CUBASE LE4

Music Production Software

steinberg

Tutorials by Steve Kostrey
Revision for Cubase LE and Quality Control:
Cristina Bachmann, Heiko Bischoff, Sabine Pfeifer

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Introduction

Welcome

Congratulations and welcome to the world of Cubase. You have now become a member of the world's largest community of music production software users. Looking back at more than 20 years of innovation in computer-based music production, Steinberg has always been the driving force behind software technology and Cubase is the benchmark for this development. With Version 4, Cubase is taking the next evolutionary step towards a totally integrated software and hardware system.

Whether you're already a user of some computer-based music production software or this is your first hands-on experience with a software-based sequencer/digital audio workstation: this version of Cubase gives you full access to the Cubase workflow and provides you with a powerful yet easy-to-use music production system. Cubase LE features the same professional audio engine used in Steinberg's flagship version of Cubase - Cubase 4. It supports both Windows XP and OS X operating systems, including the latest Intel Mac systems from Apple Computers. With a brand-new set of great-sounding plug-ins, new instrument tracks, and the ability to play ACIDized audio files matching a song's tempo.

Take some time to find your way around in this new version of Cubase. If you are a first-time user, you will find a lot of help in the tutorial section, which is included in this manual. It comes with matching Cubase LE project files and even short training videos, which you will find on your program DVD. Even if you are already familiar with Cubase, it makes sense to study these tutorials in order to learn about some of the new features, and how they are integrated.

Last but not least, by registering your software you will have access to Steinberg's personal user area on the Steinberg website! It gives you access to special offers from Steinberg and ensures that you are always up-to-date on the latest news about tips and tricks, updates or special events. Finally, you are also invited to join our Cubase user forum at www.steinberg.net, which is the best way to communicate directly with us and other Cubase users around the world.

See you around! The Steinberg Cubase Team

About the manuals and the help

The Cubase LE documentation is divided into several sections, as listed below. The documents are in Adobe Acrobat format (extension ".pdf") – these can be accessed in the following ways:

▪ You can open the pdf documents from the Documentation submenu on the Help menu in the program.
▪ Under Mac OS X the pdf documents are located in the folder "/Library/Documentation/Steinberg/Cubase LE 4".

⇨ To read the pdf documents, you need to have a suitable pdf reader application installed on your computer.
An installer for Acrobat Reader is provided on the program DVD.

The Getting Started

This is the manual you are reading now. The Getting Started covers the following areas:

▪ Computer requirements.
▪ Installation issues.
▪ Setting up your system for audio, MIDI and/or video work.
▪ Tutorials describing the most common procedures for recording, playing back, mixing and editing in Cubase LE.

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

The Operation Manual

The Operation Manual is the main Cubase LE reference documentation, with detailed descriptions of Cubase LE operations, parameters, functions and techniques. You should be familiar with the concepts and methods described in the Getting Started manual before moving on to the Operation Manual.

Plug-in Reference

This manual describes the features and parameters of the included VST plug-ins, real-time audio effects and VST instrument.

Remote Control Devices

This pdf document lists the supported MIDI remote control devices and describes how to set them up and use them with Cubase LE.

Menu Reference

This pdf document provides a list of all menus and their options with a brief description, for quick reference.

The dialog help

To get information about the active dialog, click its Help button.

About the program versions

The documentation covers two different operating systems or "platforms"; Windows and Mac OS X.

Some features and settings are specific to one of the platforms, Windows or Mac OS X. This is clearly stated in the applicable cases. In other words:

⇨ If nothing else is said, all descriptions and procedures in the documentation are valid for both Windows and Mac OS X.

The screenshots are taken from the Windows version.

Key command conventions

Many of the default key commands in Cubase LE use modifier keys, some of which are different depending on the operating system. For example, the default key command for Undo is [Ctrl]+[Z] under Windows and [Command]+[Z] under Mac OS X.

When key commands with modifier keys are described in this manual, they are shown with the Windows modifier key first, in the following way:

[Win modifier key]/[Mac modifier key]+[key]

For example, [Ctrl]/[Command]+[Z] means "press [Ctrl] under Windows or [Command] under Mac OS X, then press [Z]". Similarly, [Alt]/[Option]+[X] means "press [Alt] under Windows or [Option] under Mac OS X, then press [X]".

⇨ Please note that this manual often refers to "right-clicking", e.g. to open context menus, etc. If you are using a Macintosh computer with a single-button mouse, hold down [Ctrl] and click.

2

System requirements and installation

About this chapter

This chapter describes the requirements and installation procedures for the Windows version and the Mac version of Cubase LE.

Minimum requirements

To use Cubase LE, your computer must meet the following minimum requirements:

Windows

- Windows XP (Home or Professional)
- Intel Pentium or AMD Athlon 1.4 GHz processor
- 512 MB RAM
- Windows DirectX compatible audio hardware; ASIO compatible audio hardware recommended for low latency performance.
- Display resolution of 1024x768 pixels
- DVD ROM drive required for installation
- Internet connection required for license activation

Macintosh

- Mac OS X 10.4
- Power Mac G4 1 GHz or Core Solo 1.5 GHz
- 512 MB RAM
- Display resolution of 1024x768 pixels
- CoreAudio compatible audio hardware
- DVD ROM drive required for installation
- Internet connection required for license activation

General notes on how to set up your system

⚠ On the Steinberg web site, under "Support–DAW Components", you can find detailed information on what to consider when setting up a computer system dedicated to audio work.

- RAM – There is a direct relation between the amount of available RAM and the number of audio channels that you can have running.
The amount of RAM specified above is the minimum requirement, but as a general rule "the more the better" applies.

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

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

- Wheel mouse – Although a regular mouse will work fine with Cubase LE, we recommend that you use a wheel mouse.
This will speed up value editing and scrolling considerably.

MIDI requirements

If you intend to use the MIDI features of Cubase LE, you need the following:

- A MIDI interface to connect external MIDI equipment to your computer.
- A MIDI instrument.
- Any audio equipment required to listen to the sound from your MIDI devices.

Audio hardware

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

- Stereo.
- 16 bit.
- Support of at least the 44.1kHz sampling rate.
- Windows – The audio hardware must be supplied with a special ASIO driver, or a DirectX compatible driver, see below.
- Mac – The audio hardware must be supplied with Mac OS X-compatible drivers (CoreAudio or ASIO).

Using the built-in audio hardware of the Macintosh

Although Cubase LE is designed with multi-channel input and output in mind, it's of course possible to use the program with "basic" stereo inputs and outputs. As of this writing, all current Macintosh models provide at least built-in 16 bit stereo audio hardware. For detailed information, refer to the documentation describing your computer.

Depending on your preferences and requirements, using the built-in audio hardware may be sufficient for use with Cubase LE. It is always available for selection in Cubase LE – you don't need to install any additional drivers.

⚠ Some Macintosh models have audio outputs but no inputs. This means that you can only play back audio – recording is not possible without additional audio hardware.

About drivers

A driver is a piece of software that allows a program to communicate with a certain piece of hardware. In this case, the driver allows Cubase LE to use the audio hardware. For audio hardware, there are two different cases, requiring different driver configurations:

If the audio hardware has a specific ASIO driver

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

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

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

If the audio card communicates via DirectX (Windows only)

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

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

Hardware Installation

Installing the audio hardware and its driver

1. Install the audio card and related equipment in the computer, as described in the card's documentation.

2. Install the driver for the card.
Depending on the operating system of your computer, there are different types of drivers that could apply: card-specific ASIO drivers, DirectX drivers (Windows) or Mac OS X (Mac) drivers:

Specific ASIO driver

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

DirectX driver (Windows only)

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

Mac OS X drivers (Mac)

If you are using a Macintosh computer, make sure you are using the latest Mac OS X drivers for your audio hardware. Follow the manufacturer's instructions to install the driver.

Testing the card

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

- Use any software included with the audio card to make sure you can record and play back audio without problems.

- If the card is accessed via a standard operating system driver, try playing back audio using the computer's standard audio application (e.g. Windows Media Player or Apple iTunes).

Installing a MIDI interface/synthesizer card

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

1. Install the interface (or MIDI synthesizer card) inside your computer or connect it to a "port" (connector) on the computer.

Which is right for you depends on which type of interface you have.

2. If the interface has a power supply and/or a power switch, turn it on.

3. Install the driver for the interface, as described in the documentation that comes with the interface.

You should also make sure to check the manufacturer's web site for the latest driver updates.

Installing Cubase LE

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

Windows

1. Insert the Cubase LE DVD into the DVD drive of your computer.

2. Double-click the file called "CubaseLE4.msi".

3. Follow the instructions on screen.

Macintosh

1. Insert the Cubase LE DVD into the DVD drive of your computer.

2. Double-click the file called "Cubase LE 4.mpkg".

3. Follow the instructions on screen.

Registering your software

The Syncrosoft eLicenser

After installing Cubase LE you can use the program for 30 days without any restrictions. After this period, you will have to register your program, otherwise, Cubase LE will not run anymore.

Proceed as follows to register your program:

1. Open the Syncrosoft License Control Center (which can be found in the Start/Programs menu under Windows or in the Applications folder on a Mac).

2. Write down the number of the eLicenser for Cubase LE displayed in the Syncrosoft License Control Center.

3. Launch Cubase LE and select the Registration option from the Help menu.

The "My Steinberg" section on the Steinberg web site is opened.

4. Follow the instructions on the web site to create a user account.

You will receive an e-mail asking you to confirm the creation of your account in order to activate it. Just click on the confirmation link in the e-mail. After the confirmation, you will be able to log in to the Steinberg customer area.

5. Go back to "My Steinberg" on the Steinberg web site, log in to your account and enter the number of the eLicenser for Cubase LE.

You will receive an email with the activation code for Cubase LE.

6. In the Syncrosoft License Control Center open the Wizards menu and select the "License Download" option.

Follow the instructions and enter your Cubase LE activation code.

7. Congratulations! You have successfully licensed and registered your program and are now entitled to technical support and kept aware of updates and other news regarding Cubase LE.

Defragment the hard disk (Windows only)

If you plan to record audio on a hard disk where you have already stored other files, now is the time to defragment it. Defragmentation reorganizes the physical allocation of space on the hard disk in order to optimize its performance. It is done with a special defragmentation program.

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

Installing the Additional Content

On the program DVD you will find the folder "Additional Content". To use the content, insert the DVD in the DVD drive of your computer and copy the files to a location on your hard drive.

3

Setting up your system

Setting up audio

⚠ Always make all connections with all equipment turned off!

Connecting audio

Exactly how to set up your system depends on many different factors, e.g. the kind of project you wish to create, the external equipment you want to use, the computer hardware available to you, etc. Therefore, the following sections can only serve as examples.

How you connect your equipment, i.e. whether you use digital or analog connections, also depends on your individual setup.

Stereo input and output – the simplest connection

If you only use a stereo input and output from Cubase LE, you can connect your audio hardware, e.g. the inputs of your audio card or your audio interface, directly to the input source and the outputs to a power amplifier and speaker.
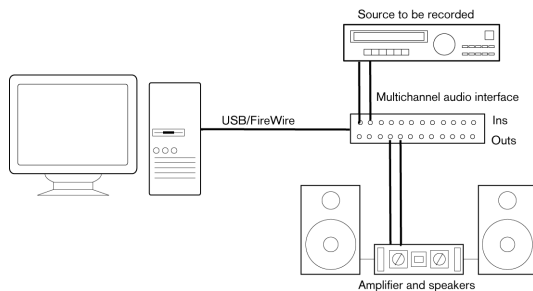
A simple stereo audio setup.

This is probably the simplest of all setups – once you have set up the internal input and output busses, you can connect your audio source, e.g. a microphone, to your audio interface and start recording.

Multi-channel input and output

Most likely however, you will have other audio equipment that you want to integrate with Cubase LE, using several input and output channels. Depending on the equipment available to you, there are two ways to go: either mixing using an external mixing desk, or mixing using the mixer inside Cubase LE.

▪ External mixing means having a hardware mixing device with a group or bus system that can be used for feeding inputs on your audio hardware.

In the example below, four busses are used for feeding signals to the audio hardware's inputs. The four outputs are connected back to the mixer for monitoring and playback. Remaining mixer inputs can be used for connecting audio sources like microphones, instruments, etc.
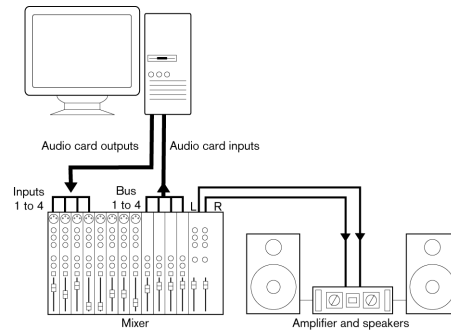
A multi-channel audio setup using an external mixer.

⇨ When connecting an input source (like a mixer) to the audio hardware, you should use output buses, sends or similar that are separate from the mixer's master output to avoid recording what you are playing back. You may also have mixing hardware that can be connected via FireWire.

▪ When using the Mixer inside Cubase LE, you can use the inputs on your audio hardware to connect microphones and/or external devices. Use the outputs to connect your monitoring equipment.
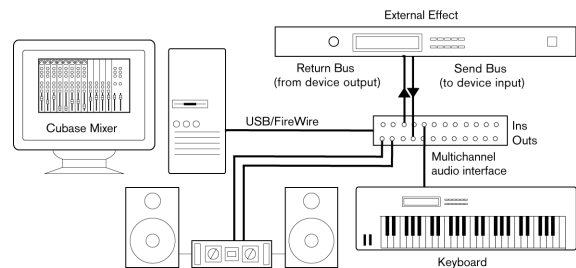
Mixing inside Cubase LE

Recording from a CD player

Most computers come with a CD-ROM drive that can also be used as a regular CD player. In some cases the CD player is internally connected to the audio hardware so that you can record the output of the CD player directly into Cubase LE (consult the audio hardware documentation if you are uncertain).

