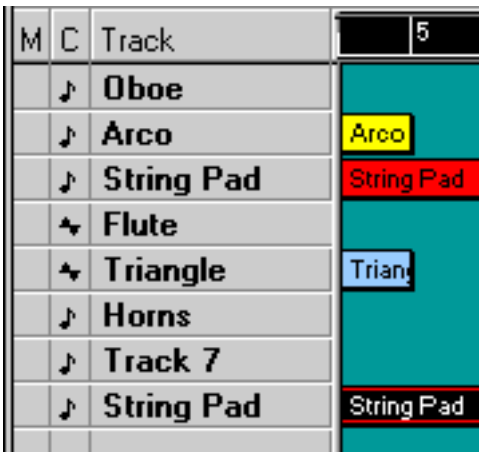
A duplicate of the selected Track is created and placed, complete with Parts, at the bottom of the Track List.

● You can not duplicate empty Tracks.

Deleting Tracks

You may delete a Track and all Parts on it.

1. Make sure that no Part is selected, by clicking in some empty area in the Part Display.
This is to make sure that what you Delete will be a Track, not a Part.

Check that this menu item says "Delete Track", <u>not</u> Delete Parts.
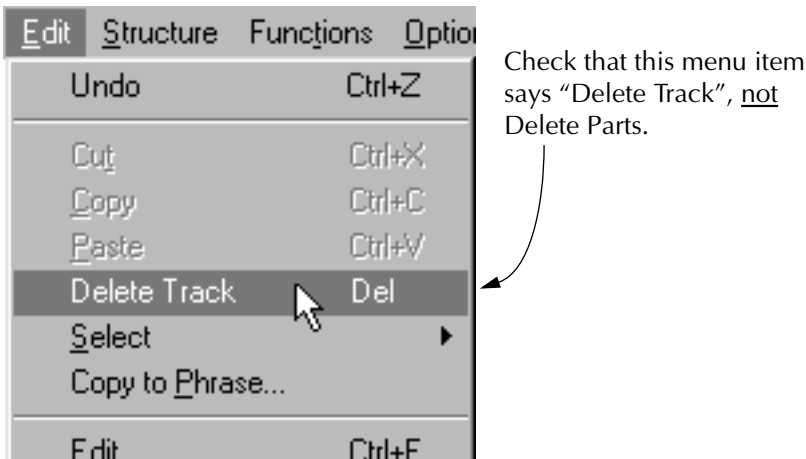
2. Press [Backspace] on the computer keyboard or select Delete Track on the Edit menu.

● If you change your mind, you can undo the Delete Track operation with the Undo option on the Edit menu, or by pressing [Control]-[Z] on the computer keyboard.

Track Classes

There are different types of Tracks, called *classes*. In the column marked "C" in the Track List, a small symbol shows which class each Track has.

How to select a Class for a Track

Press the mouse button with the pointer in the "C" column for a Track...
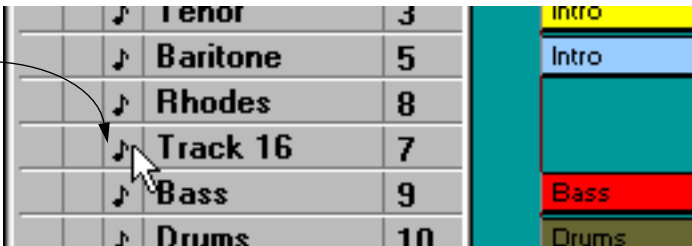
...to pull down a menu where you can select a Track Class.

Converting a Track from one Class to another

If you have not recorded anything yet on a Track, you may at any time convert it to any class. Just select the new class from the menu as described above. If there is something recorded on it you may not be able to select another class for the Track.

● In the rest of this manual, if nothing else is stated, an operation applies to all Track classes.

The Basic Track Classes

	Audio Tracks	Audio Tracks are used for recording and playing back audio.
	MIDI Tracks	MIDI Tracks are used for regular MIDI recording and editing.
	Drum Tracks	Just like MIDI Tracks, Drum Tracks contain MIDI Events, but Drum Tracks are tailor-made for use with the Drum editor. See the chapter "Drum Edit" in the electronic documentation.
	Mix Tracks	A Mix Track contains data for the MIDI Mixer, a window that lets you control the volumes and parameters on your connected MIDI devices, from inside Cubase VST. See the separate document "The MIDI Mixer and Mix Tracks".
	Group Tracks	These are described in the chapter "Groups" in the electronic documentation.
	Tape Tracks	These are described in the separate document "Tape Tracks – Controlling Tape Recorders".
	Style Tracks	These are available if you have installed the Style Tracks module, a device that lets you work with "Styles", a kind of automated accompaniment pattern. See the separate document "Style Tracks".
	Chord Tracks	Chord Tracks contain information about chord changes. These chords are used by the Style Tracks, and in the Score editor in Cubase VST Score.

About Parts

Parts are the containers for your audio and MIDI recordings. The use of Parts in Cubase VST makes it easy to get a quick overview of the arrangement, and to move, duplicate or delete sections of music. On the following pages you find a number of functions for working with Parts in the Arrange window.

- **For more informations about what you can do with Parts, see the chapter "The Arrangement-Working with Tracks and Parts" in the electronic documentation.**

Creating Parts

Normally, Parts are created automatically when you record something, or when you drag or import files into the Arrange window (see page 153 and page 245). However, there are situations when you might want to create an empty Part, and then fill it with Events in an editor. There are several ways to do this:

- **Select the Pencil tool and draw a Part.**
  The length of the Part is restricted by the Snap value (see page 104).

- **Set the Left and Right Locators to where you want the Part to start and end, pull down the Structure menu and select "Create Parts".**
  A Part is created on the active Track, between the Locators.

- **Double click with the arrow pointer between the Left and Right Locator.**
  A Part is created on the Track where you clicked, between the Locators.

Naming Parts

When you record a Part, it gets the name of the Track. You can rename a Part at any time, using one of the following methods:

- **Select the Part, open the Inspector and double click on the name field.**
  Type in a new name and press [Return].

- **Hold down [Alt] on the computer keyboard and click on the Part.**
  A small name value box opens, where you can type in a new name.

● For the name to be displayed in the Part, you need to have the option "Show Names" or "Show Names and Waves" selected on the Part Appearance submenu on the Options menu (see page 128).

Selecting Parts

As with all elements in Cubase VST, you have to select a Part to be able to move, delete or in any way manipulate it. Selecting a Part can be done in several different ways:

- **By clicking.**
  Clicking on a Part with the Arrow tool selects it, and deselects all other selected Parts.

- **By shift-clicking.**
  If you hold down Shift and click on a Part, it is selected, but all previously selected Parts remain selected as well.

- **By using the computer keyboard.**
  If a Part is already selected you can press the right arrow key on the computer keyboard to select the next Part on the same Track. The left arrow key selects the previous Part on the Track.

- **By enclosing Parts in a rectangle.**
  Click somewhere in an empty area of the Part Display and drag the mouse with the button pressed. A dotted rectangle outline is shown.
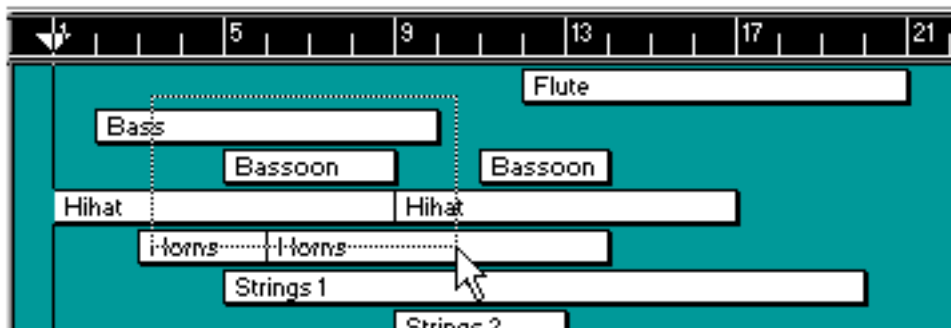
When you release the mouse button, all Parts that were enclosed or "touched" by the rectangle, become selected.
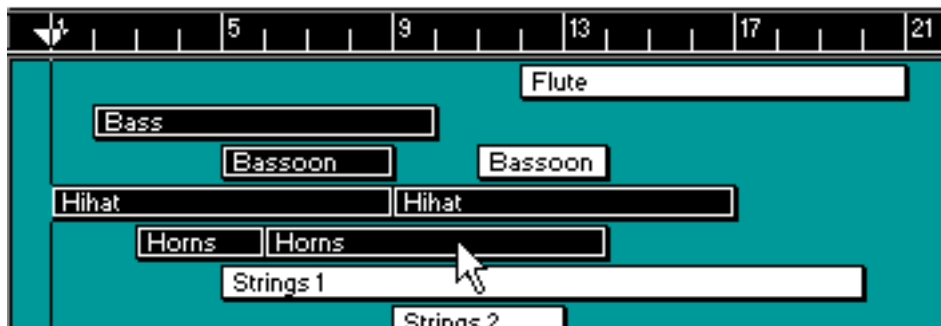
If you hold down [Shift] when you start to drag, you don't have to point at an empty area, you can start with the pointer positioned over a Part.

Selecting Parts using the Edit menu

On the Edit menu you will find an item called "Select" which brings up a sub-menu with a number of options that allow you to select all Parts on a Track, all Parts in the Arrangement, to invert the current selection etc (see the Online help for a complete description of the menu selection options).
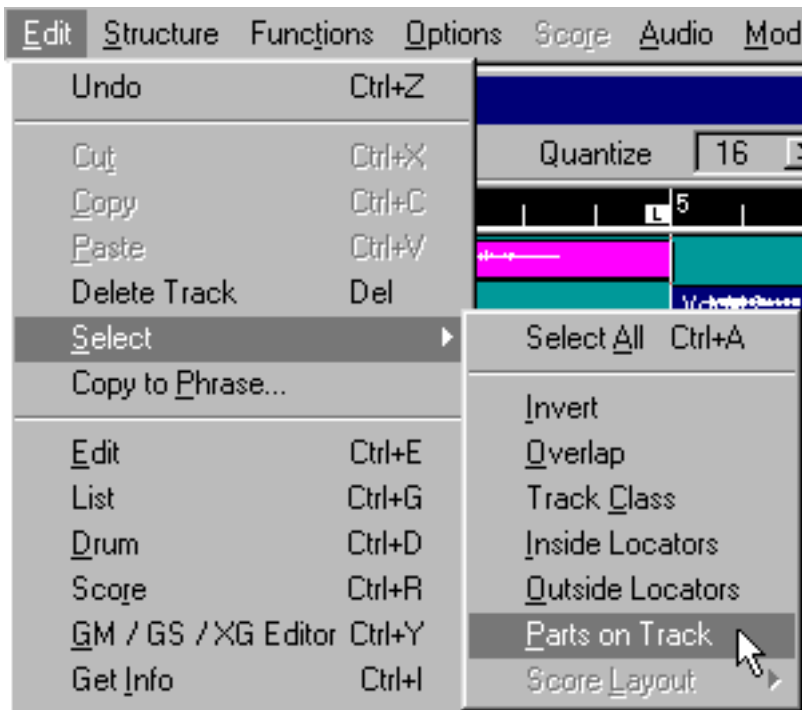
- •You can also select all Parts by pressing [Control]-[A] on the computer keyboard.
- •You can also select all Parts on a Track, by holding down [Shift] and double clicking anywhere on that Track.

Deselecting Parts

There are two principal ways to deselect already selected Parts:

- **If you click in some empty area of the Part Display, all selected Parts get deselected.**

- **If you hold down [Shift] and click on a selected Part, only this Part gets deselected.**
  The other selected Parts remain selected.

Manipulating Parts

● When you are moving, duplicating or changing the length of Parts, the result of your actions depends on the Snap value, just as when moving the Song Position or the Locators (see page 104).

Moving Parts

You can move one or more Parts to a new position on any Track. Remember that the Snap value determines where you can place the Parts.

Press the mouse button with the pointer over the selected Parts you want to move. The pointer takes on the shape of a hand.
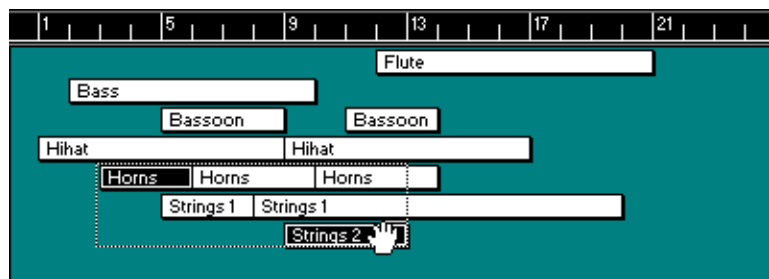
Drag the Parts to their new position...
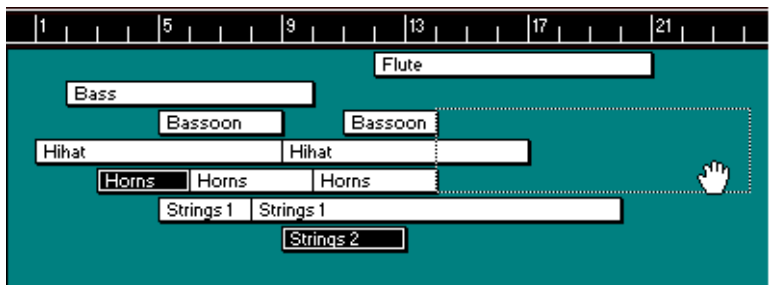
...and release the mouse button. The Parts are moved. Note that the relative distances between the moved Parts are kept intact.
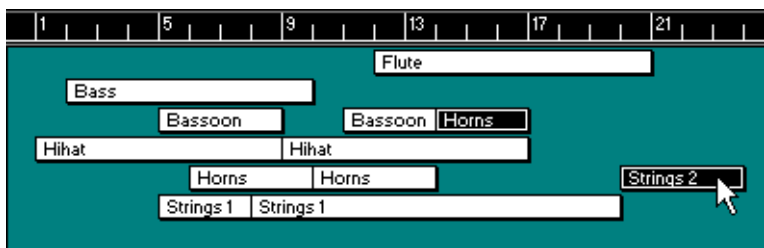
Duplicating Parts

To duplicate Parts, proceed exactly as when moving, but hold down the [Alt] key on the computer keyboard when you are dragging the Parts. You may move the duplicate to any position on any Track.

Other ways of duplicating Parts is to use the Repeat function, or Cut/Copy and Paste. These functions are described in the chapter "The Arrangement – Part and Track Operations" in the electronic documentation.

Changing the length of a Part

You can change the length of a Part in the following way:

1. Select the Pencil tool from the Toolbox.

2. Click on the outline of a Part and drag the outline to set a new length.
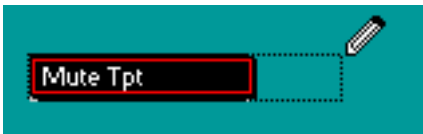
● If you make a MIDI Part shorter, all Events in the removed section of the Part will be erased!

Splitting a Part

You can use the Scissors tool to split a Part in two:

1. Select the Scissors tool.

2. Click on the Part.
The Part is split in two, at the position where you clicked (taking the Snap value into account). The two Parts will have the same name as the original Part.
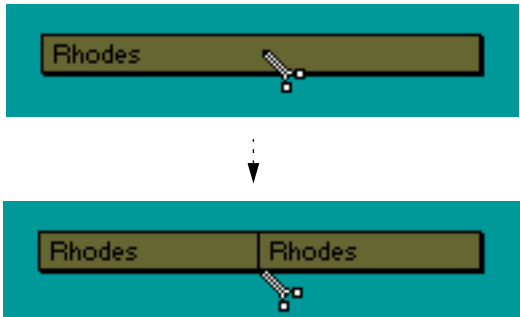
Joining two Parts

Just as you can split a Part in two, you can use the Glue Tube tool to "glue together" two Parts. The two Parts do not have to touch one another:

1. Select the Glue Tube tool.

2. Click on the first Part.
The Part is joined to the next Part on the Track. The resulting, longer Part will have the name of the first Part.
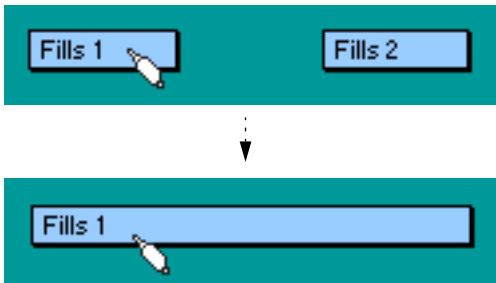
• **If you hold down [Alt] and click on a Part with the Glue Tube tool, all the consecutive Parts on the Track will be joined into one.**

Monitoring the contents of a Part

With the Magnifying Glass tool, you can perform what is known as "Scrubbing". This means that you can listen to the contents of each Part separately in Stop mode:

1. Select the Magnifying Glass.
From there on, the procedure differs for Audio Parts and MIDI Parts:

2. To monitor the contents of an Audio Part, click anywhere in the Part.
You will hear the contents of the Part played back, from the point where you clicked, for as long as you keep the mouse button pressed (or until the end of the Part).

When you press the mouse button, the pointer takes on the shape of a speaker.

3. To monitor the contents of a MIDI Part, drag the pointer forwards or backwards over the Part.
Notes and other MIDI Events will be played back according to how fast you drag the pointer.

Deleting Parts

There are several ways to get rid of unwanted Parts.

- **Select them and press [Backspace] on the computer keyboard.**

- **Select them and use Delete Parts on the Edit menu.**

- **Click on the Parts with the Eraser tool.**
  If you hold down [Alt] when you click, the Part and all the consecutive Parts on the Track will be deleted.

● Deleting an Audio Part will not erase the actual audio file or the segment in the Pool!
To delete an Audio Part and erase the corresponding audio file from the hard disk, select the Part, hold down [Control] and press [Backspace].

Part Appearance and Color

By using the Part Appearance submenu on the Options menu, you can choose how the Parts should be displayed in the Part display. The setting is global for all Arrangements in the Song.

There are four options:

- **Show Names.**
  The Parts are displayed as boxes with the Part names.

- **Show Events.**
  Each Part is displayed as a box containing a graphical representation of the Events in the Part. For MIDI Parts, you may define which types of Events should be displayed, by turning on and off the flags in the Part Appearance sub menu.

Events shown in Audio Parts and MIDI Parts.

- **Show Frames.**
  The Parts are displayed as empty boxes.

- **Show Names and Waves.**
  MIDI Parts are shown as boxes with the Part names; Audio Parts are shown with names and a representation of the audio waveform.

Part Color

To distinguish Parts, you may give them different colors. You have a choice of 16 user definable colors.

Adding Color to all Parts on a Track

1. Make sure no Parts are selected.

2. Select the Track in the Track list.

3. Select the desired color from the Part Color pop-up.

The Part Color pop-up is found above the Part Display.

Choosing one of the colors from the menu adds color to the Parts.

Click here to edit the colors and names.
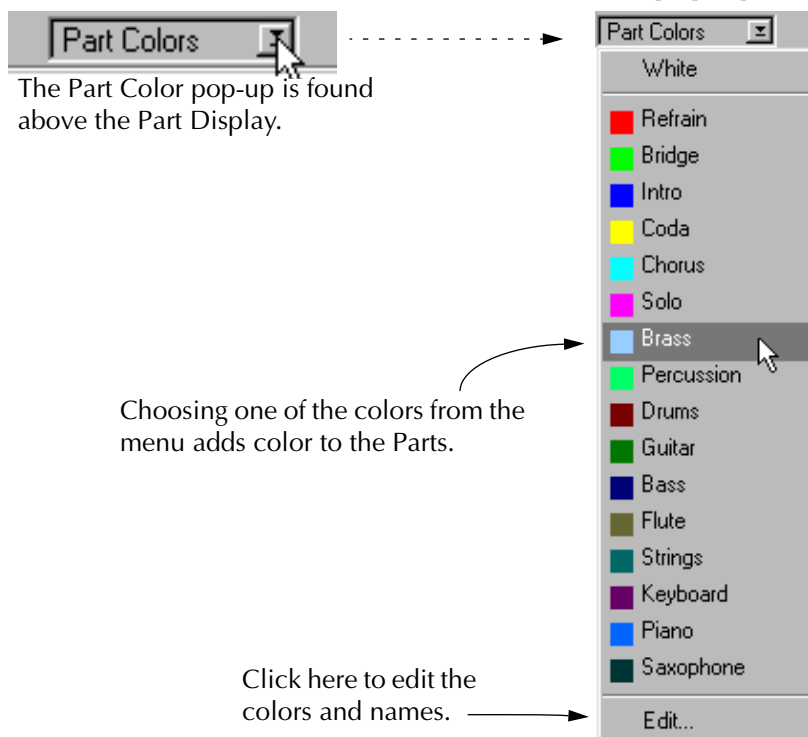
Adding Color to some Parts

1. Select the Parts.

2. Select the desired color from the Part Color pop-up.

Selecting different colors for different Parts can be very useful if you want to edit several Parts in a MIDI Editor. As described in the chapter "The Midi Editors-General Information" in the electronic documentation, you can then choose to display the Events in the color of their respective Part, making it easier to distinguish the different Parts.

Managing the Arrangements

As stated earlier, you can have up to 16 Arrangements in one Song. This section describes some functions used to handle Arrangements.

Creating a new Arrangement

You create a new Arrangement by pulling down the File menu and selecting "New Arrangement", or by pressing [Control]-[N] on the computer keyboard.

Naming an Arrangement

To keep track of the different Arrangements in a Song, you can give names to each. Click with the right mouse button with the pointer over the current Arrangement name (to the left in the Arrange window's Title bar), and type in a new name.

- **If you choose to save an Arrangement to disk as a separate file, then the name you give it while saving will be used as the Arrangement's title next time you load it.**

Activating an Arrange Window

Normally, if you want to work in the Arrange window, you click on it to activate the window and bring it to front. However, if you have a lot of Arrangements in your Song, some of them might be obscured and impossible to activate this way. Then you can use the following method instead:

1. **Pull down the Windows menu.**
   At the bottom of the menu, you find a popup with all Arrangements in the Song:
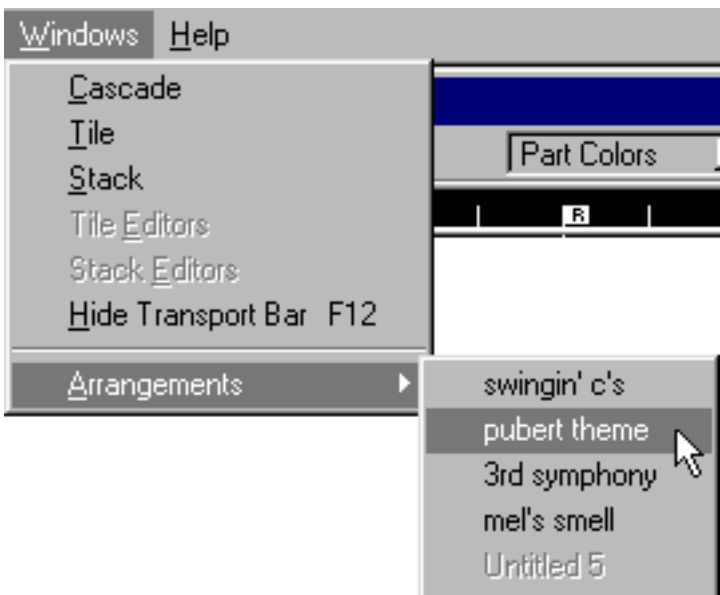
2. **Select the desired Arrangement from the list.**

Saving and Opening Arrangements

The basic file format for Cubase VST is the Song file, but you can also save and open Arrangements separately, using the "Save As" and "Open" commands on the File menu. This makes it possible to transfer recordings from one Song to another: Save the Arrangement containing the recordings, open the other Song and open the Arrangement you saved.

- **Read more about Saving and Opening in page 237.**

Closing an Arrangement

If you select Close on the File menu, press [Control]-[W] or click on the window's Close button, the following alert message will appear:
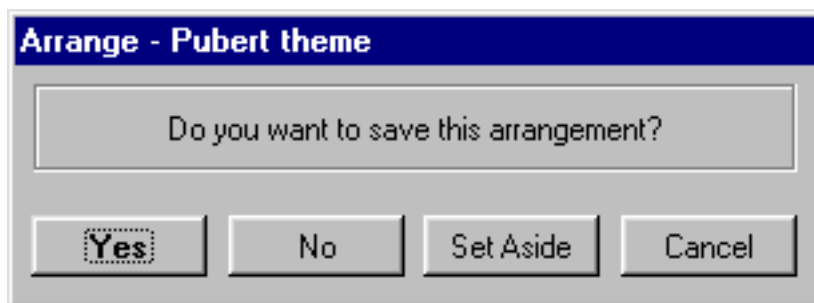
Select one of the following options:

- **Yes.**
  Opens a file dialog where you can save the Arrangement for later use. After saving, the Arrangement is closed.

- **No.**
  Closes the Arrangement without saving it.

- **Set Aside.**
  The window is closed, but the Arrangement is kept ,"hidden" in the Song. To open a Set Aside Arrangement, pull down the Windows menu and select it from the Arrangement popup menu there.

- **Cancel.**
  Cancels the operation, i.e. the Arrangement is not closed.

● Please note that there is no "Close Song" command! Even if you close all Arrangements, the Song is still there. To create a new Song, use the "New Song" command on the File menu.

11

The Track Columns and the Inspector

The Track Columns

The Track columns show names and settings for the Tracks. These settings can be changed directly. The headings are the same for all Tracks, but may have a slightly different meaning for different Track classes. Not all columns apply to all Track classes.

