Revised August 9, 2006

After ACID software is installed and you start it for the first time, the registration wizard appears. This wizard offers easy steps that allow you to register the software online with Sony Media Software. Alternatively, you may register online at http://www.sony.com/mediasoftware at any time.

Registering your product will provide you with access to a variety of technical support options, notification of product updates, and special promotions exclusive to registered ACID users.

Registration assistance

If you do not have access to the Internet, registration assistance is available during normal weekday business hours. Please contact our Customer Service department by dialing one of the following numbers:

Telephone/Fax	Country
1-800-577-6642 (toll-free)	US, Canada, and Virgin Islands
+608-204-7703	for all other countries
1-608-250-1745 (Fax)	All countries

Customer service/sales

For a detailed list of customer service options, we encourage you to visit http://mediasoftware.sonypictures.com/support/custserv.asp. Use the following numbers for telephone support during normal weekday business hours:

Telephone/Fax	Country
1-800-577-6642 (toll-free)	US, Canada, and Virgin Islands
+608-204-7703	for all other countries
1-608-250-1745 (Fax)	All countries

Technical support

For a detailed list of technical support options, we encourage you to visit http://mediasoftware.sonypictures.com/support/default.asp. To listen to your support options by telephone, please call 608-256-5555.

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USA

Table of Contents

Chapter 1 Introducing ACID Software

Welcome

Congratulations on purchasing a revolutionary software application for Microsoft® Windows®. With ACID® from Sony Media Software, you can create great music by simply picking, painting, and playing.

System requirements

The following lists the minimum system requirements for using ACID:

- Microsoft® Windows® 2000 SP4 or XP
- 1 GHz processor (1.2 GHz if using video)
- 256 MB RAM, 512 MB recommended
- 150 MB hard-disk space for program installation
- 600 MB hard-disk space for optional Sony Sound Series Loops & Samples™ reference library installation
- Microsoft Windows-compatible sound card
- DVD-ROM drive (for installation from a DVD only)
- Supported CD-recordable drive (for CD burning only)
- Microsoft DirectX® 9.0c or later (version 8.1b included on DVD-ROM)
- Microsoft .NET Framework 1.1 (included on DVD-ROM)
- Internet Explorer 5.1 or later (included on DVD-ROM)
- Internet connection (for Gracenote® MusicID™)

Installing ACID

Prior to installing the software, we recommend that you exit all open applications and temporarily turn off any virus protection.

1. Insert the application disc. The setup screen appears (if AutoPlay is enabled for your CD-ROM or DVD-ROM drive).

Note: *If you have disabled the AutoPlay feature, click the* **Start** *button and choose* **Run**. *In the Run dialog that the CD-ROM or DVD-ROM drive letter and add* **:\setup.exe**. *Click* **OK** *to start the installation.*

2. Click **Install**. The installation process begins.
3. Follow the on-screen prompts to install the appropriate version of the software for your computer.

Note: *Windows Installer is used for all versions of Windows. Windows Installer is installed and then you are asked to restart your system.*

Using online help

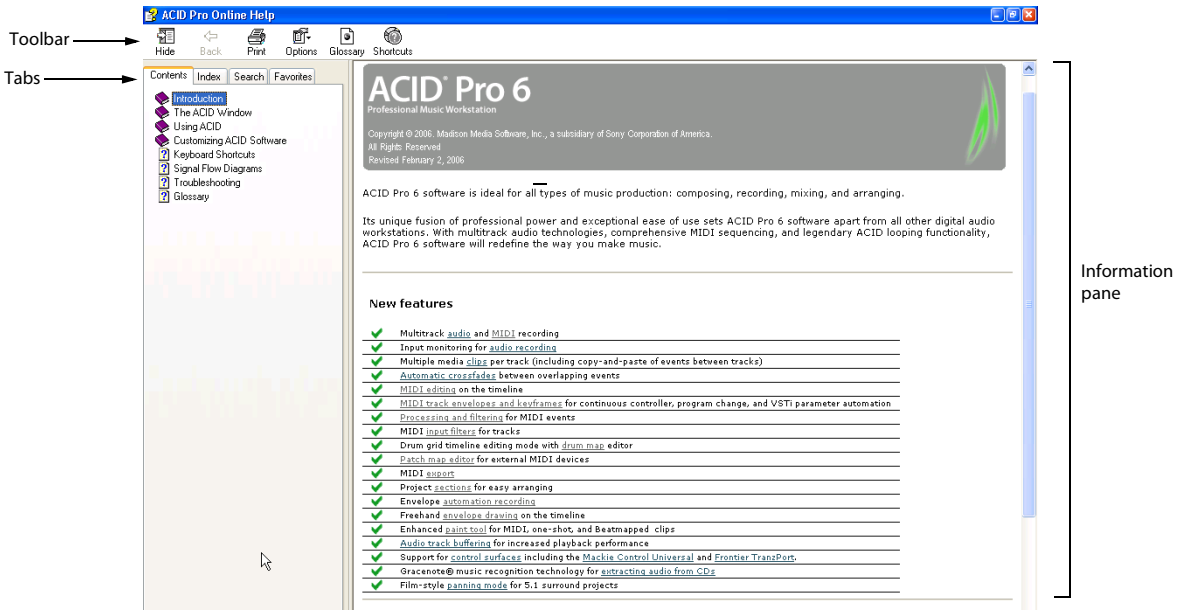
You can access two varieties of help within ACID:

- Online help
- What'sThis? help (also referred to as context-sensitive help)

Online help

To access online help, choose **Contents and Index** from the **Help** menu or press F1.

Note: *To view online help, Internet Explorer 5.1 or later must be installed on your system. If you purchased the boxed version of ACID, Internet Explorer version 5.1 is included on your CD-ROM.*



The **Contents** tab provides a list of available help topics. Double-click a closed book ( ) to open the pages and then click a topic page ( ).

The **Index** tab provides a complete listing of the help topics available. Scroll through the list of available topics or type a word in the **Type in the keyword to find** box to quickly locate topics related to that word. Select the topic and click Display.

The **Search** tab allows you to enter a keyword and display all of the topics in the online help that contain the keyword you have entered. Type a keyword in the **Type in the word(s) to search for** box and click List Topics. Select the topic from the list and click Display.

The **Favorites** tab allows you to keep topics that you revisit often in a separate folder. To add a topic to your favorites, click Add on the **Favorites** tab.

What's This? help

What'sThis? help allows you to view pop-up window descriptions for ACID menus, buttons, and dialog boxes. Choose **What's This?** from the **Help** menu, press Shift+F1, or click the **What'sThis? help** button ( ) on the toolbar and then click any ACID item. To use What'sThis? help in a dialog box, click the question mark button ( ) in the upper-right corner of the dialog box and then click an item in the dialog box.

Help on the Web

Additional ACID information is available on the Sony Media Software Web site. From the **Help** menu, choose **Sony on the Web**, and choose the desired location from the submenu. The software starts your system's Web browser and attempts to connect to the appropriate page on the Sony Web site.

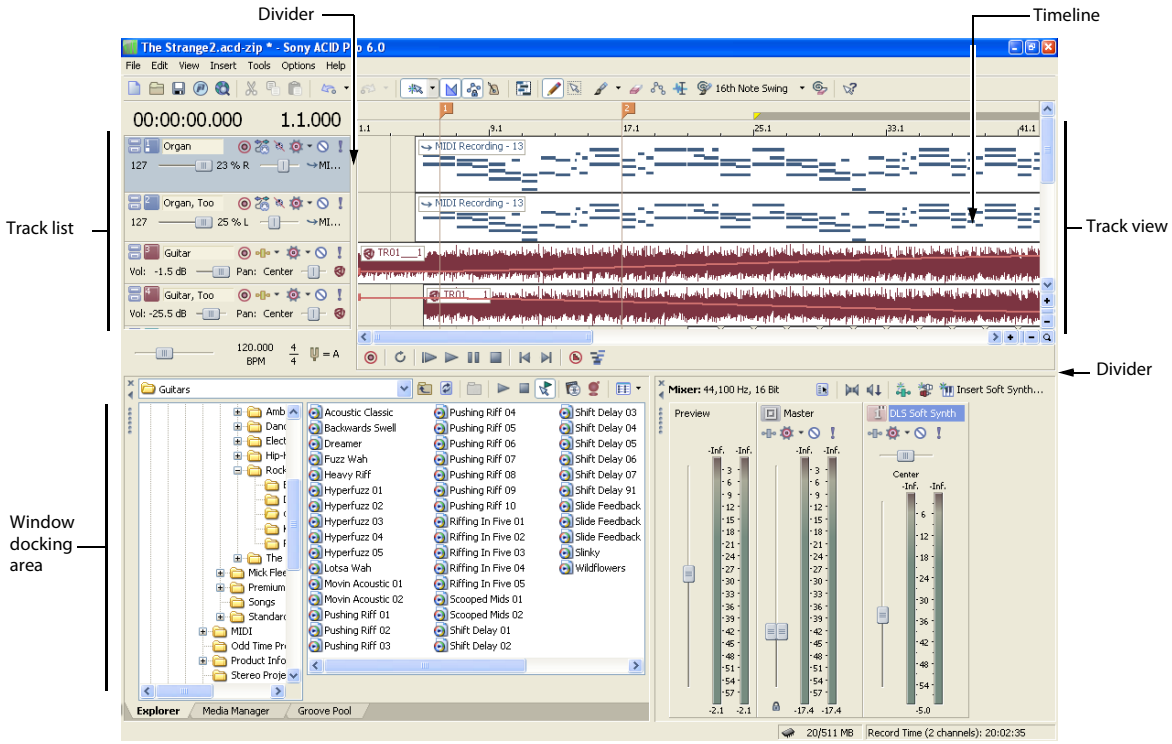
Overview of ACID software

ACID music creation software is designed to be powerful and flexible, yet easy to use. Many of the ACID operations, menu items, and shortcut keys are common to other Sony Media Software applications.

The following sections provide a tour of the ACID work area.

Main window

The ACID workspace includes three main areas: the track list, the track view (or timeline), and the window docking area. The other parts of the interface are tools and features used while creating and working with your project. You can resize the track list, track view, and window docking area by dragging the dividers between them.



Toolbar

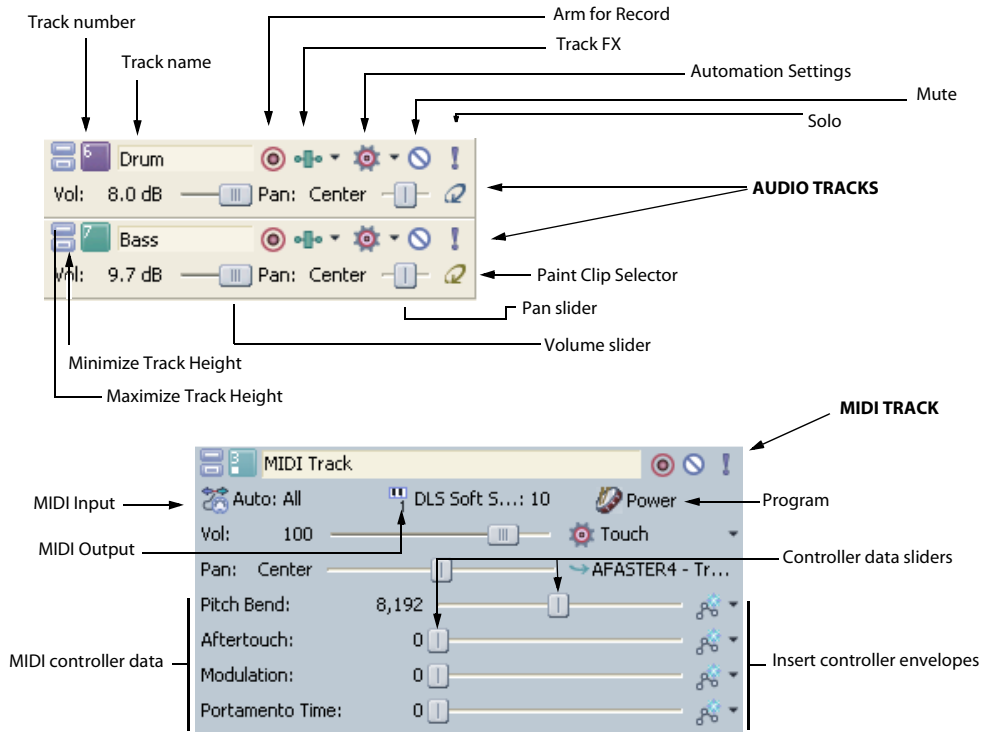
The toolbar allows you to quickly access the most commonly used functions and features in ACID.

Opens a new project. You will be prompted to save any changes to the current project.	Locks envelope points so they move with an event when it is moved along the timeline.
Displays the Open File dialog. From this window, you can browse all of the available drives to select an ACID project or audio file to open.	Activates the Metronome to keep time during recording and playback.
Saves any changes to the current project. The first time you save a project, the Save As dialog appears.	Allows editing of MIDI events directly on the timeline. In this mode, you can draw and erase notes in a piano roll or drum grid view.
Opens the Publish wizard so you can share your ACID creation on the Web.	Activates the Draw tool to add and edit events.
Opens a dialog where you can download media from the Internet.	Activates the Selection tool to select multiple events.
Clears the selected items from the track view and places them on the ACID clipboard. You can then paste them to a new location.	Activates the Paint tool to insert events across multiple tracks.When used in conjunction with the Ctrl key, the Paint tool can paint an entire one-shot, MIDI, or Beatmapped media file to an event with one click.
Creates a copy of the selected items from the track view on the ACID clipboard. You can then paste them to a new location.	Activates the Erase tool to erase events or parts of events. When used in conjunction with the Ctrl key, the Erase tool can erase an entire one-shot, MIDI track, or Beatmapped track event with one click.

Inserts the contents of the ACID clipboard at the current cursor position. The pasted items cover any existing events. To make room for pasted events, choose Paste Insert from the **Edit** menu.	Activates the Envelope tool to select and modify envelope points.
Reverses the last action performed. ACID supports unlimited undos, allowing you to restore the project to any state since the last save.	Activates the Time Selection tool to quickly select all events within range of time.
Reverses an undo.	Activates the Groove tool to apply a groove to a track. You can use grooves to manipulate the timing of tracks by quantizing media to predefined grooves or by applying the feel of one track to another.
Turns the snapping feature on or off. With snapping enabled, you can decide whether to snap to the grid or to all elements (markers, regions, etc.).	Activates the Groove Erase tool to erase grooves or parts of grooves. When used in conjunction with the Ctrl key, the Groove Erase tool can erase an entire groove event.
Allows you to automatically create crossfades when you overlap two audio events.	Activates What'sThis? help to obtain information about a specific option, menu, or part of the ACID window.

Track list

This list identifies the track order in your project and contains the track's controls. The following sections identify and briefly explain the controls located in the track list.



Minimize/Maximize Track Height buttons

These buttons control the track's appearance (size) on the track list and the track view.

Track number

This area identifies the track's number in the project. You can quickly change the track order by dragging selected tracks within the track list.

Track name

When you add a file to a project, the track name is initially the same name as the file's name. Right-click the track name and choose **Rename** from the shortcut menu (or double-click) to change the track name.

Bus assignment/Device selection

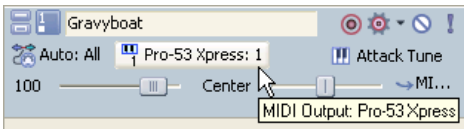
Clicking the **Bus Assignment** button ( ) and selecting a letter from the menu allows you to assign the corresponding track to the specified output bus. However, the button is only available in projects containing multiple busses. *For more information, see Adding busses to the project on page 139.*

MIDI Input button

Clicking the **MIDI Input** button allows you to choose a MIDI input device for recording MIDI. *For more information, see Recording MIDI on page 162.*

MIDI Output button

Clicking the **MIDI Output** button allows you to select soft synths and MIDI devices and the channel you want to use to play MIDI data on the track. *For more information, see Setting up a MIDI controller for recording into a track on page 162.*



Program button

Clicking the **Program** button allows you to change the settings of your soft synth and show/hide keyframes. *For more information, see Changing the track voice on page 176.*

For more information, see Adding a program change keyframe on page 182.