▪ All routing and level adjustments for recording from a CD (if available) are done in the audio hardware setup application (see "Making settings for the audio hardware" on page 14).

▪ You can also grab audio tracks directly from a CD in Cubase LE (see the chapter "File Handling" in the Operation Manual).

Word Clock connections

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

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

About recording levels and inputs

When you connect your equipment, you should make sure that the impedance and levels of the audio sources and inputs are matched. Typically, different inputs may be designed for use with microphones, consumer line level (-10 dBV) or professional line level (+4 dBV), or you may be able to adjust input characteristics on the audio interface or in its control panel. Please check the audio hardware documentation for details.

Using the correct types of input is important to avoid distortion or noisy recordings.

⚠ Cubase LE does not provide any input level adjustments for the signals coming in to your audio hardware, since these are handled differently for each card. Adjusting input levels is either done in a special application included with the hardware or from its control panel (see below).

Making settings for the audio hardware

Most audio cards come with one or more small applications that allow you to configure the inputs of the hardware to your liking. This includes:

▪ Selecting which inputs/outputs are active.
▪ Setting up word clock synchronization (if available).
▪ Turning monitoring via the hardware on/off (see "About monitoring" on page 16).
▪ Setting levels for each input. This is very important!
▪ Setting levels for the outputs, so that they match the equipment you use for monitoring.
▪ Selecting digital input and output formats.
▪ Making settings for the audio buffers.

In many cases all available settings for the audio hardware are gathered in a control panel, which can be opened from within Cubase LE as described below (or opened separately, when Cubase LE isn't running). In some cases, there may be several different applications and panels – please refer to the audio hardware documentation for details.

Selecting a driver and making audio settings in Cubase LE

The first thing you need to do is select the correct driver in Cubase LE to make sure that the program can communicate with the audio hardware:

1. Launch Cubase LE, select Device Setup from the Devices menu and click on VST Audio System in the Devices list to the left.
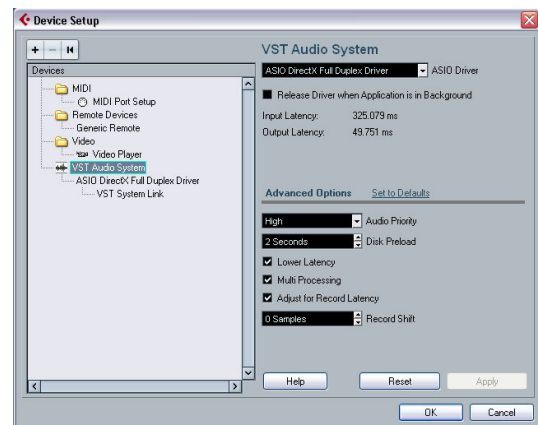
The VST Audio System page in the Device Setup dialog.

2. Select your audio hardware driver from the ASIO Driver menu.

There may be several options here that all refer to the same audio hardware. When you have selected a driver, it is added to the Devices list.

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

3. Select the driver in the Devices list to open the Driver settings for your audio hardware.

4. Bring up the control panel for the audio hardware and adjust the settings as recommended by the audio hardware manufacturer.

▪ Under Windows, you open the control panel by clicking the Control Panel button.

The control panel that appears when you click this button is provided by the audio hardware manufacturer and not Cubase LE (unless you use DirectX, see below). Hence it will be different for each audio card brand and model.

The Control panel for the ASIO DirectX driver is an exception, as it is provided by Steinberg, and is described in the dialog help, opened by clicking the Help button in the dialog. See also the notes below.

▪ Under Mac OS X, you will find the control panel for your audio hardware in the System Preferences ("Other" section), opened from the Apple menu or from the Dock.

If you are using the built-in audio hardware of the Macintosh, you use the "Sound" control panel in the System Preferences to set levels, balance, etc. If you are using ASIO audio hardware, you can click the Control Panel button to bring up its panel.

5. If you plan to use several audio applications simultaneously, you may want to activate the option "Release Driver when Application is in Background" on the VST Audio System page. This will allow another application to play back via your audio hardware even though Cubase LE is running.

The application that is currently active (i.e. the "top window" on the desktop) will get access to the audio hardware. Make sure that any other audio application accessing the audio hardware is also set to release the ASIO (or Mac OS X) driver so Cubase LE can use it when it becomes the active application again.

6. If your audio hardware and its driver support ASIO Direct Monitoring, you may want to activate the Direct Monitoring checkbox on the page for the driver.

Read more about monitoring later in this chapter and in the chapter "Recording" in the Operation Manual.

7. Click Apply and then OK to close the dialog.

If you are using audio hardware with a DirectX driver (Windows only)

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

Cubase LE comes with a driver called ASIO DirectX Full Duplex, available for selection on the ASIO Driver pop-up menu (VST Audio System page).

⇨ To be able to take full advantage of DirectX Full Duplex, the audio hardware must support WDM (Windows Driver Model) in combination with DirectX version 8.1 or higher.

In all other cases, the audio inputs will be emulated by DirectX (see the dialog help for the ASIO DirectX Full Duplex Setup dialog for details about how this is reported).

⇨ During the installation of Cubase LE, the latest DirectX will be installed on your computer.

When the ASIO DirectX Full Duplex driver is selected in the Device Setup dialog, you can open the ASIO Control Panel and adjust the following settings (for more details, click the Help button in the control panel):

▪ Direct Sound Output and Input Ports

In the list to the left in the window, all available Direct Sound output and input ports are listed. In many cases, there will be only one port in each list. To activate or deactivate a port in the list, click the checkbox in the left column. If the checkbox is ticked, the port is activated.

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

In most cases, the default settings will work fine. Audio buffers are used when audio data is transferred between Cubase LE and the audio card. While larger buffers ensure that playback will occur without glitches, the latency (the time between the moment Cubase LE sends out the data and when it actually reaches the output) will be higher.

▪ Offset

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

Setting up the input and output ports

Once you have selected the driver and made the settings as described above, you need to specify which inputs and outputs should be used and name these:

1. In the Device Setup dialog, select your driver in the Devices list on the left to display the Driver settings for your audio hardware.
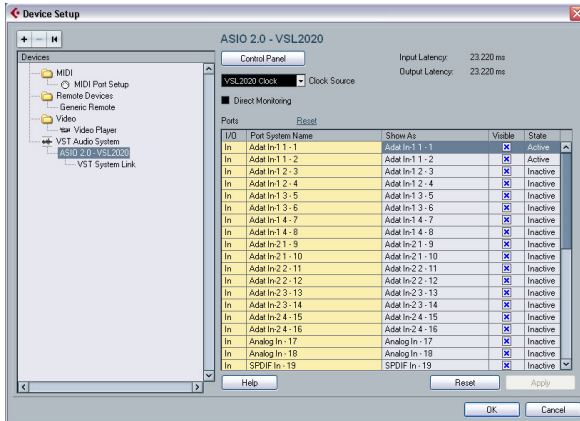
All input and output ports on the audio hardware are listed.

2. To hide a port, click in the "Visible" column for the port (deselecting the checkbox).

Ports that aren't visible cannot be selected in the VST Connections window where you set up your input and output busses – see "Setting up the VST Connections" on page 24 and the chapter "VST Connections: setting up input and output busses" in the Operation Manual.

⚠️ If you attempt to hide a port that is already used by a bus you will be asked whether this is really what you want – note that this will disable the port!

3. To rename a port, click on its name in the "Show as" column and type in a new name.

⇨ It is a good idea to give your ports names that are related to the channel configuration (rather than to the actual hardware model)!

4. Click OK to close the Device Setup dialog and apply your changes.

About monitoring

In Cubase LE, monitoring means listening to the input signal while preparing to record or while recording. There are three ways to monitor:

External monitoring

External monitoring (listening to the input signal before it goes into Cubase LE) requires an external mixer for mixing the audio playback with the input signal. This can be a classic mixing desk or a mixer application for your audio hardware, if this has a mode in which the input audio is sent back out again (usually called "Thru", "Direct Thru" or similar).

Via Cubase LE

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

This allows you to control the monitoring level from Cubase LE and add effects to the monitored signal only.

ASIO Direct Monitoring

If your audio hardware is ASIO 2.0 compatible, it may support ASIO Direct Monitoring (this feature may also be available for audio hardware with Mac OS X drivers). In this mode, the actual monitoring is done in the audio hardware, by sending the input signal back out again. However, monitoring is controlled from Cubase LE. This means that the audio hardware's direct monitoring feature can be turned on or off automatically by Cubase LE.

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

▪ If you want to use the external monitoring via your audio hardware, make sure the corresponding functions are activated in the card's mixer application.

Setting up MIDI

⚠ Always make all connections with all equipment turned off!

This section describes how to connect and set up MIDI equipment. If you have no MIDI equipment you can skip this section. Note that this is only an example – you might need or want to hook things up differently!

Connecting the MIDI equipment

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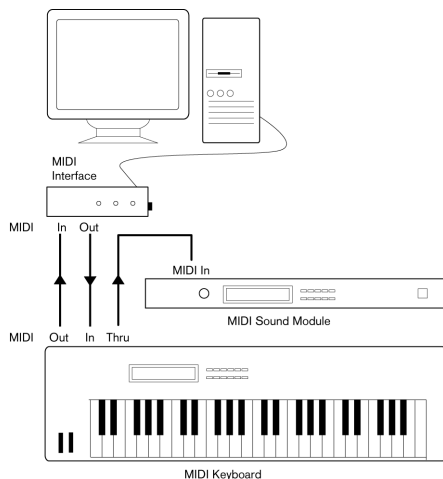
A typical MIDI Setup.

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

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

Setting MIDI Thru and Local On/Off

In the "MIDI" section in the Preferences dialog (located on the File menu under Windows and on the Cubase LE menu under Mac OS X), you will find a setting called "MIDI Thru Active". This is related to a setting in your instrument called "Local On/Off" or "Local Control On/Off".

▪ If you use a MIDI keyboard instrument, as described earlier in this chapter, MIDI Thru should be activated and that instrument should be set to Local Off (sometimes called Local Control Off – see the instrument's operation manual for details).

The MIDI signal from the keyboard will be recorded in Cubase LE and at the same time be 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 LE, MIDI data received is immediately "echoed" back out.

MIDI data coming in to the instrument is played by the "Synth" inside it.
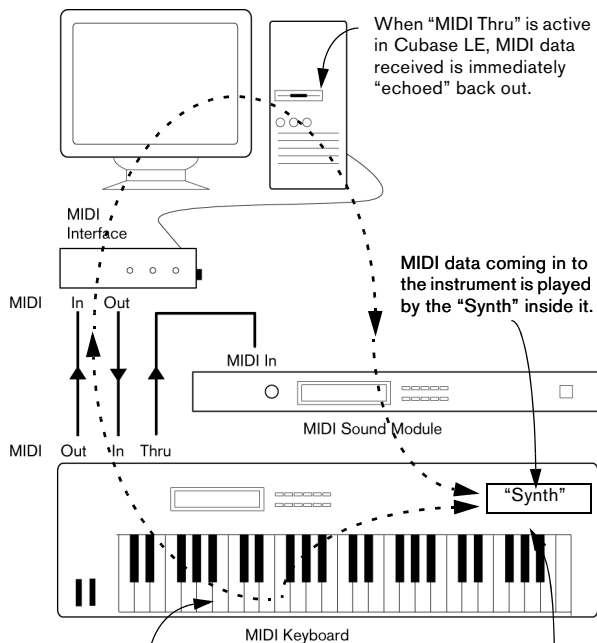
When you press a key, it is sent out via MIDI to Cubase LE.

When Local Control is turned 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 – one that does not produce any sounds itself – MIDI Thru in Cubase LE should also be activated, but you don't need to look for any Local On/Off setting in your instruments.
• The only case where MIDI Thru should be deactivated is if you use Cubase LE with only one keyboard instrument and that instrument cannot be set to Local Off mode.
• Note that MIDI Thru will be active only for those MIDI tracks that are record enabled and/or have the Monitor button activated. See the chapter "Recording" in the Operation Manual for more information.

Setting up MIDI ports in Cubase LE

The Device Setup dialog lets you set up your MIDI system in the following ways:

⇨ Note: When you change MIDI port settings in the Device Setup dialog, these are automatically applied in the program.

Showing or hiding MIDI Ports

The MIDI ports are listed in the Device Setup dialog on the MIDI Port Setup page. By clicking in the "Visible" column for a MIDI input or output, you can specify whether or not it should be listed on the MIDI pop-up menus in the program.

⇨ Hiding a MIDI port from view does not turn it off if it is already selected for a track or a MIDI device.

Setting up the "All MIDI Inputs" option

When you record MIDI in Cubase LE, you can specify which MIDI input each recording MIDI track should use. However, you can also select the "In All Inputs" option for an input port, which causes any MIDI data from any MIDI input to be recorded.

The "In All Inputs" option on the MIDI Port Setup page allows you to specify which inputs should be included when you select All MIDI Inputs for a MIDI track. This can be especially useful if your system provides several instances of the same physical MIDI input – by deactivating the duplicates you make sure only the desired MIDI data is recorded.

⇨ If you have a MIDI remote control unit connected, you should also make sure to deactivate the "In All Inputs" option for that MIDI input.
This will avoid accidentally recording the data from the remote control when the "All MIDI Inputs" option is selected as input for a MIDI track.