Getting the Track Columns to appear

The Arrange Window is divided into two parts, the Track columns to the left and the Part display to the right. To get all of the Track columns to appear, press the mouse button with the pointer positioned above the Divider (the border between the two parts of the Arrange Window) and drag it as far to the right as possible. You should now be able to see all of the Track columns.
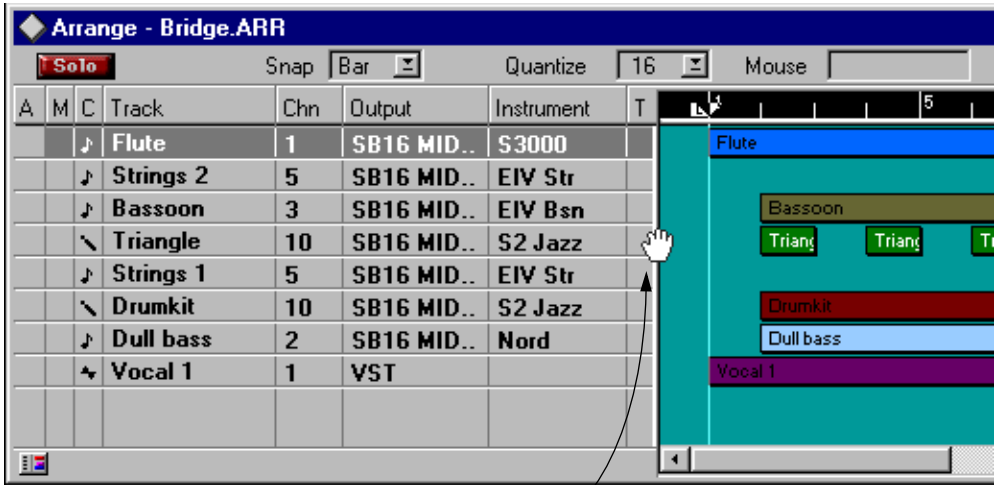
The Divider, dragged as far right as possible.

Changing the order of the Track Columns

You can arrange the vertical columns in any order you like, by simply dragging the headings to the left and right, respectively.

If you drag to the left, the column will be inserted to the left of the column you "drop it on". If you drag to the right it will be inserted to the right of the column you "drop it on".

The Activity Column

This column is only shown if the checkbox "Activity Display" in the Preferences dialog (reached from the File menu) is activated. The column, with the heading "A", shows if any MIDI/audio is being sent out from the Track at the moment. The width of each bar represents velocity for notes. The activity column applies to Audio Tracks, MIDI Tracks, Drum Tracks, and Group Tracks.

The Activity Column as it looks when notes are played back.

● This column cannot be moved!

The Mute Column

The Mute column is indicated by an "M". By clicking in this column, you temporarily "silence" the Track. A black dot is displayed in the column. To make the Track sound again, you just click in the Mute column again.

Click in the "M" column...

...to Mute the Track. The black dot indicates that a Track is Muted.

The Solo function

If you click on the Solo button in the upper left corner of the Arrange window (or press [S] on the computer keyboard), all Tracks *except* the selected are Muted. This is useful if you want to listen closely to the contents of a Track, and don't want any other music to interfere.

The highlighted Solo button indicates that Solo is activated.

All Tracks except the currently selected, get Muted.
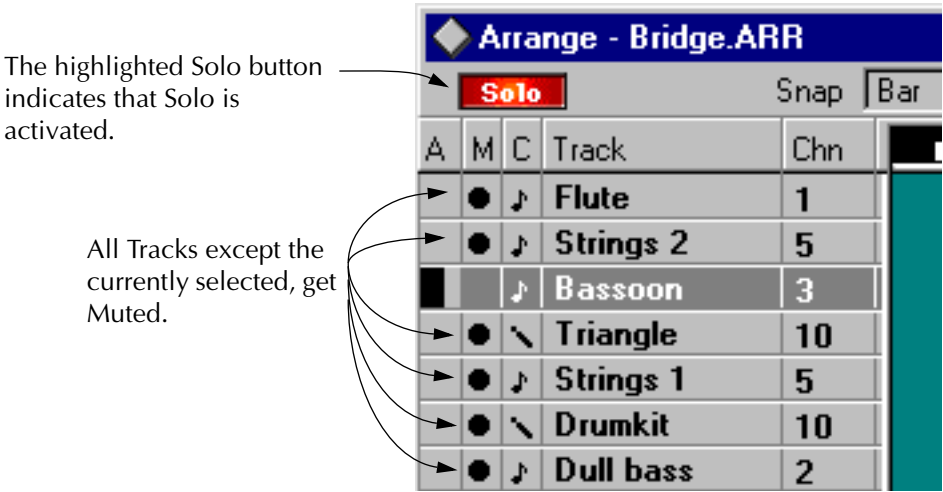
- **You can unmute one or more Tracks while in Solo mode if you want to hear, for example, just how two or three Tracks sound together.**

- **When you deactivate Solo, all Tracks will return to the Mute status they had before Solo was activated.**

- **If any MIDI notes are sounding at the moment their Tracks are Muted, they are allowed to play until their end.**

- **It is also possible to Mute single Parts, using the Mute tool.**
  This is described in the chapter "The Arrangement - More on what you can do with Parts and Tracks" in the electronic documentation.

About the "M" sign in the Mute column

For Audio Tracks, the Mute column serves a second purpose: when monitoring is activated for a Track, an "M" is displayed in its Mute column. This is only an indication; you cannot change the monitoring status by clicking in the column. The Mute function works as usual, regardless of the monitoring status.
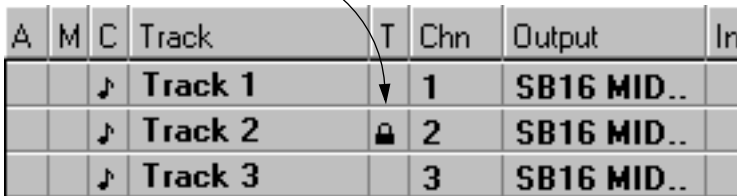
The Class Column

This column is indicated by a "C" and is used to set a Track to a certain Class. See page 119 for a thorough explanation.

The Time Lock Column

This column is indicated by at "T". If you click in it, a lock symbol will appear, meaning that Events on the Track are fixed in time. The uses for this are explained in detail in the chapter "Time Locked Tracks" in the electronic documentation. Normally, you should make sure that no Track is Time Locked.

A Time Locked Track.

A	M	C	Track	T	Chn	Output	In
		♪	**Track 1**		1	**SB16 MID..**	
		♪	**Track 2**	🔒	2	**SB16 MID..**	
		♪	**Track 3**		3	**SB16 MID..**	

The Track Column

This column shows the Track's name. To enter or change a name, double click in this field for the relevant Track.

The Chn Column

The Chn column shows the Audio/MIDI Channel for each Track. You may change the channel of a Track at any time. For a full explanation of Audio/MIDI Channels and the effect of changing them, see the chapter "How Cubase handles audio and MIDI" in the electronic documentation. To avoid confusion, please take your time and read that chapter.

● The Chn column has different functions for Chord Tracks and Tape Tracks (see the separate documents about Styles and Tape Tracks, respectively). The column is not used at all for Style Tracks, Mix Tracks or Group Tracks.

The Output Column

For MIDI and Drum Tracks, the Output column shows which physical MIDI Output each Track uses (see the chapter "How Cubase handles Audio and MIDI"). For Audio Tracks, this column will always show the word "VST".

To change Output for a MIDI Track, position the pointer in its
Output column, press the mouse button...

...and select the MIDI Output you want
from the pop-up menu that appears.

- **If you hold down [Control] while you change the Output value, all Tracks will get the selected Output value.**

● The function of the Output column for Mix Tracks is described in the chapter "The MIDI Mixer and Mix Tracks" in the electronic documentation. The function of the column for Chord Tracks is described in the separate document about Styles.
The column is not used at all for Style Tracks, Tape Tracks or Group Tracks.

The Instrument Column

In Cubase VST terms, an *Instrument* is simply a certain MIDI Channel together with a certain Output. Instruments can be defined for MIDI Tracks and Drum Tracks.

Defining your different MIDI Channel/Output combinations as Instruments can be practical, since you can do this once and then not have to check the actual Channel and Output settings. The concept is more thoroughly explained in the Instruments chapter in the electronic documentation.

Using the Inspector

● The information in this section is mostly relevant to MIDI Tracks/Parts only. For Audio Tracks, the Inspector is mainly used to set up the Tracks for recording, as described on page 62.

What is the Inspector?

The Inspector is a part of the Arrange Window. It contains a number of value- and name fields, where you can change settings and properties of a Track or individual Parts on a Track.

There is one important thing to remember before you start working with the Inspector:

● The settings you make in the Inspector will affect the material *during playback*. You do not really change anything recorded.

When you play back notes from a Part...

...they pass through the Inspector...
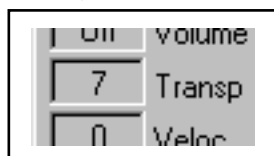
...and are output, in this example transposed one fifth (i.e. seven semitones) upward.

The actual recorded material in the Part is not affected.

This also means that Inspector settings, such as transposition, are not shown when you edit a Part. To make these settings permanent you need to use the Freeze Play Parameter item on the Functions menu, as described on page 147.

Getting the Inspector to appear

You open the Inspector by clicking on the strip with the little Inspector Icon below the Track column, or by pressing [Alt]+[Ctrl]-[I]. An area to the left of the leftmost column in the Track list appears. In this you find a number of value fields, name fields and buttons, described in the following pages.

Click on the Inspector Icon...

...to open the Inspector.
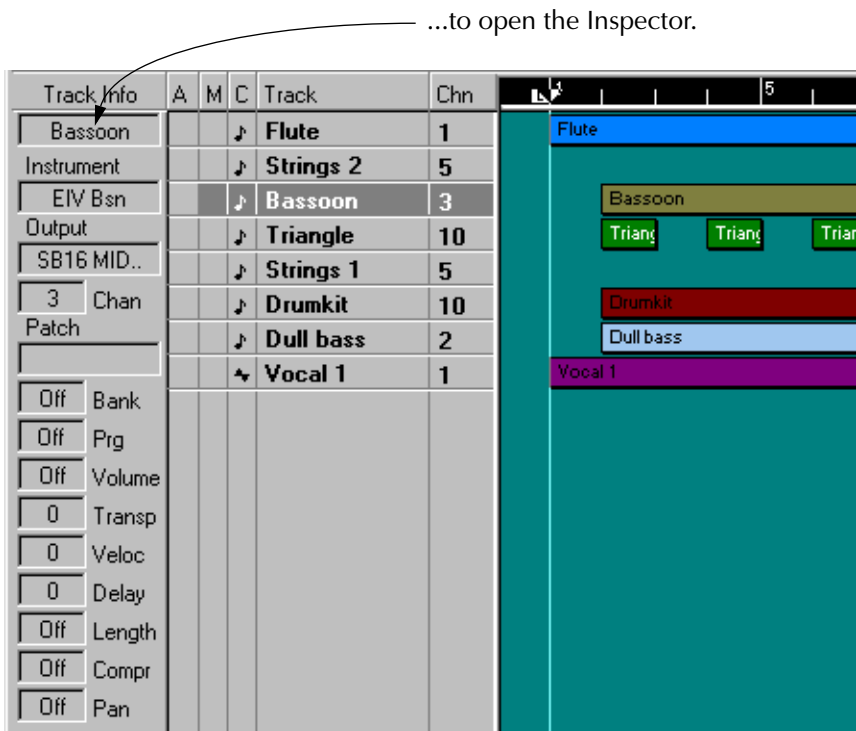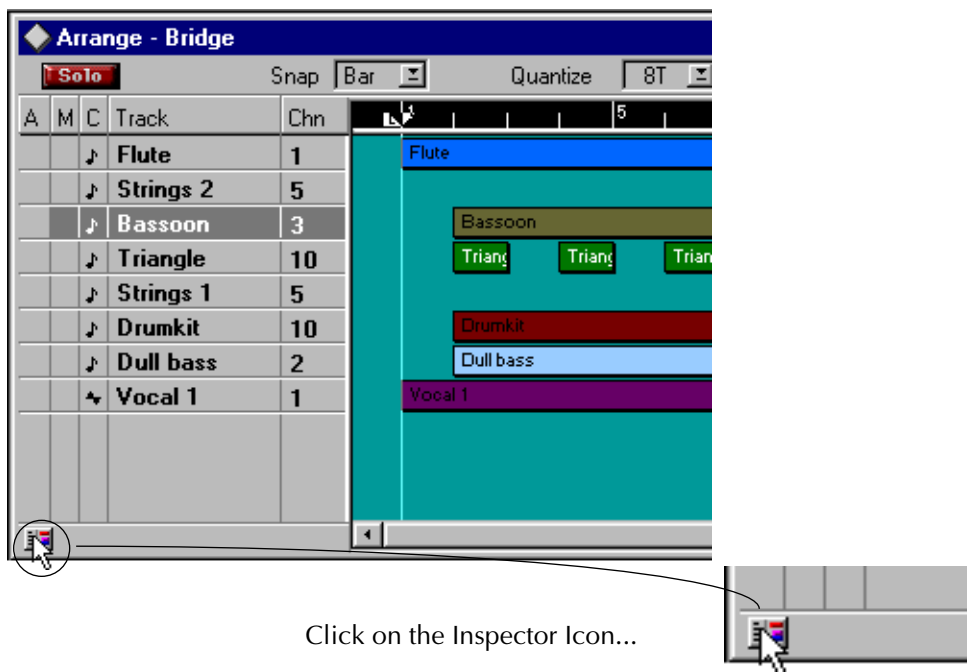
• **To close the Inspector, click on the Inspector Icon again.**

Changing values in the Inspector

By changing values in the Inspector, you make changes to your Parts and Tracks. Some fields are duplicates of fields in the Track list, Audio Monitor Mixer or GM/GS/XG Editor, while others can be found only in the Inspector. To get a basic grip of how to use the Inspector, follow the steps below:

1. **Open the Inspector.**

2. **Select a MIDI Track on which you have recorded some music.**

3. **Check that no Parts are selected.**
   The heading of the Inspector should read "Trackinfo" - otherwise, just click on an empty area in the Part Display.

4. **Start playback.**

5. **While the music is playing, try changing the "Transpose" and "Volume" values in the Inspector.**
   The transposition and volume of the played back music will change accordingly.

Making Real-time changes with the Inspector

When you change the value of a parameter in the Inspector, the new value is immediately sent out to the MIDI Output. This will affect not only the sound source assigned to the selected Track, but all MIDI devices connected to the same Output as the Track, and set to receive on the same MIDI Channel.

You may use this feature for setting appropriate values (e.g. volume, velocity etc) while the music is playing.

What is affected by the Inspector?

This depends on what is selected in the Arrange window. The following possibilities exist:

When a Track, but not a Part, is selected

When no Parts are selected, the Inspector has the heading "Trackinfo". The parameter values affect the selected Track, and all the recorded material (the Parts) on it.

The Inspector opened for the Track "Bass".

One Part is selected

The Inspector has the heading "Partinfo". The parameter values affect the selected Part only.

The Inspector opened for the Part ″Bass verse″.

Two or more Parts are selected

The Inspector has the heading "Partinfo", and shows the parameter values of one of the selected Parts. If you change a parameter, you will get the question "Copy value to all selected Parts?". If you click "Yes", all the selected Parts will get the new value, regardless of their previous settings. If you click "No", the change only affects the Part whose values were shown in the Inspector.

How MIDI Part and Track settings relate

As you have seen, you may change parameter values both for the whole Track and for individual Parts on the Track. It is the latest change that "counts". If you for example change the velocity value of a single Part and then set another velocity value for the whole Track, the Part will also get this latest velocity value. Other parameter settings for the Part will remain unaffected.

Make various settings for a Part...   ...then change the velocity
                                                        value for the whole Track.

Part Info		Track Info		Part Info	
Bass verse		Bass		Bass verse	
Instrument		Instrument		Instrument	
Nord		Nord		Nord	
Output		Output		Output	
SB16 MID..		SB16 MID..		SB16 MID..	
2	Chan	2	Chan	2	Chan
Patch		Patch		Patch	
Off	Bank	Off	Bank	Off	Bank
Off	Prg	Off	Prg	Off	Prg
73	Volume	Off	Volume	73	Volume
3	Transp	0	Transp	3	Transp
-10	Veloc	22	Veloc	22	Veloc
0	Delay	0	Delay	0	Delay
75%	Length	Off	Length	75%	Length
Off	Compr	Off	Compr	Off	Compr
Off	Pan	Off	Pan	Off	Pan

Now the velocity value for the Part is changed to that of the
Track, but the other settings for the Part remain unaffected.

The Fields and values in the Inspector

The Inspector contains names, numerical values and pop-up menus. All these settings can be changed using any combination of mouse and keyboard, as usual. Like all other changes, these can of course be done while the music is playing and even while recording.

The tables below contain the different parameters in the Inspector for *Audio and MIDI Tracks/Parts,* respectively. For other Track classes, the contents of the Inspector may differ. For a more thorough explanation of some of these parameters, see the chapter "Inspector Real Time Parameters" in the electronic documentation.

Audio Parts/Tracks (Mono or Stereo)

Parameter	Explanation
Track/Part Name	If a Track is selected, this shows the Track's name. If a Part is selected, this displays the name of the Part.
Delay	Delays the playback of the Audio Track/Part. With a negative value, Delay will cause the Audio Events to play earlier instead.
Chan	The audio channel the Track uses, as described on page 61. For Tracks set to stereo, both channels in the stereo pair are shown (e.g. "3+4").
Input button	This is a duplicate of the Input button for the audio channel in the Monitor mixer window. Clicking this button activates monitoring for the channel, while holding down [Control] and clicking allows you to select an Input for the channel. See page 64.
FX/EQ buttons	These are duplicates of the FX/EQ buttons for the audio channel in the Monitor mixer window. See page 222.
Record Info	Shows the name of the audio file currently assigned for the recording.
Record Enable button	Click this button to enable recording on the Track.
Mono/Stereo button	This is used to select whether the Track should be set to Stereo or Mono. The label on the button indicates which mode is currently selected for the Track. A lit up button indicates that it is possible to switch mode (see page 63).

Audio Parts/Tracks ("any" channel)

If the Track or Part is set to audio channel "any", the Inspector appears different. There are no FX/EQ buttons, and the Input and Record Enable buttons are replaced by a number of Monitor and Record Info buttons, one for each audio channel.

The "any" channel concept is described in the electronic documentation.

MIDI Parts/Tracks

Parameter	Explanation
Track/Part Name	The name of the selected Track or Part.
Instrument	The Instrument (Output and Channel) that the selected Track or Part is assigned to.
Output	The Output port for the selected Track or Part.
Chan	The MIDI Channel set for the Track or Part.
Patch	If you are using a soundcard with a built-in synthesizer that supports SoundFonts (such as the Creative Labs AWE series) you can use this field to select sounds for the synthesizer (see the chapter "Program Change and MIDI Volume" in the electronic documentation).
Bank	Lets you associate a MIDI Bank Select message with a Track or a Part, to make an instrument switch "program bank" (see the chapter "Program Change and MIDI Volume" in the electronic documentation).
Prg	Lets you associate a MIDI Program Change number with a Track or a Part, to make a connected instrument switch sound. If GM, GS or XG Mode is activated in the GM/GS/XG Editor, clicking this field will open a hierarchical pop-up menu, where you can select a GM instrument by name. If you are using the Studio Module, Program selection is done differently - see the separate Studio Module documentation.
Volume	A volume value for a Track or a Part. This setting is sent out as a MIDI Volume message.
Transp	Lets you transpose the notes in a Part or on a whole Track.

Parameter	Explanation
Veloc	The value in this field is added to the velocity of the notes played back.
Delay	Delays the notes. With a negative value, Delay will cause notes to play earlier instead.
Length	Changes the note length by a percentage factor.
Compr	Compresses/expands the velocity range of notes. This is done by multiplying the velocities with a percentage factor (25% - 200%). If for example you want to "even out" a Part with varying velocity values, you could select a "Compr" value of 25, 50 or 75%. The smaller the value, the lesser the velocity difference between notes. To compensate for the decrease in velocity, you may want to add a positive value in the "Veloc" field. In a similar way, "Compr" values greater than 100% will make velocity differences greater.
Pan	Sends out a MIDI message, telling your instrument to place the sound of the Part/Track in a certain position in the stereo field.

When should I use the Track Columns and when should I use the Inspector?

Many of the parameters in the Inspector have equivalents in the Track columns. Remember the following facts:

- The Inspector can affect both Tracks and single Parts. The Track columns only affect whole Tracks.
- The fields with the same name in the Track columns and the Inspector have exactly the same function. Changing the value in one affects the other as well.

Why then use the Track columns at all? Well, for one thing, it is very handy to have instant overview and control over all Tracks at the same time. The contents of the Inspector will change depending on which Parts you have selected. There may also be situations when you want the Part display (to the right in the Arrange Window) as large as possible, and therefore need to close the Inspector.

Using Freeze Play Parameters

As already mentioned, the Inspector settings (or "Play Parameters") do not change the MIDI Events themselves, but work rather like a "filter", affecting the music on playback. However, sometimes you may want to make these settings permanent, i.e. convert them to "real" MIDI Events in the Part. You might for example want to transpose a Part and then edit the transposed notes in a MIDI editor. For this, you need to use the Freeze Play Parameters item on the Functions menu:

1. **Select the Part(s) with Inspector settings you want to make permanent.**
   If no Parts are selected, all Parts on the active Track will be affected.

2. **Pull down the Functions menu and select "Freeze Play Parameters".**
   Bank Select, Program Change, Patch, Volume and Pan settings in the Inspector will be converted to MIDI Events and inserted at the beginning of the Part(s). All notes in the Part(s) will be modified according to the Transpose, Velocity, Delay, Length and Compression settings in the Inspector, and the Inspector settings will be reset.

● When you export a MIDI file, you can choose to have all Inspector settings automatically included in the file, with no need to perform Freeze Play Parameters:
   Before exporting, select "Preferences" from the File dialog and make sure that the checkbox "Leave MIDI File Track Data as is" is *not* activated! Then export the MIDI file, as described on .

Real-time Thru

In most MIDI recording situations, the Thru function in Cubase VST is used to "echo" incoming MIDI data via MIDI Out. If you use the Thru function, the MIDI data that Cubase VST receives via MIDI In is modified in real-time by some of the Playback parameters. This means that if you for instance set a transposition value of 7 (semitones) and play your keyboard, all notes coming out via the MIDI Out are transposed a perfect fifth higher.

Notes from the keyboard...

...are passed through the Inspector...

...and output again, transposed one fifth upward.
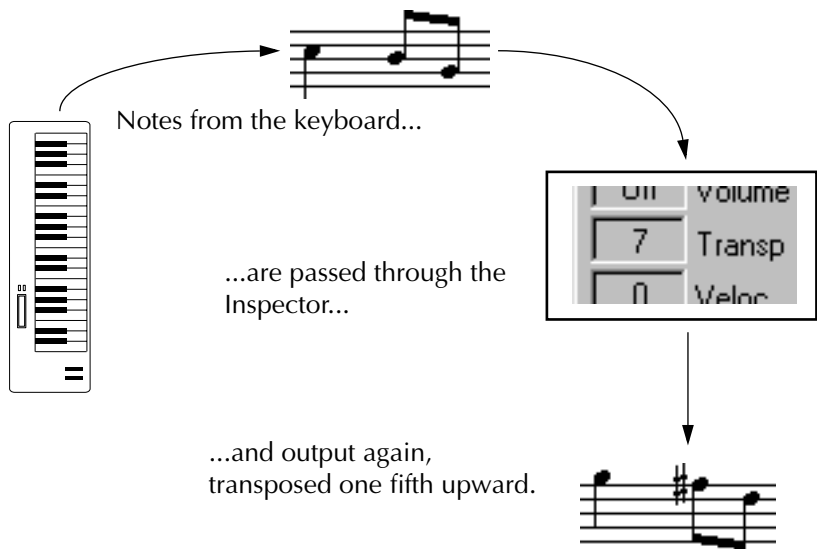
This allows you to try out what effect a certain parameter setting will have on the music, before and when you record something. Since different Parts can have different settings you must select the right Track and check that the Song Position is somewhere within the Part that has the settings you want to try.

The Part in the "cross" made up by the Active Track and the Song Position is used for real-time "Thruing".

● It doesn't matter which Part or Track you have visible in Part Info (you may have stepped through the Parts and Tracks with the arrow keys on the computer keyboard), it is only the Song Position and Active Track which determines which Part's settings should be used for the real-time modification.

The real-time parameters used for modification are: Transpose, Velocity and Compression.

You can also thru-put to up to four Instruments (Outputs and MIDI Channels), see the chapter "Multi Track Recording" in the electronic documentation.

12

Using the Pool

What is the Pool?
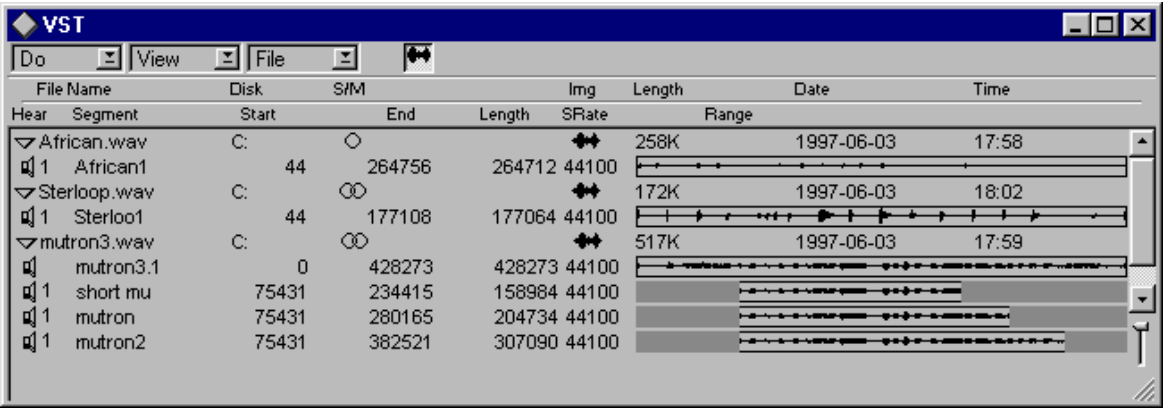
Every time you record on an Audio Track, a file is created on your hard disk. This file is also added to the Pool, a window listing all audio files used in the Song. The way the Pool displays Cubase VST audio files and their contents is similar to the way the Windows Explorer displays lists of files and folders.

But Cubase VST is not restricted to playing complete files. It can also play any section of a file from the beginning, at the end, or some snippet in the middle, short or long, it doesn't matter. A specification for such a section of a file is called a *segment*. For each file that is used in the Song there will be at least one segment. There can be more. For example, different sections of an audio file might be used in more than one place in the song. All the segments are listed in the Pool.