Track FX button

The **Track FX** button ( ) accesses the Audio Plug-In window from which you can add, edit, and apply effects to the track. *For more information, see Using clips with tracks on page 105.*

Mute button

Clicking the **Mute** button ( ) temporarily suspends playback of the corresponding track, allowing you to focus on the project's remaining tracks. A muted track appears grayed out in the track view. *For more information, see Muting tracks on page 46.*

Solo button

Clicking the **Solo** button ( ) isolates the track during playback by muting the project's remaining tracks. *For more information, see Soloing tracks on page 47.*

Surround panner

In 5.1 surround projects, the surround panner allows you to view and edit surround panning settings for a track. Double-click a surround panner to view the Surround Panner window and make fine panning adjustments.

Volume fader

This dedicated volume fader controls how loud a track is in the mix. A value of 0 dB means that the track plays with no boost or cut from the software. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.

Pan slider

This dedicated pan slider controls the position of a track in the stereo field. Dragging the slider to the left places the track in the left speaker more than the right, while dragging the slider to the right places the track in the right speaker.

You can choose among five panning types to determine how a track is panned. *For more information, see Choosing stereo pan types on page 111*.

Multipurpose slider

This multipurpose slider allows you to control the following:

- The level of the track's signal being routed to each of the project's busses.
- The level of the track's signal being routed to an assignable effect control.

Each track's slider position is independent from the others; however, you can move sliders simultaneously by selecting multiple tracks before making your adjustment. If you do not see this slider, expand the track.

For MIDI tracks, four multipurpose sliders are displayed to allow you to adjust MIDI controller data. *For more information, see Controller automation on page 174*.

You may choose what the slider controls by clicking the slider label. Changing the slider type for one track changes it for all tracks so you can compare levels of the same control across the project. *For more information, see Adjusting the mix on page 46*.

Paint Clip Selector button

Clicking the **Paint Clip Selector** button displays all the clips available for the track, allows the user to add clips, and opens the Clip Pool.

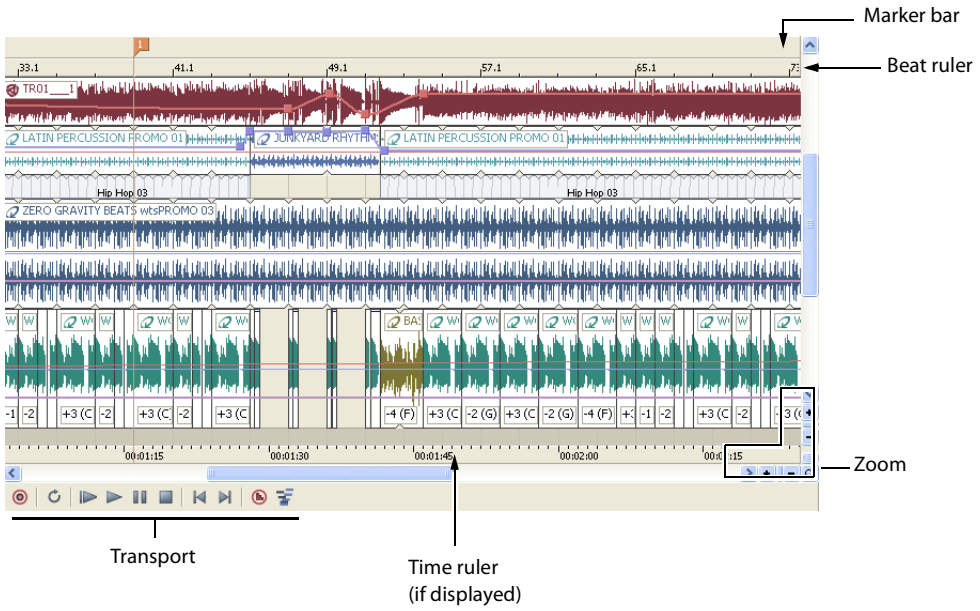
The Paint Clip Selector button shows the clip type icons.

Clip type icons	
	Loop
	One-shot
	Beatmapped
	MIDI (if Loop button  is selected in the Clip Pool)
	MIDI (if Loop button is not selected  in the Clip Pool)

For more information, see Adding clips to tracks on page 105.

Track view

In the track view, you can view and edit the events in a track. The area in which events display is the timeline. The track view contains other elements which are described in the following sections.



Marker bar
The marker bar runs the length of your project and contains the tags for markers and regions positioned along the project's timeline.

Beat ruler
The beat ruler allows you to place events in reference to the musical time of bars and beats. This ruler is fixed and does not update when you change the tempo. This allows the events in the tracks to maintain their size when you adjust the tempo.

Time ruler
The time ruler provides a timeline for your project. This ruler can show real time in many different formats. *For more information, see Changing the time ruler format on page 225*. The ruler changes with tempo, since the number of beats and beats per second of real time changes with tempo.

Transport bar
The transport bar contains the playback and cursor positioning buttons frequently used while working on your project.

Record new track	Pause/resume project playback
Loop playback	Stop playback
Play from beginning of project	Move cursor to start of project
Play project from cursor position	Move cursor to end of project
MIDI step record	MIDI merge record

The software also includes keyboard shortcuts for these playback commands. *For more information, see Playback commands on page 26*.

Zoom controls

To the right of the horizontal scroll bar are the time zoom controls. Clicking the **Zoom In Time** button ( ) increases the horizontal magnification of the project. To decrease the level of magnification, click the **Zoom Out Time** button ( ).

Directly below the vertical scroll bar are the dedicated track height zoom controls. Clicking the **Zoom In Track Height** button ( ) increases the vertical magnification of the project. To decrease the level of magnification, click the **Zoom Out Track Height** button ( ).

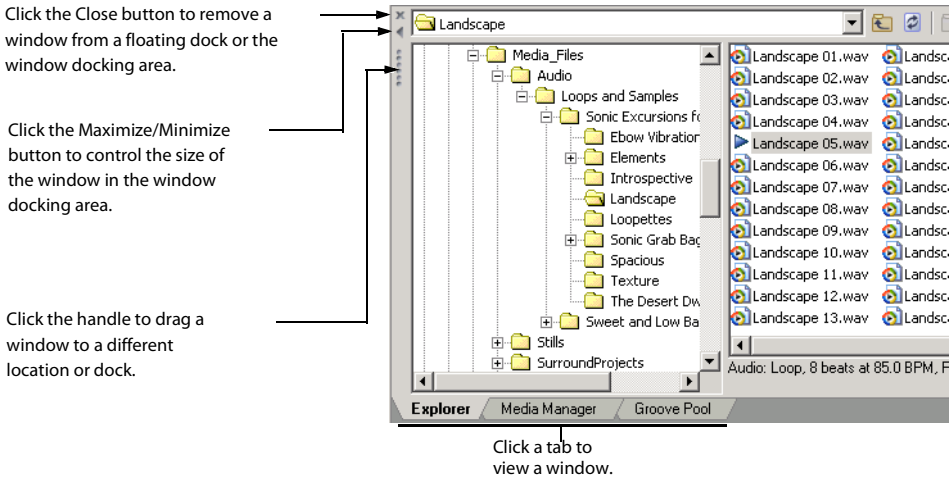
> **Note:** *Double-clicking the horizontal or vertical scroll bars adjusts the magnification so that as much of the project (either horizontally or vertically) is displayed as possible.*

Click the **Zoom Tool** button ( ) in the corner of the track view to temporarily change the cursor into the Zoom tool. After you select an area of the track view to magnify, the cursor reverts to the previously active tool.

> **Note:** *Double-clicking the Zoom tool adjusts both the horizontal and vertical magnification so that as much of the project is displayed as possible.*

Window docking area

This area allows you to keep frequently used windows available while working on a project. Windows can be docked side by side or in stacks in the window docking area. *For more information, see Docking and floating ACID windows on page 223.*



The default windows display in the window docking area when you start ACID for the first time. Additional windows can be displayed by clicking the window's tab or by choosing the desired window from the **View** menu.

> **Tip:** *You can quickly hide or show the window docking area by pressing F11.*

The available windows can be docked anywhere at the bottom of the ACID window or floated over the ACID window or on a secondary monitor (this setup requires a dual-monitor video card). You can also create floating docks anywhere by dragging more than one window to the same area.

Explorer window

The Explorer window works similarly to the Windows® Explorer. You can use the Explorer window to locate, preview and select media files to be added to your project. You can also use the Explorer window to perform common file management tasks, such as renaming files or creating folders. Display the Explorer by choosing **Explorer** from the **View** menu or pressing Alt+1.

Chopper
The Chopper™ isolates audio events so that you can dissect them and reinsert them into a project to produce elaborate slice-n-dice effects with minimal effort. Display the Chopper by choosing **Chopper** from the **View** menu or pressing Alt+2. *For more information, see Using the Chopper on page 99.*

Mixer
The Mixer window provides access to output levels, as well as soft synth controls and the project audio properties. Display the Mixer by choosing **Mixer** from the **View** menu or pressing Alt+3. *For more information, see Using the Mixer window on page 49.*

Video Preview
This window displays prerendered video files that can be imported and synchronized with an ACID project. The video file displays during project playback and can be rendered with the project to an appropriate format. Display the Video Preview window by choosing **Video Preview** from the **View** menu or pressing Alt+4. *For more information, see Using the Video Preview window on page 208.*

Media Manager
This window displays the Media Manager™, which you can use to search for, manage, and tag your media files. Display the Media Manager window by choosing **Media Manager** from the **View** menu or pressing Alt+5. *For more information, see Using the Media Manager on page 73.*

Track Properties
This window allows you to change track attributes. Display the Track Properties window by double-clicking a track's icon or by pressing Alt+6. *For more information, see Configuring track properties on page 113.*

Surround Panner
This window allows you to control panning in a 5.1 surround project. Display the Surround Panner window by double-clicking the surround panner on a track or mixer control or by pressing Alt+7. *For more information, see Working with 5.1 Surround on page 211.*

Soft Synth Properties
This window allows you to change the attributes of soft synth controls in the Mixer window. Display the Soft Synth Properties window by double-clicking a soft synth control's icon or by pressing Alt+8. *For more information, see Using soft synth controls on page 142.*

Audio Plug-In
This window displays plug-ins and settings for track, assignable, bus, and soft synth effects chains. Display the Audio Plug-In window by clicking a track's **Track FX** button ( ), by choosing **Audio Plug-In** from the **View** menu, or by pressing Alt+9. *For more information, see Using clips with tracks on page 105 and Adding effects to soft synth mixer controls on page 147.*

Plug-In Manager

This window allows you to view and choose effects plug-ins to be added to a track, bus, or assignable effects chain.

Display the Plug-In Manager window by choosing **Plug-In Manager** from the **View** menu or by pressing Ctrl+Alt+1.

Tips:

- *To add an effect quickly, drag a plug-in from the Plug-In Manager window to a track, bus, assignable effects chain, or soft synth bus.*
- *If the VST plug-in you want to use isn't displayed in the list, you can use the VST Effects tab in the Preferences dialog to add the plug-in's folder and then click the* **Refresh** *button to scan for plug-ins. For more information, see Using the VST Effects tab on page 236.*
- *If the DirectX plug-in you want to use isn't displayed in the list, hold Ctrl+Shift while restarting ACID and then select the* **Delete all cached application data** *check box to reset your preferences and rescan for DirectX plug-ins.*

Groove Pool

This window allows you to view and edit the grooves in your project. Display the Groove Pool by choosing **Groove Pool** from the **View** menu or by pressing Ctrl+Alt+2. The upper half of the Groove Pool window shows all of the groove maps currently in your project. The lower half of the window displays the selected groove map in the Groove Editor, which allows you to make changes. *For more information, see Working with grooves on page 118.*

Clip properties

For audio (non-MIDI) clips, this window allows the user to change clip types (loop, one-shot, and Beatmapped), and adjust time stretching, pitch, root notes, tempo, and downbeat.

For more information, see Configuring clip properties on page 113.

For MIDI clips, you can use the Clip Properties window to edit data using the OPT list editor or piano roll.

For more information, see Using the piano roll editor on page 185. For more information, see Using the list editor on page 189.

Keyboard command reference

The ACID keyboard commands are shortcuts that you can use while working on your project.

Important: *Some keyboard commands listed below are associated with features that are not available in all versions of ACID. For information on a specific feature and its availability, please refer to the description of the feature in this manual.*

General commands

Description	Keys
Display online help	F1
Display What'sThis? help	Shift+F1 and click an item
Refresh screen	F5
Shortcut menu	Shift+F10
Temporarily suspend snapping	Shift+drag

Project file commands

Description	Keys
Create new project	Ctrl+N
Create new project and bypass the Project Properties dialog	Ctrl+Shift+N
Open existing project or media file	Ctrl+O

Description	Keys
Save project	Ctrl+S
Open project properties	Alt+Enter
Close the current project	Ctrl+F4

Magnification and view commands

Description	Keys
Show Explorer window	Alt+1
Show Chopper window	Alt+2
Show Mixer window	Alt+3
Show Video/Video Preview window	Alt+4
Show Media Manager window	Alt+5
Show Track Properties window	Alt+6
Show Surround Panner window	Alt+7
Show Soft Synth Properties window	Alt+8
Show Audio Plug-In window	Alt+9
Show Plug-In Manager window	Ctrl+Alt+1
Show Groove Pool window	Ctrl+Alt+2
Show Clip Properties window	Ctrl+Alt+3
Shift focus forward through open ACID windows	F6
Shift focus backward through open ACID windows	Shift+F6
Shift focus forward (clockwise) through track list, timeline, bus track timeline, and bus track list (when track view or timeline has focus)	Tab
Shift focus backward (counterclockwise) through track list, bus track list, bus track timeline, and timeline (when track view or timeline has focus)	Shift+Tab

Description	Keys
Restore project magnification to the default settings	F9
Restore track height to a level where all track list controls are displayed	Shift+F9
Reduce timeline magnification so the entire length of the project and as many tracks as possible are displayed	Ctrl+F9
Zoom time in/out small increments (when timeline has focus)	Up or Down Arrow
Zoom time in/out large increments (when timeline has focus)	Ctrl+Up or Down Arrow
Zoom in time until each video thumbnail represents one frame	Alt+Up Arrow
Zoom track height in/out (when timeline has focus)	Shift+Up or Down Arrow
Change track height for all tracks	Ctrl+Shift+Up or Down Arrow
Minimize/restore track height for all tracks	'
Return all tracks to the default height	Ctrl+'
Minimize/restore the window docking area	F11 or Alt+'
Show/hide Event Information	Ctrl+Shift+I
Minimize/restore timeline vertically and horizontally (window docking area and track list will be hidden	Ctrl+F11 or Ctrl+Alt+'
Minimize/restore the track list	Shift+F11 or Shift+Alt+'
Show/Hide bus tracks	B

Explorer window commands

Description	Keys
Add all selected files to the track list	Enter

Description	Keys
Add selected file or currently playing file to the track list	Ctrl+Enter

Cursor placement, loop region and time selection commands

Description	Keys
Go to beginning of active loop region or viewable area (if no selection)	Home
Go to end of active loop region or viewable area (if no selection)	End

Description	Keys
Center in view	\
Move cursor to corresponding marker or select corresponding region	Number keys (not Keypad)

Description	Keys
Toggle cursor between beginning and end of loop region	Numeric keypad 5
Time select loop region (when Time Selection tool is selected)	Shift+Q
Toggle previous selection	Backspace
Go to beginning of project	W or Ctrl+Home
Go to end of project	Ctrl+End
Move left by grid marks	Page Up
Move right by grid marks	Page Down
Go to (using measures, beats, and ticks)	Ctrl+G
Go to (using absolute time)	Shift+G
Set end of time selection (using measures, beats, and ticks when Time Selection tool is selected)	Ctrl+Shift+G

Description	Keys
Move left/right one pixel	Left/Right Arrow
Move to marker(s)	Ctrl+Left/Right Arrow
Move left/right to event edit points including fade edges	Ctrl+Alt+Left/Right Arrow
Move through a video event one frame at a time	Alt+Left or Right Arrow
Create or extend loop region/time selection	Shift+Left or Right Arrow
Double loop region/selection length	' (apostrophe)
Halve loop region/selection length	; (semicolon)
Shift loop region/selection left	, (comma)
Shift loop region/selection right	. (period)