Connecting a synchronizer

⚠ Always make all connections with all equipment turned off!

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

Setting up video

⚠️ Always make all connections with all equipment turned off!

Cubase LE plays back video films in AVI or Quicktime formats. Under Windows, video can be played back using one of the following playback engines: Video for Windows, DirectShow or Quicktime. This ensures compatibility with as wide a range of video files as possible. Under Mac OS X, Quicktime is always used as playback engine.

Generally there are two ways to play back video:

▪ Without any special hardware at all, using the computer CPU.
In this case, the "codec" is in software. While this will be fine in many situations it does put a limit on the size of the video window as well as the quality of the image.

▪ Using video hardware that for example connects to an external monitor.
Mac OS X: Using a FireWire port, you can play back video on an external monitor using a DV-to-analog converter or a DV camera (see also the chapter "Video" in the Operation Manual).
This is valid for DV video and QuickTime is used for playback.
Windows: Multi-head graphics cards which support overlay functionality can be used to display the video picture on an external monitor. The following manufacturers have working (and tested) solutions available: nVIDIA and Matrox.

If you plan to use special video hardware, install it and set it up as recommended by the manufacturer.

Before you use the video hardware with Cubase LE, we recommend that you test the hardware installation with the utility applications that came with the hardware and/or the Windows Media Player or Quicktime Player (Mac OS X) applications.

Optimizing audio performance

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

Two aspects of performance

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

Tracks and effects

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

Short response times (latency)

Another aspect of performance is response time. The term "latency" refers to the "buffering", i.e. the temporary storing, of small chunks of audio data during various steps of the recording and playback process on a computer. The more and larger those chunks, the higher the latency.

High latency is most irritating when playing VST Instruments and when monitoring through the computer, i.e. when listening to a live audio source via the Cubase LE mixer and effects. However, very long latency times (several hundred milliseconds) can also affect other processes like mixing, e.g. when the effect of a fader movement is heard only after a noticeable delay.

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

▪ Depending on your audio hardware, it may be possible to "trim" your latency times, usually by lowering the size and the number of buffers.
For details, refer to the audio hardware documentation, or, if you are using a DirectX driver under Windows, the dialog help.

System factors that affect performance

CPU and processor cache

It goes without saying that the faster the computer processor, the better. But there are a number of factors that affect the apparent speed of a computer: the bus speed and type (PCI is strongly recommended), the processor cache size and of course, the processor type and brand. Cubase LE relies heavily on floating point calculations. When shopping for a processor, please make sure you get one that is powerful in calculating floating point arithmetics.

Note also that Cubase LE features full support for multi-processor systems. So if you own a computer system with more than one processor, Cubase LE can take advantage of the total capacity and evenly distribute the processing load to all available processors. See "The advanced options" on page 20.

Hard disk and controller

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

Audio hardware and driver

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

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

This is especially true when using Cubase LE for Windows:

▪ Under Windows, ASIO drivers written specifically for the hardware are more efficient than a DirectX driver and produce shorter latency times.

▪ Under Mac OS X, audio hardware with properly written Mac OS X (Core Audio) drivers can be very efficient and produce very low latency times.
However, there are additional features currently only available with ASIO drivers, such as the ASIO Positioning Protocol.

Making settings that affect performance

Choosing a driver for your audio hardware

As described in the section "Selecting a driver and making audio settings in Cubase LE" on page 14, it is recommended to install and use a standard ASIO driver if available for your specific hardware. Check the manufacturers web site for the latest drivers etc.

Making audio buffer settings

Audio buffers affect how audio is sent to and from the audio hardware. The size of the audio buffers affects both the latency and the audio performance. Generally, the smaller the buffer size, the lower the latency. On the other hand, working with small buffers can be demanding for the computer. If the audio buffers are too small, you may get clicks, pops or other audio playback problems.

▪ Under Mac OS X, you can adjust the size of the buffers on the VST Audio System page in the Device Setup dialog.
You may also find buffer settings in the control panel for the audio hardware.

▪ Under Windows, you adjust the buffer size settings in the control panel for the audio hardware (opened by clicking the Control Panel button on the driver page in the Device Setup dialog).

The advanced options

On the VST Audio System page you will find the "Advanced options" section. Here you find advanced settings for the VST Engine, including a Multi Processing option. When this is activated (default setting if you have a hyper-threading or multiple-CPU system) and there is more than one CPU in your system, the processing load is distributed evenly to all available CPUs, allowing Cubase LE to make full use of the combined power of the multiple processors. See the dialog help for details.

Activating the "Lower Latency" option will basically disable the CPU overload protection, but allow for lower latencies. See the dialog help for details.

Optimizing processor scheduling (Windows only)

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

1. Open the Windows Control Panel from the Start menu and select System.

2. Select the Advanced tab and click the Settings button in the Performance section.
The Performance Options dialog appears.

3. Select the Advanced tab.

4. In the Processor Scheduling section, select "Adjust for best performance of: Background services"

5. Click OK to close the dialogs.

4

Tutorial 1: Recording Audio

Creating a new project

In this section we are going to explain how to create a new project, save a project and open a saved project.

When you first open Cubase LE an empty screen appears before you. You need to either create a new project or open an existing one.
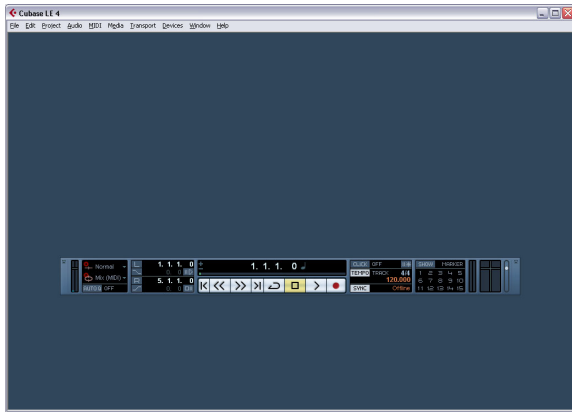
To Create a New Project:

1. Let's create a new project by selecting "New Project" from the "File" Menu.

2. The Templates dialog box will open up.
Templates are discussed in the "File Handling" section of the Operation Manual.

3. Choose "Empty".
This will create a new project with nothing in it.

4. Click "OK".

5. Cubase LE now wants to create a folder on the hard drive so that your Cubase LE project file and all of its related files are stored in one safe place.
It is important that every project gets stored in its own folder. Having many different projects stored in the same folder only leads to confusion later on.

6. Navigate to where you would like this project to be created.
NOTE: You are not saving the project at this point! You are creating a folder on the hard drive that your project will get saved into later. This will be explained very shortly.

7. Click "Create" on the PC or "New Folder" on the Mac to create a new folder for your project.

8. Give your new folder a name.
If your are going to name your project "My First Project" then you could call this folder "My First Project" or "First Project". What's important here is that you are creating a folder on the hard drive to store your project into it. This folder should have a unique name that is different than any other Cubase LE project you have created before.
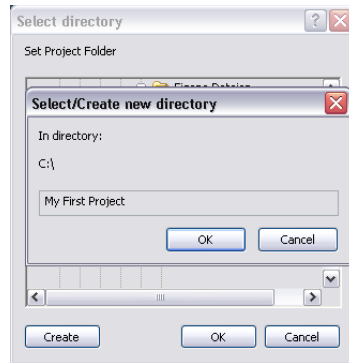
9. Click "OK" on the PC or "Create" on the Mac.
Your project folder is now created on the hard drive!

10. Now click "OK" on the PC or "Choose" on the Mac.

11. You should be looking at your very first project in Cubase LE now, Congratulations!
If you look at the top of the window in Cubase LE (called the Project window) you'll see the name of this project is "Untitled1". Proceed further to learn how to save your first project.

The name of the project
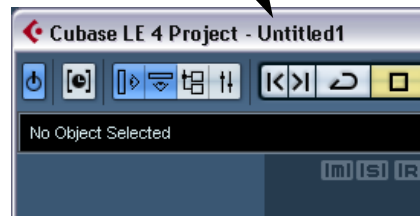
⚠ You're not done yet!
So far we've created a blank Cubase LE project. We have a folder sitting on the hard drive but we haven't saved the actual Cubase LE project yet.

To save a project

1. Select "Save As…" from the File menu.

The difference between Save and Save As are discussed in the chapter "File Handling" in the Operation Manual.

2. You will notice that Cubase LE is in the "My First Project" folder that you created earlier. This is where you want to save your project. Type in a name for your Project – you can use "My First Cubase LE Project" for example.

3. Click "Save" – and that's it!

To close a project

1. Make sure the Project window is selected.

The Project window is the main window that you work in. See the chapter "The Project window" in the Operation Manual.

2. Select "Close" from the "File" Menu.

If you have made any changes to the project since you last saved it, you will be prompted to "Save", "Don't Save" or "Cancel". Click "Save" if you want your changes saved.

To open a project

Now that we have saved and closed your project, let's show you how to open it.

Open a project using the "Open" command

1. Select "Open" from the "File" Menu.

Here you can navigate to the folder that has the project you wish to open.

2. Once you have found the project click "Open" and the project will load.

Open a project using the "Recent Projects" submenu

Cubase LE remembers recently open projects and lists them in the "Recent Projects" submenu under the "File" menu.

1. Select "Recent Projects" from the "File" Menu.

2. Choose the project you wish to open by clicking once on it.

Setting up the VST Connections

The VST Connections window allows you to set up the input and output signals of Cubase LE to your audio card. Cubase LE calls these "busses". This section will show you how to set the busses up so that you can get playback and recording working.

Make sure you read the chapters "System requirements and installation" on page 8 and "Setting up your system" on page 12, so that your audio hardware is properly setup before proceeding.

⚠ Load the project called "VST Connections" found in the "Tutorial 1" folder.

Adding outputs

1. Open the "Devices" menu and choose "VST Connections".

The default key command for this is [F4].

▪ You'll see two tabs at the top of the window: Inputs and Outputs.

2. Let's choose "Outputs" first. We want to start from scratch and remove anything that is currently there, just in case it's set up incorrectly. If you see anything in the "Bus Name" column, right-click with the mouse and choose "Remove Bus".
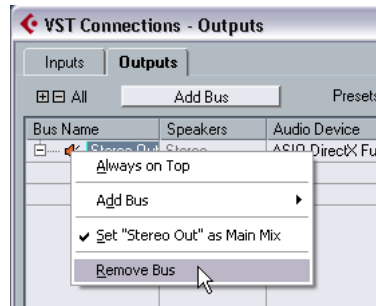
3. Now click the "Add Bus" button. Choose "Stereo" for configuration and "1" for count and click OK.

This has now added a new stereo bus (Left and Right) allowing us to have audio in Cubase LE route to our audio hardware.

4. Since we mainly listen to our music as a stereo mix, all we need is a stereo output.

5. Depending on your audio hardware, your outputs should be setup now. You can however select the outputs of your choice from the "Device Port" pop-up menu.

Normally you'll want to choose "Out 1" and "Out 2" or "Left 1" and "Right 2" as these are the main stereo outputs of your audio card. More sophisticated setups may require you to choose different outputs and even add more busses.
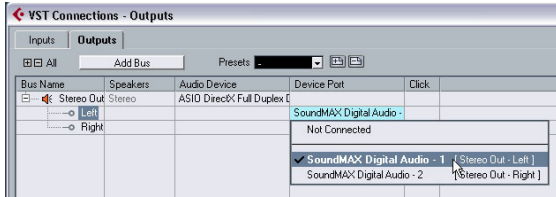
Adding Inputs

Now let's open the "Inputs" tab and set up the inputs we are going to use for recording into Cubase LE.

1. Do the same as mentioned above for the outputs. Right-click and select "Remove Bus".

2. Click the "Add Bus" button. Choose "Stereo" for configuration and "1" for count and click "OK".

This has now added a new stereo bus (Left and Right) allowing us to have audio from our audio card's input route to Cubase LE for recording.

▪ Having a stereo input is useful for recording audio with two channels. An example of this is recording a keyboard with a left and right audio channel. If we wanted to record in mono or with one channel we can make separate busses. Let's do this now.

1. Click the "Add Bus" button. Choose "Mono" for configuration and "2" for count and click "OK".

This has now added a two new mono busses allowing us to have audio from our audio card's input route to Cubase LE for recording.

2. Next click in the "Device Port" column to select the audio inputs of your audio card for the stereo and mono inputs.

In our case we have the MI4 interface so we are selecting "MI4 Channel A" and "MI4 Channel B" for our inputs.
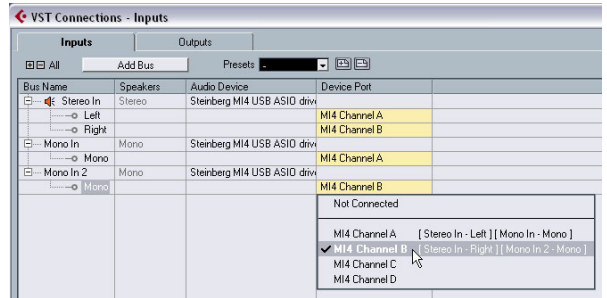
That's it! You should now be ready to record audio in Cubase LE and then play it back.

Level settings and recording

For this section, we are going to record a bass guitar in mono from the input "Mono In". Make sure you have your audio card set up and you have read through the section "Setting up the VST Connections" on page 24.

⚠ Load the project called "Recording" found in the "Tutorial 1" folder.

Adding a mono track

1. Now let's add an audio track to record to. Open the Project menu and choose "Audio" from the "Add Track" submenu.

2. Choose "Mono" for Configuration and "1" for Count. Click "OK".

This adds a mono audio track to our Project window.