This Audio File has four segments, playing different sections of the file.
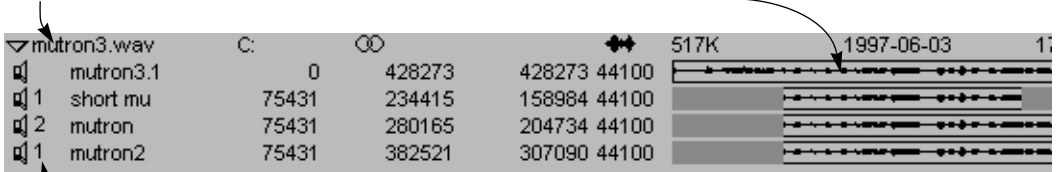
The number to the left of the name, shows how many times each segment is used in the Song.

• **Read more about files and segments in the chapter "How Cubase VST handles Audio and MIDI" in the electronic documentation.**

This chapter describes the basic techniques and information related to the Pool. In the electronic documentation you will find a lot more information.

Opening the Pool

The Pool is opened by selecting "Pool..." from the Audio menu or by pressing [Control]-[F].

How files and segments are displayed

Files

Each file is represented by a line in bold text, preceded by a triangle. For each file there are a number of settings and information, described in the chapter "The Audio Pool" in the electronic documentation.

Renaming a file

You can rename an audio file by double clicking on its name in the Pool and typing in a new name. This method makes it possible for Cubase VST to keep track of the name change. Renaming audio files in the Explorer or from the Desktop is *not* recommended.

Segments

Each file that is in use, has one or more segments, listed below the file in the Pool. The segments have their own settings, described in the chapter "The Audio Pool" in the electronic documentation.

To display or hide the segments for one audio file, you click on the triangle preceding the file.

- **To Show/Hide all segments for all files, select Expand/Collapse from the pop-up View menu.**

Auditioning a segment

To audition a segment from its beginning, press and hold the mouse button with the pointer over the speaker icon to the left of the segment name. The segment will be played back in its entire length (or for as long as you hold down the mouse button).

If you don't wish to audition the segment from its beginning, you can click anywhere in the waveform image to the right. The segment will play back from the position where you clicked, for as long as you keep the mouse button pressed.

Finding Out how a Segment is used in the Song

Next to the speaker icon for each segment, you will see a number telling how many times in the Song this segment is used. A segment without numbers is not used anywhere.

Dragging from the Pool to the Arrange window

One of the most important features in the Pool, is the possibility to drag segments into the Arrange window. This example makes use of the Quick Start Song included on the CD-ROM:

1. **If you haven't already copied the Quick Start Song folder to your hard disk, do this now.**
See .

2. **Open the Song "Quick Start Song".**

3. **Select New Arrangement from the File menu so that you get a new empty Arrangement.**
In this example you will not use the original Arrangement, even though it will still be there in the background. ´

4. **Make sure you have a number of Audio Tracks at the top of the Arrangement.**

5. **Set the tempo of the Arrangement to 70 BPM.**

6. **Pull down the Audio menu and select Pool.**
A Pool window with a large number of audio files in it is displayed.

7. **Resize and arrange the windows so that you can see the first eight Tracks in the Arrangement, as much as possible of the Part Display and as much as possible of the Pool window.**

8. **In the Pool window, select Expand from the pop-up View menu.**

9. **Now, below each file appears one or several segments.**

10.Position the mouse pointer over one of the segment names, and press the button. With the mouse button down, drag the segment onto an Audio Track in the Arrangement.
The picture sequence below shows this step in more detail.

1. Point at the Segment name

2. Drag onto an audio Track in the Arrangement
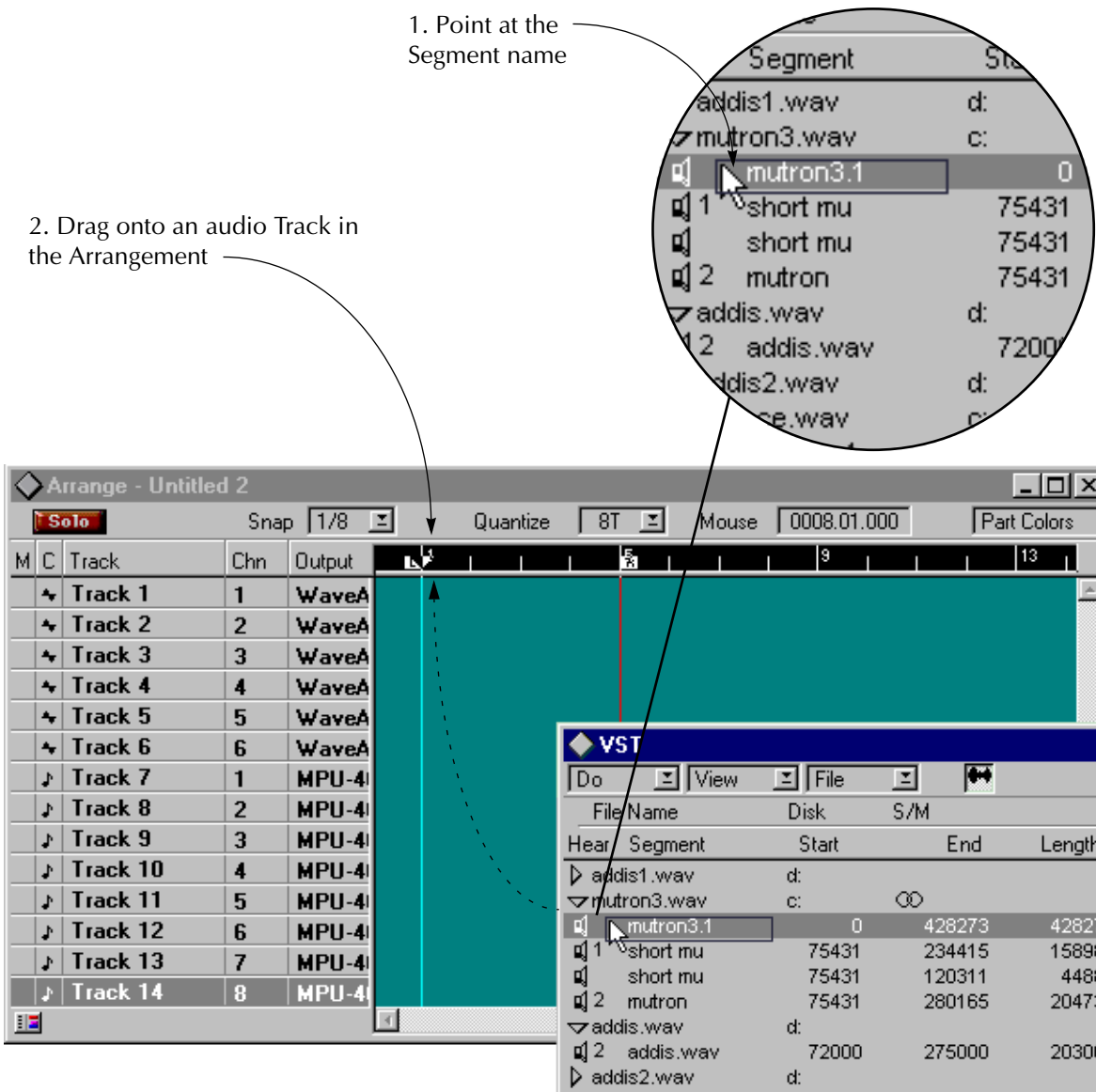
3. The Segment appears as a Part in the Part Display
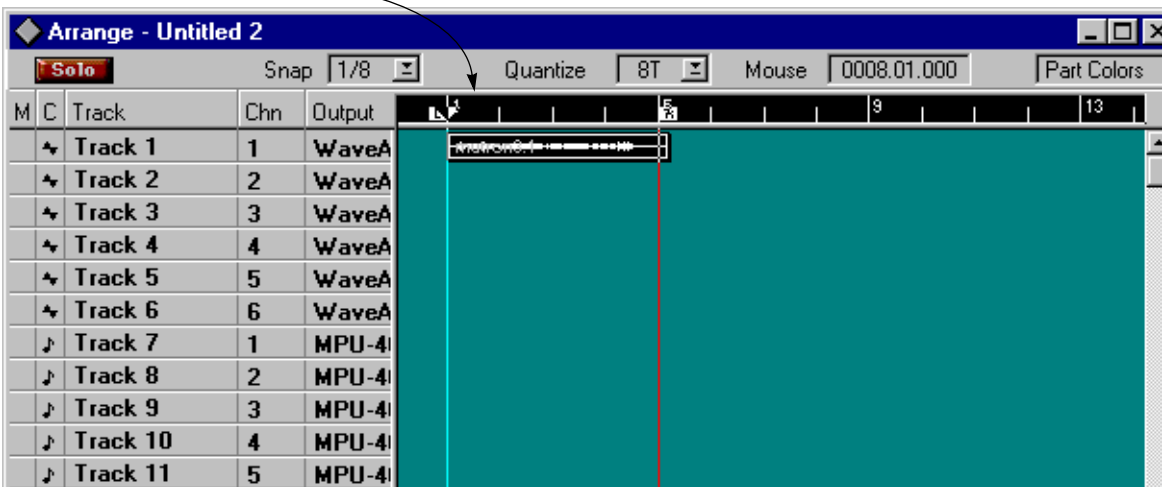
11.If the Part doesn't appear at the place you intended, simply drag it to the right Track and bar position.
As always in the Arrangement, the Snap value affects where the segment is positioned.

12.Play back to hear the new Arrangement.

13.Drag another segment to another Track, and position it so that they start at the same time. Play back to hear the results.

14.Continue like this to add more Parts to build an Arrangement.

Two tips:

• **Remember that you can repeat Parts that are already in the Arrangement.**
This might be faster than dragging the same segment from the Pool many times.

• **Use the Cycle function to try out different files and see if they go well together.**
The Cycle function makes the section between the Left and Right Locator repeat over and over again. Just place the Left and Right Locators where you want them, click on the Cycle button on the Transport Bar so that it is lit, and activate playback. Then drag files to positions inside the Cycle while the program is playing back!

The Cycle button.

Importing Files into the Pool

If you have any other audio file on your hard disk, and would like to use it in the song, you can import it into the Pool and then drag it into the Arrangement, as described above.

File Specifications

The Audio file must meet the following specifications:

- It must be in Wave (.WAV, most common on PC computers) or AIFF (.AIF, Audio Interchange File Format, most common on Macintosh computers) format.
- It must be an uncompressed 16 bit file.
- The sample rate (also called sampling frequency) of the file must be the same as the one used in the Song (see page 59).
- The file can be mono or stereo.

Importing the file

1. **Activate the Pool window.**

2. **Select Import Audio from the pop-up File menu.**
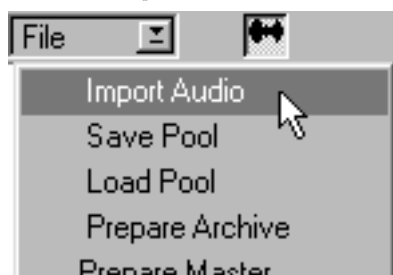
A regular file dialog appears.

3. **Select a file format (WAV, AIF or both) from the File Type pop-up.**
   Files of the selected type(s) are listed in the file dialog box.

4. **Use the file dialog box to locate the file and select it.**

- **You can audition the audio file with the Play button.**
  When you click the Play button, its label changes to "Stop" and the selected audio file is played back. Playback continues until you click on Stop, or select another file.

- **You can select several files by using the [Shift] or [Control] keys, in standard Windows fashion.**

5. **Click "Open".**
   Now, the File(s) will appear at the bottom of the Pool window, each complete with a segment which can be dragged into the Arrangement (see above).

- **Please note that you can also import audio files directly into the Arrangement, using the "Import Audio File" item on the File menu (see the electronic documentation for details).**

13

An Introduction to Audio Editing

Introduction

There are several ways to edit audio recordings in Cubase VST:

- By manipulating Audio Parts in the Arrange window.
- By changing file and segment settings in the Audio Pool (see the Audio Pool chapter in the electronic documentation).
- By editing and trimming the Audio Events in the Audio Editor.
- By applying permanent editing and processing the actual audio files and segments in the Wave Editor (described in the Wave Editor chapter in the electronic documentation).

This chapter describes the basic features and techniques in the Audio Editor. For more detailed information, see the Audio Editor chapter in the electronic documentation.

About Segments, Events, Parts and Non-destructive editing

As already mentioned, an audio segment is a section of an audio file. Basically, each segment consists of a reference to an audio file, a start point and an end point (called *Start and End Insets* from now on).

An Audio Event can be viewed as a "box" containing a segment (together with some additional settings). The Audio Part, in turn, is a "box" containing one or several Audio Events (just like MIDI Parts contain notes or other MIDI Events).

When you edit an Audio Part in the Audio Editor, you do not change the actual recording (i.e. the audio file), but rather the properties of the segment(s) and Audio Event(s) in the Part. The editing you perform is non-destructive, meaning that no audio data is lost. You can always change the settings back to the way they were before you started editing.

Opening the Audio editor

To open the Audio editor, proceed as follows:

- **Double click on an Audio Part,**

  or

1. **Select one or more Audio Parts.**
   You can edit Parts from several Tracks at the same time, if you like.

2. **Pull down the Edit menu and select Edit, or press [Control]-[E] on the computer keyboard.**

   You can only have one Audio editor window open at a time.

The Audio Editor - overview
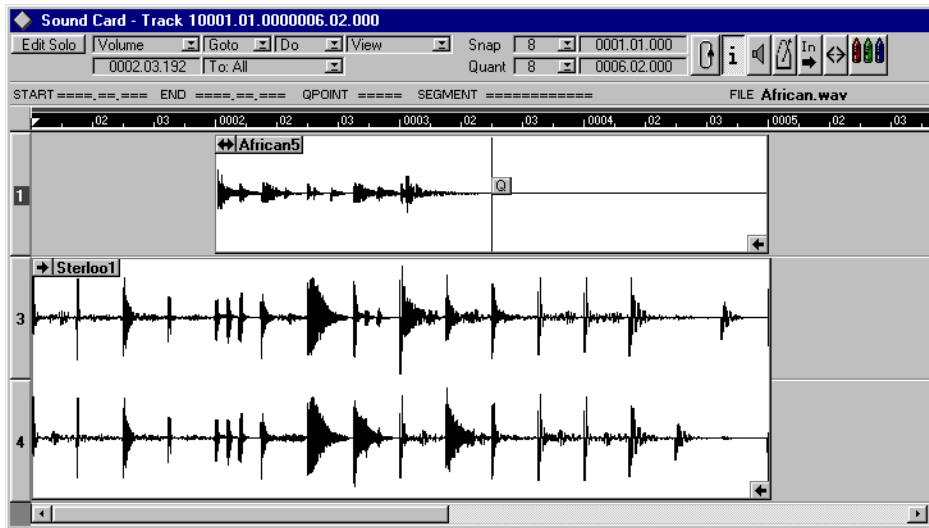
About Lanes

When you first open the Audio editor you will note that it is divided horizontally into something we call *Lanes*. You can move or copy Events between Lanes, but the results of this are different, depending on the audio channel setting of the edited Track:

- **When Editing A Single Channel (Mono) Track.**
  If the Track is set to Mono, and set to play back on one specific audio channel, in the Arrange window (as opposed to being set to channel "Any"), the Lanes all have equal value. The only reason for you to use more than one Lane when editing a single channel Track is if you find that it gives you a better overview of what is going on.

- **When Editing a Stereo Track.**
  If the Track is set to play back in Stereo, the Audio Editor will show two different Lanes, one for each stereo side. This means that if you edit a Stereo Track set to channel 3, the Audio Editor will display lanes for channel 3 and 4.

- **When Editing a Multi Channel Track.**
  If you are editing a Track set to channel "Any" (or several Parts on different Tracks), each Lane will represent one of the available audio channels. Which audio channel each Lane "uses" is indicated by a number on the left side of the window.

  By moving an Event between Lanes with different channel numbers, you change which audio channel the Event is played back on.

● This chapter assumes you are editing Parts on the same audio channel. For more information about multi channel audio editing, see the Audio Editor chapter in the electronic documentation.

How Audio Events are displayed

Normally, Audio Events are displayed as boxes containing a waveform - or two waveforms if the corresponding audio file is in stereo. In addition, several handles, markers and other things can be shown in the Event. What is displayed depends on the setting on the View pop-up menu:

Waveforms

This option governs whether the waveform(s) should be shown or not. Usually, you will want to leave this option activated.

Names

When this is activated, the name of the segment is shown in the top left corner of the Audio Event.

Handles

Each Event has a Start and End Inset which represent the Segment start and end points in the audio file. If the "Handles" option is activated on the View pop-up menu, handles for adjusting the Start and End Insets are visible in the upper and the lower corners (respectively) of the Events. For information about how to adjust the Insets, see page 166 in this chapter.

Start Inset handle   Q-Point handle   End Inset handle
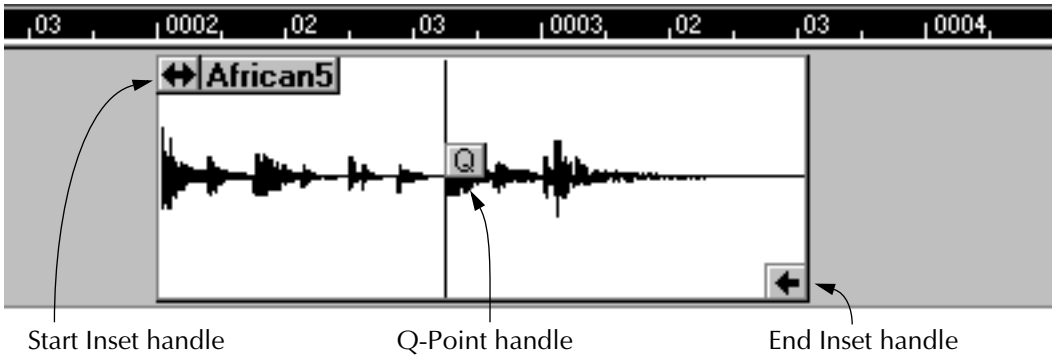
The shape of the handle indicates what the Event actually plays:

➡	If this symbol appears at the beginning of the Event, it means that the Event plays the audio file from the beginning.
↔	If this symbol appears at the beginning of the Event, it means that the Event plays the file from some point later than the absolute beginning of the file. The Start Inset has already been adjusted.
⬅	If this symbol appears at the end of the Event, it means that the Event plays the audio file to its end.
↔	If this symbol appears at the end of the Event, it means that the Event does not play the file to its absolute end. The End Inset has already been adjusted.

- **Even if the Event doesn't begin or end inside the window, the Start and End Inset symbols will be visible at the edges of the window.**
  If you have long Events, this allows you to see the "status" of the Insets (as described above) without scrolling the view.

The Handles option will also show/hide the Q-Points (see page 162).

By Output

When this is activated, all Events that play back on the same audio channel will be displayed on the same Lane. For more information about this, see the Audio Editor chapter in the electronic documentation.

Lane Info

If this option is activated a field will be shown to the left of each Lane, displaying the number of the corresponding audio channel.

Dynamic Events

When this is activated, the lower part of the Audio Event will display a volume curve, a pan curve or Match Points. This is all described in the Audio Editor chapter in the electronic documentation.

About Q-Points

In the Audio Event, you will also find a vertical line with a handle, marked "Q". This is the Q-Point, a marker that is used for snapping the Event to musical positions.
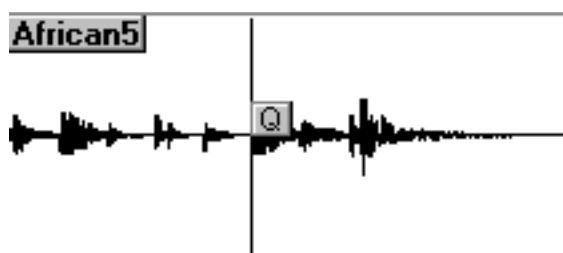
The concept behind this is that with audio, as opposed to MIDI, the beginning of the Event might not occur at a musical position at all, there might for example be a significant amount of silence at the beginning of the recording.

This means that snapping the beginning of the Event to a musical position normally doesn't make much sense. Hence Q-points. These allow you to specify a position in the Segment which is to be taken as it's first "musically significant position", the first down-beat for instance.

• **To move the Q-Point in an Audio Event, just click and drag the Q-handle.** For the Q-Point to be visible, "Handles" must be activated on the View popup menu.

For more info about working with Q-Points, see the Audio Editor chapter in the electronic documentation.

Which Audio Events will I Hear?

If any two Audio Events try to play back on the same audio channel at the same time, only one of them will be heard. This is shown in the pictures below:
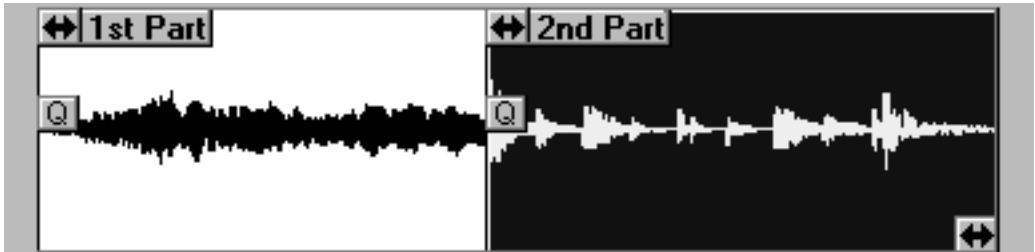
The "1st Part" Event is cut off by the "2nd Part" Event.
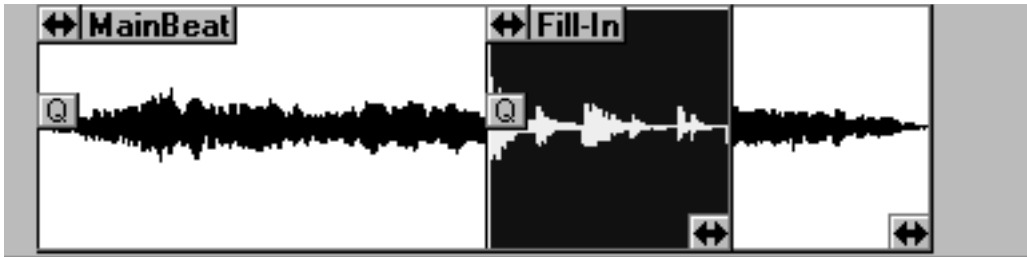
The "MainBeat" Event is cut off by the "Fill-in" Event. After the end of this shorter Event, the "MainBeat" Event will be heard again.

Creating Audio Events

There are three general ways to create new Audio Events in the Audio Editor:

- **By recording.**
  Audio Recording in the Audio Editor is done just as in the Arrange window. If you are editing several Parts on different Tracks, you determine which Part to record into by clicking in the Lane Info field to the left in the window.

- **By importing.**
  If you select the Pencil tool and click somewhere in a Lane, a file dialog will open. Locate and select the audio file you want to import, and click OK. An Audio Event is created at the position where you clicked (taking the Snap value into account), and the file and segment is added to the Pool.
  The file specifications are the same as when importing into the Pool (see page 156).

- **By dragging segments from the Pool.**
  This is done just like dragging segments into the Arrange window (see page 153).

Manipulating Audio Events

This section describes some of the basic ways of manipulating Audio Events.

Moving Events

Audio Events are moved just like other objects in Cubase:

1. **Select the Arrow Tool.**

2. **Select all Events you want to move.**

3. **Press and hold the mouse with the arrow pointer over one of the selected Events (not in the handles) and move the mouse.**
   The mouse box shows you where the Q-point of the first selected and dragged Event will wind up when you release the button.

4. **If you want to restrict movement to horizontally or vertically, hold down [Shift] while dragging.**

5. **Release the mouse button, and the selected Events are moved to the new position.**
   The Snap function applies, positioning the Event so that its Q-point gets aligned with the closest Snap value.

   You can also make fine adjustments to Event position, using the Hand tool. This is described in the Audio Editor chapter in the electronic documentation.

Duplicating Events

This works just as when moving Events, except that you press [Alt] and hold it down while you are dragging the Events. The duplicated Audio Events will play new segments, with the same properties as the original.

- **If instead you want the duplicated Event to play *the same segment*, you can create a Ghost Copy of the Event, by holding down [Control] while you are dragging.**
  The advantages of this are that you don't get a lot of identical segments in the Pool, and that you can edit one segment, and have your changes affect several Audio Events at once. For more info about Ghost Copies, see the Audio Editor chapter in the electronic documentation.

Changing Start and End Insets

Changing the Start and End Insets is the main way to trim your Audio Events. There are a couple of things to think about before starting:

- **Snap to Zero.**
  If the option "Snap To Zero" in the Audio menu is enabled, all offset adjustment will be followed by an automatic "search for a zero crossing". The advantage of using zero crossings is that there will be no clicks due to sudden volume changes in the audio material. For more info on Zero Crossings, see the chapter "The Audio Editor" in the electronic documentation.

- **Changing the Magnification.**
  It is often a good idea to zoom in horizontally and vertically when you are making fine adjustments to the segment start and end points. Use the sliders in the lower right corner of the window to change magnification.

- **The Inset value is in *ticks.***
  There are 384 ticks for each beat (quarter note) which means that when you change the Insets this is the resolution you are using for the position value. However, if you need sample accurate editing of Segment Insets, you can perform this in the Pool, see the electronic documentation.

- **The Insets do *not* "snap" to the closest Snap value.**

Changing the Start Inset

The Start Inset is adjusted by dragging in the *upper left corner* of the waveform part of the Segment. Usually, you will point at the handle, click and drag, but the handle does not actually have to be shown (hide/show it with the View pop-up menu, if you like).

Position the pointer in the upper left corner of the waveform, and drag the Inset left or right.

- **If you click somewhere along the very top edge of the segment (though not on the segment name) the Start Inset will immediately be set to that position.**
  The Start Inset can also be changed numerically from the Info Line (see page 170).

What happens when you Change the Start Inset?