Event editing commands

Description	Keys
Paint the entire media length for all media except video (only when Paint tool is selected)	Ctrl+click in timeline
Cycle event clip forward for all selected clips	C
Cycle event clip backward for all selected clips	Shift+C
Select Draw tool	Ctrl+D
Select next edit tool in list	D
Select previous edit tool in list	Shift+D
Undo	Ctrl+Z
Redo	Ctrl+Shift+Z
Cut selection	Ctrl+X
Copy event	Ctrl+drag
Paste from clipboard	Ctrl+V
Paste repeat from clipboard	Ctrl+B
Paste insert	Ctrl+Shift+V
Insert event at cursor	Y
Paste event at cursor	Shift+Y
Delete selection	Delete
Move selected event(s) right one pixel	Numeric keypad 6

Description	Keys
Join selected events	J
Create fades	F
Reverse event	U
Trim events to selection length. This command has no effect if there is no selected data. Trimming does not copy data onto the clipboard. Available only when the Time Selection tool is active	Ctrl+T
Slip Trim: moves the media with the edge as it is trimmed	Alt+drag edge of event
Slip: move media within event without moving the event	Alt+drag inside the event
Slide: move event while leaving the underlying media in place	Ctrl+Alt+drag event
Create fades	F
Copy selection	Ctrl+C
Pitch up one semitone	Numeric keypad + =
Pitch down 4 semitones	Shift+Numeric keypad - Shift+-
Pitch up 4 semitones	Shift+Numeric keypad + Shift+=
Pitch down one octave	Ctrl+Numeric keypad -
Pitch up one octave	Ctrl+Numeric keypad +
Reset pitch	Ctrl+Shift+Numeric keypad - or + Ctrl+Shift+-/=
Change an event's gain setting	Keypad / or *
Change an event's gain setting by 10%	Shift+Keypad / or *

Description	Keys
Move selected event(s) left one pixel	Numeric keypad 4
Temporarily suspend Snap To	Shift while dragging an event (press Shift after you click)
Erase entire event	Ctrl+click event with Erase tool
Split event(s)	S
Pitch down one semitone	Numeric keypad - -

Description	Keys
Change an event's gain setting by 25%	Ctrl+Keypad / or *
Set an event's gain to 0.0 dB	Shift+Ctrl+Keypad *
Set an event's gain to silence	Shift+Ctrl+Keypad /
Render to new track Chop to new clip if the Chopper window has focus	Ctrl+M

Playback commands

Description	Keys
Start/stop playback	Spacebar
Stop playback	Esc
Toggle looped playback	Q
Play from start	Shift+Spacebar or Ctrl+Shift+Spacebar when the timeline or track view has focus Shift+F12 from any window
Play from cursor	Ctrl+Spacebar when the timeline or track view has focus F12 (from any window)
Pause/resume playback	Enter when the timeline or track view has focus Ctrl+F12 from any window

Description	Keys
Record	Ctrl+R
Go to start of project	Ctrl+Home or W
Go to end of project	Ctrl+End
Skip backward	Page Up
Skip forward	Page Down

Timeline commands

Description	Keys
Record	Ctrl+R
Go to (using measures.beats.ticks)	Ctrl+G
Go to (using current time ruler format)	Shift+G
Set end of time selection (using measures, beats, and ticks when Time Selection tool is selected)	Ctrl+Shift+G
Toggle snapping	F8
Temporarily suspend snapping	Shift+drag
Toggle snap to grid	Ctrl+F8
Ripple edit mode	Ctrl+L
Draw tool	Ctrl+D
Select next edit tool in list	D
Select previous edit tool in list	Shift+D
Mark in point	I or [
Mark out point for selection	O or]
Render to new track	Ctrl+M
Insert/show/hide track pan envelope	P
Insert/remove track pan envelope	Shift+P
Insert/show/hide track volume envelope	V

Description	Keys
Insert/remove track volume envelope	Shift+V
Adjust envelope point value in fine increments without changing the point's timeline position	Ctrl+drag envelope point or segment
Adjust envelope point value in normal increments without changing the point's timeline position	Ctrl+Alt+drag envelope point or segment
Adjust envelope point's timeline position without changing its value	Alt+drag
Insert region	R
Insert marker (standard)	M
Insert time marker	H
Insert disc-at-once CD track marker	N
Change tempo	Alt+drag time marker
Insert command marker	C
Insert tempo change	T
Insert key change	K
Insert time signature change	Shift+K
Insert tempo and key change	Shift+T
Maximize timeline vertically (window docking area will be hidden)	F11
Maximize timeline vertically and horizontally (window docking area and track list will be hidden)	Ctrl+F11
Maximize timeline horizontally (track list will be hidden)	Shift+F11

Track list commands

Description	Keys
Mute selected tracks	Z
Solo selected tracks	X
Record	Ctrl+R
Cycle through effect automation envelopes	E or Shift+E
Insert new MIDI track	Ctrl+Alt+Q

Description	Keys
Render to new track	Ctrl+M
Show/hide bus tracks	B
Insert folder track	Ctrl+Alt+F
Insert audio track	Ctrl+Q

Mixer commands

Description	Keys
Change selection of a mixer control	Left/Right Arrow
Move the right channel of the fader for the selected mixer control	Ctrl+Up/Down Arrow
Move the left channel of the fader for the selected mixer control	Shift+Up/Down Arrow
Select multiple, adjacent mixer controls	Shift+Left/Right Arrow

Description	Keys
Select multiple nonadjacent mixer controls	Ctrl+Left/Right Arrow
Delete the selected bus or assignable FX control	Delete
Move the fader of the selected mixer control (for assignable effect controls, moves the Out fader)	Up/Down Arrow

MIDI commands

Description	Keys
Insert new MIDI track	Ctrl+Alt+Q
Generate MIDI Timecode	F7
Generate MIDI Clock	Shift+F7
Copy to new MIDI clip	Ctrl+Shift+C

Description	Keys
Trigger from MIDI Timecode	Ctrl+F7
Reset all MIDI ports	Ctrl+Alt+F7
Show velocity information in MIDI events	F
Toggle inline MIDI editing mode	G

Chopper commands

For more information, see Using Chopper toolbar and keyboard commands on page 100.

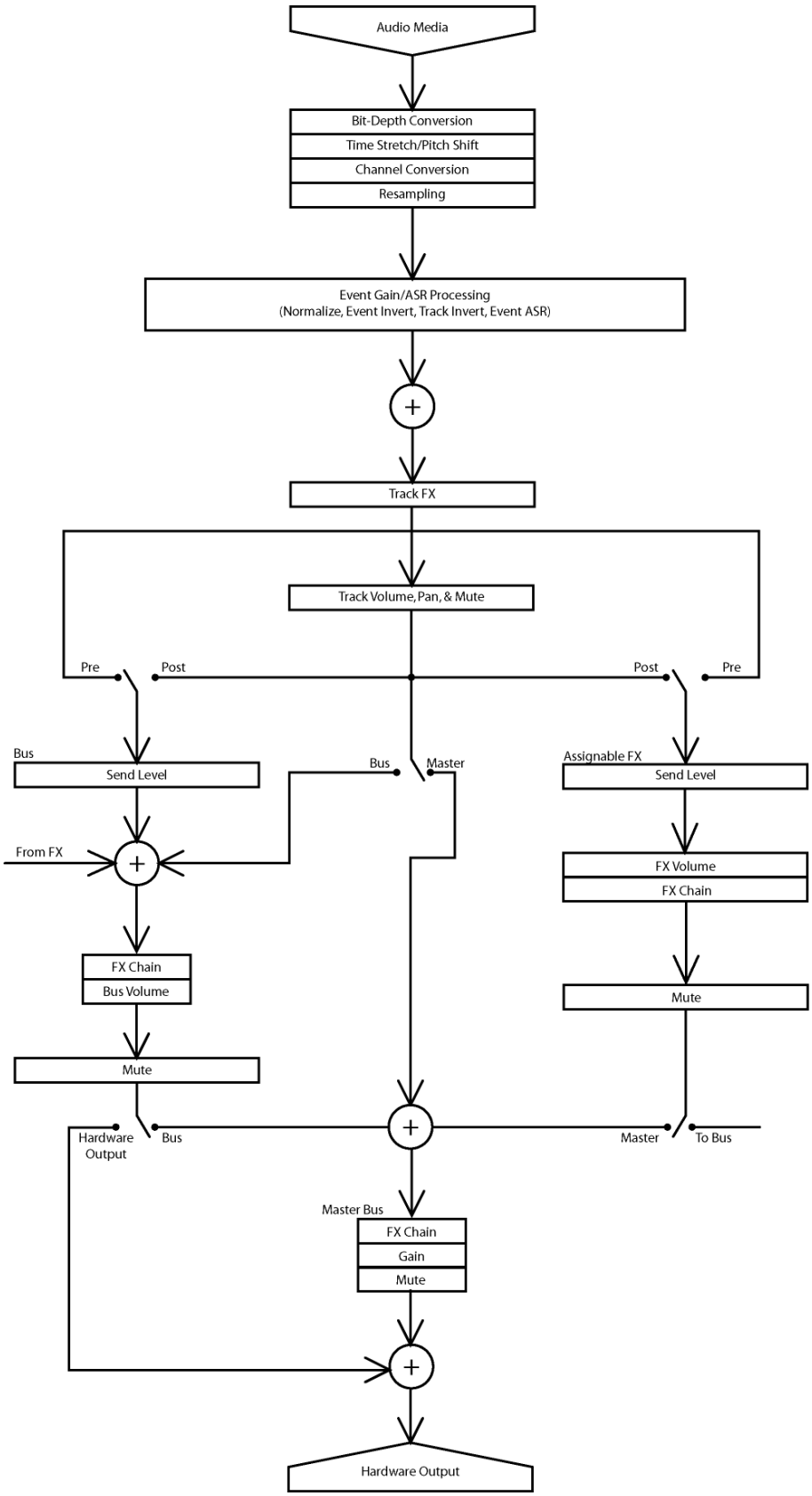
Surround Panner commands

For more information, see Moving the pan point on page 217.

Mouse scroll-wheel shortcuts

Description	Keys
Zoom in on timeline	Rotate mouse wheel forward or back
Vertical scroll	Ctrl+wheel
Horizontal scroll	Shift+wheel
Auto-scrolling	Press mouse wheel and move the mouse in the desired direction
Move the cursor in grid increments	Ctrl+Shift+wheel
Move the cursor in video frames	Ctrl+Alt+Shift+wheel
Adjust slider/fader	Wheel up or down while hovering over slider/fader handle
Adjust slider/fader in fine increments	Ctrl+wheel up or down while hovering over slider/fader handle

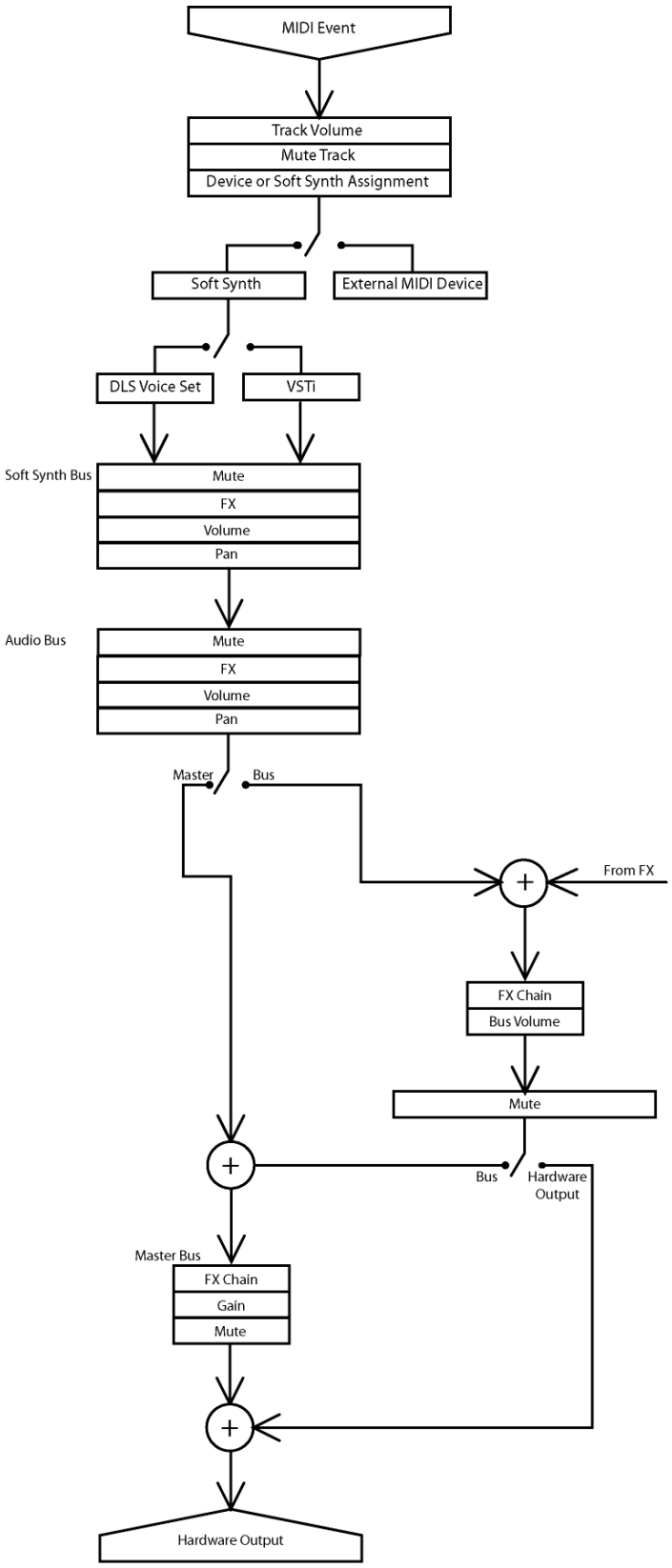
Audio signal flow



Notes on audio signal flow

- This diagram describes non-MIDI audio events. *For MIDI events, see MIDI signal flow on page 31*.
- In 5.1 surround projects, tracks routed to the Surround Master bus send surround panning (six-channel) information. Tracks routed to busses (e.g., Bus A) send stereo panning (two-channel) information.
- Assignable effect chain panning is available only in 5.1 surround projects. In 5.1 surround projects, assignable effect chains routed to the Surround Master bus send surround panning (six-channel) information. Assignable effect chains routed to busses (e.g., Bus A) send stereo panning (two-channel) information.
- Bus panning is available only in 5.1 surround projects. In 5.1 surround projects, busses routed to the Surround Master bus send surround panning (six-channel) information. Busses routed to hardware send stereo panning (two-channel) information.

MIDI signal flow



Notes on MIDI signal flow

- Soft synth panning is available only in 5.1 surround projects. In 5.1 surround projects, soft synth controls routed to the Surround Master bus send surround panning (six-channel) information. Soft synth controls routed to busses (e.g., Bus A) send stereo panning (two-channel) information.
- Bus panning is available only in 5.1 surround projects. In 5.1 surround projects, busses routed to the Surround Master bus send surround panning (six-channel) information. Busses routed to hardware send stereo panning (two-channel) information.

Chapter 2 Getting Started

Now that you have an understanding of the interface and controls found in ACID® software, you are ready to begin learning the techniques needed to pick, paint, and play in ACID projects. In this chapter you will learn the skills that will allow you to create music, from locating media files to writing the finished project to CD.

Starting projects

Double-clicking the ACID icon on the desktop starts the software. You can immediately begin building your ACID project using the application's default project properties. However, you may prefer to customize the project properties prior to beginning the project.

Setting project properties

ACID allows you to configure project properties and add summary information prior to beginning a project. Choosing **New** from the **File** menu displays the New Project dialog. This dialog contains two tabs: **Summary** and **Audio**. Selecting the **Start all new projects with these settings** check box configures the software to use the parameters and information in both tabs as defaults when starting all subsequent projects.