3. Click on the new track you've created and make sure the Inspector is shown.

The Inspector allows us to see and manipulate a lot of information for the selected track.

Click to open the Inspector

The Inspector
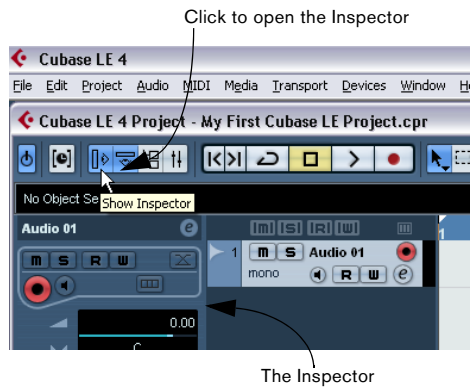
4. Make sure that "Mono In" is selected for the audio track's input and that "Stereo Out" is selected for the audio tracks output.

You may have different inputs and outputs based on your audio hardware. See the chapter "VST Connections" in the Operation Manual for more detailed information. By setting "Mono In", we will be able to record the audio from the left input of our audio card into a track in Cubase LE. Setting the output to "Stereo Out" allows us to hear what we are recording.

Turning on the metronome click

We'll want to have a click or metronome play in the background as we record the bass guitar so that what we record aligns with the bars and beats in Cubase LE.

1. Activate the "Metronome/Click" button on the Transport panel.

2. If you would like a two bar count in before you record, also activate the "Precount/Click" button.

3. We now need to set the speed or the tempo of our project. This will directly affect how fast the click plays. You can set the tempo just below the click.

We have a setting of 125 which means 125 BPM (beats per minute).

Setting levels

We have a bass guitar playing through an amplifier with a microphone in front of the amplifier's speaker. This microphone is plugged directly into the Steinberg MI|4 microphone input. We have set the level on the MI|4 so that we have enough volume without clipping.

1. Clicking the Monitor button will allow us to hear the bass guitar.

You should see and hear the audio coming in to the right of the track.

Audio coming into this track
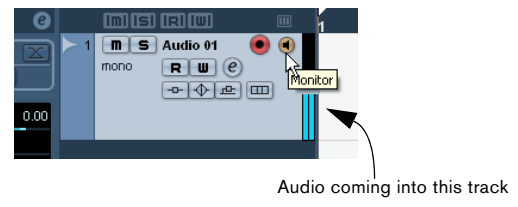
2. Now click the "Record Enable" button on the track.
Setting the track to Record Enable lets Cubase LE know that you want to record on this track and no other one. You can have many tracks Record Enabled at a time.

3. In the Inspector, open the "Channel" tab.
This will display the channel fader for the selected track.

Click here to display the channel fader.

▪ Do the best you can to send the maximum amount of volume to the audio inputs of your audio card before you hear any distortion. Most audio cards show some kind of level or volume indication. If yours doesn't, don't worry we can change the amount here.

4. Move the fader up or down so that the volume is loud enough without going into the red on the channel meter. If you go into the red you may cause clipping or distortion. You will see a line near the top of the channel meter – make sure the level does not go over this line!

Do not allow the audio level to go past this line!

This is the safe area for recording
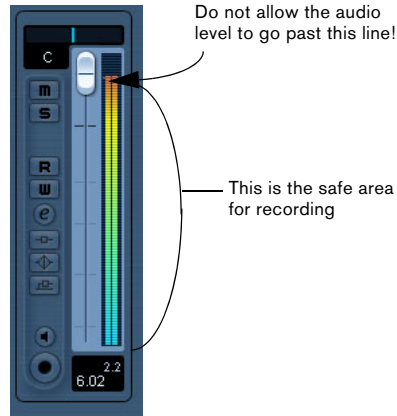
▪ Once the level is set, you are ready to record!

Recording bass guitar

1. Position the cursor at the beginning of the project.
This will make sure we start recording on bar 1.
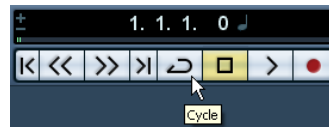
2. Click the Record button to record the bass guitar.
Since the "Precount/Click" button is activated, we'll hear two bars of click before recording begins.

3. Click "Stop" when you are finished.

4. Turn off the Monitor and Record Enable buttons on the track so that we don't hear the input or record on the track any more.

Congratulations! You have just recorded your first piece of audio in Cubase LE. Move ahead to the next section to learn how to play back audio.

Playback

We are going to learn how to play back audio in Cubase LE. You might think this is very simple – just hit "Play". It is actually this simple but there are a few tricks to learn so that you'll be playing back what you want with precision.

⚠ Load the project called "Playback" found in the "Tutorial 1" folder.

To start playback

There are a few ways you can play back in Cubase LE.

▪ Click the "Start" button on the Transport panel.

▪ Press the space bar on your computer keyboard.
This toggles between start and stop.

▪ Press the [Enter] key of the numerical computer keypad.

▪ Double-click in the lower half of the ruler.

Double-click in the lower half of the ruler…
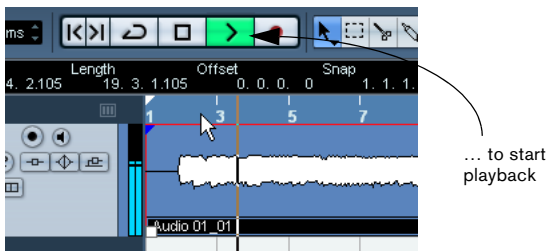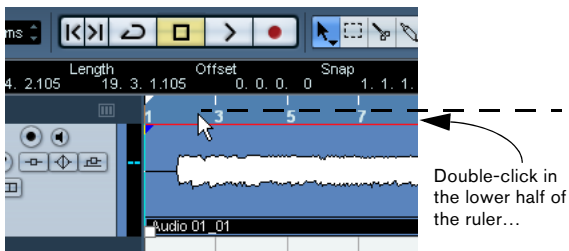
… to start playback

▪ Select the audio event called "Audio 01_01" and choose "Loop Selection" from the Transport menu.

⚠ The default key command for this is [Shift]+[G]. This is the quickest way to loop an audio event and start playback!

To stop playback

▪ Click the "Stop" button on the Transport panel.

▪ Clicking the "Stop" button twice moves the cursor to the position in the project where you started playback.

▪ Press the space bar on your computer keyboard.
This toggles between stop and start.

▪ Press the "0" key of the numerical computer keypad.

Cycle playback

Cubase LE has the ability to loop or cycle a section of your project. To set the cycle location you need to use the left and right locator.

1. On the Transport panel, set the left locator to "1" and the right locator to "5".
This tells Cubase LE that we want to loop or cycle between bars 1 and 5. Meaning we will have a 4 bar loop since the end of bar 4 is the beginning of bar 5.

The left locator set to "1".

The right locator set to "5". Cycle activated.

2. Make sure that the "Cycle" button is activated.

3. Click the Start button on the Transport panel and Cubase LE will play looping over and over until you click "Stop".

⚠ Don't forget – you can set the locators to encompass the selected event, turn on "Cycle" and begin playback all by the key command [Shift]+[G].

Recording modes with cycle off

There are three different modes for recording when the cycle is turned off. This is called linear recording. The three modes are:

- Normal
- Merge
- Replace

When recording audio, "Normal" and "Merge" are the same. Selecting either of these will allow you to record over the top of another audio event and it will appear as an overlap. You can then select between the overlapping events and determine which one will play. This is discussed in the section "Cycle recording" on page 29.
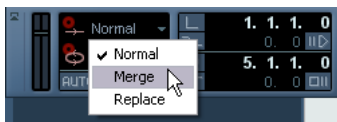
"Replace" mode when used will not overlap the audio if there is already some on the track. It will split or cut the audio where the recording takes place replacing what was there previously. Keep in mind though that the audio being replaced is not permanently deleted. It is only cut or trimmed away allowing you to recover it later.

Cycle recording

You can record audio while "cycle" is on.

⚠️ Load the project called "Cycle Recording" found in the "Tutorial 1" folder.

So far we've shown you how to add tracks, record and playback. Now we are going to add an electric guitar to our bass guitar using cycle recording. Recording with cycle on allows us to make multiple passes of our recording and then pick the best take.

If you haven't reviewed the previous sections in this tutorial, please do as we are going to move a little faster now.

Recording electric guitar

1. Let's add another "Mono" audio track.

2. You can see now that we have a track called "Audio 01" and "Audio 02". Up to now we haven't been concerned about naming the tracks but let's do this now.
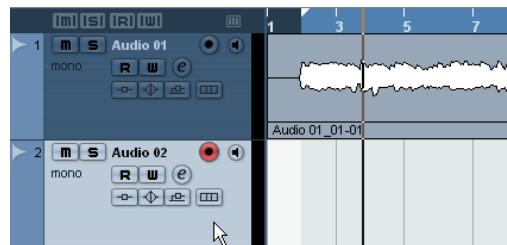
3. Double-click on "Audio 01" and re-name it "Bass".

4. Double-click on "Audio 02" and re-name it "Elec Guitar". That looks a lot better now.

- It's always good to name your tracks before you start to record. This way the audio event will take the name of the track. Since "Audio 01" was the name of our first track the audio event is named "Audio 01_01". The suffix "_01" being the first event recorded on the "Audio 01" track. We'll show you how to re-name your audio files in the chapter "Tutorial 2: Editing Audio" on page 31.

5. Make sure "Cycle" is activated, set the left locator to 2 and the right locator to 18.
This will loop or cycle between bars 2 and 18.

Right Locator Position

6. On the Transport panel, make sure "Mix (MIDI)" is selected for the "Cycle Record Mode".
This will allow us to record the electric guitar, and as each cycle repeats a new take will be created. We will then choose the best take to keep as our guitar line.

Cycle Record Mode

7. Activate the Record Enable and Monitor buttons on the "Elec Guitar" track.

8. Click the "L" button on the Transport panel once.
This will make sure we start recording at the left locator.

9. Click the "Record" button on the Transport panel.
As you record the guitar, let the cycle repeat three times so we have three different guitar takes.

10. Click "Stop" when you're finished. We've just recorded three different guitar takes. Now let's figure out how to select the best sounding one.

⚠ Load the tutorial called "Cycle Recording 2" found in the "Tutorial 1" folder.

Selecting different takes

1. Right-click on the new guitar audio event that we just recorded and choose a take from the "To Front" submenu.
Cubase LE has recorded all of the passes we made when we were recording in loop mode (Cycle Recording). These passes are called "Takes". In our example we have three different guitar takes. We can pick between them and choose which one sounds best.

Current take   Other takes
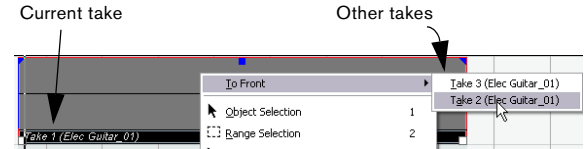
2. Listen to the different takes and when you are done, choose "Take 1".

5

Tutorial 2: Editing Audio

Event operations

In this section we'll learn how to edit events or parts. This includes rename, resize, split, glue, move, copy, repeat, mute, erase and adding a fade.

⚠️ Load the project called "Event Operations" found in the "Tutorial 2" folder.

Renaming

If we look at the audio events that we recorded earlier, we notice that the bass track has an audio event on it called "Audio 01_01". This is because the name of the track was originally "Audio 01" and the suffix "_01" means that it is the first audio file to be recorded on the track. The second audio file would be called "Audio 01_02".

Naming your audio files keeps your project clean and easy to understand. Let's rename "Audio 01_01" to "Bass":

1. Choose the Object Selection tool.
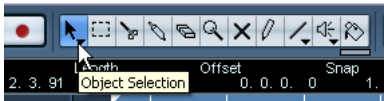
2. Click on the event "Audio 01_01".

3. Make sure "Show Event Infoline" is activated on the toolbar.

▪ The "Event Infoline" gives us detailed information about an object or objects that are currently selected in the event display.

4. Change "Audio 01_01" to "Bass" underneath the word "File".
This changes the audio file's name directly on the hard drive – easy!

5. Notice that our audio event now says "Bass".
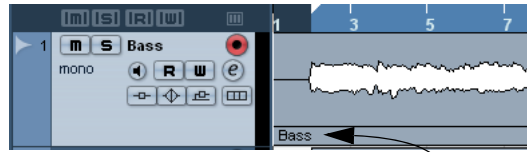
The name has changed from "Audio 01_01" to "Bass".

Resizing

You resize an event by adjusting the start and/or end of the event. Used in combination with the split tool this is usually all the editing you'll need.

1. Choose the Object Selection tool.

2. Click on the event you wish to resize.
In our case let's change the "Bass" event.

There is extra space on either side of the Bass audio event that we don't want.

White squares appear on the bottom left and bottom right of the event. Resize the event with these.
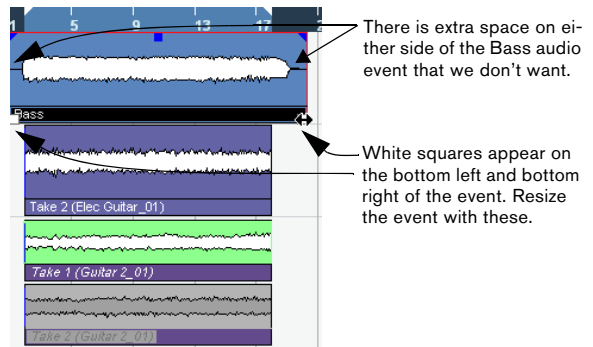
3. Position the cursor over one of the squares at the bottom right or bottom left of the event. Click and adjust the "Bass" event so that it lines up with "Elec Guitar_01".
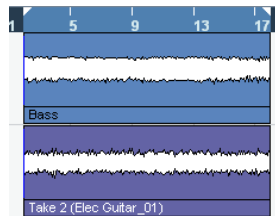
Splitting

Splitting is used to cut events. You can split or cut an event wherever you want or split them evenly to bars and beats.