Changing the Start Inset adjusts from which point in the file the Segment plays; it "hides" more or less of the beginning of the file. It does not *move* the audio in the Song. Note the difference between changing the Start Inset and moving the Event:

Before moving the Event

Before moving the Start Inset

After moving the Event

After moving the Start Inset
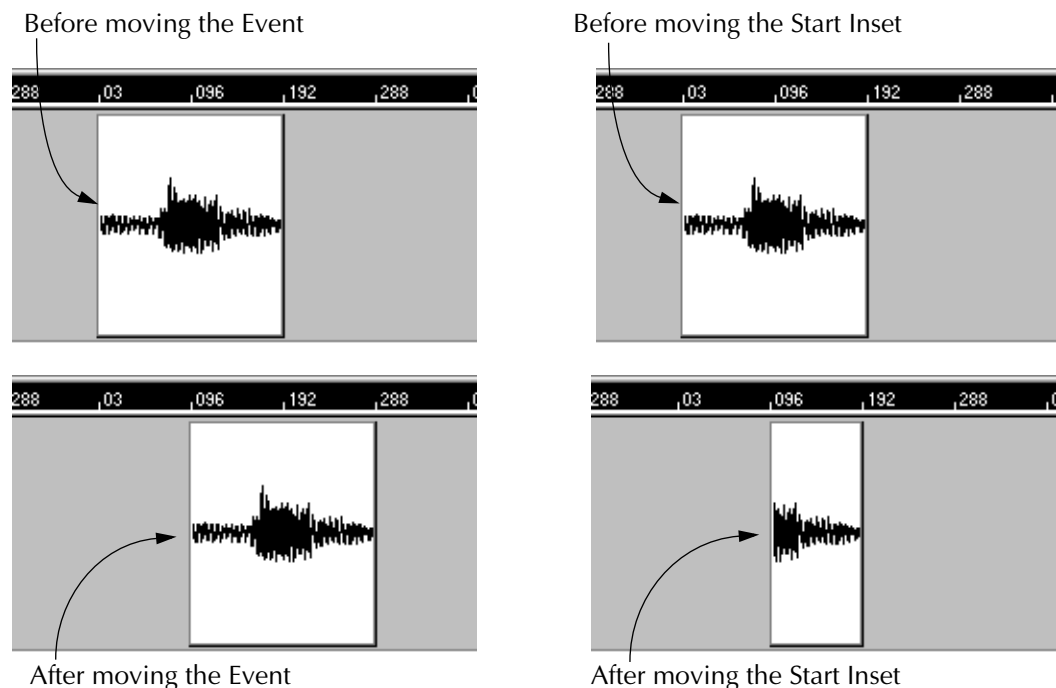
Changing the End Inset

This is done just as changing the Start Inset, only you click and drag in the *lower right corner* of the waveform. Changing the End Inset adjusts the Length of the Event; that is, it hides more or less of the end of the file.

- **If you click somewhere along the bottom edge of the segment, the End Inset will immediately be set to that position.**
  The End Inset can also be set numerically on the Info Line (see).

Monitoring the changes

If you activate the Speaker icon, a short section of the segment will be played back when you change the Insets, allowing you to fine-tune the settings by ear. In the electronic documentation, you find information about how to set the length of the section to be played back.

Auditioning Audio Events

This allows you to check out the contents of an Event, by playing it back from any position:

1. Select the Magnifying Glass from the Toolbox.

2. Make sure the Scrub icon on the Status Bar is deactivated.
When this is activated, the Magnifying Glass is used for Scrubbing. This is described in the Audio Editor chapter in the electronic documentation.
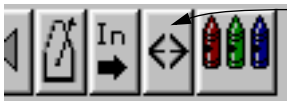
The Scrub icon deactivated (Auditioning mode).
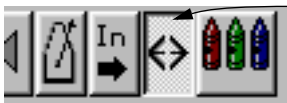
The Scrub icon activated (Scrubbing mode).

3. Click on an Event.
The Event is played back from that point as long as you hold the mouse button down. The audio is routed through the monitor mixer as usual.

Deleting Audio Events

Audio Events can be deleted in several ways, just as Parts in the Arrange window:

- **By clicking with the Eraser tool.**
  This will remove the Event from the Audio Part. The file will remain on the hard disk, and in the Audio Pool, together with the segment.

- **By selecting the Event and pressing [Backspace] on the computer keyboard.**
  Again, this will only remove the Event from the Audio Part.

- **By selecting the Event, holding down [Control] and pressing [Backspace].**
  If you do this, the following alert message will appear:
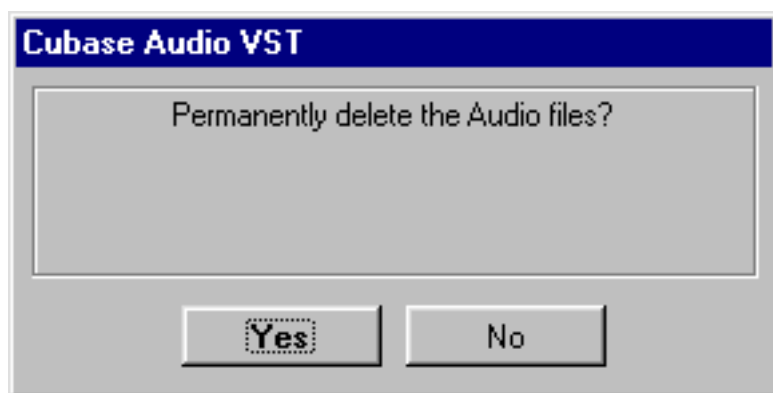
If you click No, only the Audio Event will be removed, as if you had not pressed [Control].
If you click Yes, the audio file will be permanently deleted from the hard disk, and the segment and file will be removed from the Audio Pool.

● Permanently deleting an audio file from your hard disk this way cannot be undone!

Editing on the Info Line

The Info Line is a section in the window containing numerical settings for the selected Audio Event. Proceed as follows:

1. To display the Info Line, click on the "I" button on the Status Bar:
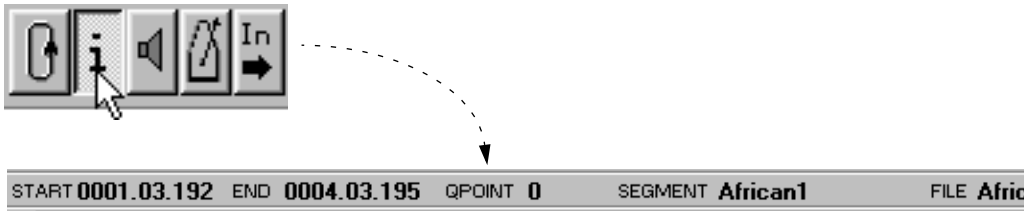
2. Select one, and only one, Event.

3. Adjust the values as described in the table below:

Heading:	Description:
Start	Start Position. Adjusting this moves the Event.
End	End Inset. Adjusting this shortens or lengthens the Event.
QPoint	Q-point. Adjusting this moves the Q-point. See page 162 in this chapter.
Segment	Segment name. If you change this, this is reflected in all Events that play the Event, and in the Pool.
File	File name. Changing this means that the actual audio file on the hard disk is renamed.
Chn	The audio channel the Event plays on. This cannot be changed on the Info Line.

14

An Introduction to MIDI Editing

What can I do with the MIDI Editors?

When you record MIDI data, you fill Parts with notes and other MIDI "Events". But you don't really get to see and manipulate those Events individually from the Arrange window. In the MIDI editors you do!

Different types of Events and where to find them

Below we'll list the different types of MIDI data that Cubase VST can record, and how and where they are displayed for editing:

Notes (Note On and Off messages)

Notes are displayed in all MIDI editors. Let's look at a simple drum pattern and how it is shown in the different editors:

In Drum Edit
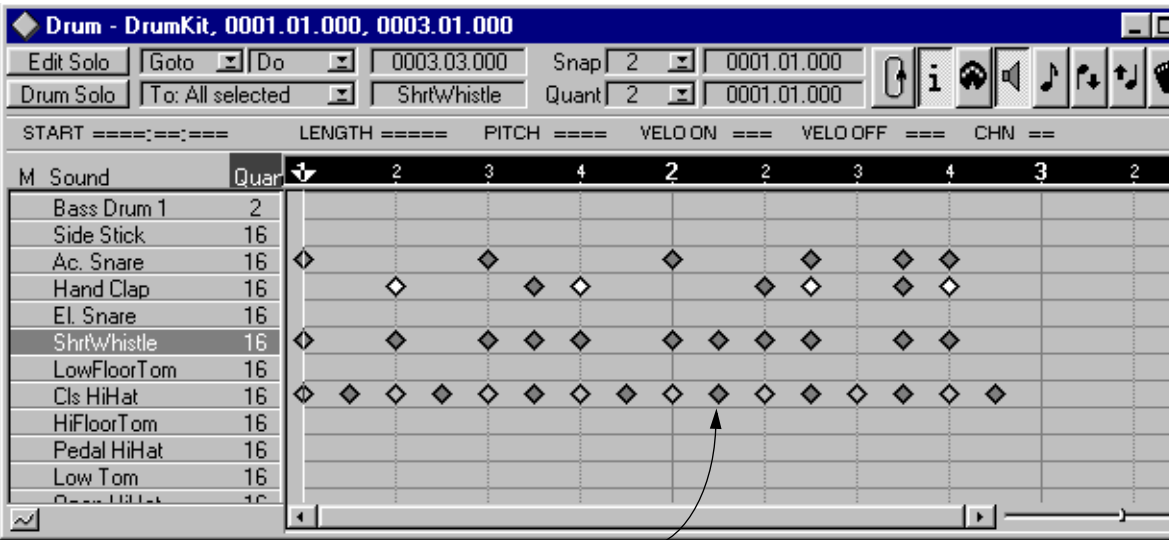
In the Drum Edit window, the notes are shown as diamonds.
Each key corresponds to a Sound, as listed to the left. The different
shadings of the diamonds indicate different velocity values.

In Key Edit

The piano keyboard to the left is there to make it easy
to find the right pitch when inputting or editing notes.
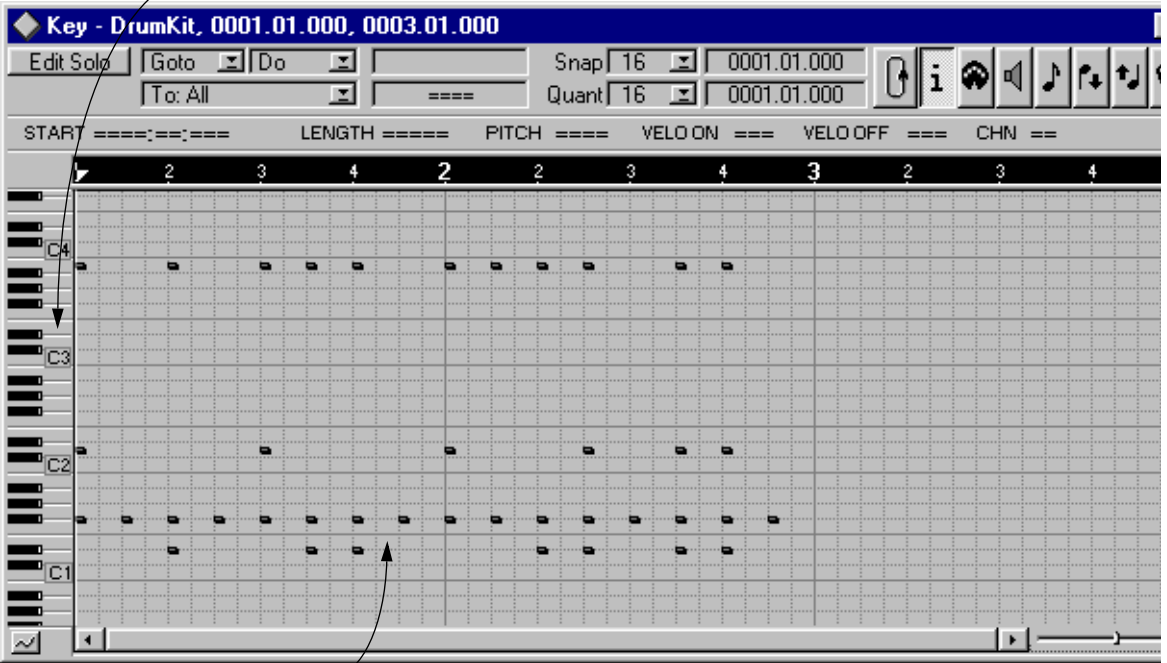
The notes are shown as boxes, with higher notes higher up in the grid.
Since this is a drum pattern, all the notes are short, but otherwise note
length is indicated by the width of the rectangle.

In List Edit

The notes are shown both in the list
to the left, and in the graphic display to the right.
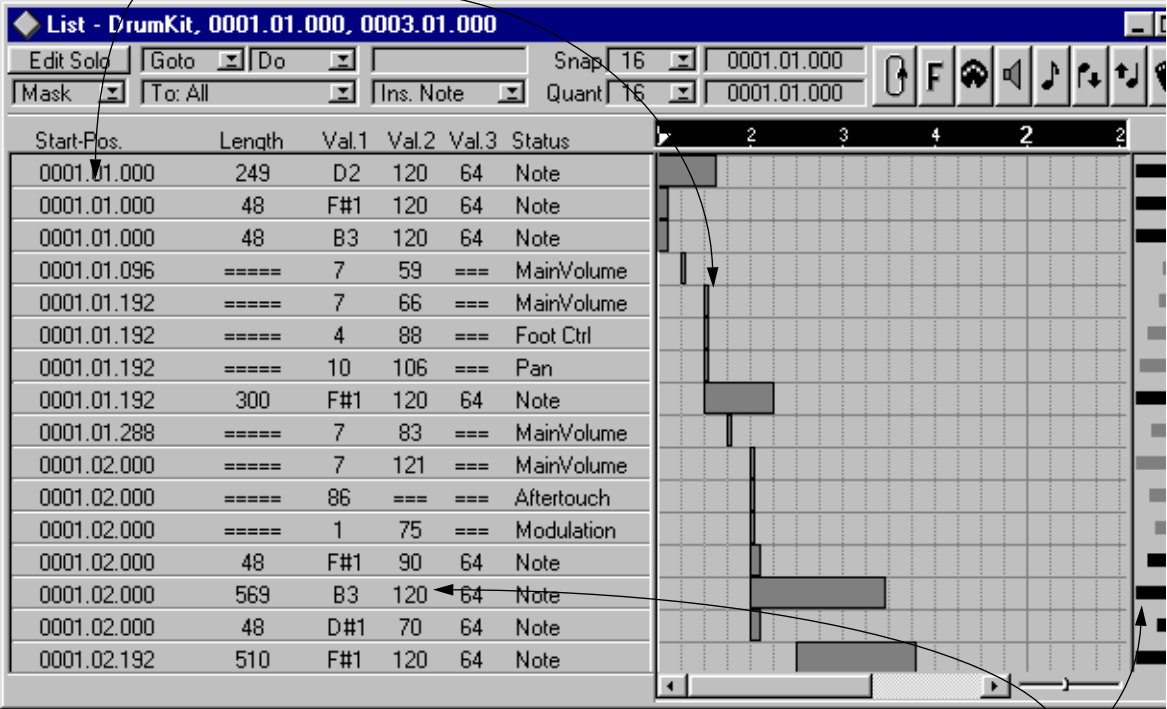
The black bar graphs are for graphically displaying and
editing MIDI "Value 2" in every Event. In the case of
notes, "Value 2" is the velocity value.

In Score Edit
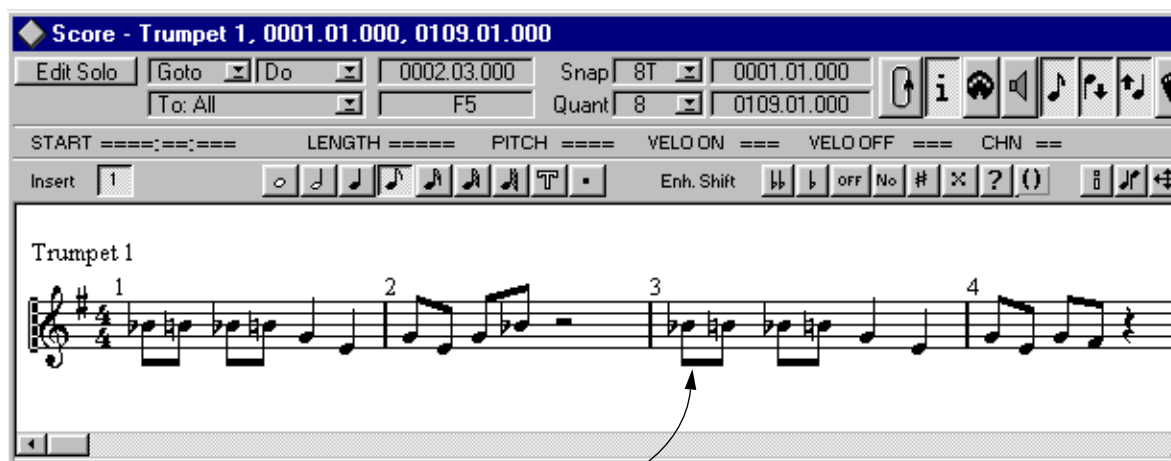
In Score Edit, notes are displayed and edited just as notes on a printed score.
This snapshot is taken from Cubase Score.

Continuous Messages

In MIDI, various types of MIDI messages are used to transfer continuous changes. To be exact, these types are:

- Aftertouch (Channel Pressure and Poly Pressure).
- Pitch Bend.
- Controllers, like sustain pedal, MIDI Volume, Modulation wheel etc.

To be really exact (not to say pedantic!) some of these are not really continuous. Sustain Pedal for example can only be down (On) or up (Off). However, the MIDI specification groups all these messages as Continuous messages, and so does Cubase VST.

Continuous messages are shown and edited in Key Edit and List Edit:

In Key Edit, the area beneath the Divider is the Controller Display.
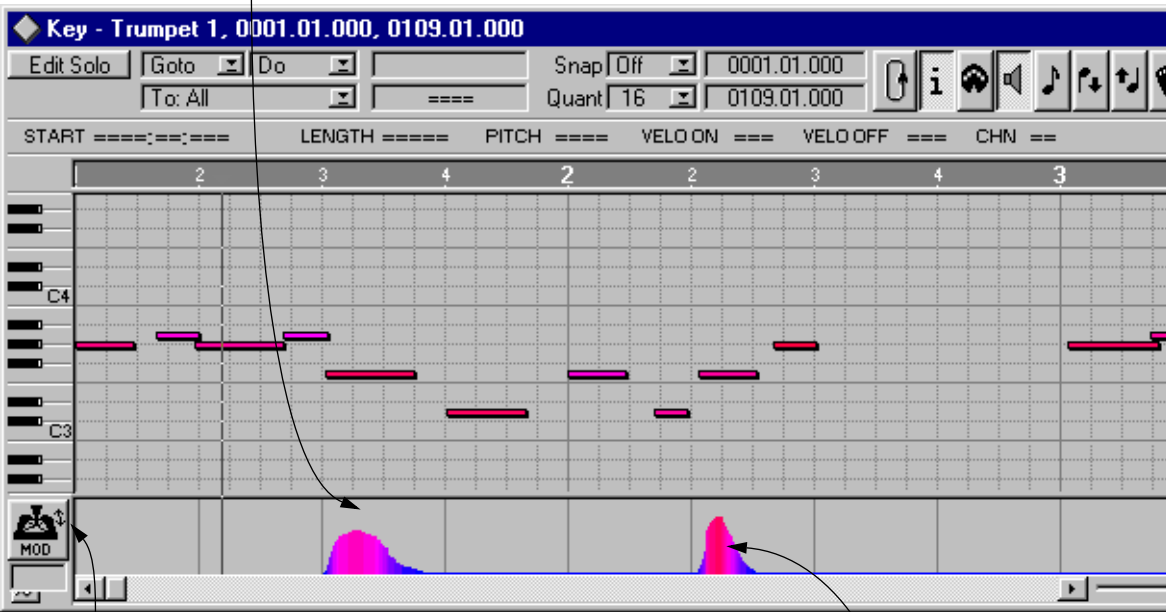
Clicking on this icon brings up a pop-up menu, allowing you to select which type of continuous data should be shown. In this case, modulation wheel Events are displayed.

The "mountains" of continuous data (as shown in the Key Edit Window) are in reality a large number of single Events. This becomes clear when looking at the same data in the List Edit Window:

Value 2 for each Event is shown in the list and in the bar display. The grey color indicates non-note Events.

The modulation Events are listed in their playback order.

Start-Pos.	Length	Val.1	Val.2	Val.3	Status
0001.01.000	=====	57	===	===	Program Ch
0001.01.000	192	G#3	93	48	Note
0001.01.252	148	A3	71	24	Note
0001.01.374	287	G#3	83	22	Note
0001.02.264	153	A3	63	32	Note
0001.03.006	=====	1	3	===	Modulation
0001.03.012	=====	1	6	===	Modulation
0001.03.014	289	F3	99	24	Note
0001.03.018	=====	1	16	===	Modulation
0001.03.024	=====	1	29	===	Modulation
0001.03.030	=====	1	39	===	Modulation
0001.03.036	=====	1	49	===	Modulation
0001.03.042	=====	1	55	===	Modulation
0001.03.048	=====	1	59	===	Modulation
0001.03.054	=====	1	64	===	Modulation

Program Change messages

A Program Change message is a MIDI Event, telling a connected MIDI device to switch to another Program (e.g. a sound in a synthesizer, a setting in a reverb device, etc). You can record Program Change messages into Cubase VST like any other Event. If you want to edit (or create new) Program Change messages, it can be done in Key Edit or List Edit.

System Exclusive messages

System Exclusive messages are a special kind of MIDI Events, intended for detailed control of the parameters of a MIDI device. Since all devices have different parameters, each major manufacturer of MIDI devices has a special ID code that is included in the System Exclusive message.

System Exclusive messages can be displayed and edited in the List Edit window (See the "List Edit" chapter). For extensive System Exclusive editing and managing, you can use the SysEx Editor module, described in a separate electronic document.

Opening A MIDI Editor

There are several ways to open a MIDI editor:

● If you haven't recorded any MIDI data, but want to input MIDI Events "from scratch" in a MIDI Editor, you need to create a Part first, by using the Pencil tool or the Create Part function. This is described on .

Double clicking on one Part

If the Part is on a Drum Part, the Drum editor opens. If it is a regular MIDI Part, which editor opens depends on the "Double Click Opens" setting in the Preferences dialog. To set this, proceed as follows:

1. Pull down the File menu and select "Preferences".
The Preference dialog opens.

2. Pull down the "Double click opens" pop-up menu and select the preferred editor (Key, Score or List Edit).
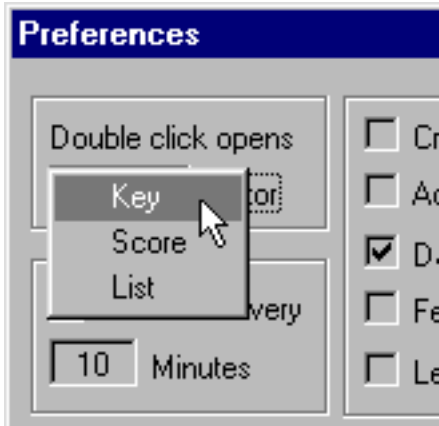
The Double Click Opens setting is saved with the Song. If you want this setting to be valid for all new Songs, you should set up your "Def.ALL" song for this. See .

Editing a complete Track

You can edit all Parts on a Track at the same time:

1. Make sure no Parts are selected by clicking somewhere in the background area of the Arrange Window.

2. Select the Track you want to Edit.

3. Select the preferred editor from the Edit menu or use the keyboard equivalents.
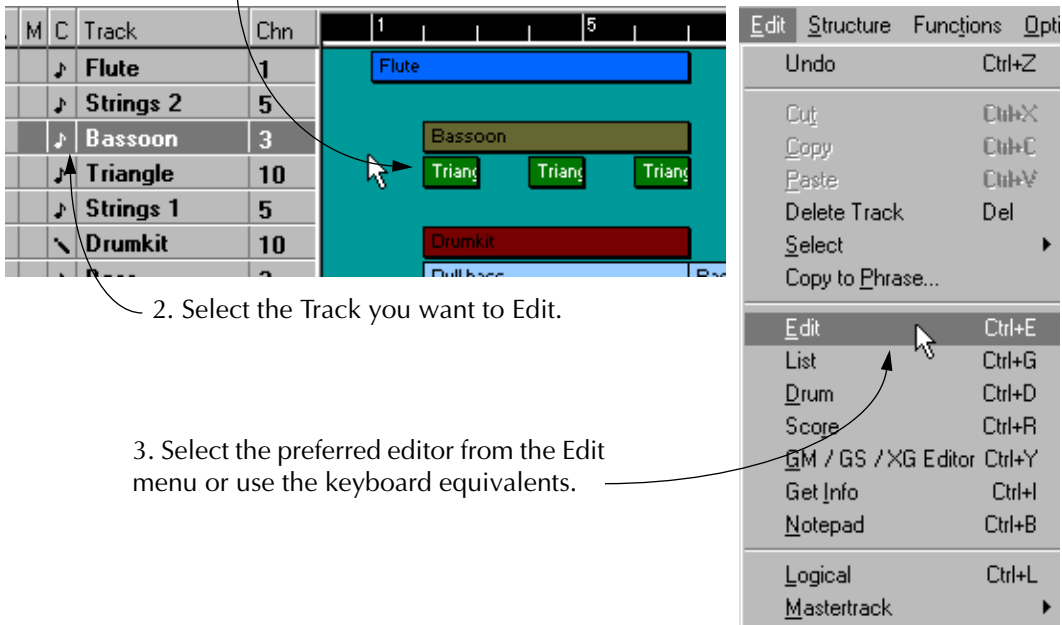
For MIDI Tracks the "Edit" item opens Key Edit, for Drum Tracks it opens Drum Edit.

Editing more than one Part

You can edit any selection of Parts, even Parts on different Tracks at the same time. The only restriction is this:

● List Edit can only be used to edit Parts that are all on the same Track.