Note: *You can edit project audio properties and summary information at any time. Choose* **Properties** *from the* **File** *menu to display the Project Properties dialog, which contains the identical tabs and parameters as the New Project dialog.*

Using the Summary tab

This tab allows you to enter information about the project. These boxes may be left blank or if information exists, you may change it at any time.

Item	Description
Title	Enter the name or title of the project.
Artist	Enter the name of the narrator, band, or artist(s) being recorded into the project.
Engineer	Enter the name(s) of the people who mixed and edited the project.
Copyright	Enter the date and ownership rights of the project.
Comments	Enter information that identifies and describes the project.
Universal Product Code/Media Catalog Number	Enter the Universal Product Code (UPC) and the Media Catalog Number (MCN) to be written to your CD for identification purposes.
Start all new projects with these settings	Select this check box if your projects' requirements do not change or you want consistent settings for future projects.

Using the Audio tab

This tab allows you to set different characteristics the project uses to handle the audio.

Item	Description
Master bus mode	Choose either Stereo for a standard audio project or 5.1 Surround for a surround project.
Number of additional stereo busses	Enter the number of stereo busses that you want in your project. You may add up to 26 busses. The busses appear in the Mixer window. For more information, see Using busses on page 139.
Sample rate	Choose a sample rate from the drop-down list or enter your own rate. The sample rate range is 2,000 Hz to 192,000 Hz. Higher sample rates result in better quality sound, but also mean larger audio files.
Bit depth	Choose a bit depth from the drop-down list. A higher bit depth results in better quality sound, but also means larger audio files.
Enable low-pass filter on LFE	Select this check box to limit the audio sent to the LFE channel in a 5.1 surround project. For more information, see Working with 5.1 Surround on page 211.

Item	Description
Cutoff frequency for low-pass filter	Enter a low-pass cutoff frequency value for 5.1 surround projects. Audio sent to the LFE channel is limited to frequencies lower than the value you enter. Applying a low-pass filter approximates the bass-management system in a 5.1 decoder and ensures that you're sending only low-frequency audio to the LFE channel. Available only in ACID.
Low-pass filter quality	Choose a setting from the drop-down list to determine the sharpness of the low-pass filter's rolloff curve. Best produces the sharpest curve. Available only in ACID.
Start all new projects with these settings	Select this check box if your project requirements do not change or you want consistent settings for future projects.

Opening existing projects

1. From the **File** menu, choose **Open**. The Open dialog appears.
2. Choose a drive and folder from the **Look in** drop-down list.
3. Select a file in the browse window or type a name in the **File name** box. Detailed information about the selected file appears at the bottom of the dialog box.
4. Choose a file type from the **Files of type** drop-down list to limit the files displayed in the dialog box.
5. Click **Open**.

Note: *If one of the media files cannot be located when you open an ACID project, you can choose to leave the media offline and continue to edit events on the track. The events point to the location of the source media file. If you restore the source media file at a later time, the project opens normally.*

Opening ACID projects with embedded media

When you open an .acd-zip project, the project file and all media files are copied to the temporary files folder.

Note: *You can customize the location of the temporary files folder. For more information, see* *From the Options menu, choose Preferences to display the Preferences dialog. on page 229*.

Any changes you make to the project are saved to the files in this temporary folder until you save the .acd-zip file again. *For more information, see* *Saving projects on page 52*.

Getting media files

Now that you've created a new project or opened an existing project, the next step is to add media to the project. You can use the Explorer window to locate, preview and add media to your project. You can also extract audio from a CD or download media from the Web. If you have ACID, you can also use the Media Manager to locate and add media files.

Previewing media from the Explorer window

The Explorer window allows you to preview files in looped playback at the current project tempo before adding them to your project. You can also preview files in the Explorer in conjunction with playing your project, thereby allowing you to preview how a file will sound in the project.

To preview files, use the **Start Preview** ( ), **Stop Preview** ( ), and **Auto Preview** ( ) buttons at the top of the Explorer window.

Previewing a media file

1. Select the media file in the Explorer window that you want to preview.
2. Click the **Start Preview** button ( ). The media file begins looped playback. You can monitor its levels on the preview bus.

3. Click the **Stop Preview** button ( ) to end playback.

Previewing multiple media files

You can use the Explorer's multiple-selection preview feature to preview a group of files in the order that you select them.

1. From the **Options** menu, choose **Preferences.**

   In ACID, click the **Other** tab of the Preferences dialog and select the **Enable multiple-selection preview in Explorer window** check box.

   If you want, you can enter values in the **Number of times to repeat each Loop** box, **Seconds of each One-Shot to play** box, and **Number of Beatmapped measures to play** box to specify how different file types are previewed.
2. Click **OK** to close the Preferences dialog.
3. In the Explorer, select the media you want to preview. Hold Shift while clicking to select multiple, adjacent files or hold Ctrl while clicking to select multiple, nonadjacent files.
4. Click the **Start Preview** button ( ). The first selected file in the list is previewed, followed by each file in the list. A file's icon changes to a **Play** icon ( ) to indicate which file is currently previewing.

Note: *To add the currently previewing file to your project, press Ctrl+Enter. Press Enter to add all selected files to your project.*

Using Auto Preview

Click the **Auto Preview** button ( ) to toggle automatic playback of media files when you select them in the Explorer. If your project is currently playing when you select a new file, the new file plays back along with your project. This feature allows you to listen to the media file in the context of your project.

Adding media to the project

You must add media files to a project before you can paint, arrange, and process them. When you add a file to a project, a new track is created to accommodate it. New tracks are added at the current volume of the Preview fader in the Mixer window, unless you have set a default track volume level. *For more information, see Setting default track properties on page 229.*

There are several methods of adding media files to a project.

Notes:

- *Proxy files may be created for media whose compression scheme may cause working with them to be inefficient and slow. For more information, see Proxy File on page 255.*
- *Before using long Beatmapped or long one-shot files from CDs or shared network folders, copy the media to your local drive for the best possible performance.*

ACID temporary files

When you add a media file to a project from a removable device, a copy of the media file is stored in the temporary files folder. This keeps the media file available for use even if the source of the media is no longer accessible.

Be aware that the temporary files folder is cleared when you close the ACID application. However, files are not cleared from the folder if the software closes inappropriately.

Note: *You can customize the location of the temporary files folder. For more information, see From the Options menu, choose Preferences to display the Preferences dialog. on page 229.*

Adding media files from the Explorer window

You can use the Explorer window, which operates similarly to the Windows® Explorer, to locate media files for use in projects. Display the Explorer, if needed, by choosing **Explorer** from the **View** menu, or by pressing Alt+1.

There are three ways to add media files from the Explorer window:

- Double-click the desired file.
- Drag the file from the Explorer to the track view or track list. Dragging a file from the Explorer to the track *name* of an existing track allows you to replace the original file with the new file, while all events remain in place.
- Right-click and drag a file to the track view or track list to specify the type of track to be created. When you drop the file, a shortcut menu appears that allows you to choose whether to treat the file as a loop, one-shot, Beatmapped track, or as an autodetected type.

Adding MIDI files from the Explorer window

You can add MIDI files to your project just as you would add audio files. You can right-click a MIDI in the Explorer window, you can choose how you want to add it to your project:

- Add to Project.
- Add to Project with Events.
- Add to Project with Events Rippled.
- Open as New Project.

For more information, see Adding MIDI files to a project on page 161.

Adding media files from the Media Manager window

If you have ACID, you can use the powerful Media Manager feature to locate, catalog, and add media files to your ACID projects. Within the Media Manager window, you can build media libraries of your media that include file attributes, ACID metadata, and tags that you can assign to classify your media. You can also search for, purchase, and access reference libraries from outside sources to build your media file base. Display the Media Manager, if needed, by choosing Media Manager from the View menu, or by pressing Alt+5.

For more information on the Media Manager feature, see Using the Media Manager on page 73.

Adding media files from the Open dialog

There are three ways to add media files from the Open dialog:

- Select the desired file and click **Open**.
- Right-click the selected file and choose **Select** from the shortcut menu.
- Double-click the selected file.

Adding media files from outside the application

You can also add a media file to a project by dragging it from Windows® Explorer to the track view.

Adding multiple media files simultaneously

To add multiple media files to the project, Ctrl+click (or Shift+click) to select the files and drag them to the track view or the track list.

Extracting media files from CD

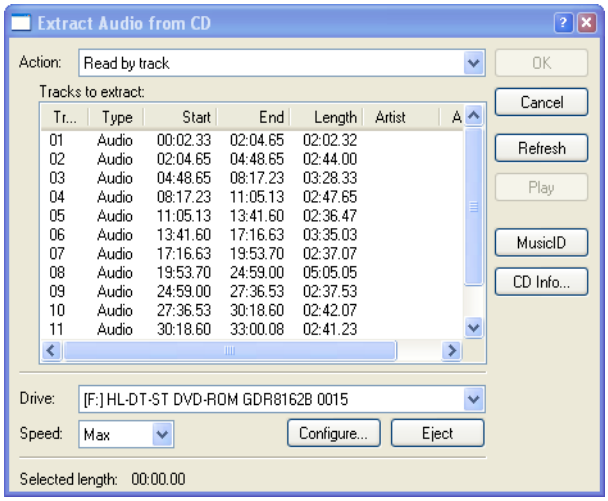
You can extract 44,100 Hz, 16-bit, stereo data from CDs. Extracted CD tracks are added to new tracks in your ACID project.

1. Insert a CD in the CD-ROM drive.
2. From the **File** menu, choose **Extract Audio from CD**. The Extract Audio from CD dialog appears.
3. If you have more than one CD drive, choose the CD drive that contains the audio you want to extract from the **Drive** drop-down list.

4. From the **Action** drop-down list, choose how you want to extract audio:

   - Choose **Read by track** and select each track you want to extract. Each track is extracted to a new track in your project.
   - Choose **Read entire disc** to extract the current CD to a single file.
   - Choose **Read by range** and enter a starting time and ending time (or a starting time and length). The time range is extracted to a new track in your project.

   Click **Play** to preview your selection. In order to preview, your CD drive's audio output must be connected to your sound card, or you can connect headphones to the front of the CD drive.



5. From the **Speed** drop-down list, choose the speed at which you want to extract audio.
6. Click **OK**. The Save As dialog appears.
7. Enter a file name and choose a location for the new file(s).

Tip: *Extracted tracks can be automatically named for you. From the* **Options** *menu, choose* **Preferences**, *and on the* **General** *tab, select the* **Autoname extracted CD tracks** *check box. For more information, see From the Options menu, choose Preferences to display the Preferences dialog. on page 229.*

8. Click **Save** to start extracting audio.

   CD data extraction begins and a progress meter is displayed. If the file is longer than 30 seconds, the Beatmapper™ Wizard appears.
9. Use the Beatmapper Wizard or choose to open the file as a one-shot. The extracted file is added to a track. *For more information, see Using the Beatmapper on page 112.*

You can also double-click a CDA file in the Explorer window (or drag it to the track view) to extract a CD track without opening the Extract Audio from CD dialog.

Note: *When adding media from multiple CDs, you may need to press F5 to refresh the Explorer window to view the new CD's contents.*

Obtaining or editing CD information using Gracenote

If ACID can access information about a track or CD (either from the file or CD itself, or from a local cache), it automatically reads and displays this information when you insert a CD or browse your computer. However, if this information is not available, the software can retrieve information over the Internet from Gracenote MusicID.

Once ACID obtains information from Gracenote MusicID, it is saved to a local cache so the information displays more quickly the next time the tracks are displayed.

If the software cannot connect to the Gracenote Media Database and the appropriate CD information is not available on your computer, the tracks are simply listed numerically. In this case, you can edit CD information and submit it to the Gracenote Media Database.

Note: *Using Gracenote MusicID requires an active Internet connection. For more information on using Gracenote MusicID, refer to www.gracenote.com/.*

Obtaining CD information

1. Insert a CD in your drive.
2. Click the **MusicID** button in the in the Extract Audio from CD dialog, or browse to the CD and click the  button in the Explorer window. *For more information, see Extracting media files from CD on page 36. For more information, see*

Explorer window on page 20.

Gracenote MusicID attempts to obtain matching CD information and displays artist, album, and track data:

- If the service locates an exact match, this information is automatically displayed. No additional action is necessary.
- If the service locates multiple possible matches, the Match dialog is displayed. Proceed to step 2.

3. Choose a method for completing the CD information:

   - If none of the possible matches is appropriate, click the **Submit New** button. The Gracenote CDDB Disc Information dialog is displayed, allowing you to complete information for the CD and submit it for inclusion in the Gracenote Media Database. For help on submitting CD information, click the **Help/Guidelines** button in this dialog.

     When you are finished typing information, click the **OK** button to submit your data.
   - Select the appropriate match from the list and click the **Accept Match** button. The artist, album, and track information is displayed based on your selection in the right side of the PC pane.

4. You're now ready to extract tracks.

Editing and submitting CD information

1. Insert a CD in your drive.
2. Select a track and click the **CD Info** button in the Extract Audio from CD dialog, or browse to the CD and click the button in the Explorer window. The Gracenote CDDB Disc Information dialog is displayed. *For more information, see Extracting media files from CD on page 36. For more information, see Explorer window on page 20.*
3. Use the Gracenote CDDB Disc Information dialog to edit information about the CD. For help on submitting CD information, click the **Help/Guidelines** button in this dialog.
4. When you are finished entering the information, click the **OK** button to submit it for inclusion in the Gracenote Media Database.

Downloading media files from the Web

The **Get Media from the Web** command allows you to view and download various audio and video files available on the Internet.

1. From the **File** menu, choose **Get Media from the Web**.
2. Choose an icon from the left frame to specify the media provider from which you want to download files.
3. Preview the file, select the file you want to open and click **Download**. The Browse for Folder dialog appears.
4. Select a folder for the download. The selected file is downloaded to the folder specified in the **Destination** box.
5. When you are finished downloading, close the Get Media from the Web dialog. The file is added to your project.

Click **Show Details** to display additional information about your download. In this mode, you can add files to a download queue, specify where the downloaded files should be stored, and monitor the progress of your downloads. Click **Start** to begin downloading queued files, or click **Hide Details** to return to basic mode.

Understanding clip types

When you add media to a project, a new track is created for the file. Depending on the type of media you add, one of four clip types is created to accommodate it: loop, one-shot, Beatmapped, or MIDI. You can identify a track's type by looking at the paint clip selector icon in the track header. *For more information, see Using clips with tracks on page 105*.

Loops

Loops are small chunks of audio that are designed to create a continuous beat or pattern when played repeatedly. They are usually one to four measures long. Loops are the type of file that you will use most frequently.

One-shots

One-shots are chunks of audio that are not designed to loop, and they are streamed from the hard disk rather than stored in RAM if they are longer than three seconds. Things such as cymbal crashes and sound bites could be considered one-shots.

Unlike loops, one-shots do not change pitch or tempo with the rest of a project.

Beatmapped

When you add a file that is longer than thirty seconds to a project, the Beatmapper Wizard starts, allowing you to add tempo information to the file. As a result, these clips respond to tempo and key changes just like loops. *For more information, see Using the Beatmapper on page 112.*

> **Tip:** *You can change the length of the file that starts the Beatmapper in the* **Audio** *tab of the Preferences dialog. For more information, see Using the Audio tab on page 232.*

MIDI

A MIDI clip is automatically created when you open a MID, SMF, or RMI file. You can use MIDI clips to record data from and play back through synthesizers and other MIDI-compliant equipment. *For more information, see Working with MIDI on page 161.*

Folder tracks

Folder tracks can contain any combination of tracks. Use folder tracks to group related tracks or sections of a project so they can be easily expanded or minimized. For example, if you have many drum tracks in your project, you can add a folder track to consolidate drum tracks and minimize their vertical space in the track list.

When the folder track is minimized, you can also perform edit operations on clustered events in the group, but you cannot create events with the Draw or Paint tools or perform edge-trimming. Expand the folder track to edit individual events.

For more information, see Using folder tracks on page 122.

Adding and editing events

You have added media to the project, and tracks have been created for the media files. Now you can add events to the track view. The following sections describe three basic techniques used when working with audio events: painting, deleting, and moving.