Splitting with "Snap" off

Splitting with "Snap" off allows you to cut anywhere without locking to any kind of reference like bars and beats.

1. Choose the Split tool.

2. Make sure "Snap" is off (not highlighted).
Snap allows you to edit to various time frames. The most common one is bars and beats. Meaning you can cut exactly to the bar with "Snap" turned on. With it turned off you can cut anywhere. See more about "Snap" in the chapter "The Project window" in the Operation Manual.

3. You can now split or cut the audio anywhere by clicking on the event.
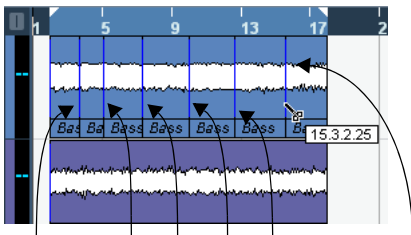
Here are the splits that were made to the Bass event.

4. Undo your actions by choosing "Undo Split" from the Edit menu as many times as you used the Split tool.
Make sure there are no splits in the "Bass" event any more.

Splitting with "Snap" on

Having "Snap" on allows you to split or cut to a time reference. For example, if you want to cut the "Elec Guitar" track to bars or beats.

1. Choose the Split tool.

2. Make sure "Snap" is on.
Snap allows you to edit to various time frames. The most common one is bars and beats. Meaning you can cut exactly to the bar with "Snap" turned on. With it turned off you can cut anywhere. See more about "Snap" in the chapter "The Project window" in the Operation Manual.
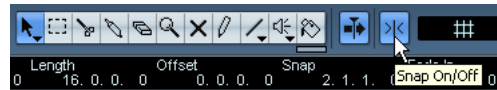
3. If you are having trouble seeing anything beyond the "Tool Buttons", right-click in the toolbar (the top bar that the "Tool Buttons" are on).
This allows you to change what you see at the top of the Project window. Customization is in the heart of Cubase LE.

Right-click in the toolbar.

There is more to see but your screen resolution may prevent you from seeing everything.
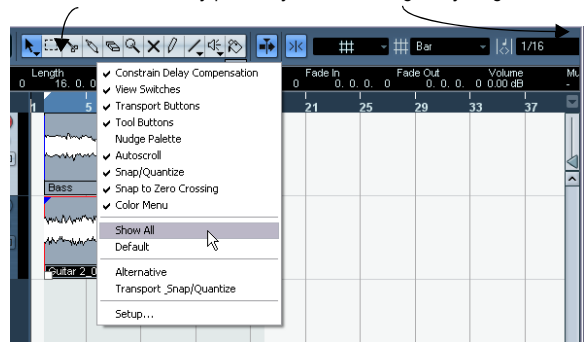
4. Choose "Show all" to see all available tools.

5. Next, right click again and choose "Nudge Palette" so that it is hidden from view.
Now we can see enough for us to continue on with the Split tool.

6. With most of the snap features in view, choose "Grid" from the Snap mode pop-up menu to the right of the Snap button.
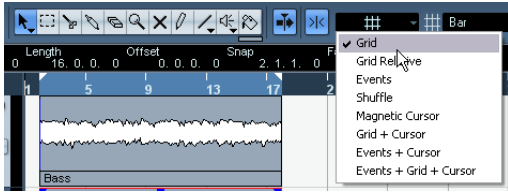
This means we'll be snapping to a grid.

7. Next choose "Bar" as the "Grid Type".

This means you will split to bars.

8. You can now split the "Elec Guitar_01" event precisely to the bar. Cut on bars 6, 10 and 14.
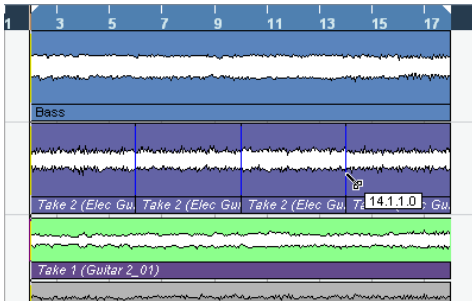
Splitting with [Alt]/[Option]

1. Choose the Split tool.

2. Hold down [Alt]/[Option] and click on the bass event at bar 3 and the length of the split will be repeated until the end of the event.
You can try this with "Snap" on or off.

3. Select "Undo Split" from the Edit menu and return the bass to the way it was.

Gluing or joining events

Using the Glue tool allows you to join events together that have been cut using the Split tool.

1. Choose the Glue tool.
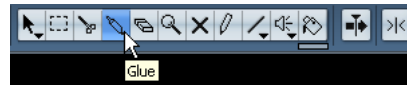
2. Glue together the split events in the "Elec Guitar" track by clicking just before each split.
Let's make sure we glue all of them.
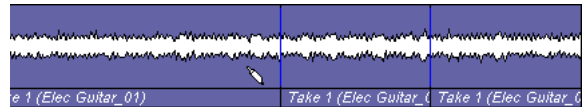
Moving events

1. Choose the Object Selection tool.
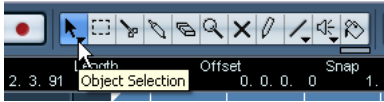
2. Move all the events in the Project window from bar 2 to bar 1. Click and hold the mouse on an empty area of the Project window. Drag to create a selection of all the events. When you release the mouse button, all the events will be selected.
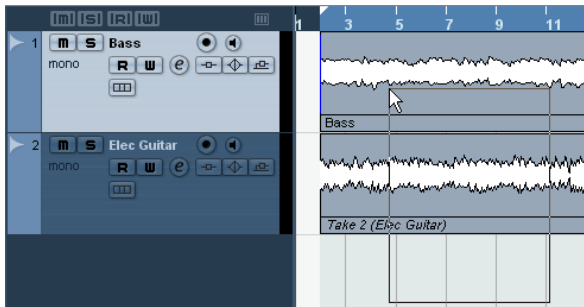
3. With all the events selected, click and drag them to bar 1.
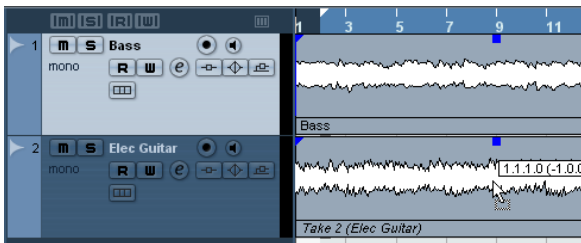
4. Click on an empty area of the Project window so that no event is selected.

Copying events

Copying can be used to copy an event to another area in the Project window. If you want to make several copies in one go, see "Repeating" on page 36.

Using Copy and Paste

1. To copy an audio event, click on the desired event and choose "Copy" from the Edit menu.
In our case let's choose the "Elec Guitar_01" event.

2. Position the cursor at the point in the project that you wish the copy to be made.
We'll put our cursor at bar 17.

3. Make sure you click on the track that you want the copied event to be copied to. Choose "Paste" from the Edit menu.
It is possible that you may have another track selected. If so the "Paste" command would paste it to a different track. Always note the track you have selected before choosing "Paste".
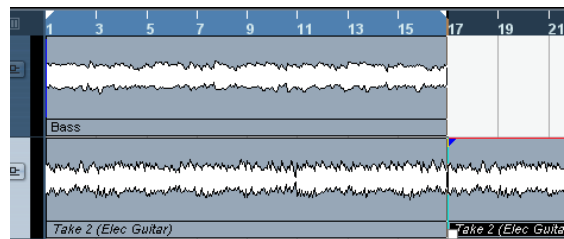
4. Now we have two guitar events. Note that we also copied the takes that were on the guitar track. We can use these later.

Using the [Alt]/[Option] key

1. Choose the Object Selection tool and hold down [Alt]/[Option].

2. We are going to copy the "Guitar 2" events. Remember that there are three events. Select all of the "Guitar 2" events by clicking and dragging as described above.

3. Click and hold the selected events and drag to the position you wish the copy to be made. Then release the mouse button.

Don't worry about the "Scissor" icon that appears. As soon as you click and hold on the event you are copying it switches to an arrow with a "+" sign indicating that you are copying.
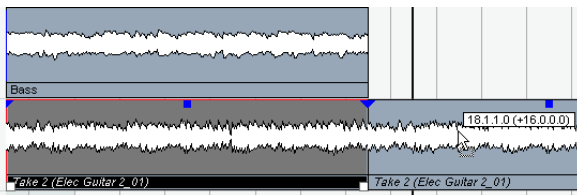
Repeating

Repeats are great for repeating something over and over directly after the event you want to repeat.

1. Click the bass event with the Object Selection tool.

2. Choose "Repeat" from the Edit menu.
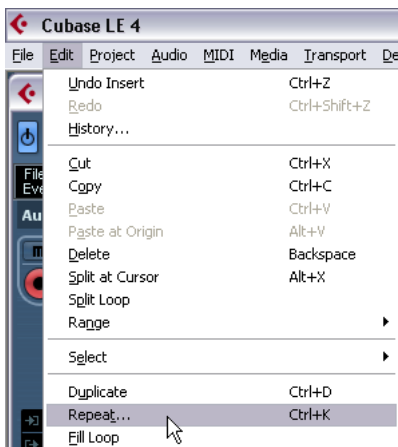
3. In the dialog that opens, choose how many copies you wish to make by increasing the "Count" field.
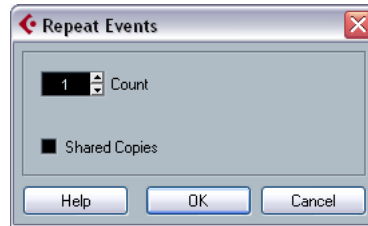
▪ You can choose to select "Shared Copies" if you want. Shared copies allow you to make aliases to the original event. This means that if you make changes to the original event (such as processing or editing), the copies will reflect those changes. This is a big time saver!

4. Click "OK" and the repeat will be placed directly after the Bass event.
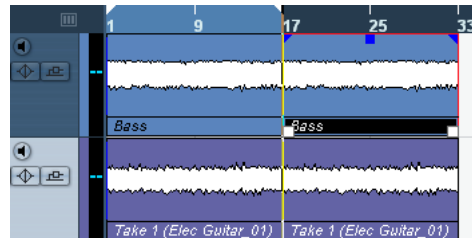
Muting

Muting an event stops you from hearing just that event. You may want to mute events on a track so that the track continues to play except for the events you mute. Note that this is different from muting a track.

1. Choose the Mute tool.

2. Click on the event you wish to mute.
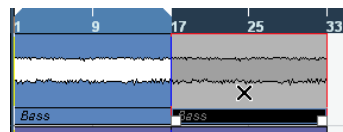
3. To un-mute an event, click on the muted event with the Mute tool again and it returns to normal.

▪ If you drag with the Mute tool you can mute a number of events at a time. Equally this will un-mute events that are muted.

Erasing

1. Choose the Erase tool.

2. Click on the events you wish to erase.

Adding a fade

You can add a fade to an event to give the effect that the event is fading in or fading out.

1. Choose the Object Selection tool.
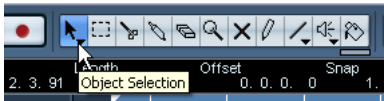
2. Click on the event you wish to add a fade to.
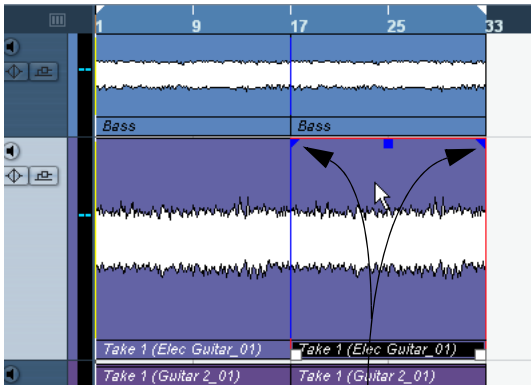
Notice the blue triangles that appear at the top left and top right of the event.

3. Click on one of the blue triangles and move it so that a fade appears.
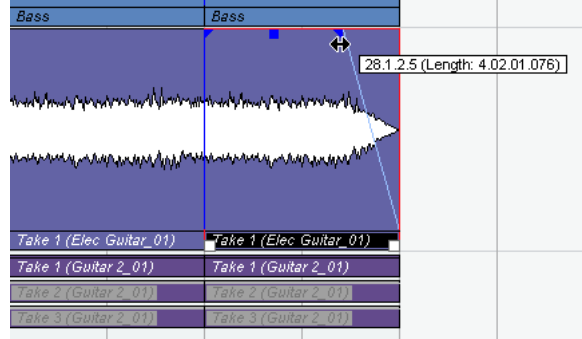
4. For more advanced fades you can double click on the fade area to open up the fade dialog. See the chapter "Fades and Crossfades" in the Operation Manual for more information.
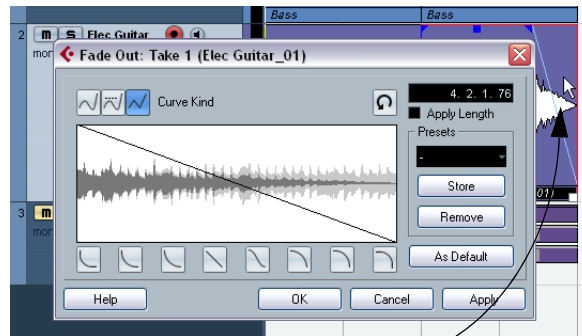
Double click here to open the fade dialog.