1. Select the Parts you want to Edit.

2. Select the preferred editor from the Edit menu or use the keyboard equivalents.

Key Edit
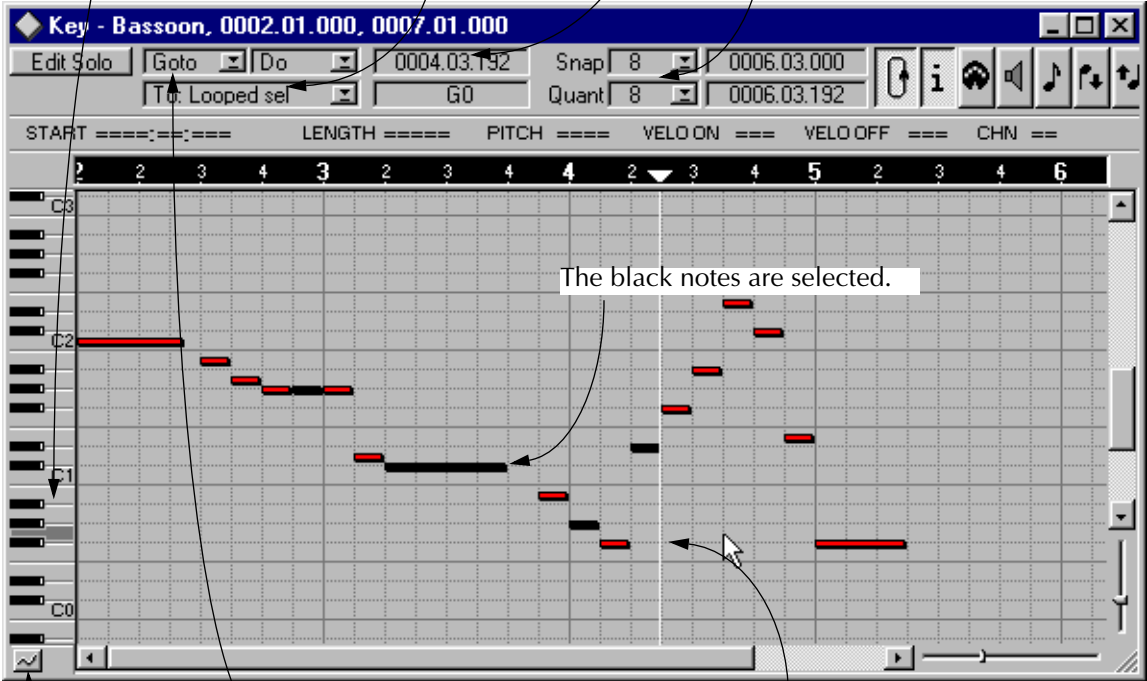
Overview

Below you will find a description of some of Key Edit's main features:

The position of the mouse pointer is shown both on the Piano keyboard and in the Mouse Box.

The Do and To pop-ups. See "The MIDI Editors – General Information" in the electronic documentation.

The Snap and Quantize boxes.

The black notes are selected.

The Goto pop-up is used for moving the view.

The Song Position Pointer.

Clicking here opens the Controller Display.

Drum Edit

Drum Edit can be used to edit MIDI Tracks. It can also be used in a more advanced context, for editing Drum Tracks. See the chapter "Drum Edit and Drum Tracks".

Overview

Below you will find a description of some of Drum Edit's main features:

The Do and To menus.
See the chapter "The MIDI
Editors – General Information"
in the electronic
documentation.

The position of the mouse is shown in the
Mouse Box. The name of the Drum Sound
on the corresponding line, is shown in the
box below.

The Song Position pointer.

The black notes are selected.

The Drum Sound list. By dragging the Divider
further to the right, more columns are shown.

Clicking here opens the Controller Display.
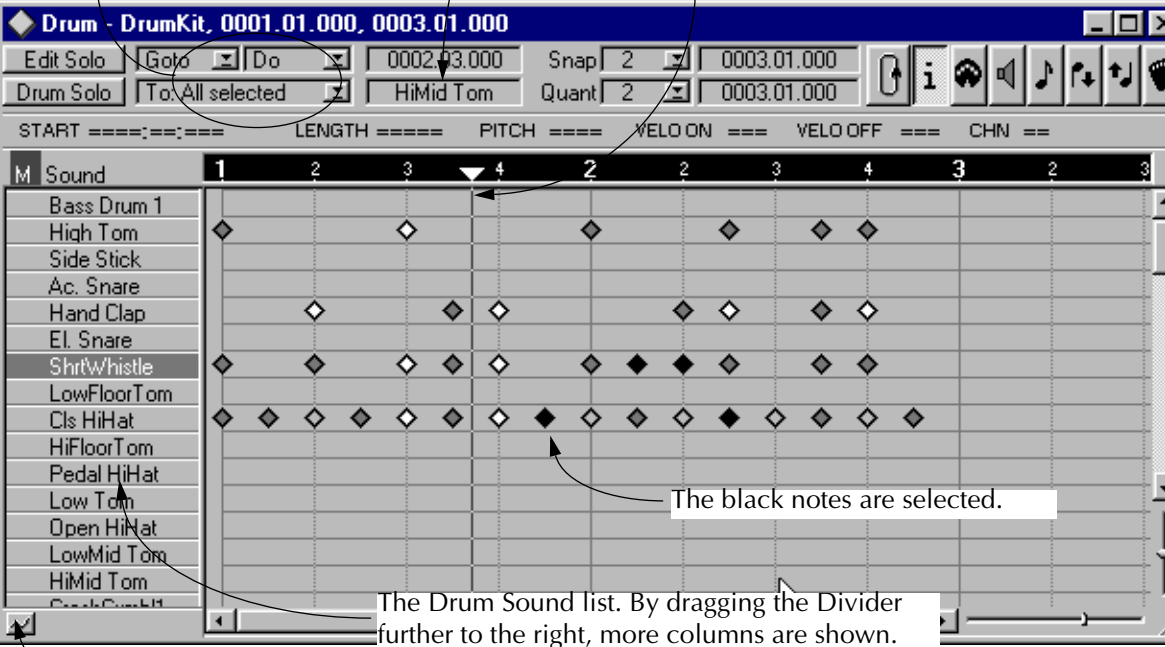
About Drum Maps

In Drum Edit, each key on your MIDI keyboard is represented as a "Sound", in a "Drum Map". This map consist of 64 Sounds which can be named and set to represent a certain drum sound in your synthesizer, sampler or drum machine.

When you have defined a Sound, all notes that are already recorded with that Sound will appear as diamonds on that "line" in the note display.

Opening ready-made Drum Maps

A number of ready-made drum maps are included on the Cubase VST CD-ROM. This example describes opening a drum map for General MIDI instruments, but you may very well find a drum map which has been created specifically for the drum sounds in one of your instruments. To load a map, proceed as follows:

1. Select Open from the File menu.

2. From the File Format pop-up menu, select "Drumsets (*.DRM)".
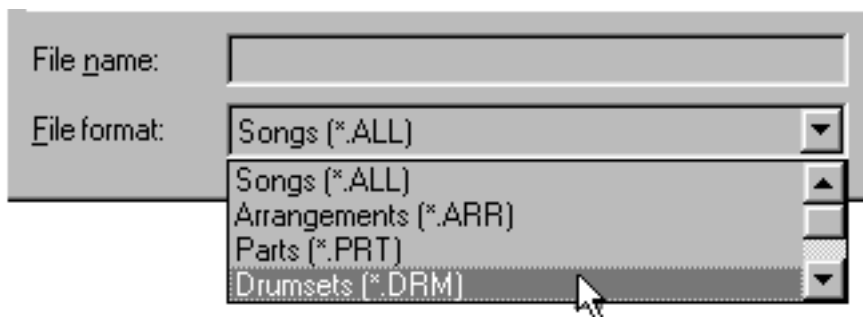
3. Locate the Drum Maps folder on the Cubase VST CD-ROM.
You may find it more convenient to copy the desired Drum Maps from the CD-ROM to your hard disk, and open them from there instead.

4. Locate the drum map you desire, and click OK.
For a General MIDI compatible drum map, open the Roland folder and select the "GS Standard" map.
Now when you next time open the Drum editor, your Drum Map is already properly defined and recordings made in the Arrange window should appear with all the notes on the right "lines".

If you save your Song, the selected drum map is saved together with the Song. It will be loaded automatically next time you open the Song.

Setting up and changing the Drum Map

You can easily change an existing drum map, or set up a whole new one to fit the percussion and drum setups in your MIDI instruments.

● This example assumes you are using Drum Edit for editing MIDI Parts.

1. Check out and take note of which key on your keyboard is used to play a certain Sound.
2. Open the Drum editor and drag the Divider between the Drum Map and the Note display so that you see the first few columns in the list.
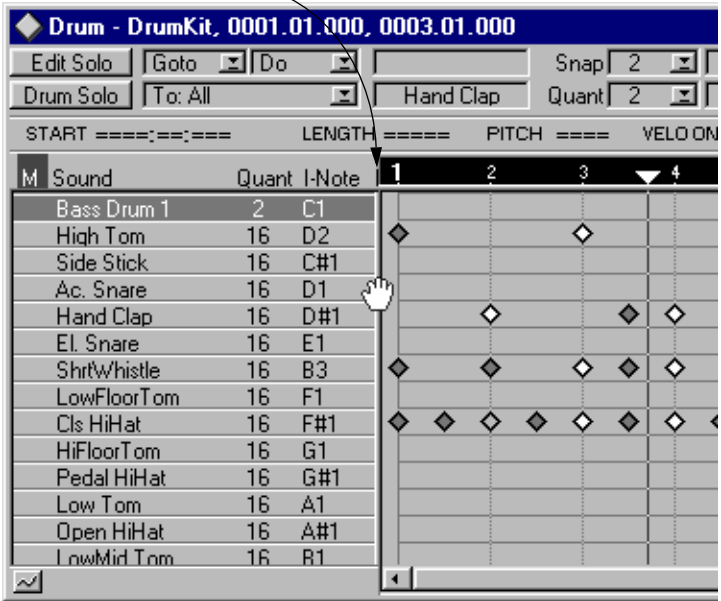
3. Double click on a Drum Name and type in your own.
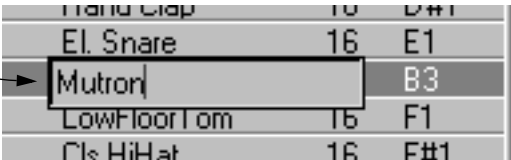
4. Double click on the I-note value for that Sound, and type in the pitch of the key that plays the Sound.
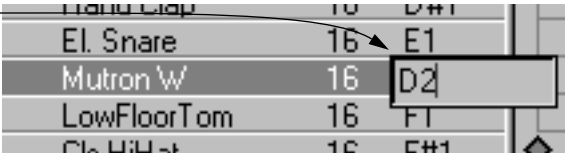
Now, recordings made with the Sound played by that key will appear on that line.

If already recorded Notes don't appear on the Line

It may happen that you have defined an I-Note correctly and still, no notes appear although they play back correctly. If this happens it is because more than one Sound is set to the same I-Note. Proceed as follows:

1. **Scroll up or down the List to find a Sound set to the same I-Note as the one you want to use.**

2. **Scroll the I-note value of the Sound you just located to its lowest possible value (C-2).**

3. **Scroll back to the original Sound and check again.**
   The notes should now have appeared.

If you get the "Double defined Notes" message
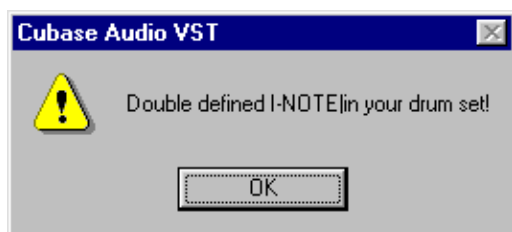
When you change the I-note value, a dialog box may appear saying "Double defined I-NOTE in your drum set". This means that more than one Sound is set to respond to the same MIDI Note, as described above.

This dialog will appear every time you open Drum Edit, until you change one of the identical I-note values.

Saving your Drum Map

You may of course save any Drum Maps you have created. This is described in the "Drum Edit and Drum Tracks" chapter in the electronic documentation.

List Edit

Overview

The Mask pop-up is used to make List Edit show Events of a certain type only.

In the Insert pop-up menu, you decide which type of Events to input.

The Mouse position is shown in the Mouse Box.

The Do, To and Goto menus.

The Song Position is shown both in the Event list and in the Event display

The Events are shown in the list and in the display to the right.

Score Edit

The design and features of the Score editor differs depending on which version of Cubase VST you have: In the "regular" Cubase VST, there is a basic Score editor without advanced layout features, while Cubase Score VST contains a larger Score editor, for pro-level score layout and printing.

Unless where explicitly stated otherwise, this section and the Score Edit chapter in the electronic documentation describe the basic Score editor in Cubase VST. If you have Cubase Score VST or Cubase Audio VST you should also read the separate "Score Layout and Printing" document.

Overview

Below you will find a description of some of Score Edit's main features:

The mouse position is shown both in the mouse box and as a note name in the box below. When you move a note, the lower box shows the amount of transposition in semitones.

The Song Position Pointer.

The "inverted" notes are selected.
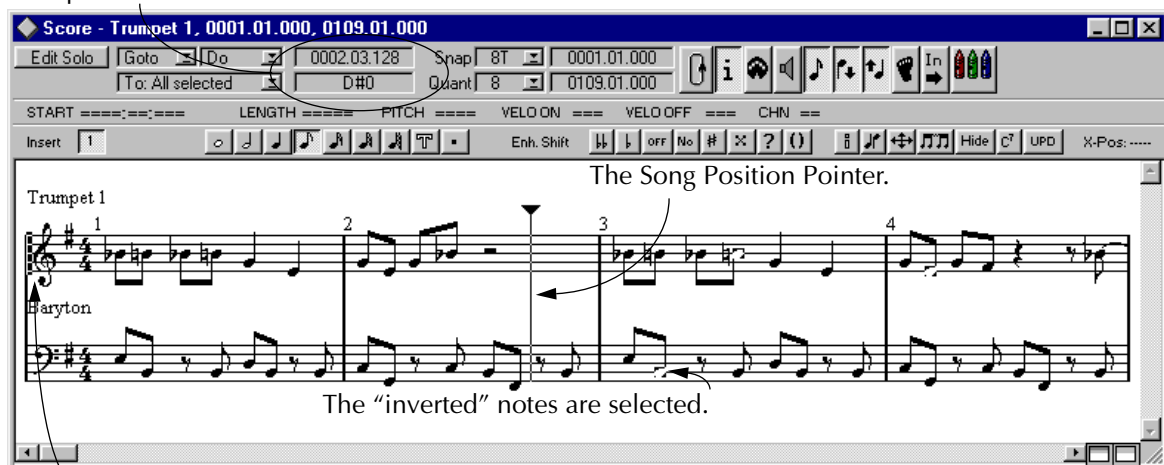
If you are editing Parts on several Tracks at the same time, the striped double bar line at the beginning of the score indicates the Active Track.

Getting the Score displayed correctly

When you first open Score Edit, the score layout can reflect the minor inaccuracies of a real human performance. There are a number of settings that can be made to clean up the score layout, without having to change the actual MIDI data. See the Score Edit chapter in the electronic documentation for more info.

Page Mode vs Edit Mode

If you are using Cubase VST Score or Cubase Audio VST, your program will have a Score menu. The top item on this menu is used to switch the Score editor between its two modes, "Page" and "Edit".

Selecting Page Mode will display the music as it will look when printed...

...while Edit Mode displays the music in a way more suitable for editing, see below.

The text below assumes the editor is set to Edit mode. The other mode is for score layout and printing.

Users of the regular Cubase VST (not Score) do not have to worry about this.

Window Size

Score Edit's Edit mode displays as many notes as there is room for in the window. In other words, to see more or less of your Track, simply resize the window.

About Recording and Playback in the Editors

Basically, anything you can do in the Arrange window that relates to playback and recording, you can also do in the editors.

- **Realtime**
  As everything else in Cubase VST, editing can happen in realtime. This means that you can edit while the music is playing or actually even while you are recording!

- **Step Recording**
  If you prefer not to record your music in real time, you may use the Step Recording function to input music one note at a time. This is explained in the chapter "Step Recording" in the electronic documentation.

- **Follow Song**
  If Follow Song on the Options menu is turned on, the window automatically scrolls during playback, so that the current Song Position is always visible.

You may also press [F] on the computer keyboard to turn Follow Song on/off.

- **Edit Solo**

When this button is activated, you will only hear the Track/Parts that are currently being edited. All other Tracks are muted. Use this function when you want to concentrate on editing the Parts in the editor, rather than hearing the recording in a context.

- **Cycle**
  Activating Cycle (see page 87) can be very handy for editing, since you can fine tune a recording and instantly hear the result without having to Rewind and Play to get to the right section.

Entering Notes

Notes can be entered manually, using slightly different methods in the different MIDI editors:

Key Edit

1. Set the Snap value to the smallest position you want to enter a note at.
If for example you only want to enter notes at quarter note positions, set Snap to "4".

2. Set the default length of the note to enter with the Quantize value.
The value "8" will for example give eighth notes. You may also change the length while you're drawing - see page 189.
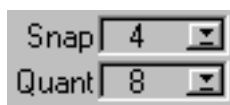
Snap and Quantize values set up for entering eighth notes at quarter note intervals.

3. Select the Pencil tool.

4. Move the pointer onto the note display, to the position where you want the note to be placed.
The keyboard display to the left, and two fields on the Status Bar will help you by showing the position and pitch.
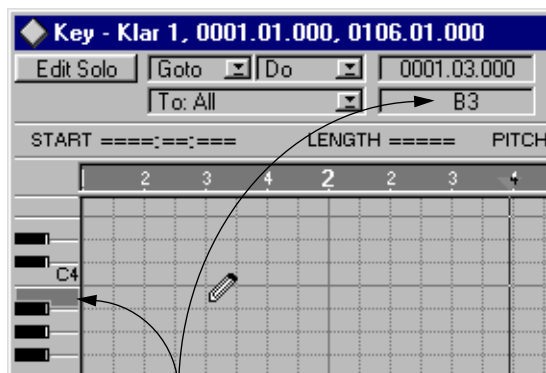
The pitch is indicated on the keyboard display and in the Status Bar.

5. Click once with the mouse to input a note.

Setting the length while drawing

It is possible to set the length of notes to something else than the quantize value, while entering them. Still the *Snap value* applies so you can only set the Length to even multiples of this value.

1. Aim with the Pencil at the correct position and pitch.

2. Press the mouse button and drag to the right with the button pressed.
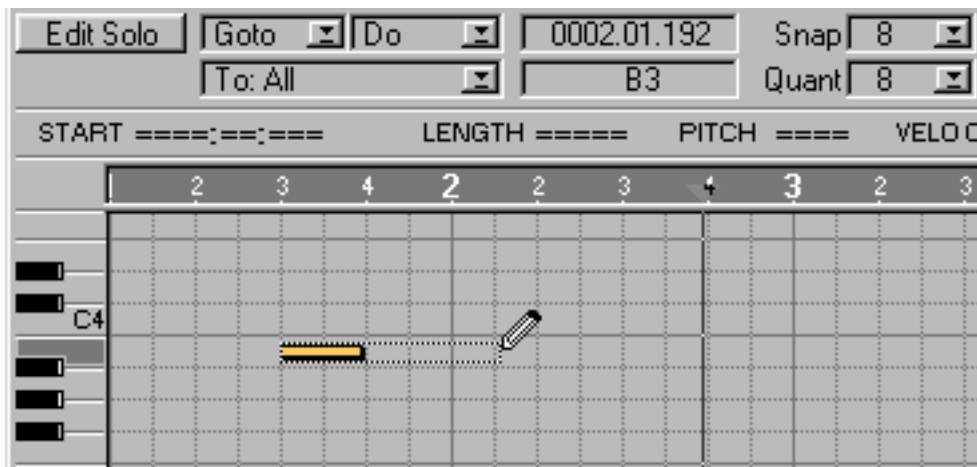
3. Release the mouse button.
The Event is adjusted to the closest Snap value.

Determining the velocity of the notes

By holding down different modifier keys on the computer keyboard, you can give the notes you enter different velocity values. This is described in the chapter "The MIDI Editors - General Information" in the electronic documentation.

Drum Edit

1. **Drag the Divider to the right, so that you can see the "Q" and "Len" columns.**

2. **Locate the Sound you want to enter notes for, and set the value in the "Q" column to the smallest position you want to enter a note at.**
   When inputting notes, this value works in the same way as the Snap value in Key Edit. However, Drum Edit allows you to set different Q values for each Sound, making it easier to quickly input patterns with 16th note hihat patterns and eighth note snares and bass drums, etc.

3. **Set the default length of the note to enter in the "Len" column.**
   Again, you may set different values for different Sounds.

Q and Len values set up for entering a 16th note hihat pattern.

4. **Select the Drumstick tool.**

5. **Move the pointer onto the note display, to the position where you want the note to be placed.**

Two fields on the Status Bar will help you by showing the position and Sound.

6. **Click once to input a note.**
   If you want to remove a note, just click on it again with the Drumstick.

Entering several notes at once

If for example you want to enter a 16th note pattern, there is an easier way of doing this than clicking in the notes one by one:

1. Set up Q and Len values for the Sound.

2. Select the Paint Brush tool.

3. Aim at where you want the first note to be, click and drag to the right.

Quant	I-Note	Len	O-Note
16	E1	32	E1
16	D2	32	B3
16	F1	32	F1
16	F#1	32	F#1
16	G1	32	G1
16	G#1	32	G#1
16	A1	32	A1
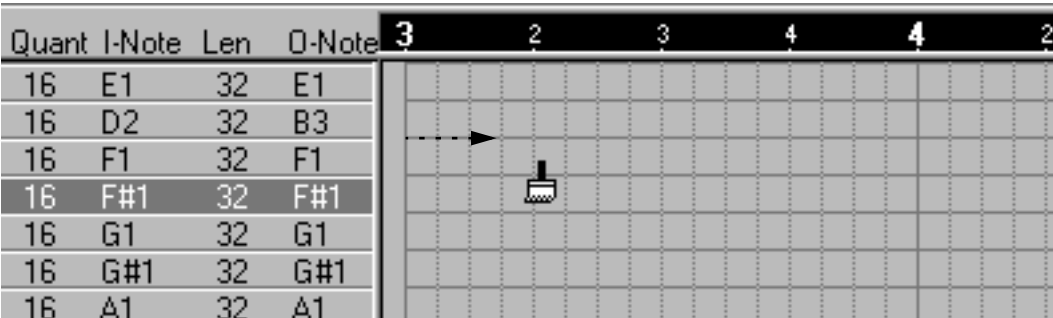
4. Release the mouse button.
A row of notes are entered, positioned according to the Q value for the Sound.
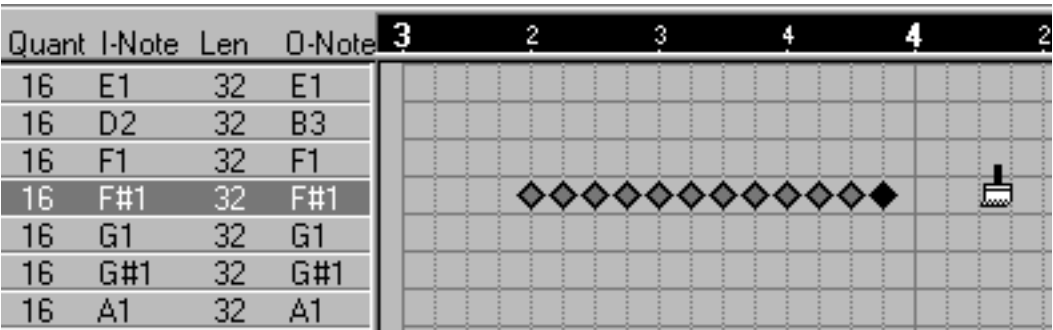
Quant	I-Note	Len	O-Note
16	E1	32	E1
16	D2	32	B3
16	F1	32	F1
16	F#1	32	F#1
16	G1	32	G1
16	G#1	32	G#1
16	A1	32	A1

Determining the velocity of the notes

By holding down different modifier keys on the computer keyboard, you can give the notes you enter different velocity values. This is described in the Drum Edit chapter in the electronic documentation.

List Edit

In List Edit, you can insert any type of Event. However, in this example, we will insert notes (see the List Edit chapter in the electronic documentation for more information).

1. Pull down the Insert pop-up menu and make sure "Note" is selected.
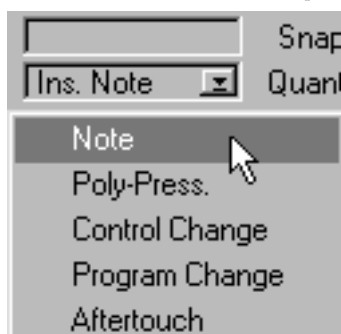
This is where you select the type of Event to enter.

2. Set the Snap and Quantize values as when entering notes in Key Edit.

3. Select the Pencil tool.

4. Aim and click in the Event display to the right of the List.
The Event will appear both in the Event display and in the List.
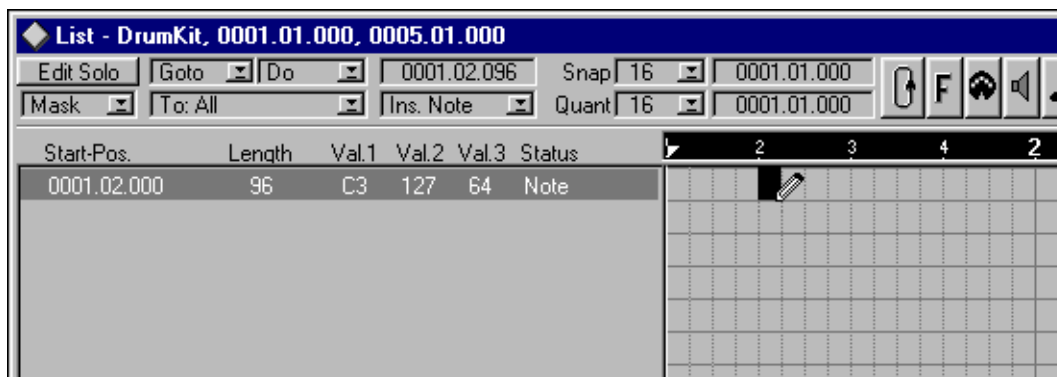
- **You can set the length of the note manually while you are entering it, just like in Key Edit (see page 189).**

When you enter a note in List Edit this way, it gets a default pitch. To change the pitch of the note, proceed as follows:

5. Drag the divider to the right, so that you can see "Val 1" column in the List.
For Note Events, Value 1 is the pitch.

6. Change the pitch value using any kind of value editing.

Score Edit

In Score Edit, you use the Note tool to input notes:

1. Set the Snap value to the smallest position you want to enter a note at.

2. Select the Note tool.

3. Select a note value by clicking on a note button on the Toolbar.

The Note tool takes on the shape of the selected note value.