Painting events

After you add a media file to your project, you must paint it on the timeline in order to hear it. When you paint on the media file's track, you create an event that displays the file's waveform. You can paint events on the timeline using either the Draw tool or the Paint tool.

Clips can also be painted on the timeline with the Draw and Paint tools. *For more information, see Adding clips to tracks on page 105.*

> **Note:** *Media files must be added to the project before either of these tools can be used to paint events.*

Placing events with the Draw tool

The Draw tool is the most common method of placing events on the timeline. This tool allows you to add events one at a time. In addition, you can use the Draw tool to select, edit, and move events. *For more information, see Adding and editing events on page 39.*

1. Click the **Draw Tool** button ( ) or choose **Editing Tool** from the **Edit** menu and choose **Draw** from the submenu. The pointer displays as a pencil icon.

2. Place the Draw tool at the left edge of any track containing a media file.
3. Click and hold the mouse button while dragging the Draw tool to the right. A waveform representing the event appears on the timeline as you drag the mouse.

   Notice that if you are placing a loop file on the timeline, small indentations appear along the top and bottom edges of the event indicating the start and end points of each individual loop.

Tip: *Events can be also be drawn from right (end) to left (beginning).*

4. Release the mouse button to end the event.
5. Click the **Play from Start** button ( ) on the transport bar. The event plays back.

Painting events with the Paint tool

Unlike the Draw tool, the Paint tool allows you to quickly paint multiple events across several tracks. This can be useful when you need to quickly add several seemingly random events to a project. The Paint tool is also best used for painting multiple one-shot events that will be evenly spaced on the grid lines.

When painting MIDI or one-shot clips, you can click the down arrow next to the Paint tool to set the length of events that will be created when you drag with the Paint tool.

1. Click the **Paint Tool** button ( ) or choose **Editing Tool** from the **Edit** menu and choose **Paint** from the submenu. The mouse pointer displays as a brush icon.
2. Click and hold the mouse button while dragging the Paint tool randomly across the several tracks. Notice that events are painted in every grid space the Paint tool contacts.
3. Release the mouse button to stop adding events.
4. Click the **Play from Start** button ( ) on the transport bar. All new events play back.

Tip: *With the Paint tool selected, you can use Ctrl+click to paint an entire event for one-shot, Beatmapped, and MIDI tracks.*

Inserting events at the play cursor

You can also insert events at the cursor during playback. You can use this feature to create rhythms on one-shot tracks while listening to the track you're editing in the context of the rest of your project. When you're done creating events, you can use the **Render to New Track** command (on the **Edit** menu) to save the rhythm to a new track, or you can copy and paste your new events across the timeline.

1. Create a time selection in the portion of the project you want to edit.
2. Select the Loop Playback button ( ).
3. Click the Play button ( ) to start playback.
4. Click a track header in the track list to set the focus track.
5. Press Y to add an event at the play cursor (during playback, the edit cursor remains fixed, and the play cursor follows playback).

   If snapping is enabled, events are created at the next snap point. You can use snapping to quantize your events.
6. Repeat step 5 as needed.
7. You can press the up and down arrow keys to change the focus track.
8. Click the Stop button ( ) when you're finished creating events.
9. Edit event positions as necessary.

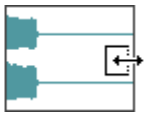
Tip: *If you're using this feature to tap rhythms with one-shot tracks, try applying a groove to adjust the timing of your rhythm.For more information, see* *Working with grooves on page 118*.

Changing the length of events

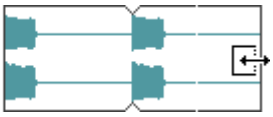
After an event is painted on the track view, you may discover that it is too long or not long enough; however, it is easy to change the length of an event. You may find it helpful to turn snapping options on by choosing **Snapping** from the **Options** menu and choosing **Enable** from the submenu.

To alter an event's length, click the **Draw Tool** button ( ) and drag either end of the event. When you drag the event past the end of the file, looped files repeat, but one-shot and Beatmapped tracks draw silence.

Original event



Drag the end of the event...



...to increase its length.

Erasing sections of events

Occasionally you may need to delete only specific sections of an event and leave the rest of it intact. The easiest method of deleting a section of an event is to use the Erase tool.

1. Click the **Erase Tool** button ( ) or choose **Editing Tool** from the **Edit** menu and choose **Erase** from the submenu. The pointer displays as an eraser icon.
2. Drag in the track view to delete event data.

> **Tip:** *With the Erase tool, you can delete an entire one-shot, Beatmapped, or MIDI event. Just hold Ctrl while you click the event.*

Moving events

The position of the left edge of an event indicates when the event becomes audible during playback. You can move events along the timeline either individually or as a group.

In addition, you can stack events on top of one another. A longer event placed over a smaller event conceals the smaller event and makes it inaudible. A smaller event placed over a larger event is audible and renders the section of the longer event it covers inaudible.

1. Click the **Draw Tool** button ( ).
2. Click the event to be moved. The event is highlighted to indicate that it is selected.

> **Tip:** *You can hold Ctrl or Shift to select multiple events.*

3. Drag the event to a new location on the track.

> **Note:** *Multiple selected events move in relation to the event being dragged.*

Editing MIDI events

You can use the inline MIDI editing mode to edit MIDI events directly in the timeline. In this mode, you can draw and erase notes in a piano roll or drum grid view. *For more information, see Editing MIDI on the timeline on page 165.*

Using the cursor

The ACID cursor is a flashing vertical line that spans the track view of the entire project. The cursor position determines where events split, where playback/recording starts, and where clipboard contents are pasted. In addition, the positioning of the cursor is essential to the creation of time selections.

Positioning the cursor with the mouse

1. Click the **Draw Tool** button ( ).
2. Click in the track view to position the cursor.

Positioning the cursor with the keyboard

While using the mouse to position the cursor in the timeline is quick and intuitive, it is not always precise. For example, you may want the beginning of a guitar solo to coincide with a snare drum hit, or background vocals to enter exactly 3 minutes and 24 seconds into a song. For these reasons, you can also position the cursor using your keyboard. *For more information, see Cursor placement, loop region and time selection commands on page 23.*

Positioning the cursor with the Go To command

The Go To command is used to place the cursor at a specific location in the ACID project.

- Press Ctrl+G to position the cursor based on the position displayed on the beat ruler. Specify a position (in measures.beats.ticks format) in the box that appears in the time display and press Enter.

- Press Shift+G to position the cursor based on the time displayed on the time ruler. Specify a time in the box that appears in the time display and press Enter.

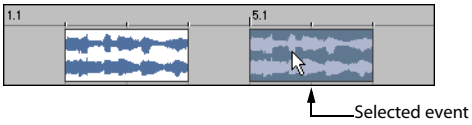
Tip: *You can also open the boxes in the time display by double-clicking the desired value.*

Making selections

You must select events before you can move or edit them.

Selecting an event

1. Click the **Draw Tool** button ( ).
2. Click an event. The event is highlighted.



Selecting multiple events

You have several methods of selecting multiple events:

- Press Ctrl or Shift while clicking events.
- Use the **Select All on Track** command.
- Use the **Select Events to End** command.
- Use the **Select All** command.
- Use the Selection tool.

Note: *Unless stated otherwise, selections can only be made using the Draw tool.*

Selecting multiple events using the keyboard and mouse

Holding Ctrl while clicking events allows you to select multiple, nonadjacent events that reside on any track. This method is useful when you need to move several scattered events by an equal amount within the project.

Holding Shift allows you to select multiple, adjacent events. Selecting any two events while holding Shift automatically selects all events located between the selected events. Events may be selected from the same track or across tracks. This method is useful when you want to move several adjacent events by an equal amount within the project.

Selecting multiple events using the Select All on Track command

Right-clicking any track in the track view and choosing **Select All on Track** from the shortcut menu selects every event on the track.

Selecting multiple events using the Select Events to End command

Right-clicking an event in the track view and choosing **Select Events to End** from the shortcut menu selects every event on the track after the selected event.

You use this command across multiple tracks by holding Ctrl to click events on several tracks and then right-clicking and choosing **Select Events to End** from the shortcut menu.

Selecting events that use a specified clip

Perform any of the following actions to select events created from a clip:

- Right-click an event in the timeline and choose **Select Events Using This Event's Clip** from the shortcut menu to select all events on the track that use the same clip as the selected event.
- Right-click the timeline, choose **Select Events Using Clip**, and then choose a clip from the submenu to select all events on the track that use the specified clip.
- Right-click a clip in the Clip Pool window and choose **Select Timeline Events** from the shortcut menu.

Selecting events using the Select All command

Choosing **Select All** from the **Edit** menu selects all events in a project.

Selecting multiple events using the Selection tool

You can drag the Selection tool across the track view to select events across multiple tracks. This tool allows you to select events using three methods: vertical, horizontal, and free selection.

Method	Description	Displays as...
Vertical	Allows you to select all events on all tracks within an interval of time.	Parallel dashed line spanning the vertical length of the project.
Horizontal	Allows you to select all events on a track or several adjacent tracks.	Parallel dashed line spanning the horizontal length of the project.
Free selection	Allows you to select a group of adjacent events on adjacent tracks. This is the default selection method.	Dashed line box.

1. Click the **Selection Tool** button ( ) or choose **Editing Tool** from the **Edit** menu and choose **Selection** from the submenu.
2. Place the pointer on the track view. The pointer displays as an arrow with an adjacent dotted box ( ).
3. Drag the mouse on the track view. A dashed rectangular box appears on the track view and all events within and adjacent to it are selected.
4. While holding the left mouse button, click and release the right mouse button (referred to as toggle-clicking). The selection method changes to vertical and again, all events within and adjacent to the selection area are selected.
5. Toggle-click the mouse once more. The selection method changes to horizontal and all events within and adjacent to the selection area are selected.

Creating time selections

You are not limited to selecting events. Frequently, you may want to select only audio events occurring within a time selection. You can do this using the Time Selection tool.

1. Click the **Time Selection Tool** button ( ) or choose **Editing Tool** from the **Edit** menu and choose **Time Selection** from the submenu. The pointer displays with an adjacent cursor ( ).
2. Drag the mouse in the track view. The selection area is highlighted on the track view.
3. Release the mouse button. A time selection is created and all events within it are selected.

Note: *If the selection area is automatically snapping to the track view's grid lines, the ACID snapping feature is turned on. You can turn snapping off by pressing F8.*

Creating event selections within time selections

You can select specific events within a general time selection. This technique is useful for selecting individual instruments from a particular section of a song. For example, you may want to copy all percussion events from a song's bridge and re-use them in the coda.

1. Click the **Time Selection Tool** button ( ) or choose **Editing Tool** from the **Edit** menu and choose **Time Selection** from the submenu. The pointer displays with an adjacent cursor ( ).
2. Drag the mouse in the track view. The selection area is highlighted on the track view.
3. Release the mouse button. A selection is created and all events within it are selected.
4. Hold Ctrl and click any event that extends beyond the time selection. The entire event appears highlighted; however, only the section of the event contained within the time selection is actually selected.

Tip: *You can select additional events within the time selection by continuing to hold Ctrl while clicking events. In addition, holding Shift allows you to select the events of multiple adjacent tracks within a selection.*

Working with tracks

The following sections explain several basic track functions and features.

Reordering tracks

When building an ACID project, you may want to reorder the tracks to place similar instruments in proximity to one another. For example, placing all drum loops together in the track view makes it easier for you to fine-tune the mix of the song's overall drum sound.

1. Drag the track header to a new location in the track list. A heavy black horizontal line appears on the track list to indicate where the track will be placed.
2. Release the mouse button. The track is dropped in the new location and the entire track list/track view adjusts accordingly.

Tip: *You can reorder multiple tracks by holding Ctrl or Shift while selecting tracks and dragging the tracks as a group.*

Resizing tracks

You can change the height of a track, thereby affecting how many tracks display in the track view. This is especially useful when building a project with a large number of tracks. In addition, you can decrease the track's height until only the multipurpose slider, **Track FX** button, **Mute** button, and **Solo** button are visible.

1. Drag the bottom edge of a track up or down in the track list. The pointer displays as a vertical stretch icon ( ).
2. Release the mouse button to establish the track's new height.

Tip: *You can set the default height for all new tracks by right-clicking the newly resized track in the track list and choosing* **Set Default Track Properties** *from the shortcut menu. For more information, see* *Setting default track properties on page 229*.

Changing track colors

As mentioned previously, tracks are automatically created to accommodate new media files. These tracks are assigned a default color. However, you can change track colors to organize the tracks in your project. To change the color, right-click the track in the track list, choose **Color** from the shortcut menu, and choose the desired color from the submenu.

Renaming tracks

To rename a track, right-click the track name and choose **Rename** from the shortcut menu, or double-click the track name. Renaming a track applies to the project only and does not change the file associated with the track.

Duplicating tracks

To duplicate a track, right-click it and choose **Duplicate Track** from the shortcut menu. An exact copy of the track is created and its events and adds it below the original track in the project. The words "Copy of" appear before the name of the duplicate track to identify it in the track list.

For creative ways to use duplicate tracks, see Playing with duplicate tracks on page 243.

Deleting tracks

You can delete unnecessary tracks from a project by selecting the track and using any of the following methods:

- Choose **Delete** from the **Edit** menu.
- Right-click a track and choose **Delete Track** from the shortcut menu.
- Press Delete.

Copying, cutting, and pasting tracks

Copying a track places an exact copy of the selected track on the clipboard, but leaves the track view unchanged. To copy a track, select the track and do one of the following:

- Click the **Copy** button ( ) on the toolbar.
- Choose **Copy** from the **Edit** menu.
- Right-click the track header and choose **Copy Track** from the shortcut menu.
- Press Ctrl+C.

Cutting a track removes it from the track view and places it on the clipboard. To cut a track, select it and do one of the following:

- Click the **Cut** button ( ) on the toolbar.
- Choose **Cut** from the **Edit** menu.
- Right-click the track header and choose **Cut Track** from the shortcut menu.
- Press Ctrl+X.

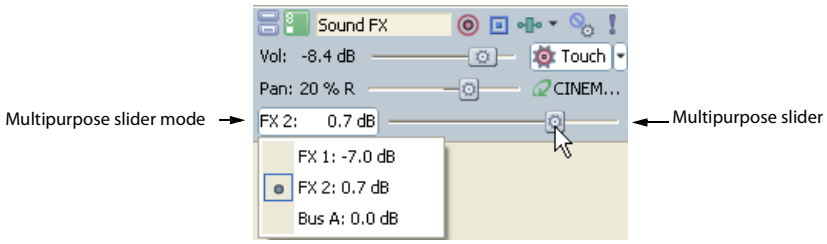
Tracks that are copied or cut to the clipboard can be pasted back into the current project or into a different project an unlimited number of times. This is a useful way to share tracks between different compositions. You can paste a track in one of the following ways:

- Click the **Paste** button ( ) on the toolbar.
- Choose **Paste** from the **Edit** menu.
- Right-click the track view and choose **Paste Track** from the shortcut menu.
- Press Ctrl+V.

Adjusting the mix

You can adjust the mix of a specific track in the track header. Volume and pan each have dedicated sliders to make adjustments.

Assignable effects and busses share a multipurpose slider. Click the multipurpose slider to choose what you want to adjust.



Once you have chosen what you want to adjust, drag the slider to adjust the level. You can hold Ctrl or Shift to select multiple tracks and move the sliders together as a group.

Function	Description
Volume	This dedicated volume slider controls how loud a track is in the mix. A value of 0 dB means that the track plays with no boost or cut from the software. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.
Pan	This dedicated pan slider controls the position of a track in the stereo field. Dragging the slider to the left places the track in the left speaker more than the right, while dragging the slider to the right places the track in the right speaker. Because true stereo panning is used, you can introduce clipping when panning a track to the left or right. Unlike a left/right balance control—which simply decreases the volume of one channel—the default panning mode actually adds the audio from one channel to the other. When panning a track, adjust the track volume accordingly. You can choose among five panning types to determine how a track is panned. For more information, see Choosing stereo pan types on page 111.
FX	With the multipurpose slider, you can control the level of the track sent to each of the assignable effect chains that you have created. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.
Bus	With the multipurpose slider, you can control the level of the track sent to each of the additional busses that you have created for your project. Dragging the fader to the left cuts the volume; dragging the fader to the right boosts the volume.