The Sample Editor

The Sample Editor is primarily used for detailed editing. It can be used for detailed sample drawing and Hitpoint editing.

The Sample Editor is explained in its own chapter in the Operation Manual. Before we go into the Sample Editor, let's explain events and parts. Audio events are considered 'raw' pieces of audio that sit in the Project window. Audio parts are a collection of events grouped together.

This is what an audio event looks like.
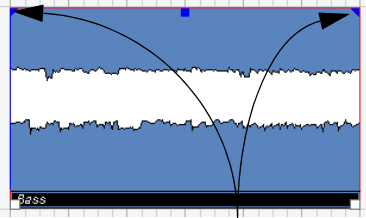
Notice the blue triangles a the top.

This is what an audio event inside a part looks like. Parts contain either audio or MIDI events.
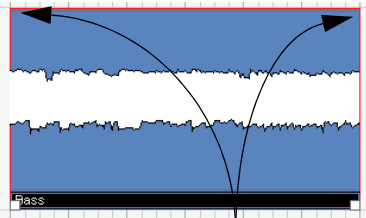
Notice there are no blue triangles at the top.

▪ To open the Sample Editor, double-click an audio event.

Double-click on the audio event to open the Sample Editor.
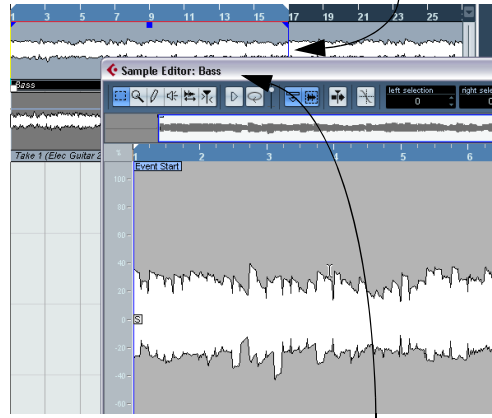
You know you are in the Sample Editor by looking at the top left hand

▪ If you double-click on an audio part, you will open the Audio Part Editor instead.

You will need to double-click on the audio event once more to reach the Sample Editor.

Processing audio

Cubase LE has the ability to make changes to the audio in more ways than splitting and resizing. You can Normalize, Reverse and Silence to name a few. For a full explanation on processing audio, see the chapter "Audio processing and Functions" in the Operation Manual.

⚠ Load the project called "Processing Audio" found in the "Tutorial 2" folder.

You can process the whole audio event or use the Range Selection tool and select just the section of audio you want.
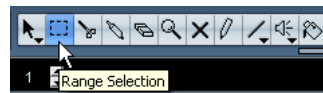
Let's show you how to Normalize and Reverse an audio event.

Normalize

Normalize raises the volume of the audio to the desired amount. Usually you adjust the slider to "0" dB or "-1" dB so that you get the maximum volume without clipping your audio. A common use for Normalizing is to raise the level of audio that was recorded at too low an input level.

1. With the Object Selection tool, click on the audio event you wish to change.
You can also use the Range Selection tool and select the section of audio you want.
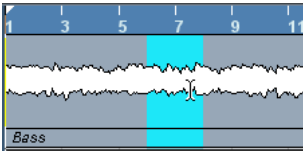
2. On the Audio menu–Process submenu, select "Normalize".
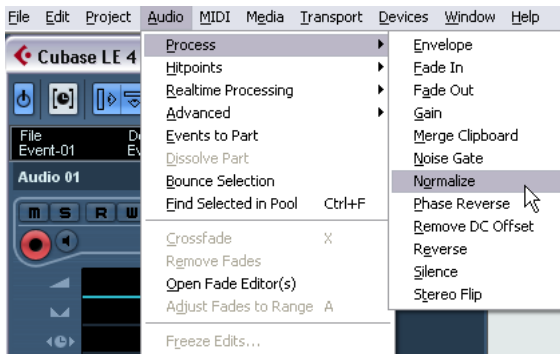
3. Adjust the slider to the amount you desire. A setting of "0" db or "-1" db is common.
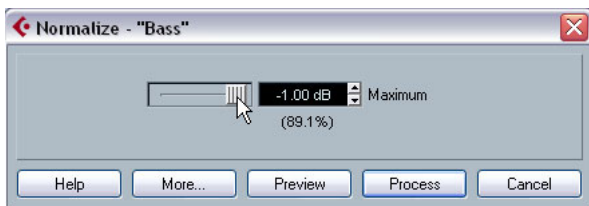
4. Click the Process button and your audio is now normalized.
For a description of the "More" and "Preview" buttons, see the chapter "Audio Processing and Functions" in the Operation Manual.

Reverse

The "Reverse" command reverses the audio selection. This will sound as if you were playing a tape backwards.

1. With the Object Selection tool, click on the audio event you wish to change. In our case, let's pick the bass audio event.
You can also use the "Range Selection" tool and select the section of audio you want.

2. On the Audio menu–Process submenu, select "Reverse".

3. If you have copied events in the Project window, this dialog box will open. It asks if you want all the copied events changed (Continue) or if a new version is to be created so that only your selection is affected (New Version).
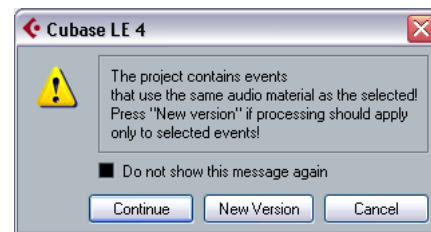
4. Clicking either "Continue" or "New Version" will reverse your audio.

6

Tutorial 3: Recording and Editing MIDI

Introduction

In this chapter, we are going to add some more instruments to our song. In the previous tutorials, we have recorded audio. Now we are going to record using MIDI.

There are two ways in which we can have MIDI sounds appear in Cubase LE: via virtual instruments, that is a synthesizer inside your computer or through the use of a traditional hardware keyboard.

This tutorial will focus on virtual instruments.

Creating an Instrument Track

⚠ Load the project called "Recording MIDI 1" found in the "Tutorial 3" folder.

1. Let's start by adding a string part to our song. From the Project menu–Add Track submenu, select "Instrument".
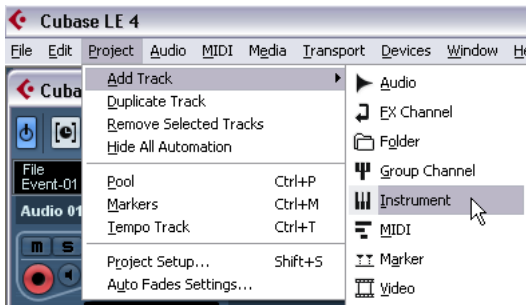
2. From the "Instrument" pop-up menu, choose "HALion-One" then click "OK".

An instrument track is created below the selected track in the Project window.

3. Make sure the "Inspector" is shown.

4. Click in the name field of the instrument track. It should be the only instrument track you created so the name should be "HALionOne 01". We can double click on this and change it to "Strings".

5. Click on the "Edit Instrument" button to open the control panel for "HALionOne".
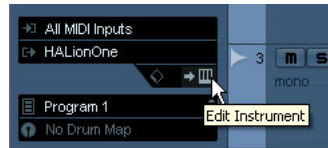
6. If you want "HALionOne" to stay always on top while you are working you can right click on the bar near the top of the instrument and select "Always on Top".

Right-click here to select "Always on Top".

Browsing sounds

We are now going to load sounds into our virtual instrument "HALionOne".

⚠ Load the project called "Recording MIDI 2" found in the "Tutorial 3" folder.

1. Click the "Preset" button in "HALionOne" and choose "Load Preset" from the pop-up menu.
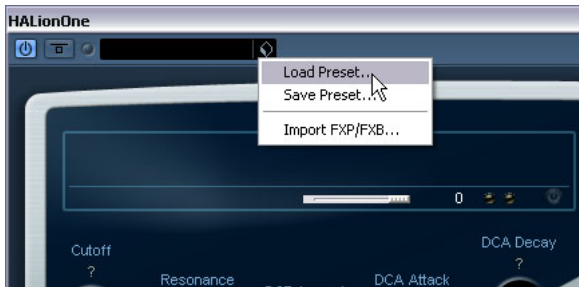
2. In the "Category" section, make sure only "Strings" is selected by deselecting anything else and clicking on "Strings". You have filtered the list to only show strings. Choose a string sound from the list on the right, e.g. "StereoST1". Then click "OK".
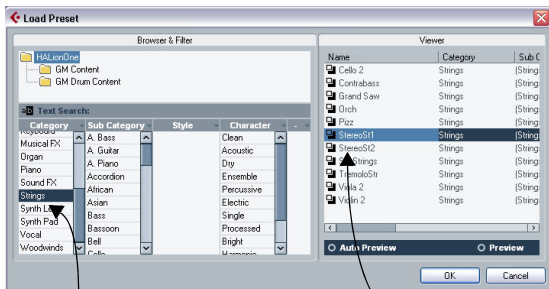
Category · Filtered List

MIDI recording

Now that we have our sound, let's record something. Recording MIDI is very similar to recording audio, see the chapter .

Setting MIDI input

1. Make sure you have a MIDI keyboard connected to your computer either directly through USB or a MIDI interface. See the chapter for information on setting up MIDI in your computer.

2. We want to have our MIDI keyboard routed to this track and play "HALionOne". Make sure the "Inspector" is shown so we can see our MIDI input and output routing.

3. Next, on the input routing pop-up menu, choose the MIDI input you wish to use. Most people leave this on "All MIDI Inputs" since you don't have to worry about which input is which. "All MIDI Inputs" takes the MIDI signal from all your inputs and routes it to this track. There are some cases where you wouldn't want this but for 99% of the time you'll be safe with this option selected.

The MIDI input routing pop-up menu.

4. Below the MIDI input routing pop-up menu, you can set the MIDI output. This is set to our virtual instrument "HALionOne". If for any reason you need to change this to another instrument you can do this here.

5. Activate the Record Enable and Monitor buttons on the track and play some notes on your MIDI keyboard.
You should see and hear the MIDI signals coming in to the right of the track.
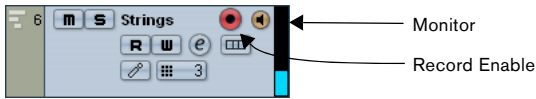
Monitor

Record Enable

Setting the track to Record Enable lets Cubase LE know that you want to record on this track and no other one. You can have many tracks Record Enabled at a time.

6. Set the left locator to bar "1" and the right locator to bar "57".

7. Make sure Cycle is turned off.
We are going to record without looping. We'll cover MIDI cycle recording in the section "Cycle recording" on page 44.

8. Press [1] on the numeric keypad of your computer keyboard.
This will move the cursor to the left locator.

9. Click the Record button and record a few bars of music.

10. Click the Stop button when you are finished.

11. Turn off the Monitor and Record Enable buttons on the track so that we don't hear the input or record on the track any more.
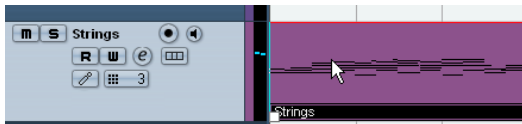
Congratulations! You have just created your first MIDI recording in Cubase LE. Move ahead to the next section to learn how to play back MIDI.

MIDI playback

We are now going to learn how to play back MIDI in Cubase LE. You might think this is very simple – just hit "Play". It is actually this simple but there are a few tricks to learn so that you'll be playing back what you want with precision.

⚠ For this section, make sure you load the project "MIDI Playback" found in the "Tutorial 3" folder.

To start playback

▪ Click the Start button on the Transport panel.

▪ Press the space bar on your computer keyboard.
This toggles between start and stop.

▪ Press the [Enter] key of the numerical computer keypad.

▪ Double-click in the lower half of the ruler.

▪ Select the MIDI event called "Strings" and choose "Loop Selection" from the Transport menu.

⚠ The default key command for this is [Shift]+[G]. This is the quickest way to loop the selected MIDI event and start playback!

To stop playback

▪ Click the Stop button on the Transport panel.

▪ Clicking the Stop button twice moves the cursor to the position in the project, where you started playback.

▪ Press the space bar on your computer keyboard.
This toggles between stop and start.

▪ Press the "0" key of the numerical computer keypad.

Cycle playback

Cubase LE has the ability to loop or cycle a section of your project. To set the cycle location you need to use the left and right locator.

1. On the Transport panel, set the left locator to "1" and the right locator to "5".
This tells Cubase LE that we want to loop or cycle between bars 1 and 5. Meaning we will have a 4 bar loop since the end of bar 4 is the beginning of bar 5.

The left locator set to "1".

The right locator set to "5".　　　　　　Cycle activated

2. Make sure that the Cycle button is activated.

3. Click the Start button on the Transport panel and Cubase LE will play looping over and over until you click Stop.

Recording modes with cycle off

There are three different modes for recording when the cycle is turned off. This is called linear recording.

- Normal
"Normal" allows you to record on top of previously recorded MIDI. You will be able to see both MIDI parts on the screen overlapping each other.

- Merge
"Merge" joins or merges any MIDI data previously recorded on the track. An example of this is when recording drums – adding the kick drum on one pass and then the snare drum on another pass. The MIDI data is then joined together as one MIDI part.

- Replace
"Replace" mode will replace or overwrite any previous MIDI recording that was on the track.
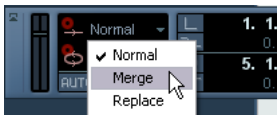
Cycle recording

You can record MIDI while the Cycle is activated.