4. Press the mouse button somewhere in the score display.

5. With the mouse button down, drag the note up/down.
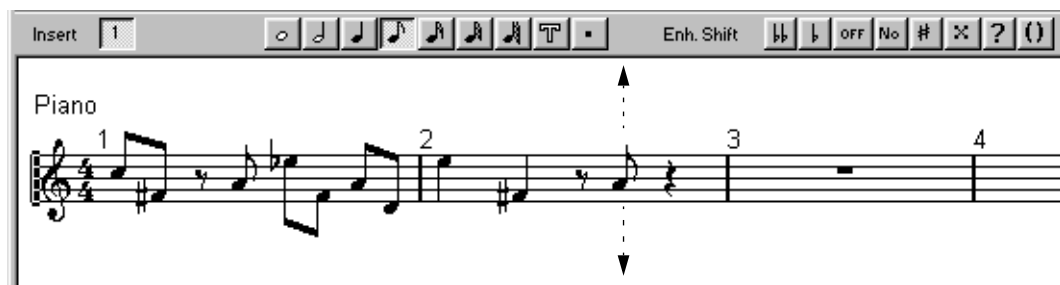
Accidentals appear to show you the exact pitch of the note. The pitch is also shown in the value field under the Mouse Box:
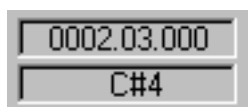
6. When you have the note at the right note line with the correct accidental, release the mouse button.

Entering Rests

You can use the Rest tool to insert rests between notes. Like the Note tool, the Rest tool changes appearance depending on the chosen note value. See the Score Edit documentation for full details.

Selecting Notes and other Events

- Selecting Notes and other Events in the main Event displays is done exactly like when selecting Parts in the Arrange window, see the previous chapter.
- Selecting Events in the List in List Edit can be done by clicking and Shift-clicking.
- You may use the Select sub-menu in the Edit menu to select Events. The contents of this sub-menu varies depending on which editor you are in. See the Online Help for more information.
- Selecting in the Controller Display in Key and Drum Edit is slightly different. See the chapter "The MIDI Editors – General Information" in the electronic documentation.

Manipulating Notes

This section describes some basic MIDI editing techniques. Two features are available to make editing easier:

- **The Snap value.**
  The Snap value is used in the editors just like in the Arrange window, that is for restricting movement and editing to certain note positions. However, in the MIDI editors you can select smaller Snap values than in the Arrange window, for very fine adjustments of positions and lengths.
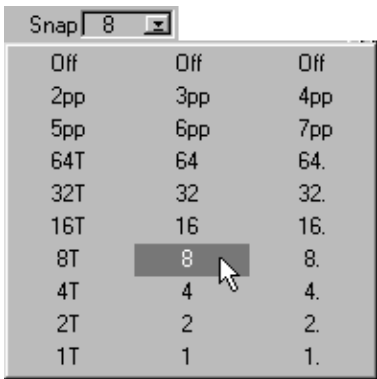
- **The Speaker.**
  If you activate the Speaker button on the toolbar, notes and other Events will be played back when you click on them, move them or edit them on the Info line (see).

Moving Notes

You move notes by dragging them with the Arrow tool, just like moving Parts in the Arrange window. If you select several notes, you can move them all at once, maintaining the relative distance between the notes.

Restricting movement to one direction

Sometimes you may want to transpose the note without moving it sideways, or vice versa. Proceed as follows:

1. Aim at the note with the Arrow tool and press the mouse button.

2. Start moving the note in the desired direction.

3. Press [Shift] and continue moving the note.
The note will now move in one direction only.

- **You can also use the Kicker tools to move a note horizontally in Snap value steps.**
  This is described in the electronic documentation.

Duplicating Notes

Again like in the Arrange window, if you hold down [Alt], the notes you drag will be duplicated.

Changing the length of Notes

The following method can be used in Key and List Edit, to change the length of notes:

1. Set Snap to an appropriate value.
The length of the note can only be a multiple of the Snap value.

2. Select the Pencil tool.

3. Click on the right edge of the note, drag the outline of the note to a new length and release the mouse button.

Auditioning Notes

If you click on a note with the Magnifying Glass tool, it is played back. You can also drag over notes (and other Events) to play them back one after the other.

Deleting Notes

Just like Parts in the Arrange window, Notes (and other Events) can be deleted in several ways:

• By clicking on them with the Eraser tool.

• By selecting them and pressing [Backspace] (or selecting Delete Events from the Edit menu).
• By using various functions on the Do pop-up menu (described in the electronic documentation).

Editing on the Info Line

At the top of each editor (except List Edit), you have the Info Line. This can be shown/hidden with the Info button.

When the "i" button is activated, the Info Line is shown.

START 0001.03.000   LENGTH 192   PITCH **D#4**   VELO ON **127**   VELO OFF **64**   CHN **3**

The Info Line shows the values for one selected note. The values can be edited, just as in the List in List Edit.

Editing in the Controller Display

Key and Drum Edit have a dedicated Controller Display at the bottom of the window, for showing velocity values and Events other than notes. You can also edit these in List Edit - see the List Edit chapter in the electronic documentation.

Showing/Hiding the Controller Display

There are two ways to show or hide the Controller Display:

• **Click on the Controller Display button in the lower left corner of the window.**
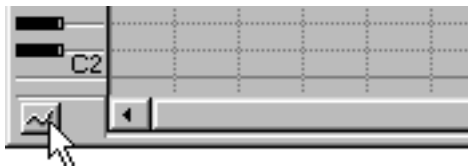
• **Press [Alt]+[Control]-[C].**

Once you have opened the Controller Display, you can change its size by dragging the Divider up or down:
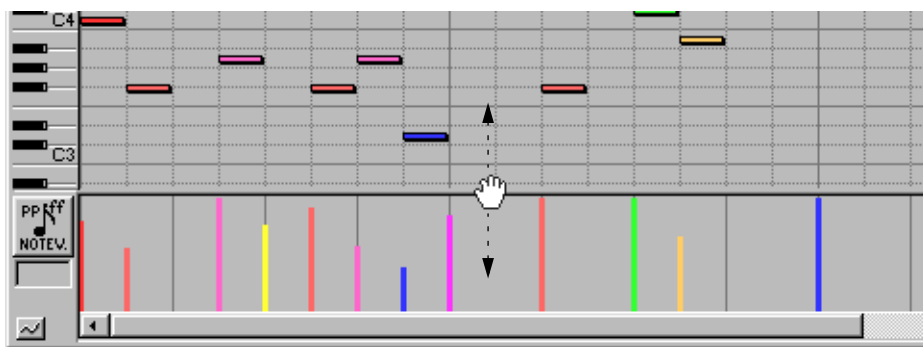
Selecting which Event type should be shown

The Controller Display can show various types of data, but only one type at the time. Select an Event type in the following way:

1. Position the pointer on the Event type icon (in the Controller Display) and press the mouse button.
The Event Type pop-up menu appears.
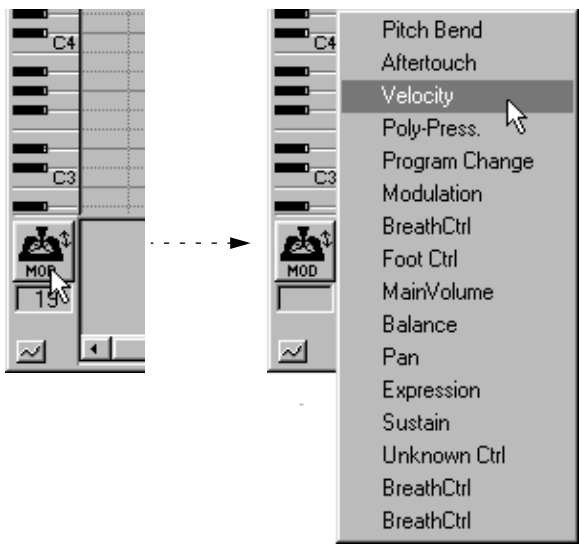
2. Select one of the Event types from the pop-up menu.

Editing velocity

One of the data types that can be shown in the Controller Display is note velocity. This is slightly different from the other types, since velocity is not an Event itself, rather a property of a note. This means that if there are no notes in the edited Part, you will not see any velocity values. Also, you cannot create velocity values (you have to enter new notes). To edit velocity, proceed as follows:

1. Select Velocity on the Event type pop-up menu.
The velocity values are shown as bars, with higher bars representing higher velocity values.
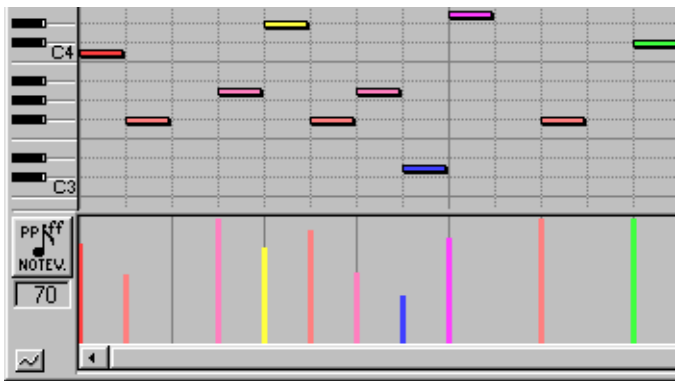
2. Select the Pencil tool.

3. To change the velocity of a note, click on its velocity bar.
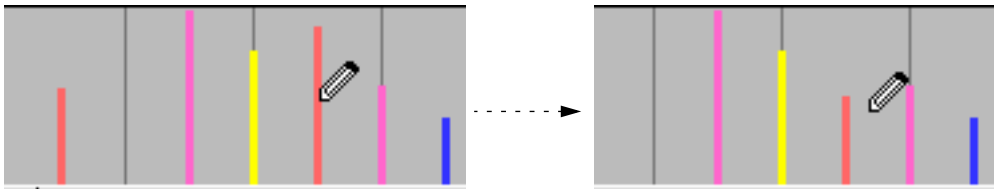
To change a series of values, drag over them.

Creating a velocity ramp

To create a ramp of values, for example a fade-in or fade-out, proceed as follows:

1. Select the Line tool.

2. Position the pointer where you want the ramp to start and press the mouse button.
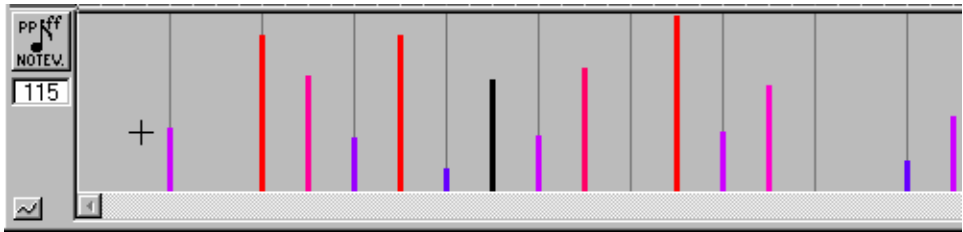
3. "Draw" the outline of the ramp with the mouse button pressed.
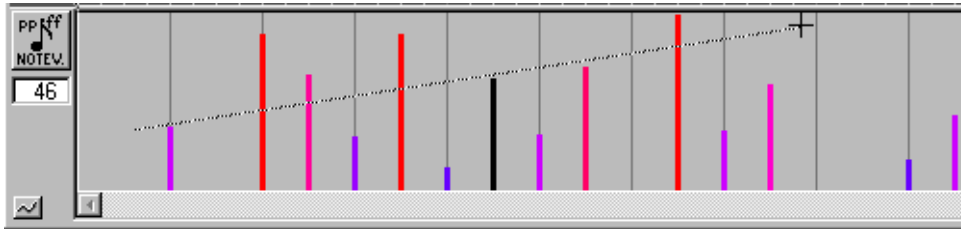
When you release the mouse button, the velocity values are changed:
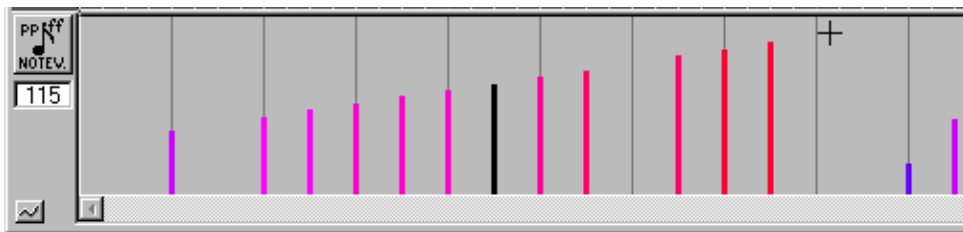
Editing Continuous Events

Most of the available Event types are "Continuous" Events, such as Aftertouch, Modulation and Pitch Bend (see page 174). They can be created and edited in the Controller display:

Creating new Events

1. Select what type of data you want to enter.

2. Use the Snap value to decide what "density" you want for the Events.
For very smooth Continuous Controller curves, you should use a small Snap value. However, please note that this creates a very large number of MIDI Events, which can cause MIDI playback to "stutter" in some situations. A medium-low density is often sufficient.

3. Hold down the [Alt] key.
From here on there are basically three ways to go:

If you want to enter just one Event, click once with the Pencil.
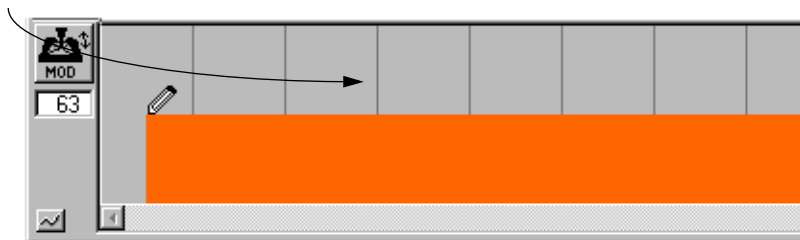
If you want to "paint a curve", drag the Pencil (with the mouse button pressed).
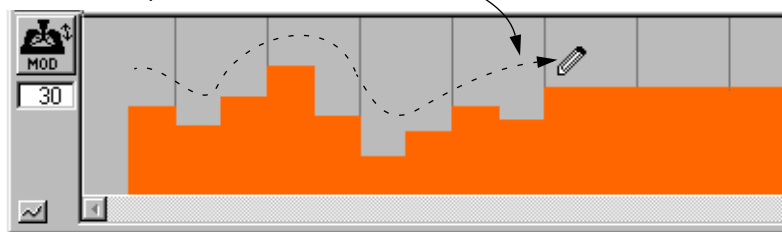
If you want to create a ramp, use the Line tool as when editing velocity.
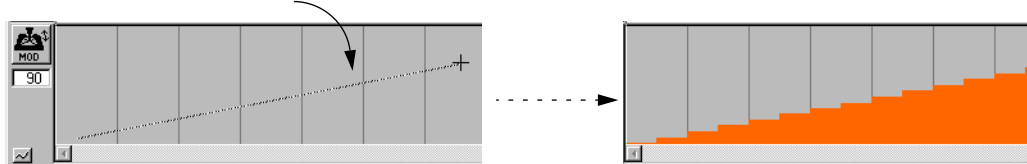
4. Release the [Alt] key.

Editing the Values

This is done just like creating new Events, except you do not press the [Alt] key:

- **To change one value with the Pencil, simply click on it.**
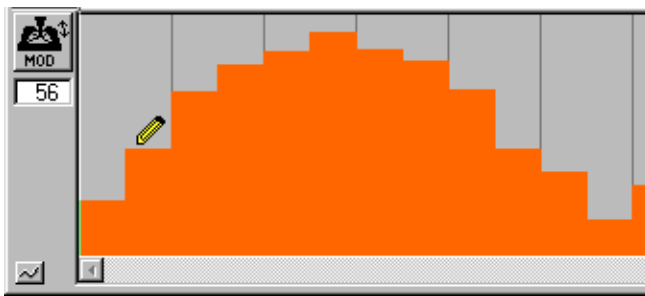
- **To change a series of values, drag over them with the Pencil.**
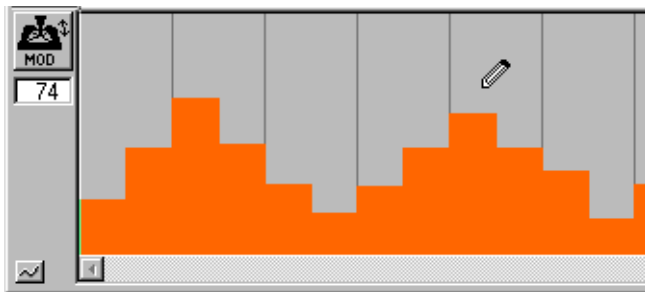
- **To create a ramp, use the Line tool.**
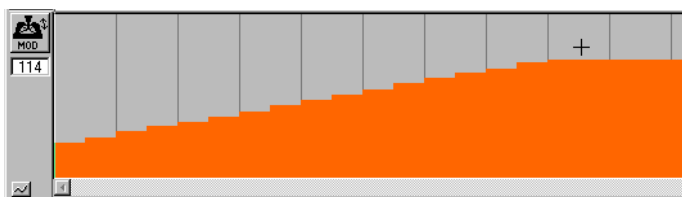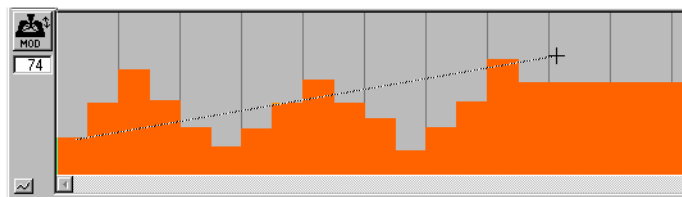
Closing the Editor

There are two ways of closing a MIDI editor, "Cancelling" and "Keeping".

Cancelling

If you press [Esc] (escape) on the computer keyboard or select "Cancel" from the Edit window's Control Menu (reached by clicking on the Control Menu button to the left on the window's title bar), the editor and all the changes you made since you last opened it are discarded.

• **If you haven't checked the "Fewer Alerts" check box in the Preferences dialog (on the File menu), a dialog box allows you to change your mind:**
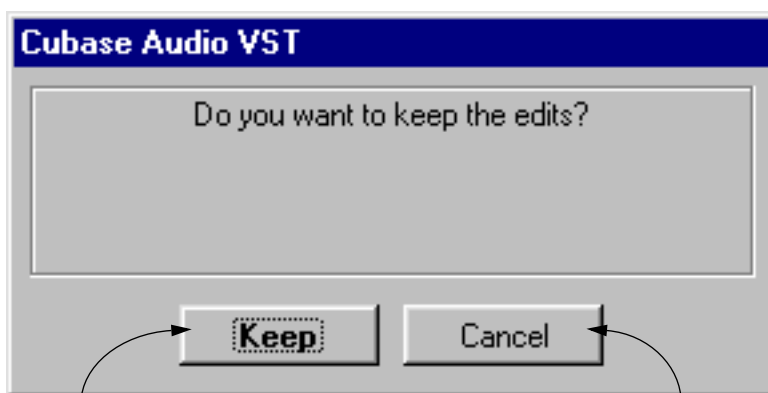
"Keep" will exit the editor, but keep your changes.

"Cancel" will cancel all changes you have made since you opened the editor.

Cancelling can be thought of as a super-undo. It allows you to try out a series of changes to a recorded piece of music and then easily revert back to its original state.

Keeping

If you close the editor by selecting "Keep" from the Control Menu or by pressing [Return], the window closes and all the editing you have made is kept.

The "Keep Appended Events?" Dialog

If you close the editor and a dialog appears asking you if you want to "Keep appended Events", this is because you have added Events outside the Part(s) being edited.

- If you click "Yes", the Part will be extended to encompass the added Events.
- If you click "No", the Events outside the Part will be discarded.

15

Using Quantize and Functions

How Functions are applied

By using "functions" you can perform various operations on notes and other MIDI Events, and in some cases on Audio Events as well. Some of the most important functions, such as the different types of Quantization, can be found on the Functions menu on the menu bar. In addition, the editors have their own "miniature" Functions menus, called the "Do" menus.
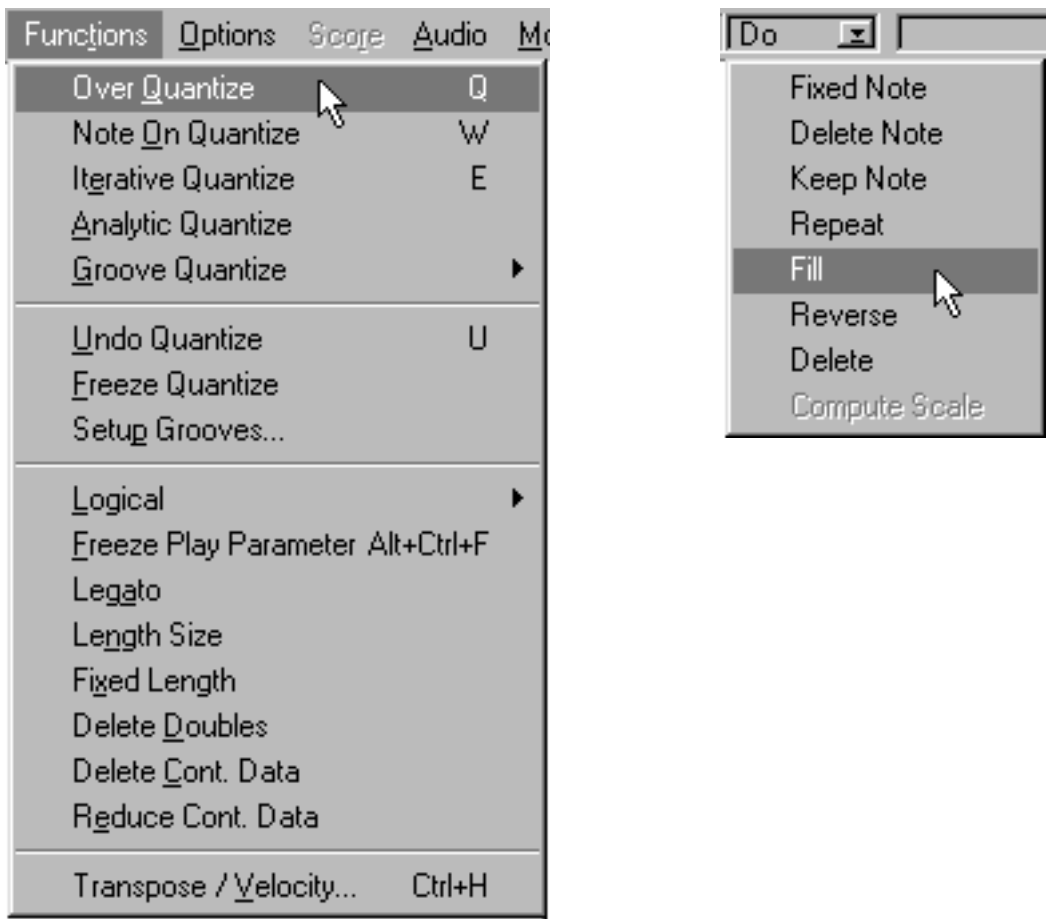
The main Functions menu and one of the Do menus – they both contain "functions".

However, before explaining how the functions work, it is important to know exactly what is affected by a function:

In the Arrange Window

If you use a function from the Arrange window, it will apply to *all selected Parts*. If there are no selected Parts, the function will apply to *all Parts* on the *active Track*.

In the Editors

All the editors feature a pop-up menu called "To". There you can decide which Events should be affected by a function. The menu options are explained in this figure:

All Events, active or inactive, will be affected.

This option has to do with the Loop feature, which is described in the electronic documentation..
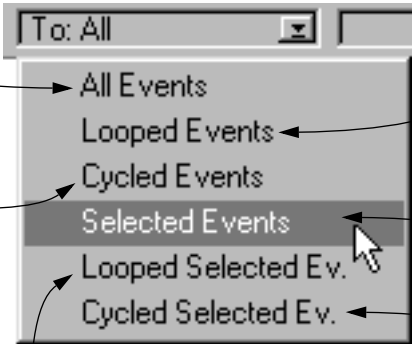
All active or inactive Events inside the Cycle (between the left and right locators) will be affected, whether the Cycle is on or off.

All selected Events, active or inactive, will be affected.

This option has to do with the Loop feature which is described in the chapter "MIDI Editors - General Information" in the electronic documentation..

Only the selected Events inside the Cycle are affected.

Quantizing

What is Quantizing?

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

If you for example record a series of eighth notes, some of them may end up slightly beside the exact eighth note positions.
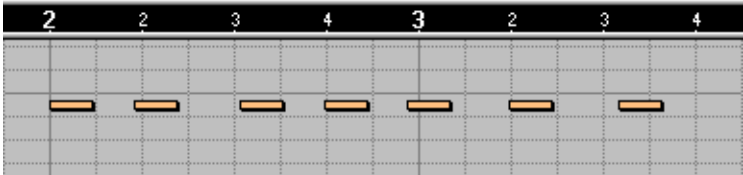
Quantizing the notes with the Quantize value set to eighth notes will move the "misplaced" notes to exact positions.
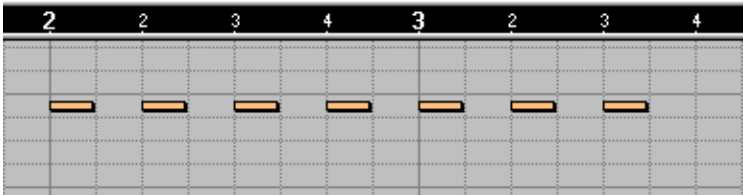
The Quantize value concept may need some explanation. By setting this value, on the pop-up menu on the Status Bar, you select the exact positions the notes should be moved to when you quantize. These are the options:

If you select OFF, no quantizing will be done.

In the left column, you select Triplet (T) Quantize values.

In the middle column you select regular Quantize values. The available values range from 1 (whole note) to 64 (1/64 note).

In the right column, you select dotted (.) Quantize values.

In this example a Quantize value of eighth note triplets is selected.

The effect of the different Quantize values is explained in the illustration on the next page.

Quantizing with different Quantize values

Start with a straight eighth note pattern.

Quantizing with an eighth note triplet Quantize value moves the each second eighth note, creating a triplet shuffle beat.