Note: *When adjusting the mix of your tracks, remember to look at the meters on the mixer. Because you are adding the volumes of all the tracks together, it is easy to clip the audio output. Make sure that the meters never display the red clip indicator during playback.*

Muting tracks

Each track has a **Mute** button ( ). Clicking this button shades the corresponding track (to indicate that it is muted) and renders it inaudible during playback. Clicking the **Mute** button a second time returns the track to its original level in the mix. Toggle-muting a track is an effective way of determining whether a track contributes to the overall sound of a project.

You can also press Z to mute a track or group of tracks.

Tip: *Press Ctrl and click the* **Mute** *button to mute only the selected track (and restore any other muted tracks). If the selected track is already muted, press Ctrl and click the* **Mute** *button to restore all tracks.*

Soloing tracks

Located next to the **Mute** button, the **Solo** button () allows you isolate tracks in a project during playback. When you click this button during playback, the corresponding track remains audible and all other tracks are muted. Clicking the **Solo** button a second time returns all tracks to their original levels in the mix. Toggle-soloing a track is an effective method of configuring and previewing isolated track effects against how they sound in the project.

You can also press X to solo a track or group of tracks.

> **Tip:** *Press Ctrl and click the* **Solo** *button to solo only the selected track (and restore any other soloed tracks). If the selected track is already soloed, press Ctrl and click the* **Solo** *button to restore all tracks.*

Working with groups of tracks

Select a group of tracks by holding the Ctrl key while you click the track header of the desired tracks. Now you can adjust the volume, panning, track color, and other track attributes simultaneously.

Using undo and redo

You have unlimited undo and redo capabilities in ACID. Each edit you perform in the project is added to an undo history, which allows you to quickly restore the project to any of its previous states. In addition, undoing an edit automatically places it in the project's redo history where it can be quickly re-performed. However, any new edit performed on the project overwrites the redo history.

> **Note:** *The undo and redo histories are cleared when you close the project or exit the application.*

Using undo

To undo an edit, click the **Undo** button () on the toolbar or press Ctrl+Z. Edits are undone in the reverse order they were performed.

> **Tip:** *You can also undo the most recent edit by choosing* **Undo** *from the* **Edit** *menu.*

Undoing a series of edits

Clicking the down arrow next to the **Undo** button () displays the project's undo history. The history displays as a drop-down list with the most recent edit located at the top. Undoing an edit in the list requires all subsequent edits to be undone as well.

1. Click the arrow to the right of the **Undo** button (). The undo history appears.
2. Locate the edit to be undone. Notice that all subsequent edits are automatically selected and the total number of edits to be undone is indicated at the bottom of the drop-down list.
3. Click the edit to be undone. The project is restored to the state it was in prior to the selected edit.

Undoing all edits

Choosing **Undo All** from the **Edit** menu undoes all project edits and automatically adds them to the redo history.

Using redo

To redo an edit, click the **Redo** button () on the toolbar or press Ctrl+Shift+Z. Edits are re-performed in the reverse order they were undone.

> **Tip:** *You can also redo the most recent undone edit by choosing* **Redo** *from the* **Edit** *menu.*

Redoing a series of edits

Clicking the down arrow next to the **Redo** button ( ) displays the project's redo history. The history displays as a drop-down list with the most recently undone edit located at the top. Redoing an edit in the list requires all subsequently undone edits to be re-performed as well.

1. Click the arrow to the right of the **Redo** button ( ). The redo history appears.
2. Locate the edit to be redone. Notice that all subsequently undone edits are automatically selected and the total number of edits to be redone is indicated at the bottom of the drop-down list.
3. Click the edit to be redone. The project is restored to the state it was in prior to the selected undone edit.

Tip: *Clicking the desktop outside the drop-down list cancels the redo operation.*

Clearing the undo history

You can clear the undo and redo histories without closing the project or exiting the application. After the histories are cleared, new ones are created as you continue building the project.

1. From the **Edit** menu, choose **Clear Undo History**. A confirmation dialog appears, alerting you that this action permanently deletes the current edit histories.
2. Click **Yes** to clear the edit histories or **No** to retain the current edit histories.

Playing the project

You have several methods for playing your projects.

Using the transport bar

All buttons required to play your project are located on the transport bar. The transport bar should look somewhat familiar to you, as it contains buttons found on most home CD and cassette players. *For more information, see Transport bar on page 19.*

Using playback options

As you build a project, you will likely have different playback needs. For example, you may want to hear the project in its entirety when checking the final mix, but not when you are working on the ending. Because of this, you have three playback options:

- Playing the entire project.
- Playing from the cursor position.
- Playing in looped playback.

Playing the entire project

To begin playback from the beginning of the project, click the transport bar's **Play From Start** button ( ) or press Shift+Space. To stop playback, click the transport bar's **Stop** button ( ) or press Space.

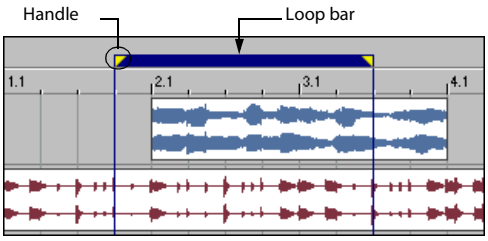
Playing from the cursor position

To begin playback from the current cursor position, click the transport bar's **Play** button( ) or press Space. To stop playback, click the transport bar's **Stop** button ( ) or press Space.

Playing in looped playback

You can also limit playback to a specific loop region on the track view. This playback method uses the transport bar's **Loop Playback** button ( ) and allows you to fine-tune mixes and effects while continually listening to the selected area. *For more information, see Transport bar on page 19.*

1. Drag the handles of the loop bar to create the desired loop region.



2. Click the **Loop Playback** button ( ) to turn on looped playback.
3. Click the transport bar's **Play** button ( ) or press Space. Playback of the selected area begins. To stop playback, click the transport bar's **Stop** button ( ) or press Space.

Bypassing audio effects during playback

If you want to hear your project without your applied audio effects (track, bus, and assignable effects), you can quickly bypass these effects during playback. From the **Options** menu, choose **Bypass All Audio FX**. This option can also conserve processing power to avoid playback problems.

> **Note:** *When effects are bypassed, you can choose whether bypassed effects remain open. When the* **Keep bypassed FX running** *check box on the* **General** *tab of the Preferences dialog is selected, effects remain open so you can bypass/enable effects with no pause for A/B testing. When the check box is cleared, effects are fully bypassed, conserving processing power.*

Using the Mixer window

The Mixer window is a dockable window with a default location in the lower-right corner of the ACID workspace. The Mixer window contains the following controls:

- A Preview fader, which allows you to adjust the loudness of media files previewed from the Explorer window, Track Properties window, Beatmapper, or the Chopper tool. Also, the Preview fader's volume determines the volume of new tracks added to the project, unless you have set a default track volume level. *For more information, see Setting default track properties on page 229*. This allows you to set up a quick mix while you are adding media to your project.
- A Master bus fader, which controls the overall volume.
- Faders for up to 26 project busses when added to the project.
- Faders for up to 32 assignable effect chains when added to the project.
- Faders for up to 32 soft synth controls when added to the project.

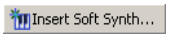
The function of the bus, assignable effect, and soft synth controls are beyond the scope of this chapter. *For more information, see Using the Mixer on page 139*.

Viewing the Mixer window

The Mixer window appears by default when you start the application, but you can hide it if necessary. To view or hide the Mixer window, choose **Mixer** from the **View** menu or press Alt+3. A check mark appears adjacent to the command to indicate when the window is displayed.

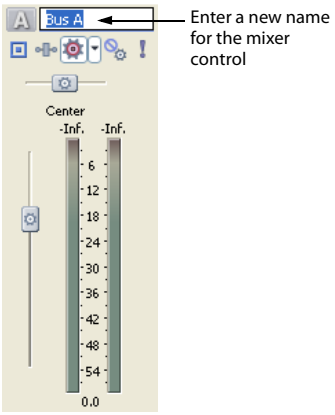
Using the mixer toolbar

The Mixer window toolbar allows you to access project properties, add busses, and add assignable effects chains to the Mixer.

Button	Description
	Displays the Project Properties dialog.
	Downmixes your audio from 5.1 surround to stereo or from stereo to mono so you can ensure your mix will sound the way you intended it, even when your audience's hardware has fewer channels than the original mix. The button represents the current playback mode:  5.1 surround output  Stereo output  Mono output
	Attenuates the volume of all busses that are routed to hardware outputs by 20 dB. Click again to restore original volume.
	Adds an assignable effect chain to your project. The Plug-In Chooser dialog appears so that you can create a plug-in chain. For more information, see Using assignable effects on page 140.
	Adds another bus to your project. The Audio tab in the Project Properties dialog updates to reflect the new number of busses. For more information, see Using busses on page 139.
	Adds a soft synth control to your project. You can assign MIDI tracks or external MIDI input devices to the soft synth control and assign the soft synth control to a DLS set or VSTi® plug-in. For more information, see Using soft synth controls on page 142.

Renaming mixer controls

Double-clicking a mixer control name allows you to rename the control. Press Enter to save the change.



Using the mixer's faders

Adjusting the Preview fader

Drag the fader up or down to adjust the preview volume.

Hiding the Preview fader

Once you have added all desired media files to a project, you may want to hide the Preview fader to make room for additional busses, assignable effects, and soft synth controls. To hide the Preview fader, right-click within the Mixer window and choose **Show Preview Fader** from the shortcut menu. The fader remains hidden until you choose **Show Preview Fader** from the shortcut menu again.

Adjusting split faders in the mixer

Split faders allow you to adjust the levels of the left and right channels independently. To move the faders individually, drag the fader for the desired channel and release the mouse when it is in the correct position.

However, you can adjust both channels simultaneously by doing either of the following:

- Drag in the middle of the fader while making your adjustment.
- Click the **Unlock Fader Channels** button( ) before adjusting the fader.

You can also change the fader level by double-clicking:

- Double-click the fader to reset it to 0.0 dB.
- If you have set each channel differently, double-click either channel to match the remaining channel to its level.

Changing meter resolution

You can select the meter resolution. This is useful when building a project from several media source pools that have varying volume levels. To change the resolution, right-click a meter and choose the desired resolution from the shortcut menu.

Note: *Changing the meter resolution of one fader automatically changes all other meters in the mixer to match the selected resolution.*

Adjusting for clipping

The volume of certain media files may cause a meter to clip. Clipping results in a distorted audio signal and displays in a red indicator at the top of the meter. If the meter clips, lower the volume and click the red clip indicator to reset the meter. Continue adjusting the fader and resetting the meter until you eliminate the clipping.

Tip: *You can also reset a meter by right-clicking it and choosing* **Reset Clip** *from the shortcut menu.*

Saving, rendering, and delivering projects

Though you are provided with the tools to quickly build impressive musical projects, you may find yourself building elaborate projects over a period of weeks or even months. While you are working on a project, you should save it in the ACID native format: the ACID project file (.acd).

Important: *If you save a project originally created in an earlier version of ACID software in ACID version 6.0, it will be unusable in earlier versions of the software. Use the Save As dialog to save the project with a new name after editing it in version 6.0.*

When you are finished building a project, you can render projects in a variety of formats. You should determine the project's final format (or formats) based on how you will deliver the media. For example, you would render your project to a streaming media format if you plan to publish it to the Internet.

Note: *Be aware that projects containing MIDI files that are routed to external MIDI ports must be rerouted to internal DLS sets or VST instruments (VSTi) to be included in the rendered mix. For more information, see* *Rendering projects with MIDI tracks on page 195*.

Saving projects

An ACID project file (.acd) is the default file format for saving a new project and should be used for saving unfinished projects. There are two ACID project file types.

Format	Extension	Description
ACID Project File	.acd	Contains all information regarding the project including track layout, envelope settings, and effects parameters. However, this type of file does not contain actual audio, only references to the audio files.
ACID Project with Embedded Media	.acd-zip	Contains all information regarding the project including track layout, envelope settings, and effects parameters. In addition, all audio files used in the project are embedded into the project file. If you save a project in .acd-zip format, the project file and all media files are copied to a temporary files folder. If you continue to work on your project after saving the .acd-zip file, your changes are saved to the files in this temporary folder. You can customize the location of the temporary files folder. For more information, see From the Options menu, choose Preferences to display the Preferences dialog. on page 229.

1. To save a file, display the Save As dialog using any of the following options:
   - Click the **Save** button ( ) on the toolbar.
   - From the **Edit** menu, choose **Save**.
   - Press Ctrl+S.
2. From the **Save in** drop-down list, choose the drive and directory where the file will be saved.
3. Enter a name for the project in the **File name** box.
4. From the **Save as type** drop-down list, choose the desired ACID project file type.
5. If you want to save a copy of each of the project's media files to the same location as your project file, select the **Copy all media with project** check box. This is available when saving as an ACID project file.
6. Click **Save**. The project is saved.

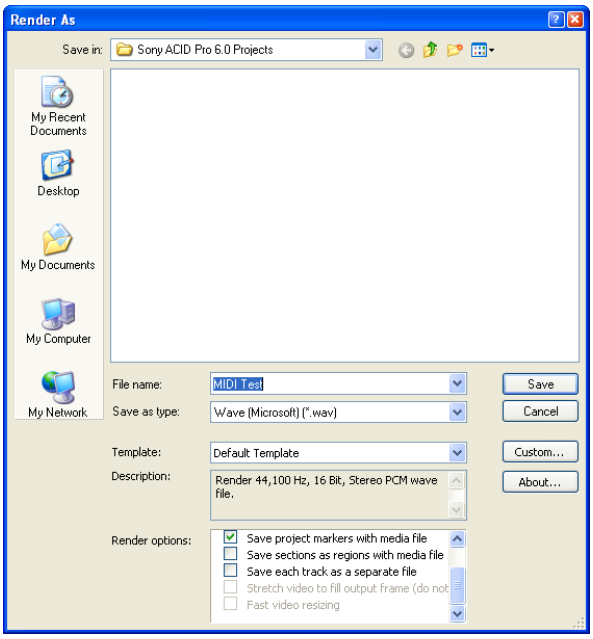
Tip: *Once the project is saved, you can use the* **Save As** *command from the* **File** *menu to create a copy of the project with a new name or save to a different ACID project file format.*

Rendering projects

Rendering refers to the process of converting the ACID project into a file that is formatted for a specific playback method. Possible playback methods include media player applications, Internet streaming media, CD-ROM, and CD audio. When an ACID project is rendered, it is not overwritten, deleted, or altered and you are able to return to the original project to make changes and re-render.

1. From the **File** menu, choose **Render As**. The Render As dialog appears.

2. From the **Save in** drop-down list, choose the drive and folder where the file will be saved.
3. Enter a new name for the project in the **File name** box.
4. From the **Save as type** drop-down list, choose the desired file format.
5. If the selected file type supports it, you can choose an encoding template from the **Template** drop-down list, or click **Custom** to create a new template. *For more information, see* *Creating custom rendering settings on page 54*.
6. Select or clear the following check boxes as needed:
   - Select the **Save project as path reference in rendered media** check box if you want to save the project path information with the rendered file to easily return to your source project if you use your rendered file in another project.



Note: *If you modify the project file after rendering, the project data will no longer match the rendered file. To edit a project using a path reference, the project file and all media must be available on your computer.*

- Select the **Render loop region only** check box if you want to save only the portion of the project that is contained within the loop region. The loop region does not need to be active for this option to work.
- If the selected file type supports it, you can select the **Save project markers with media file** check box to include markers and regions in the rendered media file.
- If the selected file type supports it, you can select the **Save sections as regions with a media file** check box to include sections in the rendered media file. If the information cannot be saved to your media file, an .sfl file will be created (using the same base name as your media file).
- Select the **Save each track as a separate file** check box to save each track in your project to a separate file. All of the volume adjustments, panning, FX, and events are saved with the track. You can also use this feature to create tracks that you can use in multitrack recording software or Macromedia® Flash®.
- If your project contains video, you can select the **Stretch video to fill output frame (do not letterbox)** check box to have your video reformatted so that it fills the output frame size listed in the **Description** box. When the check box is cleared, the current aspect ratio is maintained and black borders are added to fill the extra frame area (called letterboxing).
- If your project contains video and you see unacceptable artifacts in the rendered video, you can clear the **Fast video resizing** check box. Turning off this option can correct the artifacts, but your rendering time will increase significantly.