⚠ Load the project called "Cycle Recording MIDI" found in the "Tutorial 3" folder.

Recording MIDI drums

1. Let's add another "Instrument" track and choose "HALionOne" as our instrument.

2. Click in the program field in the Inspector and load up a drum sound of your choice found under under the category "Drums&Perc", sub-category "Drumset GM".

3. Rename this new track to "Drums".

4. Make sure the Cycle button is activated and set the left locator to "9" and the right locator to "13".
This will loop or cycle between bars 9 and 13.

5. On the Transport panel, make sure "Mix (MIDI)" is selected for the "Cycle Record Mode".
This will allow us to record the drums, and as each cycle repeats, the MIDI will mix together into one part. This makes it easy to create complex drum rhythms.

Cycle Record Mode

6. Activate the "AUTO Q" button. This is the automatic quantize function which will lock our MIDI to the beat as we record it. Great if we play off time a bit.

7. Next we have to set the value of our quantize. This is so Cubase LE knows what to lock our MIDI notes to. Choose "1/8" notes from the "Quantize Type" pop-up menu.
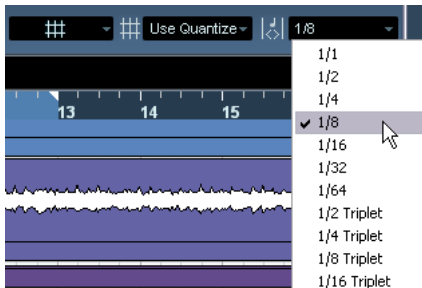
8. Activate the Record Enable and Monitor buttons on the "Drums" track.

9. Click the "L" button on the Transport panel once.
This will make sure we start recording at the left locator.

10. Activate the Record button on the Transport panel and let's record hi-hat on the first pass, kick on the second pass and then finally snare on the third.

11. Hit "Stop" when you're finished.

12. Now move and copy this drum part so that the rest of the song has a drum beat.
Move and copy were discussed in the chapter "Tutorial 2: Editing Audio" on page 31.
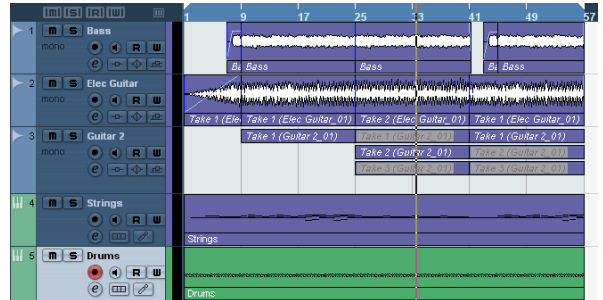
13. Glue all the parts together as one.
The Glue tool was discussed in the chapter "Tutorial 2: Editing Audio" on page 31.

The Key Editor

The Key Editor is where we can make changes to our MIDI data.

⚠ Load the project called "Key Editor" found in the "Tutorial 3" folder.

Erasing MIDI notes

1. Double-click on the "Drums" part so that the Key Editor opens.

Here we can see our drum notes lined up with a keyboard on the left. At the bottom we have the velocity of each of the MIDI notes and at the top we can see the time ruler.

Keyboard notes   Time ruler

The Drum MIDI velocities   The Drum MIDI notes
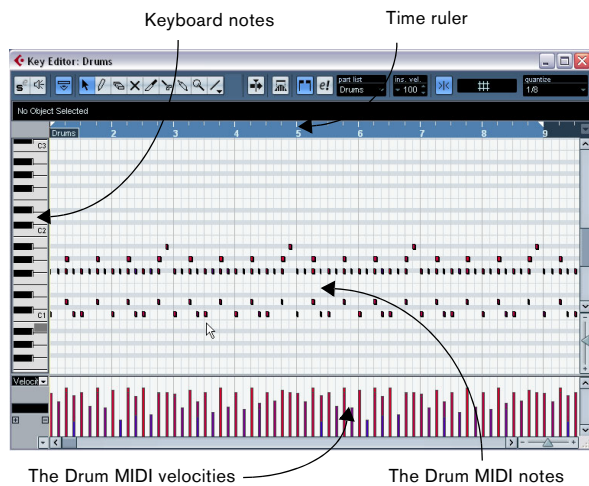
2. We want the song to start off with hi-hat and kick drum. Erase the snare by clicking once and holding the mouse while dragging a selection over the snare drum. Make your selection from bars 1 through 8.

A common term for this is to "lasso" the notes.
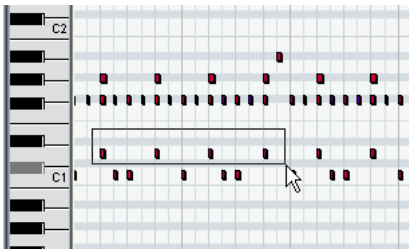
3. Press the [Delete] key to delete the snare notes.

4. Zoom in on the bar 1 and delete all the hit-hat notes with the Erase tool of the Key Editor so that you only hear 1/4 notes.

5. Now erase all the other hi-hat notes from bar 2 through 8 using any method you like.
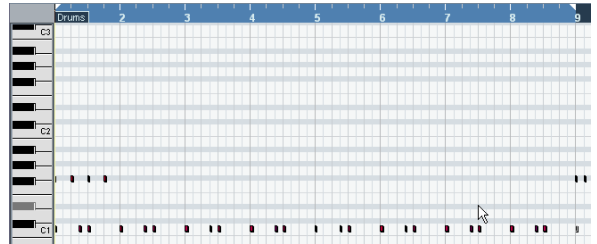
Copying MIDI notes

Let's copy the MIDI notes in bar 1 to bars 2 through 8.

1. Lasso the hi-hat notes in bar 1. Hold down [Alt]/[Option] and drag the notes in bar 1 to bar 2. This copies them.
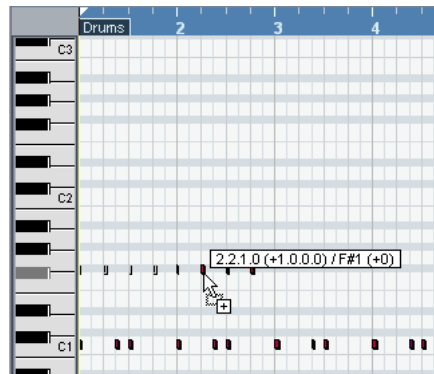
2. Continue copying until bar 9.

Creating or drawing in MIDI notes

Now we need to draw in a cymbal crash in bar 25.

1. Scroll over to bar 25 and click on the piano roll on the left hand side of the Key Editor. Click on the notes until you hear a crash cymbal that you like. There is a good one at C#2.
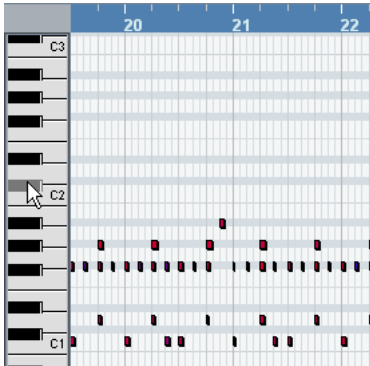
2. Select the Pencil tool of the Key Editor and draw in the crash cymbal note at bar 25 by clicking and dragging for a full bar.

Click and drag with the Pencil tool
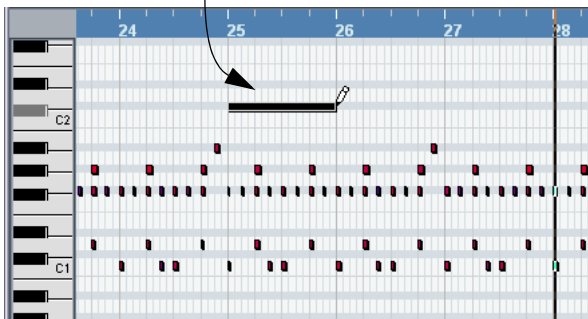
The Controller lane

The "Controller Lane" allows us to add in or modify MIDI data such as velocity and controller information. The most common use for this is to edit velocity, pitch bend and controller numbers for things like filter etc.

If you find that the MIDI velocity is too loud or quiet on certain notes, you can view and edit them at the bottom of the Key Editor.

1. Make sure you can see the Controller Lane by clicking on the "Controller Lane Presets" button at the bottom left of the Key Editor.
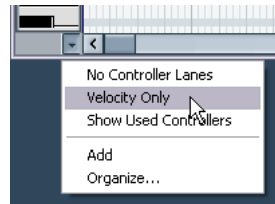
2. Choose "Velocity Only" to view the velocity.

3. You can choose the MIDI information you wish view or change from the pop-up menu.

4. You can also select "Setup" to view more controllers.

Pick one from the list or choose setup for more controllers.
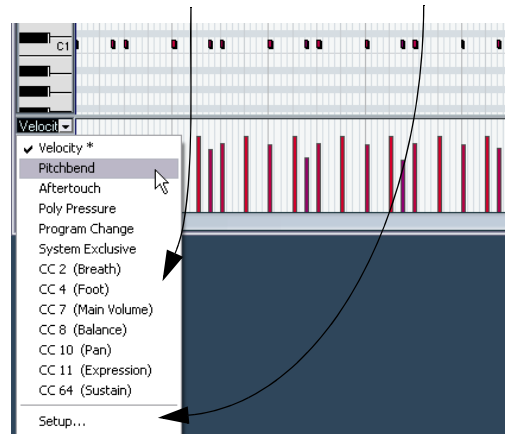
5. Use the Pencil tool of the Key Editor to draw in new velocities for the notes. You can even draw in curves and ramps.

Tutorial 3: Recording and Editing MIDI
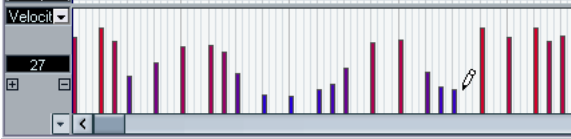
7

Tutorial 4: Mixing and Effects

Introduction

In this section we'll draw from the last 5 tutorials and finally get a mix ready with proper levels, EQs and effects. Automation will be added and then we'll export the audio.

⚠ Load the project called "Mixing 1" found in the "Tutorial 4" folder.

Setting levels

The first thing we want to do is to set the levels for our project. This helps us get a preliminary balance of the mix so we can add EQ and effects later.

1. Select the Mixer from the Devices menu.
The default key command for this is [F3].

2. Click the Start button on the Transport panel and listen to your mix.

3. Move the faders for each track so that you can hear all of the mix the way you like it.
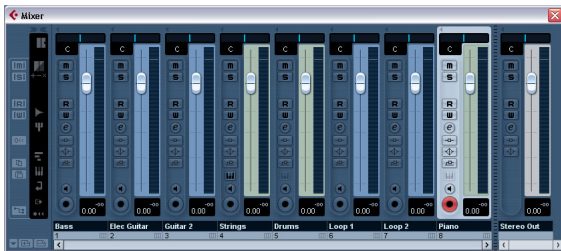
4. If for any reason you need to get the fader back to 0dB (the default setting), you can [Alt]/[Option]-click directly in the fader area.
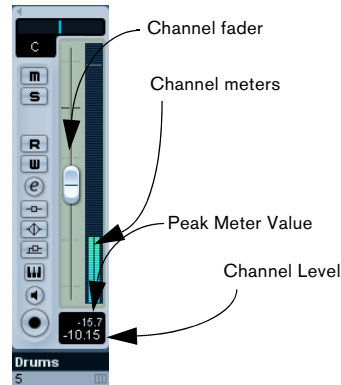
5. You can also change the fader by double clicking in the "Channel Level" area and entering the level manually.

6. Be careful when it comes to how loud you raise the faders. Make sure you keep levels at a good volume so that they are as loud as possible without clipping. You will always know when you are clipping: when the "CLIP" indicator lights up on the output channel. If it does, lower your levels and click on "CLIP". This will reset the warning light.

▪ That's it for setting the levels. Let's look at pan next.

Setting Pan

⚠ Load the project called "Mixing 2" found in the "Tutorial 4" folder.

1. Setting the pan for each track moves its position in the stereo mix. It will either keep the signal balanced in the middle of the left and right speaker, lean to the left or lean to the right or be completely in the left or right speaker.

Panner

Pan amount
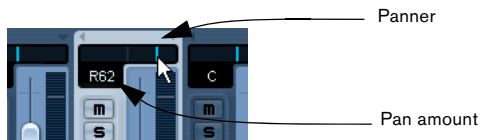
▪ To get the panner back to the middle (the default position), [Alt]/[Option]-click anywhere in the panner area.

2. Let's pan our two guitars slightly left and slightly right. This will spread them out a bit.
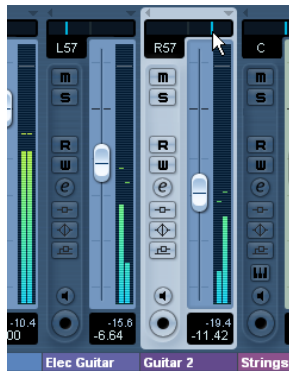
3. Keep the "Drums" track in the middle but let's move "Loop 1" a bit to the left and "Loop 2" a bit to the right. This will give our rhythm section a larger more spacious sound.
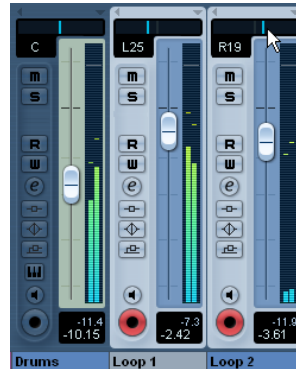
That's it for pan, let's move on to Mute and Solo.

Mute and solo

⚠ Load the project called "Mixing 3" found in the "Tutorial 4" folder.