`Quant 8T`

Quantizing with a dotted eighth note Quantize value moves notes to positions three sixteenth notes apart.

`Quant 8.`

Quantizing the eighth note pattern with a quarter note Quantize value, will move every second eighth note to even quarter note positions.

`Quant 4`

It is important to realize that there will now be two notes on each beat! This may cause strange sounds, increased volume etc.

Actually, quantizing in Cubase VST is more than just correcting errors, it is a creative feature. On the Functions menu, there are several types of quantization. The three most important ones are described in this chapter. The rest are described in the electronic documentation.

● When quantizing MIDI Parts, only notes are affected, not other types of Events.

About Quantizing Audio Parts

Quantizing Audio Parts affects the position of each Audio Event in the Part (taking the Q-point into account). Since Audio Parts in many cases contain only one Audio Event, quantizing audio is often not very useful. However, it is possible to split an audio segment into several smaller segments, and then apply quantization. This is described in the electronic documentation.

Over Quantize
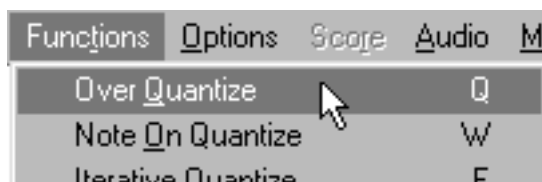
This is a very musical version of the standard "auto correct" quantize. Over Quantize will move notes to the closest quantize value, without changing the length of the notes. But it also detects and holds together chords (see the figure below) and if you consistently play behind of, or ahead of the beat, it uses this fact when finding notes to move. In most situations, Over Quantize is probably the most suitable Quantize function to use.
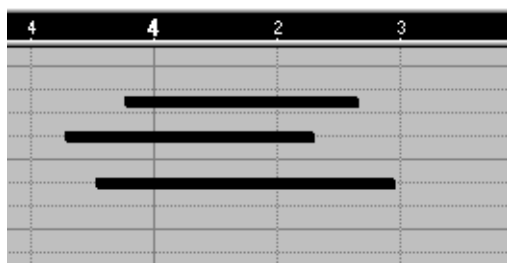
When you Over Quantize (in this example with a quantize value of 4), Cubase VST realizes that the three notes are a chord, and holds them together.
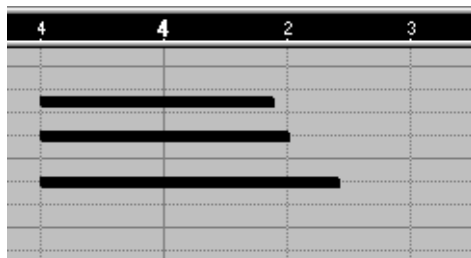
• **Over Quantize can be selected from the computer keyboard by pressing [Q].**

Iterative Quantize
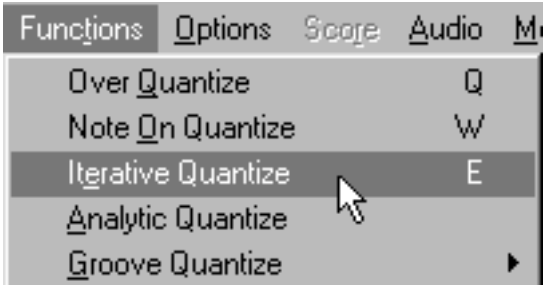
If you want to straighten up the timing of your notes a little, but don't want the precise feel you get from using Over Quantize, Iterative Quantize is probably the best bet. It works like this:
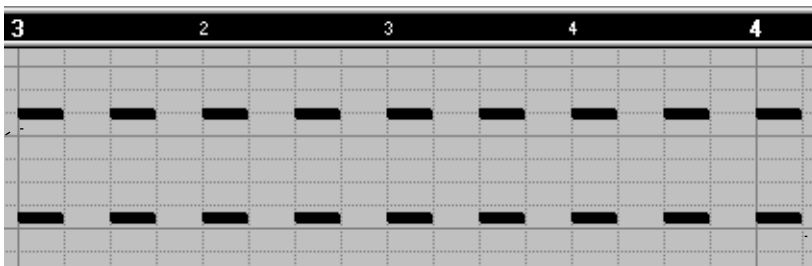
Instead of moving a note to the closest quantize value, Iterative Quantize moves it only part of the way. You can specify how much the notes should be moved towards the selected quantize value in the dialog box that appears when you select Setup Grooves... from the Functions menu.
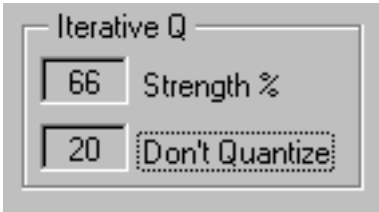
In the same dialog you can also set a value in ticks (0 to 192) called Don't Quantize. Only notes further away than the specified Don't Quantize value are moved. This lets you allow a certain amount of loose timing, while still being able to straighten out really "off" notes.

Creating a Shuffle Feel using Iterative Quantize

To show the difference between regular quantizing and Iterative Quantize, let's look at two identical eighth-note patterns:
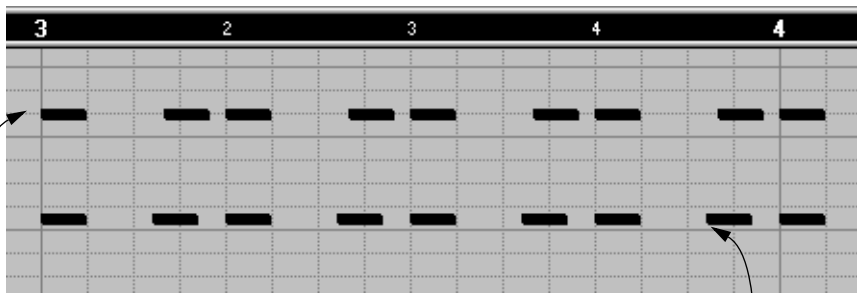
The upper set of notes are Over Quantized to eighth note triplets...

...while the lower set of notes are Iterative Quantized using the same Quantize value. Strength is set to 66%. (Don't Q is set to 20, but doesn't really matter in this case.)

The upper pattern gets a heavy, precise triplet feel...

...while the lower pattern gets a more jazzy, natural shuffle feel.

Groove Quantize

This type of quantizing is not meant for correcting errors, but for creating rhythmic feels. This is done by comparing your recorded music to a "Groove Map" (a pattern with a certain feel) and moving the appropriate notes so that their timing matches the one of the Groove Map. You can for example easily create the shuffle feel from the Iterative Quantize example above, using a suitable Groove Map instead.

You select a Groove Map from the Groove Quantize sub-menu on the Functions menu. As you see, there are more than a dozen Groove Maps included with Cubase VST from the beginning, but you can also load new ones from disk or make up your own, (using the Setup Grooves dialog, described in the Online Help).
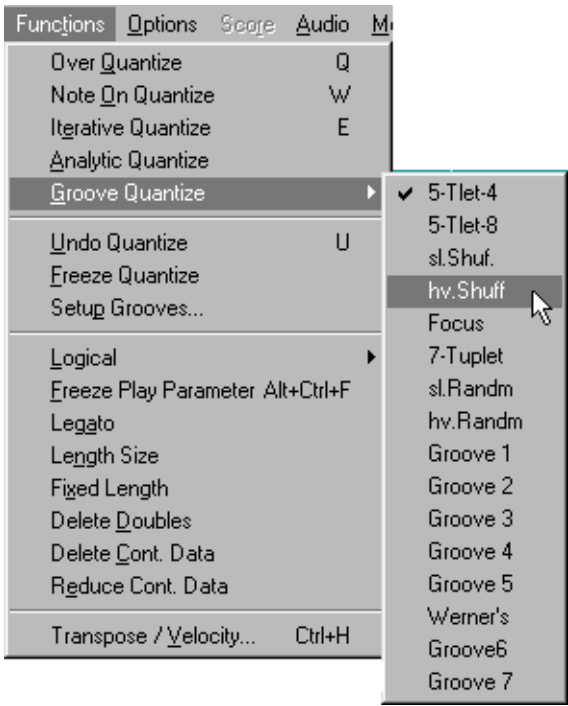
The Grooves included with Cubase VST are described in detail
in a ReadMe file in the Grooves folder on the CD-ROM.

Undoing Quantize

● Quantizing is not definite or irrevocable - not even after saving to disk! You can always re-quantize to any value, even to Off, unless you specifically "freeze" your Quantize, with "Freeze Quantize" (Functions menu).

This means that notes quantized to eighths can later be quantized to sixteenths. The original (un-quantized) positions of the notes are used for determining how notes should be moved, except when using Iterative Quantize. You can re-quantize just some notes in one of the Edit windows.

To completely restore quantized Events to their original positions, use the Undo Quantize function on the Functions menu. This can be applied to any selection of Parts or individual Events, just as all Functions (see page 206).

Automatic Quantize - Getting your music quantized while recording

This is a function that allows you to have everything automatically Quantized as you go along with your recording. When automatic Quantize is activated, everything you record is Over Quantized immediately. The quantization can be undone, just as usual.

 Automatic Quantize activated.

The AQ Button (above the Click button on the Transport Bar) turns on and off Automatic Quantize. You can also press [Z] on the computer keyboard to activate/deactivate.

● There is one thing to note. If you have this function activated, your recording gets Over Quantized at the end of each Cycle. Even if you select some other type of Quantizing (like Groove Quantize) during the Cycle, the music will be Over Quantized at the end of the Cycle. So, before you manually Quantize, turn Auto Quantize off.

Other Functions

The Functions menu is not only used when quantizing, it contains a lot of other functions as well. In addition the "Do" menus in the editors contain useful editing functions. The same rules as for Quantizing are used to decide what gets affected.

The various functions on these menus are described in the Online Help and in the electronic documentation.

16

Mixing

Introduction

This chapter describes the general procedures of handling levels, pan, EQ and effects to create a final stereo mix. Mixing is done in different windows in Cubase VST, mainly the Audio Monitor mixer (for audio) and the GM/GS/XG Editor (for MIDI).

● The GM/GS/XG Editor is designed to interact with MIDI instruments compatible with any of the standards GM (General MIDI), GS or XG. However, even if your instrument is not GM/GS/XG compatible, you may still be able to use some of the functions in the editor.

Mixing Audio

● This chapter assumes that you are using a "standard" audio card with stereo outputs only. If you have an audio card with more than two outputs, you can route different audio channels to different outputs, using the Bus system. This is described in the chapter "The Input/Output Bus System" in the electronic documentation.

Setting Levels

1. **Set up your Audio Tracks and possibly the Locators, so that they play back the section you want.**

2. **Pull down the Audio menu and select "Monitor" (or press [Control] and [*] on the numeric keypad).**
The Monitor mixer window opens.

3. **Select "Master" from the Audio menu (or press [Control] and [+] on the numeric keypad).**
The Master window opens. This is used to set the final level of the mixed signals.

4. If possible, try to arrange the windows so that you can see both the Monitor mixer and the Master window at the same time.
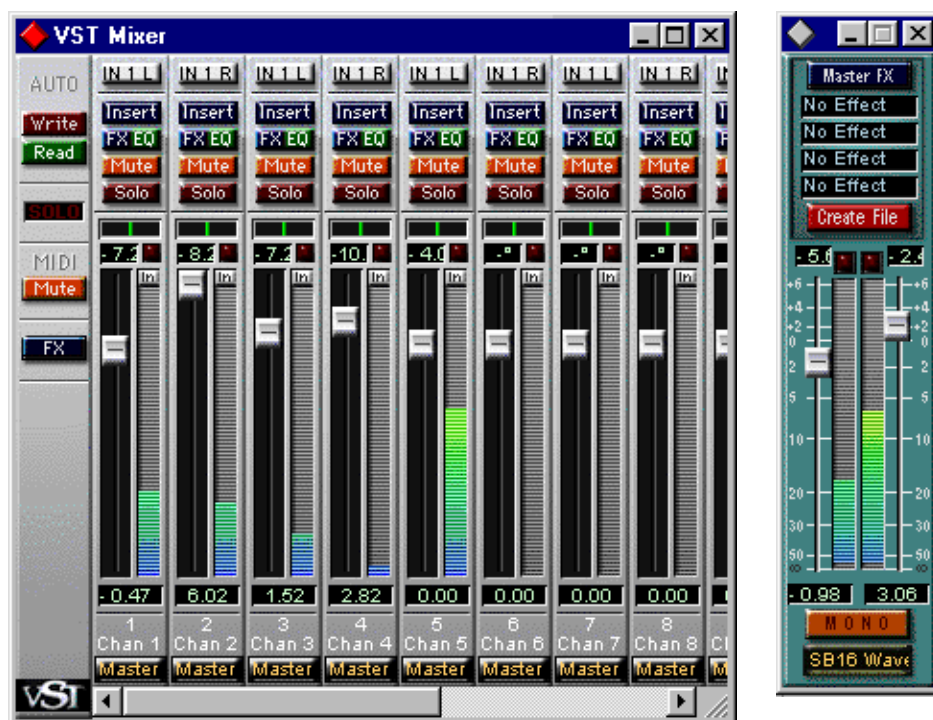
5. In the Monitor mixer window, make sure the "In" buttons are not activated for the audio channels.
When these are activated, the level meters show the input level instead of the playback level.

6. Make sure neither the "Read" or the "Write" buttons are activated.
These are used for automating mixer movements, as described in the electronic documentation. For now, we'll stick to manual mixing.

7. Activate playback, and use the faders to set the relative volume for the audio channels.
The fader settings are displayed numerically below the faders. You can boost weak signals by +6 dB in the Monitor Mixer, if you like. Just be sure to avoid signal levels above 0 dB (clipping - see).

Clipping is indicated by the red clip light above the "In" button. To reset the clip indicator, click on it.

- **For stereo channel pairs, the faders are automatically "linked", i.e. moving the fader for the left channel will automatically move the fader for the right channel, and vice versa.**
  Stereo channel pairs are indicated by the word "Stereo" at the top of the mixer channel strips. To set the level independently for one channel in a stereo pair, hold down [Alt] and drag the fader.

- **If you hold down [Control] and click on a Monitor fader, it will automatically be set to position 0.0 dB.**

8. **Adjust the total volume with the faders in the Master window.**
   The faders are linked, i.e. if you move one fader the other will move as well. If you want to adjust the level of one stereo channel independently, press [Alt] and move the fader.

About automating levels

There are two ways of automating level settings:

- **By using the Write/Read function in the Monitor Mixer.**
  As described in the chapter "Mixing Audio and using Effects" in the electronic documentation, this allows you to record and play back fader movements (as well as most other mixer and effect settings).

- **By using the Dynamic Event feature in the Audio Editor.**
  This allows you to set volume curves for individual Audio Events. See the Audio Editor chapter in the electronic documentation.

Setting Pan

With the Pan controls, you set the stereo position of each audio channel. Like volume, pan settings can be automated using the Write/Read function or the Dynamic Events in the Audio Editor.

- **When you are changing Pan for a channel, the setting is shown numerically (L63–R63) in the level display below the fader.**
  To make the display show the fader setting again, click the fader handle.

- **To select center Pan position, hold down [Control] and click on the Pan control.**

- **For audio channels in a stereo pair, you should probably pan the left (odd-numbered) channel fully left and the right (even-numbered) fully right.**

● If the Mono switch in the Master window is activated, all audio playback will be in mono, and the Pan settings will have no effect.

The Mono switch
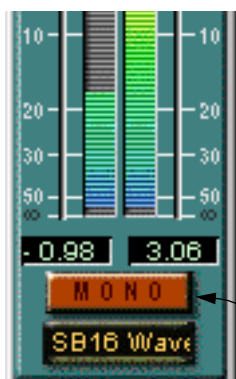
Using Mute and Solo

For each audio channel, there is a Mute and a Solo button, which can be of great use when you want to listen closely to one or several audio channels. These work as follows:

- **Clicking the Mute button silences the output of the audio channel.**
  To deactivate Mute, click on the button again.

- **Clicking the Solo button silences the output of all other audio channels.**
  You may Solo several audio channels at the same time if you like. To deactivate Solo, click on the button again.

Mute and Solo settings can be automated using the Write/Read functions in the Monitor Mixer. See the electronic documentation.

The MIDI Mute button

Activating the MIDI Mute button will turn off all MIDI output. Use this when you want to concentrate on the audio, setting levels, eq, etc. Closing the Monitor window will automatically deactivate the MIDI Mute function.

Making Equalizer settings

Cubase VST is equipped with a powerful equalizer. Depending on your computer power and available free resources, you can have up to 4 bands of full parametric EQ per audio channel!

Each audio channel has its own EQ window. To activate and set EQ for a channel, proceed as follows:

1. Click on the "EQ" button at the top of the channel strip.
The EQ and FX Send window opens. This contains a duplicate of the Monitor mixer channel strip, four effect send knobs (see) and 1–4 EQ modules.

An EQ and FX Send window with two EQ modules visible and active.

● If you make Equalizer settings for the left channel in a stereo channel pair, the settings will automatically be reflected in the right channel.

2. Use the arrow buttons in the top right corner to set the number of visible EQ modules.
This helps you avoid "screen cluttering" by hiding unused modules.

3. Activate as many EQ modules as you need (up to four) by clicking on their "Enable" buttons.

As soon as any of the EQs are activated, the "Active" button and the "EQ" button indicator in the channel strip are lit.

● The maximum total number of EQ modules (for all channels together) is governed by your computer's performance. If you activate more EQ modules than your system can handle, you will note that the "Over" indicator in the Audio Performance window lights red, and the audio playback stutters and distorts. Keep an eye on the Audio Performance bar graphs and deactivate a number of EQ modules, until the computer load seems normal.

4. Set the parameters for the activated EQ module.
It is perhaps easiest to set up a playback cycle and experiment with the settings until you get the desired sound. The three basic EQ parameters are:

Gain	Governs the amount of boost or attenuation around the set frequency. The value range is ± 12 dB.
Frequency	The center frequency for the equalization. Around this frequency, the sound will be boosted or attenuated according to the Gain setting. The range of the Frequency parameter is determined by the Hi and Lo Limits.
Q	Determines the width of the frequency band around the center frequency to be affected. The narrower frequency band, the more drastic effect of the boost or attenuation.

The other EQ parameters are described in the chapter "Mixing and Using Effects" in the electronic documentation.

● Please note that high Gain values may give rise to distortion. Check the channel level meters and compensate with the channel volume faders.

5. Close the EQ window by clicking on its close box in the upper left corner.
In the Monitor window, the "EQ" button indicator for the audio channel will now be lit, which means EQ is applied to that channel.

Turning EQ on and off from the Monitor Mixer

When you have enabled the desired EQ modules and made settings, you can turn equalizing on and off for the channel from the Monitor Mixer window, by holding down [Control] and clicking the "EQ" button for the channel. This toggles the status of the Active button in the EQ and FX Send window.

Applying Effects

There are three basic types of effects in Cubase VST; insert effects (applied separately to each channel, by using the channel inserts in the Monitor Mixer), send effects (applied separately to each channel by using the effect sends in the Monitor Mixer) and master effects (effects that accept a stereo input, and are inserted into the master mix). Typical uses for insert effects would be distortion, filters, auto panners or any effect that you want to send a whole channel through. Typical send effects would be reverb, delay, chorus or anything that you want to apply in different amounts to the different audio channels. Typical master effects would be noise reduction units, compressor/limiters or effects that change the stereo characteristics of the final stereo signal.

In this section, we will only describe how to use send effects. Insert and master effects are described in the chapter "Mixing and using Effects" in the electronic documentation.

Routing an Audio Channel through the Send Effects

You can have four different send effects in Cubase VST, and you can send the signal from each audio channel to any combination of these four effects. Proceed as follows:

1. **In the Monitor Mixer window, click on the EQ button for the audio channel you want to apply effect to.**
   The EQ and FX Send window opens, as described on the previous pages. The section between the channel fader and the EQ modules contains the effect sends.

— Dry Button (affects all four sends)
— Pre-fader Send switch
— Send On/Off
— Send level
— Send routing popup
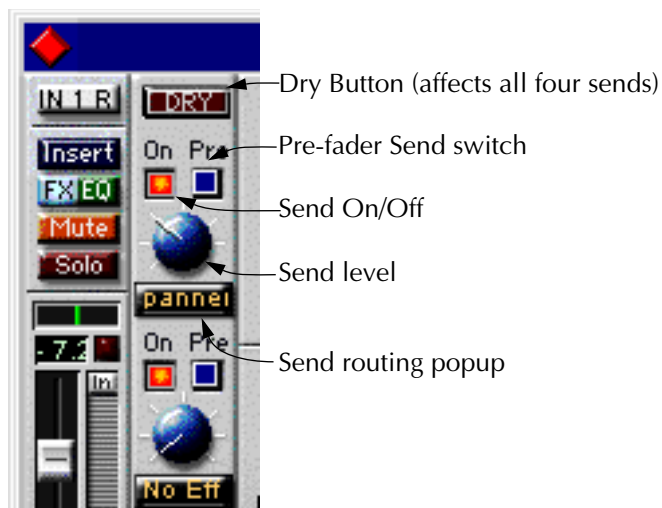
2. **Make sure the "DRY" button is not activated.**
   When this button is activated, all four effect sends are deactivated for the channel.

3. **Click on the "On" button for the effect sends you want to activate and turn the corresponding Send level knob to a moderate value.**
   Remember that the Effects rely heavily on the processing power in your computer. The more activated sends and effect units, the more computer power will be used for effects.

4. Pull down the Send Routing pop-up menu for each activated effect send, and make sure they are assigned to different effect slots.
This pop-up allows you to freely route each effect send to any of the four send effect slots, or even to an output on your audio card (see the chapter "Mixing Audio and Using Effects" in the electronic documentation).

It is possible to assign two or more effect sends to the same effect slot, but this would probably only lead to distortion in the effect unit.

5. If you want the signal to the effect to be independent of the channel fader setting, click on the PRE button for the send.
With Pre-fader effect sends, the amount of effect for the channel is not affected by the volume fader. With Post-fader effect sends (PRE button not activated), the amount of effect is proportional to the channel volume, and will change with the volume fader movements. This is the most common setting.

The next step is to select programs and set the parameters for the effect processors. Since you will probably need to adjust the send levels while doing this, leave the EQ window open.

Selecting Effects and making settings

You select effect types and programs in the Effects window:

1. Click the big FX button to the left in the Monitor Mixer window (or select Effects from the Audio menu).
The Send Effects window opens. This window resembles an effect rack, with separate "processors" arranged on top of each other.
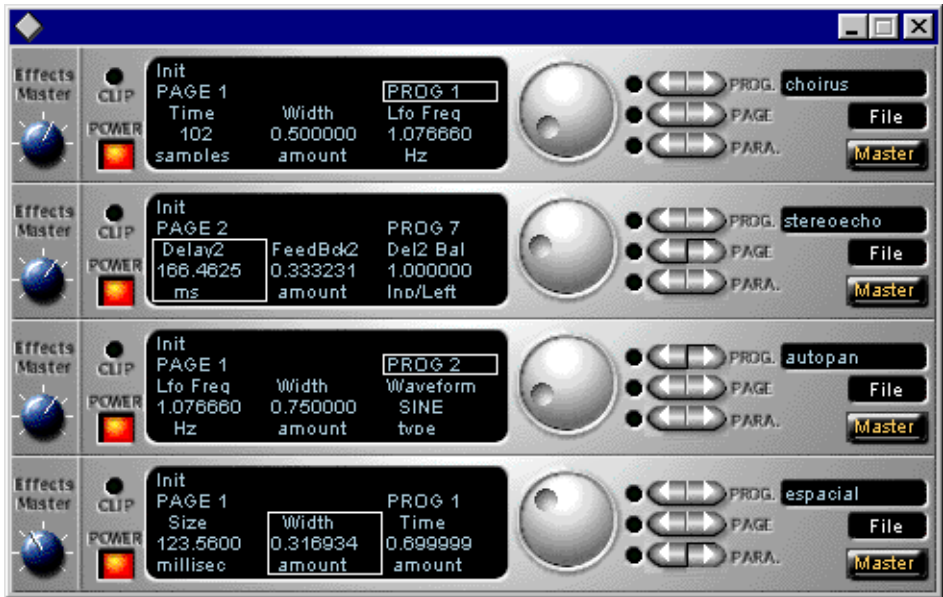
2. Activate an effect processor by clicking on its "Power" button.

3. Pull down the pop-up menu in the processor's upper right corner and select an effect type.
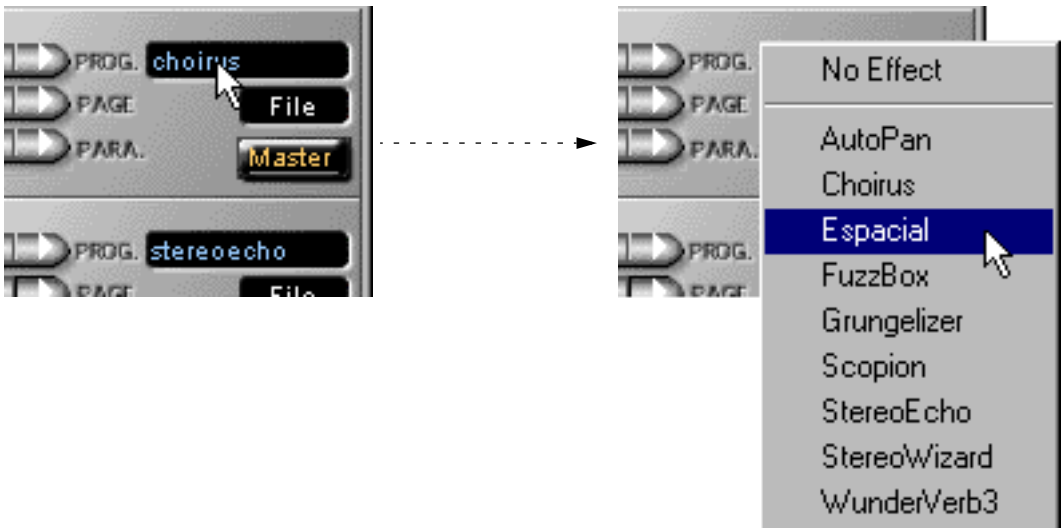
You can select between the following effects (for more detailed descriptions, see the separate Acrobat documents for each Effect Plug-in):

Effect	Description
Choirus	A chorus and flanger effect, which adds "depth" and "animation" to a sound.
Espacial	A reverb effect, adding ambience and "room quality" to the sound.
Auto Pan	Makes the sound move automatically between the left and right channel.
Stereo Echo	A delay effect, with the possibility to set different delay times for the left and right channel.
Fuzz	A simulation of a typical transistor fuzzbox.
WunderVerb 3	A reverb that provides smoother, denser reverberation.
Grungelizer	Adds crackles, hiss, distortion and filtering, for a true "lo-fi" sound.