7. Click **Save**. A progress dialog appears.
8. When rendering is complete, you can choose one of the following options:
   - Click **Open** to start the associated media player and play the newly rendered file.
   - Click **Open Folder** to open Windows Explorer and display the location of the newly rendered file.
   - Click **Close** to close the progress dialog and return to the ACID window.

Supported formats for rendering

The following table briefly describes the file formats available for rendering a project.

Format	Extension	Description
ATRAC	.aa3	A Sony proprietary audio compression technology.
AIFF File	.aif	The standard audio file format for audio used on Macintosh computers.

Format	Extension	Description
MPEG-1 and MPEG-2	.mpg	MPEG files are a format used when burning audio and video to a Video CD, Super Video CD, or DVD. MPEG-1 and MPEG-2 file creation is supported through the use of the MainConcept MPEG plug-in. **Note:** This format requires a separate purchase of the MainConcept MPEG plug-in.
MPEG-1 Layer 3	.mp3	A highly compressed format used for portable digital players and Internet sharing of media. 20 free MP3 encodes are provided. After you have used the free encodes, you must register the plug-in to continue rendering MP3s.
Ogg Vorbis	.ogg	A patent-free audio encoding and streaming technology.
QuickTime	.mov	QuickTime® for Microsoft Windows.
RealMedia	.rm	The RealNetworks® standard for streaming media via the Web. This option renders both audio and video into one file.
Sony Perfect Clarity Audio	.pca	A Sony proprietary lossless audio compression format.
Sony Wave64	.w64	A Sony proprietary wave format that does not have a restricted file size (unlike Windows standard WAV format which is limited to ~2GB).
Video for Windows	.avi	The standard video file format used on Windows-based computers.
Wave	.wav	The standard audio file format used on Windows-based computers.
Windows Media Audio	.wma	The Microsoft® audio format used to create files for streaming or downloading via the Web.
Windows Media Video	.wmv	The Microsoft audio and video format used to create files for streaming or downloading via the Web.

Note: *Some plug-ins, such as MP3, may require registration.*

Creating custom rendering settings

The Custom Settings dialog appears when you click **Custom** in the Save As dialog. You can use the Custom Settings dialog to create custom encoding templates for many of the file formats available in the software.

1. From the **File** menu, choose **Render As**. The Render As dialog appears.
2. Choose your preferred file format from the **Save as type** drop-down list. If the format allows you to create custom settings, the **Custom** button becomes active.
3. Click **Custom**. The Custom Template dialog appears.
4. Make the appropriate setting changes for the chosen file format. For help on individual settings, click the **What'sThis? Help** button ( ) and click a setting.

Tip: *To save the custom settings for future use, enter a name for the template in the* **Template** *box and click the* **Save Template** *button ( ).*

5. Click **OK**. The Custom Template dialog closes.

Publishing to the Internet

When your project is finished, you have the option of publishing it to the Internet. The most common place to publish your project is ACIDplanet.com, a virtual community of ACID users. ACIDplanet.com allows you to do the following:

- Share your music.
- Listen to projects built by other ACID enthusiasts.
- Download free loops.
- Enter remix contests co-sponsored by Sony and major record labels.

Publishing your project to the Internet involves two distinct procedures: creating a personal account and uploading the project.

Creating a personal account

You can create accounts at Web sites where you can publish your song files. Each Web site that offers publishing directly through ACID software will guide you through its own account creation process. If you haven't created an account and you attempt to publish a song, you will be directed to complete the Publish Setup utility.

1. From the **File** menu, choose **Publish**. The Publish Setup dialog displays.
2. Follow the on-screen instructions to create an account.

At any time, you can go back and create another account at a different Web site. The Web site you are currently logged into in the Publish Setup utility is where your song is published when you choose **Publish** from the **File** menu.

Uploading a project

Publishing a project file copies your media to the Web so you can share it with other Web users. The following procedure assumes you already have an account set up with a publish provider. If not, you will first be redirected to set up an account. After successfully creating an account, you will be directed back to the Publish feature.

1. From the **File** menu, choose **Publish**. The Publish Setup dialog displays.
2. Log into your publishing account, or follow the on-screen instructions to create one.
3. Select the appropriate radio button to specify whether the song to be published is the current ACID song or a different song.
   - To publish your current ACID song, choose a streaming format and bit rate.
   - To publish a different song, enter the path to the song or click **Browse** to locate the file. This song must already be in a streaming format.
4. Click **Next**. If you are publishing the current ACID song, it is rendered in the format and bit rate you specified. A window appears from the publish provider with directions for completing the publishing process.
5. Follow the instructions provided by the publish provider. The file begins uploading to the provider. A progress dialog informs you when the upload is finished.
6. Click **OK**. The publish provider provides a link to the song on their Web site; however, this may vary depending on provider.

Writing to CD

You can burn your projects to CD using supported CD-R/CD-RW drives. You can burn CDs for multiple- or single-track projects and build audio CD layouts automatically or manually. You can also create video CDs that can be played in many home DVD players and on computers with a CD-ROM drive and VCD player software, and multimedia CDs that can be played in any computer with the appropriate player.

Understanding track-at-once and disc-at-once

ACID provides two ways to record audio to a CD-R disc: track-at-once and disc-at-once.

Track-at-once

Track-at-once writing records individual tracks to the disc and results in a partially recorded disc. However, the CD-R disc remains unplayable on most systems until you close the disc. The advantage of track-at-once writing is that you can record tracks onto the disc as you finish them versus waiting until you have finished your whole album. Track-at-once writing burns the entire project as a single track.

Disc-at-once (Single Session or Red Book)

Disc-at-once writing is the most common burning method in the music industry. This writing mode is used when creating a master disc to be sent to a disc manufacturer for mass replication. Disc-at-once works just as it sounds. Multiple tracks of audio are written to the CD in one recording session.

Burning single tracks (track-at-once)

Note: *The entire project length is written to a CD track. If your project has events on muted tracks that extend beyond the end of the audible material, the muted events burn as silence at the end of your CD track. To burn just a portion of a project, create a loop region and select the* **Burn loop region only** *check box.*

1. Insert a blank CD in a supported CD-R/CD-RW drive.
2. From the **Tools** menu, choose **Burn Track-at-Once Audio CD**.

   Notice that the Burn Track-at-Once Audio CD dialog indicates the amount of time that the current project will fill on the CD as well as the total amount of time remaining on the CD. If the **Time needed for audio** value exceeds the **Time available on disc** value, you are not allowed to write the track to the CD.

Note: *If there is no CD in the CD-R/CD-RW drive, only the* **Cancel** *button is available in this dialog.*

3. Choose a setting from the **Action** drop-down list:
   - Choose **Burn audio** to begin recording audio to your CD when you click **Start**. You must close the disc before it can be played in an audio CD player.
   - Choose **Test, then burn audio** to test whether your files can be written to the CD without encountering buffer underruns. Recording begins after the test if it is successful.
   - Choose **Test only** to test whether your files can be written to the CD without encountering buffer underruns. No audio is recorded to the CD.
   - Choose **Close disc** to close your disc without adding any audio when you click **Start**. Closing a disc allows your files to be played on an audio CD player. You cannot add tracks to a CD once it has been closed.
   - Choose **Erase RW disc** to erase a rewritable CD when you click **Start**.
4. Select your burning options:
   - Select the **Buffer underrun protection** check box if your CD recorder supports buffer underrun protection. Buffer underrun protection allows a CD recorder to stop and resume burning.

     Buffer underrun protection can create a disc that can be played in CD players but may contain a bit error where burning stopped and restarted. Consider clearing this check box when creating a premaster disc.
   - Select the **Erase RW disc before burning** check box to erase a rewritable CD before you begin burning.
   - Select the **Close disc when done burning** check box to close the CD after burning. Closing a disc allows your files to be played on an audio CD player. You cannot add tracks to a CD once it has been closed.
   - Select the **Eject disc when done** check box to eject the CD automatically when burning is complete.
   - Select the **Burn selection only** check box to burn only the selected region. Clear the check box to burn the entire project.
   - Select the **Render temporary image before burning** check box if you want to render your CD project to a temporary file before recording. Prerendering can prevent buffer underruns if you have a complex project that cannot be rendered and burned in real time.

Note: *The rendered temporary file will remain until you modify your project or exit. If an image file exists when you Open the Burn Disc-at-Once Audio CD dialog, the check box is displayed as Use existing rendered temporary image.*

5. From the **Drive** drop-down list, choose the drive for burning CDs.
6. From the **Speed** drop-down list, choose the speed at which you want to burn. Choosing **Max** uses your drive's fastest possible speed; decrease the setting if you have difficulty burning because of buffer underruns.
7. Click **Start**.

Important: *Once the CD writing begins, cancelling the write operation renders the CD unusable.*

Disc-at-once (DAO) CD burning

The DAO burning process involves arranging your media on the timeline, adding pauses between tracks as necessary, inserting track markers, and burning your CD.

Adding pauses

Each CD track in your project should have a two-second pause following it. This default setting is based on the Red Book specification for audio CDs. The exception to this standard is a continuous recording, such as a live concert CD. For a continuous recording, you can omit the pauses after tracks for continuous playback. You can manually insert silence between your audio files to create a pause.

Note: *The Red Book specification also requires a two-second pause at the beginning of an audio CD. This pause is automatically added when you burn your CD.*

1. Position your audio files on the timeline in the order in which you want them to play on your CD.
2. Position the cursor where you want to insert the pause between files.
3. From the **Insert** menu, choose **Time**. The Insert Time dialog appears.
4. Enter two seconds in the **Amount of time to insert** box.
5. Click **OK**. Two seconds are inserted in the timeline at the cursor position.

Inserting CD track markers

You can use CD track markers in your project to indicate to the CD-R device where to mark the beginning and ending of a track during the writing process. A Red Book CD can contain up to 99 tracks.

1. Position your audio files and add pauses between them as necessary. *For more information, see Adding pauses on page 57.*
2. Position the cursor at the start of an audio file.
3. From the **Insert** menu, choose **CD Track Marker**. The marker appears in the marker bar and is automatically numbered.

Important: *You must place your first CD track marker at the beginning of your project. Audio placed before the first marker will not be burned to CD.*

Tip: *Once you have inserted a marker, you can move or delete them as needed.*

4. Repeat step 3 until you have marked all CD tracks.

Burning a disc (disc-at-once)

1. Insert a blank CD in a supported CD-R/CD-RW drive.
2. From the **Tools** menu, choose **Burn Disc-at-Once Audio CD**. The Burn Disc-at-Once Audio CD dialog appears.
3. From the **Drive** drop-down list, use the CD drive that you want to use to burn your CD.
4. From the Speed drop-down list, choose the speed at which you want to burn. **Max** will use your drive's fastest possible speed; decrease the setting to prevent the possibility of buffer underruns.
5. Select the **Buffer underrun protection** check box if your CD recorder supports buffer underrun protection.

   Buffer underrun protection allows a CD recorder to stop and resume burning.

Note: *Buffer underrun protection can create a disc that can be played in CD players, but may contain a bit error where burning stopped and restarted. Consider clearing this check box when creating a premaster disc.*

6. Choose a radio button in the Burn mode box:
   - **Burn CDs** begins recording audio to your CD immediately.

- **Test first, then burn CDs** performs a test to determine whether your files can be written to the CD recorder without encountering buffer underruns. No audio is recorded to the CD during the test, and recording begins after the test if it is successful.
- **Test only (do not burn CDs)** performs a test to determine whether your files can be written to the CD recorder without encountering buffer underruns. No audio is recorded to the CD.

7. Select the **Render temporary image before burning** check box if you want to render your CD project to a temporary file before recording. Prerendering can prevent buffer underruns if you have a complex project that cannot be rendered and burned in real time.

Note: *The rendered temporary file will remain until you modify your project or exit. If an image file exists when you Open the Burn Disc-at-Once Audio CD dialog, the check box is displayed as Use existing rendered temporary image.*

8. Select the **Automatically erase rewritable discs** check box if you're burning to rewritable media and want to erase the disc before burning.
9. Select the **Eject when done** check box if you want the CD to eject automatically when burning has completed.
10. Click **OK** to start burning.

Chapter 3 Editing Events

In this chapter, you'll learn about basic event editing techniques such as cutting, copying, pasting, trimming, splitting, and joining events. You'll also learn how to use ripple editing to expand the possibilities of timeline editing. Finally, you'll take a look at advanced editing techniques such as slipping and sliding events, changing event properties, and adding event envelopes.

Note: *For the basic event editing topics in this chapter, make sure that ripple editing is turned off. Verify that the* **Ripple Edits** *command in the* **Options** *menu is not selected. For more information, see* *Ripple editing on page 65*.

Copying events

Copying an event, a time selection, or event within a time selection places an exact copy of the selected event(s) on the clipboard, but leaves the track view unchanged. Events copied to the clipboard can be pasted in the project an unlimited number of times. In addition, clipboard content remains on the clipboard until replaced by new content.

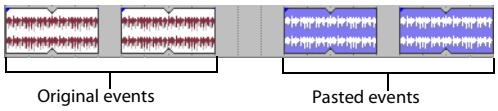
1. Select the event data you want to copy or make a time selection. *For more information, see* *Making selections on page 42*.
2. Copy the event data using any of the following methods:
   - Click the **Copy** button ( ) on the toolbar.
   - Choose **Copy** from the **Edit** menu.
   - Right-click the selection and choose **Copy** from the shortcut menu.
   - Press Ctrl+C.

Pasting events

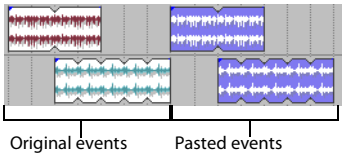
The clipboard's contents can be pasted in a project an unlimited number of times. However, an event is always pasted in the track it was copied/cut from. In addition, pasting the contents of the clipboard over an existing event results in the pasted event overlapping the existing event. To avoid pasting over existing events, you have two options:

- Use the **Paste Insert** command. *For more information, see* *Using Paste Insert on page 60*.
- Turn on ripple editing. *For more information, see* *Ripple editing on page 65*.

When events are cut/copied to the clipboard and subsequently pasted into a project, the time data inherent in the cut/copied events is maintained and pasted. For example, if you select two events on the same track that are separated by five seconds of silence, copying and pasting these events results in the five seconds of silence also being pasted into the project.



Taking this concept a step further, if you select discontinuous events from several tracks, copying and pasting these events results in any selected time data being pasted into the project as well. This maintains the relative position of events in the project.



Note: *You can also paste events across tracks using clips. For more information, see* *Copying clips and events across tracks on page 106*.

Using the Paste command

1. Place the cursor at the desired position on the timeline.
2. Paste the clipboard contents using any of the following methods:

- Click the **Paste** button ( ) on the toolbar.
- Choose **Paste** from the **Edit** menu.
- Right-click the track view and choose **Paste** from the shortcut menu.
- Press Ctrl+V.

Using Paste Repeat

When building projects, you often need to paste the contents of the clipboard several times. Rather than repeatedly pasting and moving the content, the **Paste Repeat** command allows you to specify the number of times and at what interval the clipboard's contents are pasted on the track view. This is a useful way of quickly building a project that uses a repetitive riff or structure. For example, you can build the backing tracks for a twelve-bar blues, copy them, and use **Paste Repeat** to paste several copies of it in the project.

1. Click the **Time Selection Tool** button ( ).
2. Drag the mouse in the track view to create a time selection spanning several events and copy it to the clipboard.
3. Click the **Go To End** button ( ) on the transport bar or press Ctrl+End to send the cursor to the end of the project.
4. From the **Edit** menu, choose **Paste Repeat** or press Ctrl+B. The Paste Repeat dialog appears.
5. Enter a number in the **Number of times to paste** box.
6. Select the **End to end** radio button and click **OK**. The events are pasted end to end the number of times specified in step five, starting at the cursor position.