▪ For each track there is a "M" for mute and "S" for solo button. Mute will prevent you from hearing the track and solo will only play that track or tracks which have "S" highlighted.
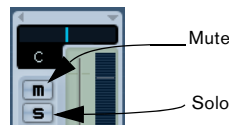
Mute

Solo

▪ You can have several tracks muted or soloed at a time.

▪ When you solo a track, the other tracks become muted.

▪ If you want to clear or deactivate all the mutes or solos, click on the "Deactivate all Mute" or "Deactivate all Solo" buttons in the common panel to the left of the Mixer.

Deactivate all Mute

Deactivate all Solo
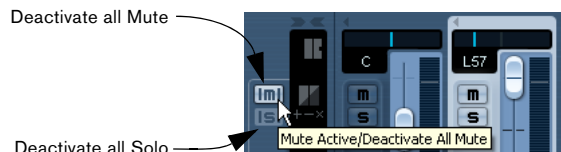
▪ There may be times when you want certain tracks to always play even if another track has solo active. If you [Alt]/[Option]-click on the "S" button, this will place the track in "Solo Defeat" mode. This allows the track to always play even if you solo another track.
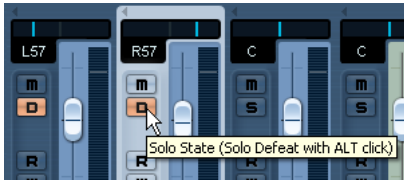
▪ To take a track out of "Solo Defeat" mode simply [Alt]/[Option]-click it again.

That's it for mute and solo, let's move on to adding EQ.

Adding EQ

⚠ Load up the project called "Mixing 4" found in the in "Tutorial 4" folder.

EQ or equalization adds or subtracts frequencies so that we can place each instrument correctly in the mix. EQ is subjective and can be influenced greatly by the style of music that you are mixing.

We're going to run through the EQ features that Cubase LE has to offer but feel free to experiment and try out the different presets on your mix.

1. Solo the Drums track and click the "Edit Instrument Channel Settings" button.
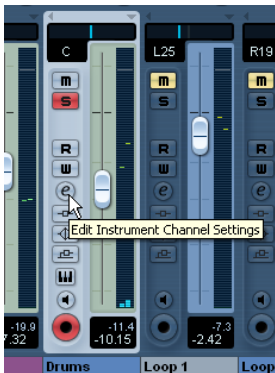
2. This will open the Channel settings window, where you can e.g. make EQ settings. Make sure you have a section of music looping so that you can hear the EQ changes you are making.

▪ There are four bands of EQ on each track.

3. Click the "EQ Band Active" button for each of the EQs to turn them on. You can also click in the EQ curve area to turn on an EQ.

Click in the EQ curve area to turn on an EQ.

Click the "EQ Band Active" button to turn on an EQ.

4. Click and move the EQ point up, down, right or left. Moving the EQ point up or down raises or lowers the gain of the EQ. The gain makes that particular EQ louder or softer. The "EQ Band Gain" at the bottom of the EQ window gives you the value of gain.

If you hold down [Ctrl]/[Command], you can restrict the movement of the EQ to just up and down.

Move the EQ up or down to raise or lower the gain.

"EQ Band Gain" amount
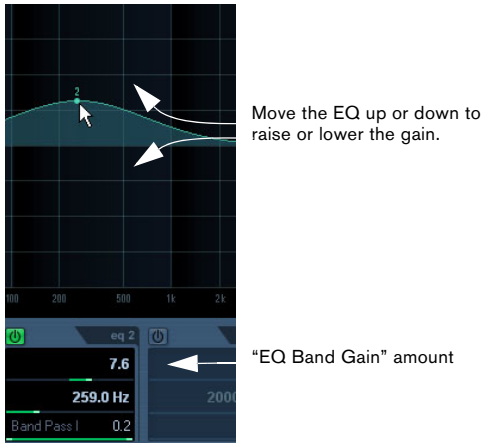
5. Moving the EQ point right or left changes the frequency of the EQ. The "EQ Band Freq" setting at the bottom of the EQ window gives you the value of the frequency.

If you hold down [Alt]/[Option], you can restrict the movement of the EQ to just right or left.

Move the EQ left or right to change the frequency

"EQ Band Freq" amount

6. Holding down [Shift] while moving the EQ point up or down changes the quality of the EQ. Many people refer to this as the width of the EQ. The "EQ Band Q" setting at the bottom of the EQ window gives you the value of the quality.

Moving the EQ up or down while holding down [Shift] changes the Q

"EQ Band Q" amount

7. You can bypass the EQs by clicking on the "Bypass Equalizers" button. If you [Alt]/[Option]-click, you can reset the EQ. A dialog window will open to confirm if you are sure you want to reset the EQs. If you are sure, click "Yes".
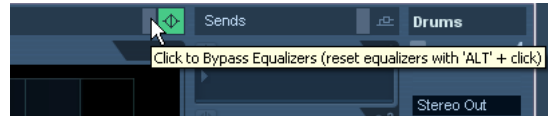
Experiment with the EQs on all your tracks in this tutorial. A good tip when using EQ is that it's usually better to take away EQ (lower the gain) than to add it.

⚠ We've made a whole bunch of EQ changes to this tutorial. Listen and see the changes by loading the project "Mixing 5" found in the "Tutorial 4" folder.

Now let's move on to effects.

Audio effects

⚠ Load the project called "Mixing 6" found in the "Tutorial 4" folder.

Now let's start using some effects:

1. Make sure the Mixer is open.
You can open the Mixer from the Devices menu or by pressing [F3].

2. Begin playback and loop or cycle a section of music so that you can hear everything.
The tutorial project has its locators and cycle already set for this. Feel free to change this if you like.

3. Click on the "Edit Audio Channels Settings" button on the Bass track to open the VST Channel Settings window.
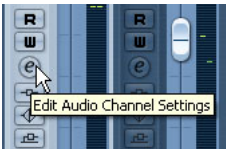
4. Let's add compression to the Bass track to smooth it out. Click on the "Select Insert Type 1" slot and choose "VSTDynamics" from the Dynamics submenu.
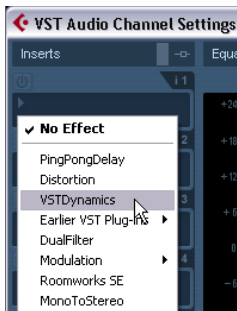
5. Make changes to the settings in the Compressor section. At the end of this section, you can load the next tutorial that will contain all of the changes we have made.

About Automation

Automation allows us to make objects such as faders, pan, knobs and effects move by themselves. This is very handy in that we can tell Cubase LE to make changes over a period of time and those changes will be remembered and will occur again without our attention.

⚠ Load up the project called "Mixing 8" found in the "Tutorial 4" folder.

1. We created a fade in on the "Elec Guitar" track earlier. Let's remove the fade on this audio event and create some automation instead. Zoom in so that you can see the first audio event more clearly.
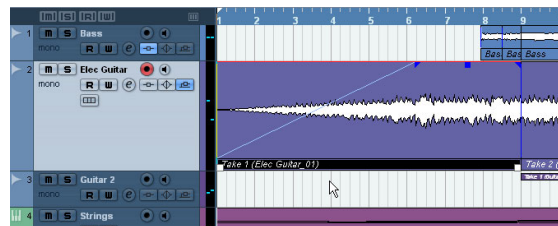
2. Select the event and choose "Remove Fades" from the Audio menu.

3. Click the "Show/Hide Automation" button at the far left of the track.

You may need to hover your mouse over the far left bottom area until you see the button appear as this is only shown when you need it. Note that in Cubase LE there is only one automation subtrack for each track.
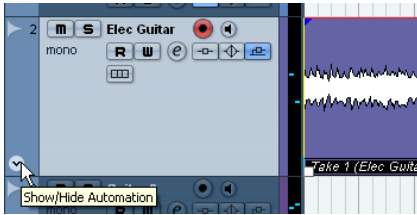
4. Select the Pencil tool.

5. In the subtrack that appears below the audio event use the "Draw" tool to draw in automation so that it resembles a fade in.
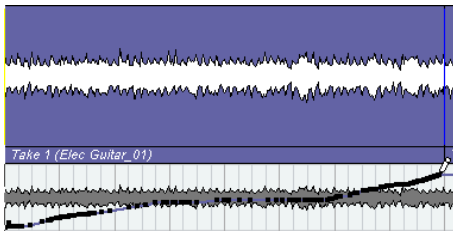
6. You can also use the "Line" tool to draw in automation in a straight line. Perfect for fade in automation.
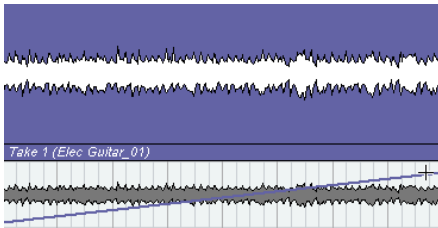
7. Listen to the fade in automation we created.

• You may have noticed that when we used the Pencil tool to place in automation, the "R" button (Read Enable) for the track became highlighted. This means that the automation on this track is being read or played back. You can turn this off and the automation will not be read. In our case we drew in volume automation, and so in turning it off the volume will not fade in but stay at one level.
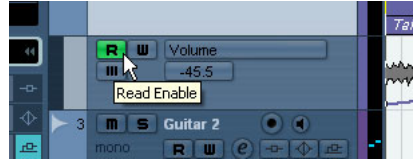
There are so many examples to show when it comes to automation. For example we could have automated our effects or our send levels. We could have even automated objects while Cubase LE was playing back. The automation can be placed into write mode and moving almost anything will create automation that we can edit for fine tuning later!

Make sure you read the chapter "Automation" in the Operation Manual to fully realize how exciting automation can be.

Exporting

Now that we have our project mixed we will want to export it so that we can import it into another program such as a CD burning application like WaveLab.

⚠ Load the project "Mixing 8" found in the "Tutorial 4" folder.

• Before we can export our mix we need to tell Cubase LE how many bars to export. We accomplish this by setting the locators.

1. Set the left locator to bar 1 and the right locator to bar 65 on the Transport panel. This will make sure we have all the music for export.

2. On the File menu–Export submenu, select "Audio Mixdown…".

3. The "Export Audio Mixdown" dialog opens.
This dialog is described in detail in the chapter "Export Audio Mixdown" in the "Operation Manual". Please refer to this for more complete information.
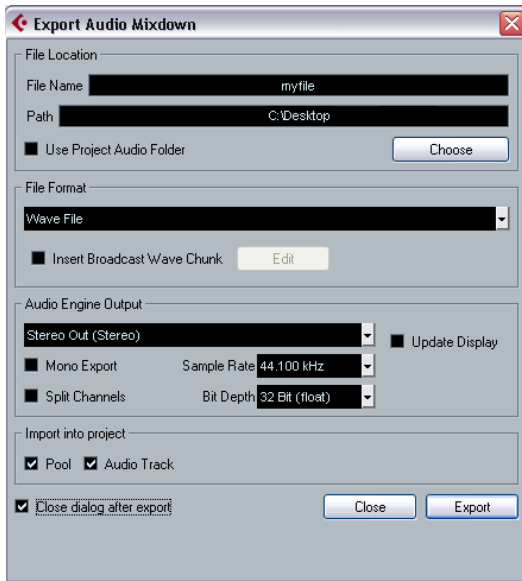
4. "File Name" is for naming the file for export. Let's name our's "Mixing Mixdown".

5. The "Path" is where you wish to save the exported file on your computer. Use the "Choose" button to navigate to the folder you wish to save to. For convenience there is the option "Use Project Audio Folder" which will store the exported file in your project's audio folder. This is one of the best places to keep it so it won't accidentally become erased or lost. Make sure "Use Project Audio Folder" is activated for this export.

6. Normally you'll want to save your exported file as a "Wave File" under "File Format". This of course chiefly depends on what file format the other application such as a CD burning program requires.

7. Choose the main stereo outputs "Stereo Out (Stereo)" for export.
The exported file will be generated through the main stereo outputs that we see in the Mixer.

8. Choose the "Sample Rate" and "Bit Depth" that will be required for your export. 44.100 kHz and 16 bit are common for CD burning.

9. Activate the options at the bottom of the dialog, as these will import the audio back into Cubase LE after you export it and automatically create an audio track. The "Export Audio Mixdown" window will also close after export.

10. When you are done making all the settings, click the Export button.
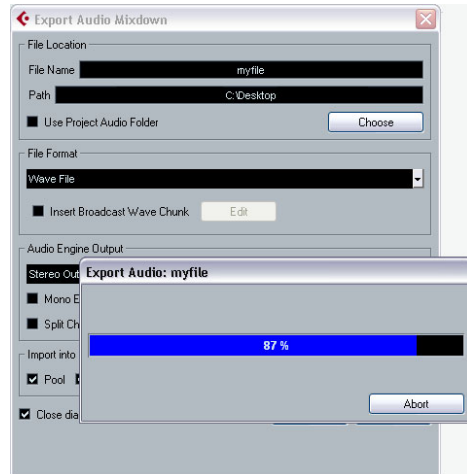
11. You will now see the exported stereo mix on a new stereo track.
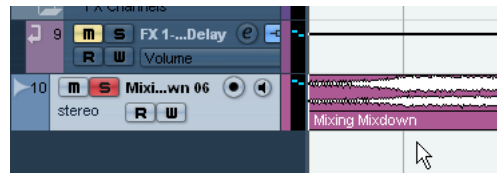
12. You can check to see if the audio mixdown sounds the way you want it by soloing the mixdown track.

⚠ Load the project called "Mixing 9" found in the "Tutorial 4" folder to see the results of this export.

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