Other effects may be included with the program when you purchase it. There are also additional Effect Plug-Ins separately available - contact your Steinberg dealer for more information. Furthermore, Cubase VST can also use DirectX compatible plug-ins installed on your computer - see the chapter "Installing and using external effect plug-ins" in the electronic documentation.

4. Click in the middle of the Prog. button, to put the processor in Program mode.

5. Step between the effect programs, either by clicking on the left or right part of the Prog. button or by rotating the value dial.
The number of program locations depends on the selected effect type. It might be a good idea to set up a cycle and have the audio channel play back while you are making settings, to hear the effect of your selected effect programs.

● Not all Effect Plug-Ins have ready-made programs. See the On-line help and the documentation included with each Plug-in.

6. Use the send level knob in the EQ window to control the amount of effect for the audio channel.

7. Use the Effects Master knob to the left on the processor panel to set the amount of input level to the effect processor.
If you set this to a high value, it might cause clipping (distortion) in the effect processor. If the output of an effect processor is clipped, an indicator will light up (this feature is not necessarily supported by all Effect Plug-Ins).

Effects Master knob

Clipping indicator

8. If you want to, repeat steps 2 – 7 for the other effect processors.
Avoid activating effect processors that you don't use, since this draws some extra processor power. To minimize the processor load, pull down the Effect type pop-up for the unused processors, and select "No Effect".

● The effect settings can be automated, as described in the chapter "Mixing Audio and Using Effects" in the electronic documentation.

Mixing MIDI

If you have a MIDI instrument that supports any of the standards GM (General MIDI), GS (Rolands extension of GM) or XG (Yamahas extension of GM), you can use the GM/GS/XG Editor to "mix" the sound of your MIDI instrument, by sending MIDI messages to the instrument. These messages include volume, pan, program change and effect settings (GS/XG only). For more information about GM, GS and XG, see .

● If your instrument does not support any of the standards mentioned, you may still be able to use some of the functions in the editor, such as volume and pan. Refer to the instrument's documentation and to the MIDI message list in the Mixer chapter in the Online documentation.

Working with GM/GS/XG Instruments

The empty Song that gets automatically loaded when Cubase VST is first installed, is set up so that each track transmits on one of the 16 MIDI Channels. This corresponds to how the GM/GS/XG editor is set up. To avoid confusion, we recommend that you keep this Track/Channel layout when recording music for GM/GS/XG sound modules.

The GM/GS/XG editor settings are saved with the Song and should be seen as an intuitive hands-on approach to quickly build a good sounding mix.

Opening the GM/GS/XG Editor

There are two ways to open the editor window:

- **Pull down the Edit menu and select "GM/GS/XG Edit".**
- **Press [Control]-[Y] on the computer keyboard.**

Selecting Output and Mode

Before you start mixing, you need to make sure the editor is set to the correct Mode and sends on the desired MIDI Output. This is done in the Device section:
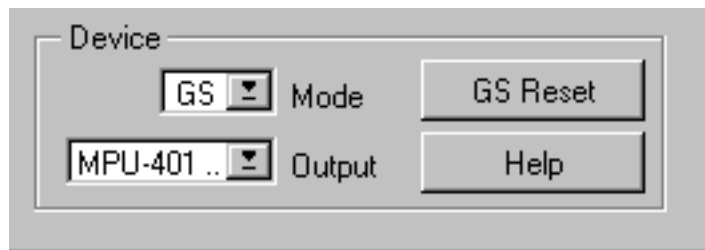
1. **Pull down the Output pop-up menu and make sure that the correct MIDI Output is selected.**
   This should be the Output to which your GM/GS/XG instrument is connected.

2. **Use the Mode pop-up menu to select the desired mode (GM, GS or XG).**
- Select GM if your instrument is General MIDI compatible, or if you have a non-GM compatible instrument but still want to use some of the mixer functions.
- Use Roland GS or Yamaha XG mode only if you have a Roland GS or Yamaha XG compatible instrument and wish to access some of the additional features.

3. Use the On/Off/Reset button to make your instrument ready for GM/GS/ XG operation.
   This button has different labels and functionalities depending on which Mode is selected:
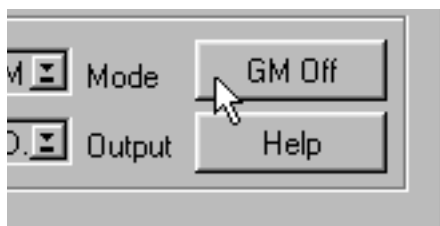
In GM mode, this button is used to switch your instrument in and out of General MIDI mode. Click on the button to send the command that is *currently shown* to your instrument.
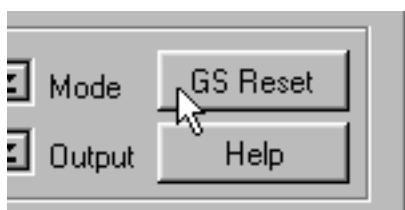
In GS/XG mode, this button is labelled "GS/XG Reset". Clicking it resets all controls in the window, as well as any connected GS/XG instrument, to their default values.

Selecting Sounds

You can select a General MIDI sound for each MIDI channel (except channel 10, which is used for drums) by using the hierarchical Program pop-up menus at the bottom of each "channel strip" in the mixer.
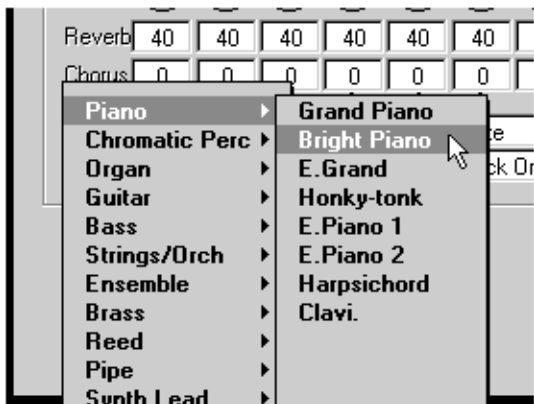
The sounds are organized in 16 instrument groups, each containing eight sounds. To select a sound, pull down the pop-up, move the pointer to one of the instrument groups and select the sound from the sub-menu that appears.

Selecting Drum Kits

If your instrument supports GS and XG, you can use the Program pop-up menu to select a Drum Kit for MIDI channel 10 (which is reserved for drums).
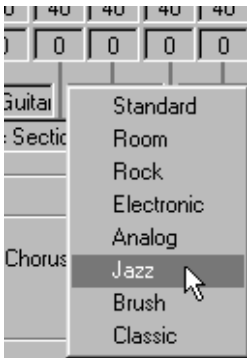
● The Program settings in the GM/GS/XG Editor are *not* reflected in the Inspector and vice versa. Also, if you use ready-made GM Scores that include Program changes, these will not be reflected in GM/GS/XG Edit.

Setting Levels and Pan

You can use the Mixer section in the GM/GS/XG Editor, to set levels, pans, etc for each MIDI channel. Even though this has the "feel" of a normal mixer, it actually works quite differently: The GM/GS/XG Editor mixes and changes the sound by sending MIDI messages to the instrument. If the mixer parameters don't seem to work as expected, you should check that your MIDI instrument really is capable of (and set to) receiving the MIDI message in question.

● For a list of which MIDI messages are sent by each parameter, see the chapter "The GM/GS/XG Editor" in the electronic documentation.
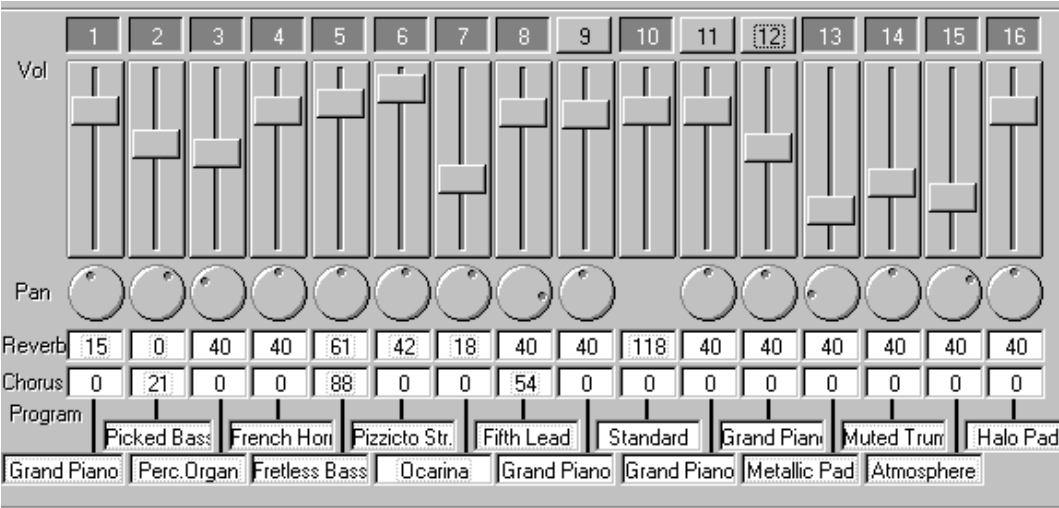
The Mixer section.

The following controls are available for each MIDI channel:

• **Volume fader.**
Drag the fader to change the volume of the corresponding MIDI channel.

• **Pan.**
Use this to set the position in the stereo image for the corresponding MIDI channel. The Drum channel (channel 10) has no panning control.

• **Reverb level.**
Although this is not a part of the GM specifications, many GM instruments (and all GS/XG instruments) have a built-in reverb that can be controlled via the standard MIDI controller number for reverb (#91). If this is so, use this value field to set the amount of reverb for the channel.

- **Chorus level.**
  Like the Channel Reverb controls, this parameter is not a part of the GM specification. However, some GM instruments (and all GS/XG units) have a built-in chorus (sometimes flanger or delay) that can be controlled via the standard MIDI controller number for chorus depth (#93). If this is so, use this value field to set the amount of chorus for the channel.

● In GS or XG Mode, you can make additional effect settings, as described below.

- **Mute switch (GS/XG mode only).**
  In GS/XG Mode (see below), the channel number fields above the faders can be used as Channel Mute buttons. You can mute/unmute each channel individually by clicking on the respective button.

Effect Settings (GS/XG Mode only)

If your instrument supports GS or XG, you can use the GM/GS/XG editor to select and make settings for effects in the instrument. This is done in the Effects section of the window (which only appears in GS or XG mode).
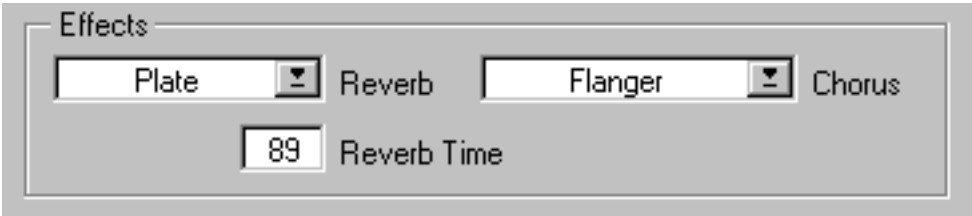
The Effects section contains the following global settings for the reverb and chorus effects that are included in all GS/XG instruments:

- **Reverb pop-up**
  Lets you select one of eight reverb types. The available reverb types are different in GS and XG instruments. In XG mode, selecting "No Effect" allows you to easily turn off the reverb completely.

- **Reverb time**
  Lets you change the overall reverb time.

- **Chorus pop-up**
  Lets you select one of eight chorus- and related effect types. The available effect types are different in GS and XG instruments. In XG mode, selecting "No Effect" allows you to easily turn off the effect completely.

What is GM/GS/XG?

General MIDI

General MIDI (GM) is a standard set up by the MIDI Manufacturers Association (MMA) and the Japanese MIDI Standards Committee (JMSC).

It defines a standardized group of sounds and the minimum requirements for General MIDI compatible synthesizers or sound modules, so that a specially prepared sequence or MIDI file that is sent to the instrument via MIDI will play back the correct sound types, regardless of make and model of the instrument.

MIDI identifies sounds by their program change number. Before the General MIDI standard was introduced, the same MIDI program change number often addressed totally different *types* of sound in any two synthesizers or sound modules from different manufacturers, eg, a flute type sound in one instrument and a piano type sound in the other.

With the introduction of General MIDI standard compatible instruments this changed. These instruments use the same program change numbers for the same *types of instruments*.

So, if the person that prepared a sequence or MIDI file wants the melody to be played by a "piano", he can use a certain program change command embedded into the sequence to automatically select a piano sound in any GM compatible sound module. The GM standard does not specify in great detail how that piano should sound. It is simply assumed that the manufacturer reproduces an acoustic piano within the capabilities used of the instrument.

General MIDI supports all 16 MIDI channels. Each channel can play a variable number of voices (thus be polyphonic). Each channel can play a different instrument (or sound, or program). A minimum of 24 fully dynamically allocated voices are simultaneously available for both melodic and percussion sounds.

Furthermore, in GM compatible instruments, percussion and drum instruments which are key-based always use MIDI channel 10 and specific note numbers are reserved for specific drum sounds.

There are a number of other MIDI messages that GM compatible instruments should respond to. Among these are the MIDI controller events for Volume (Controller 7) and Pan (controller 10). By using these controllers it is possible to create a MIDI Mix for a piece of music.

Roland GS

This is a variation of General MIDI introduced by Roland. It defines additional standard procedures for selecting alternate drum kits and sound variations, and for setting a number of other parameters in Roland GS compatible instruments.

Yamaha XG

This is a variation of General MIDI introduced by Yamaha. It defines additional standard procedures for selecting alternate drum kits and for setting a number of other parameters in Yamaha XG compatible instruments.

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File Handling

Saving

Which file format should I choose?

There are three document formats you can use for saving your music: Song, Arrangement or MIDI File. You should only choose MIDI Files if you want your music (MIDI only - no audio) to be playable in other sequencers (see). If you want to save your music for further use in Cubase VST, you should use either the Song or the Arrangement format:

Song

When you save a Song (*.All), the following information is included:

- All the Arrangements.
- The Pool, all audio settings and audio file references (but not the actual audio files themselves).
- The entire Setup, that is, settings in dialogs and on menus, Groove maps, Transport Bar settings etc.
- The Drum Map.

Arrangement

When you save an Arrangement (*.Arr), the following is included:

- All the things you see in one Arrange window; the Tracks, the Parts, Inspector settings, tempo, etc.

  The audio file references, however, are stored in the Pool, and the Pool is not part of the Arrangement. This means that if you only save an Arrangement, there will be no audio files to reference to! Therefore:

● When doing audio work with Cubase VST, we recommend that you always save complete Songs!

If you have only recorded MIDI, the Arrangement format is often perfectly adequate for saving a piece of music. The pros and cons of both formats are shown in the table on the next page.

File Format	Advantages	Disadvantages
Arrangement	• Takes up little disk space. • Can be saved, and opened in another Song, which is an easy way to transfer music between different Songs. • Does not contain "unnecessary" settings if all you want to save is the MIDI music. • Opening an Arrangement does not affect settings in dialog boxes and on menus, which, in some situations, is an advantage.	• Does not contain any audio settings and references. • Does not contain a complete "snapshot" of the program's "state".
Song	• Contains the Pool and all other audio settings. • Contains more than one Arrangement. • Saves all the settings on all menus, in all dialog boxes etc. • Includes the Drum Map.	• Takes up more disk space than the Arrangement file format, even if you only have one Arrangement in the Song.

● Even though the Song files contain all audio references, they do *not* contain the actual audio files! If you want to transfer a Song containing audio to another computer, you need to move the audio files as well. The Prepare Archive and Prepare Master functions in the Pool make this easier - see the Pool chapter in the electronic documentation.

Performing the Save

1. Pull down the File Menu and select "Save As..."
The file dialog appears.

File navigation popup

File Name

Cubase VST File type popup
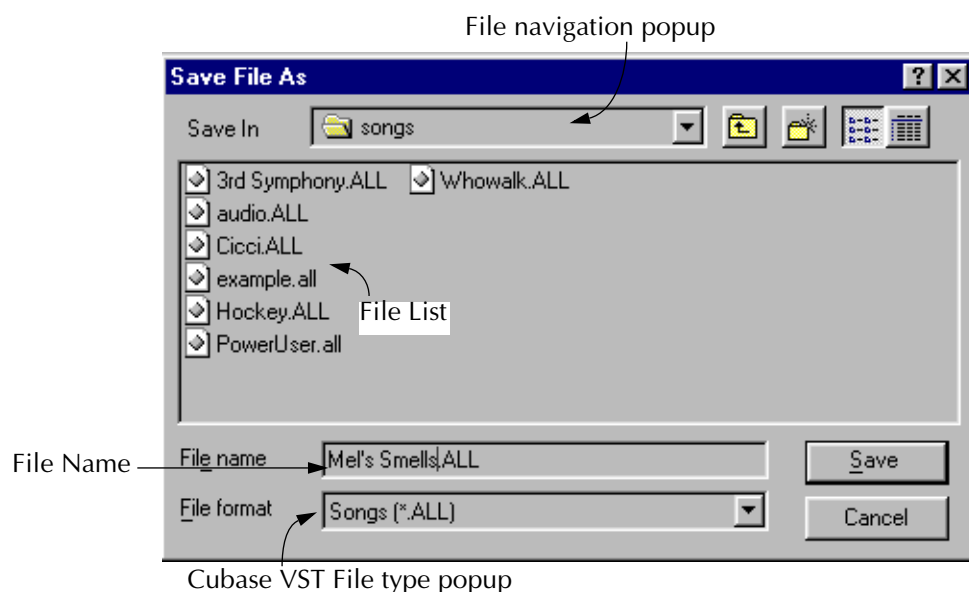
2. Use the standard controls to find the location on your hard disk where you want to save the file.

3. Use the file type pop-up to select a format, Song or Arrangement.
The other file formats are primarily used for "extracting" special elements of a Song file. See the Online Help for details.

4. Type in a name for the file.

5. Click the OK button.

Using "Save Song"

On the File menu you will find a menu item called "Save Song".

- If you have already saved your Song once (using "Save As...") selecting Save Song (or pressing [Control]-[S] on the computer keyboard) will save your Song without asking for a file name and location. The file you save now will simply overwrite the earlier version.
- If you have not yet saved your Song, selecting "Save Song" is the same as selecting "Save As...".

About the default Song

Each time you launch Cubase VST, a default Song called "Def.All" is opened. This makes it possible to customize the default functionality and layout of the program:

1. Launch the program.

2. Set up the program as you want it.
This may include the number and organization of Tracks, MIDI setup, Drum Map, Metronome settings, Audio settings, Part color and appearance and much more. See the Customizing chapter in the electronic documentation.

3. Select "Save As" from the File menu.

4. Navigate to the Cubase VST program folder.

5. Type in the name "Def.All" (without the quote signs) and press OK.
You will be asked if you want to replace the current Def.All file. Click Yes.

Next time you launch Cubase VST, you will automatically get your desired setup and layout.

About the Autosave Feature
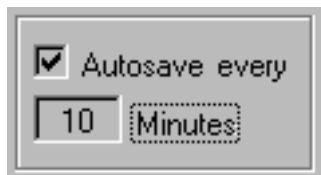
In the Preference dialog on the File menu you find a setting called Autosave. If you activate this, you can set how often the program should automatically save your Song. The Song is saved under the name "Backup.all" in the Cubase VST program folder.

Opening

1. Select Open... from the File menu.

The Open dialog appears.

File List

File selected for opening

Cubase VST File type popup
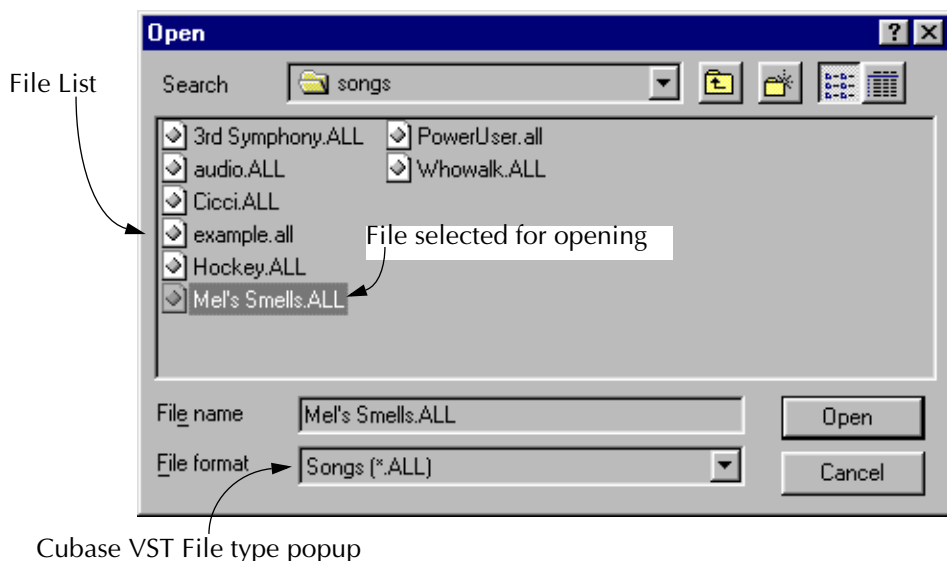
2. Use the File Type pop-up to select which type of file you want to open, Song or Arrangement.

3. Use the standard controls to display the correct folder on your hard disk.

4. Click on the file in the file list.

The list will only show documents of the selected type.

5. Click OK.

About opening Songs

If the file is a Song, you will be prompted with a reminder that the Song you open will replace the Song you have loaded now. If this is not what you want, Cancel and Save the existing Song first.

About closing Songs

There is no way to close the Song in Cubase VST! The Close command on the File menu only closes the current Arrangement, as described on . If you want to create a new Song, you should use the New Song command on the File menu.

About opening Arrangements

If the file is an Arrangement, it will appear as a new window on screen, in addition to any Arrange windows already open. You can have up to 16 Arrangements in your Song at the same time.

Exporting in MIDI File format

You might want to export an Arrangement as a Standard MIDI File, so that it can be loaded into other computer programs or hardware sequencers, for example.

● A Standard MIDI File contains MIDI data only - no audio. Any Audio Tracks in your Arrangement will automatically be excluded from the created MIDI file.

1. Mute all the Tracks you *don't* want included in the MIDI File.

2. Pull down the File menu and select "Preferences".
The Preferences dialog appears.
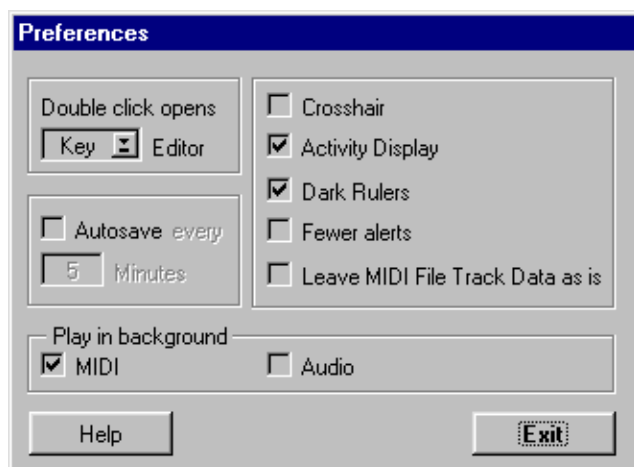
Use the "Leave MIDI File Track Data as is" checkbox to determine what happens with the Inspector settings, such as Program Change, Transpose, Volume, etc:

- If the checkbox is activated, the Program Change, Bank Select, Pan and Volume settings in the Inspector are ignored. All other settings are converted to "real" MIDI data and included in the MIDI file.
- If the checkbox is not activated, all Inspector settings will be converted to "real" MIDI Events and included in the MIDI file. When the MIDI file is imported (into Cubase VST or other sequencers) it will play back just like before you exported it. In most cases, this is the preferred mode.

3. Pull down the File menu and select "Export MIDI File...".
The file dialog appears.

4. Select a name and location for the file.
The file will automatically get the extension ".MID", which is the standard extension for MIDI files.

5. Click OK.

MIDI File formats

Cubase VST normally saves MIDI files in format 1. This means the Track structure is preserved in the file (even though all Parts on each Track will be linked together into one long Part). However, if you Export a MIDI File with only one Track unmuted, a MIDI File of type 0 is created.

Importing MIDI Files

1. Pull down the File menu and select Import MIDI File...
Cubase VST recognizes files as MIDI Files if they have the extension "MID" (the standard extension for MIDI Files).

2. Use the dialog box that appears to decide if you want the file to appear in a new Arrange window or if you want to merge the MIDI File into the current Arrangement.
If you choose the latter option, the file will appear in the current Arrangement, starting at the Left Locator position.

The file dialog appears.

3. Locate the file.
Click on the file in the File list.

4. Click OK.

When importing MIDI Files, the data is automatically split up into shorter segments (Parts) to make it easier to edit the music in the Arrange window.

Handling Audio Files

Audio files can be imported and exported in several ways:

- **By using the Import and Export commands in the Pool.**
  These also allow you to export a segment and make it an audio file of its own.

- **In the Arrange window, by using the Import and Export Audio File commands on the File menu.**
  The Export Audio File command lets you mix down several Audio Tracks into one audio file.

- **You can also import audio files directly into the Audio Editor, using the Pencil tool.**

  All these functions are described in detail in the electronic documentation.

  Make Backups of your audio files!

  Needless to say, it is essential that you back up your audio data regularly, preferably on other media. There are various functions to make it easier to manage your audio files, described in the Audio Pool chapter in the electronic documentation.

Handling ReCycle Files

Cubase VST can import files created by Steinberg ReCycle, a powerful tool for working with drum loops and similar sampled material. This allows you to use ReCycle together with Cubase VST, without the need of a sampler. This feature is described in detail in a separate chapter in the electronic documentation.

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