Using Paste Insert

To insert the contents of the ACID clipboard at the current cursor position and force existing events to move in time to accommodate the pasted events, choose **Paste Insert** from the **Edit** menu.

If the cursor is in the middle of an event, the event splits at the cursor position where the new events are pasted. *For more information, see Splitting events on page 62.*

Pasting events at the play cursor

You can also paste the contents of the clipboard at the cursor during playback. You can use this feature to create rhythms on one-shot tracks while listening to the track you're editing in the context of the rest of your project. When you're done creating events, you can use the **Render to New Track** command (on the **Edit** menu) to save the rhythm to a new track, or you can copy and paste your new events across the timeline.

1. Create a time selection in the portion of the project you want to edit.
2. Select the Loop Playback button ( ).
3. Copy the one-shot you want to use.
4. Click the Play button ( ) to start playback.
5. Press Shift+Y to paste at the play cursor (during playback, the edit cursor remains fixed, and the play cursor follows playback).

   If snapping is enabled, events are pasted at the next snap point. You can use snapping to quantize your events.
6. Repeat step 5 as needed.
7. Click the Stop button ( ) when you're finished creating events.
8. Edit event positions as necessary.

Tip: *If you're using this feature to tap rhythms with one-shot tracks, try applying a groove to adjust the timing of your rhythm. For more information, see Working with grooves on page 118.*

Cutting events

Cutting an event, a time selection, or an event within a time selection removes the audio data from the track view and places it on the clipboard. Once data is placed on the clipboard, it can be pasted back into the project an unlimited number of times. Clipboard content remains on the clipboard until it is replaced by new data.

1. Select the event data you want to cut or make a time selection. *For more information, see Making selections on page 42.*
2. Cut the event data using any of the following methods:
   - Click the **Cut** button ( ) on the toolbar.
   - Choose **Cut** from the **Edit** menu.
   - Right-click the selection and choose **Cut** from the shortcut menu.
   - Press Ctrl+X.

   All selected events are removed from the track view and placed on the clipboard.

Deleting events

Deleting an event, a time selection, or an event within a time selection removes the data from the track view and discards it. Deleted events are not placed on the clipboard and do not replace or interfere with current clipboard content. In addition, deleted events cannot be pasted back into a project.

> **Note:** *Deleted data can only be replaced in a project using the* **Undo** *command. For more information, see Using undo on page 47.*

1. Select the event data you want to delete or make a time selection. *For more information, see Making selections on page 42.*
2. Delete the event data using any of the following methods:
   - Choose **Delete** from the **Edit** menu.
   - Right-click the selected event and choose **Delete** from the shortcut menu.
   - Press Delete.

   All selected events are removed from the track view and discarded.

> **Tip:** *To remove the unused media from your project, choose* **Remove All Unused Clips** *from the Tools menu. To remove unused clips from individual tracks, click the* **Remove Unused Clips** *button in the Clip Pool window. For more information, see Using the Clip Pool on page 107.*

Reversing events

You can select events in the timeline and reverse their audio and peak data. Select an event in the timeline, right-click, and choose **Reverse** (or press U) from the shortcut menu. An arrow appears on the event in the timeline to indicate that it has been reversed.

Trimming events

Whereas deleting allows you to select event data to be removed from the project, trimming allows you to select the data that remains. Trimming is performed by creating a time selection or selecting an event within a time selection and subsequently deleting all unselected data.

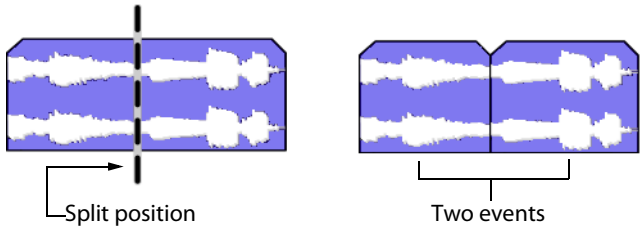
1. Create a time selection or select specific events within a time selection. *For more information, see Creating time selections on page 43.*
2. Press Ctrl+T to trim the data within the selection. All unselected event data is removed from the track view and discarded.

Splitting events

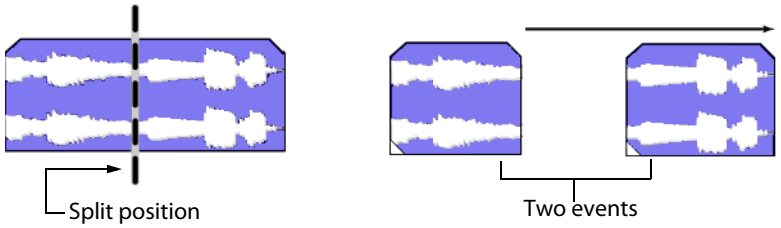
Splitting is a quick way to create independently functioning events from a single one. You might consider splitting an event if you want to adjust a small part of the track. For example, you may want to apply pitch shift to a guitar track for a few measures and then return the track to its original setting.

Splitting occurs at the cursor position or at the in and out points of a time selection. When you split an event, a new ending point is created for the original event and creates a starting point for the newly created event.

When you split an event, the newly created events abut each other. If **Quick fade edges to prevent clicks** is selected in the Event Properties dialog, fades are added at the split point. *For more information, see Changing event properties on page 68.*



However, you may move either of the events, which creates a gap.

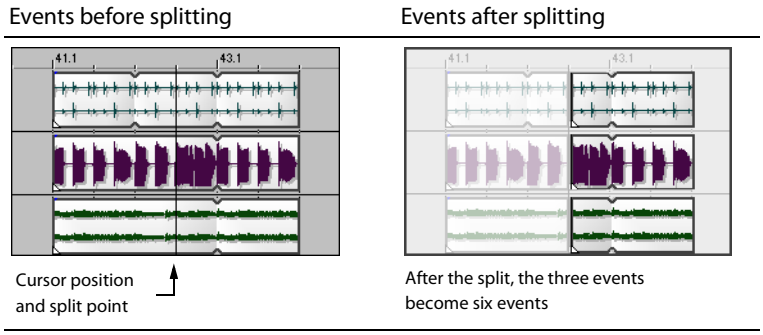


Splitting at the cursor position splits all selected events that the cursor crosses on all tracks.

1. Select the event(s) that you want to split.
2. Place the cursor where you want the split to occur or make a time selection.
3. From the **Edit** menu, choose **Split** or press S. The result of the split depends on how events were selected.

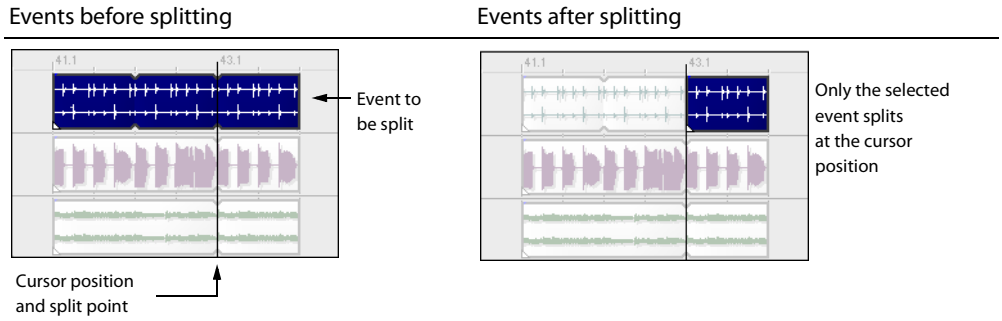
Splitting at the cursor position

Splitting at the cursor position splits all events that the cursor crosses on all tracks.



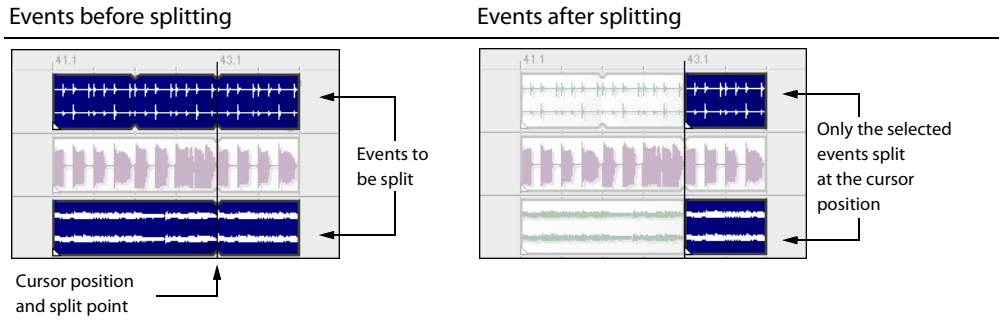
Splitting one event

Selecting a single event prior to splitting prevents other events from being split at the cursor's position.



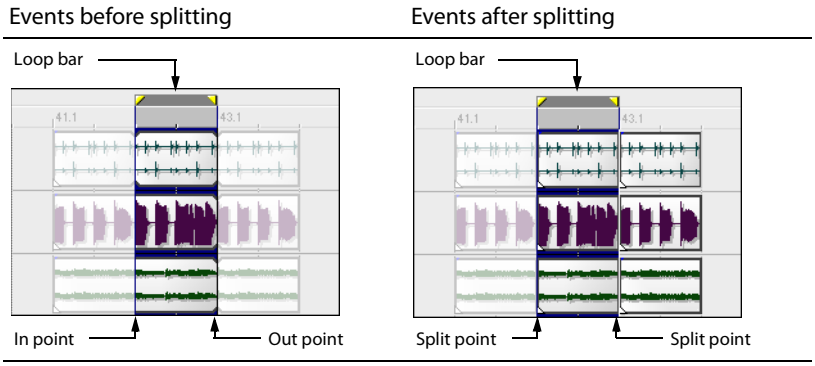
Splitting multiple events

Selecting multiple events splits only the selected events at the cursor's position. Be sure to set your cursor position before selecting events. Attempting to set your cursor after selecting events causes you to lose your event selection.



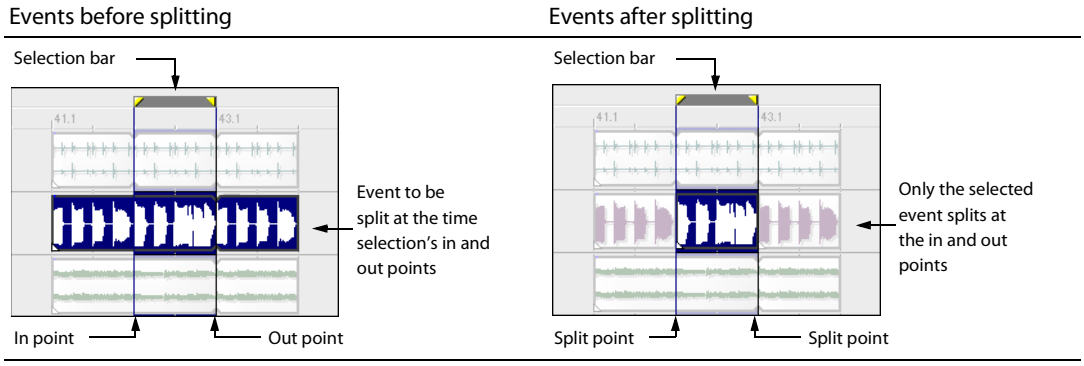
Splitting a time selection

Making a time selection allows you to split events at the time selection's in and out points across all tracks.



Splitting events within a time selection

When selecting events within a time selection, only the selected events in the time range split at the in and out points.

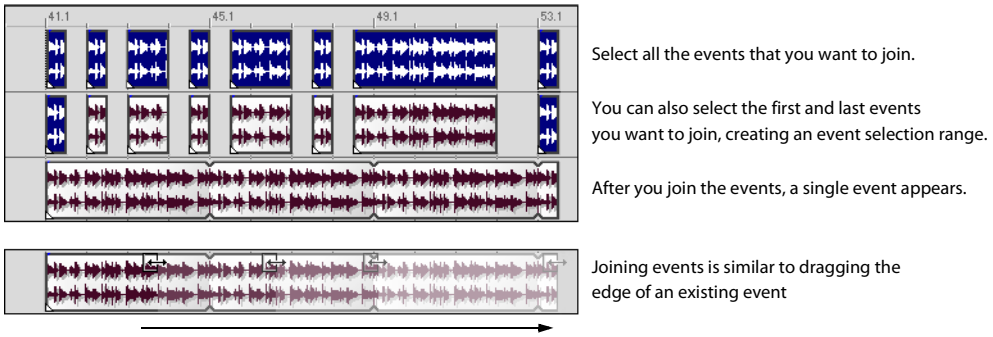


Joining events

You may join events on ACID tracks that have been segmented along the timeline. Joining events is an efficient way to redraw an event and remove any splits or silent regions between events.

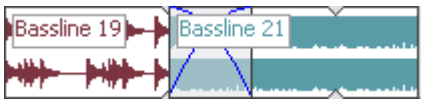
You would want to join events if you decided that the event should play uninterrupted over the specified time range.

1. Select the events or range of events that you want to join. *For more information, see Selecting multiple events on page 42.*
2. From the **Edit** menu, choose **Join** or press J. The selected events are joined.



Automatic crossfades

From the Options menu, choose Automatic Crossfades if you want to automatically create crossfades when you overlap two audio events.



Note: *Event crossfades are not available for MIDI events.*

Creating crossfades

You can easily create crossfades between events by simply dragging an event.

1. From the **Options** menu, choose **Automatic Crossfades** to turn on automatic crossfades.
2. Drag and event so that it overlaps another event on the same track.

   A crossfade is automatically added to transition smoothly between the two events.

Changing fade types

You can change a crossfade to use one of many combinations of fast, slow, linear, smooth, and sharp fade curves.

1. Right-click the overlapping area to display a shortcut menu.
2. Choose **Fade Out Type** from the shortcut menu and choose a fade curve from the submenu to set the curve for the first event's fade out.
3. Choose **Fade In Type** from the shortcut menu and choose a fade curve from the submenu to set the curve for the first event's fade in.

Ripple editing

ACID includes a ripple editing feature. This feature allows you to cut, delete, and paste events or portions of events within a time selection and simultaneously adjust the position of all later events on a selected track. The existing events' timeline position adjusts by the total amount of the time selection that is being cut, deleted or pasted from the clipboard.

You may turn on ripple editing mode by choosing **Ripple Edits** from the **Options** menu or pressing Ctrl+L.

> **Note:** *Ripple editing is only available when a time selection is present.*

Cutting events in ripple editing mode

Cutting events or portions of events removes them and their time information from their respective tracks. This information is placed on the clipboard, from which you may paste the information back into your project.

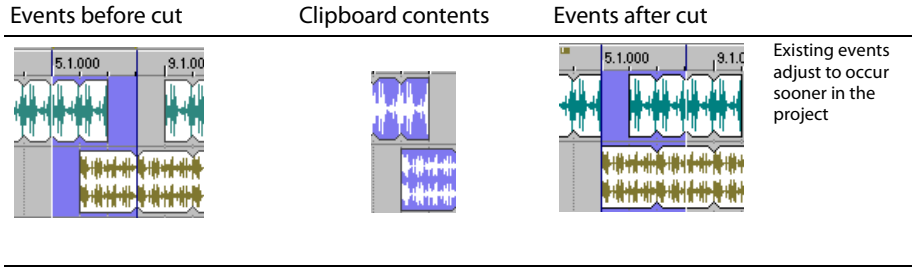
1. From the **Options** menu, choose **Ripple Edits** to enter ripple editing mode.
2. Click the event to be cut or make a time selection.

   To cut multiple events, use the Ctrl key, the Shift key, or the **Selection** ( ) tool to select the events. *For more information, see* *Selecting multiple events on page 42*.
3. Click the **Cut** button ( ) on the toolbar to cut the event(s) to the clipboard.

   The cut events and their time information are removed from the selected track(s) and placed on the clipboard. Existing events in the selected track(s) move forward to occupy the space created by the cut.

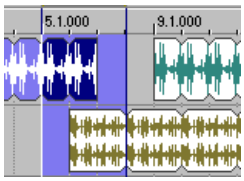
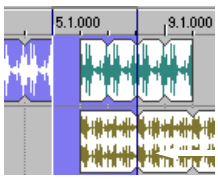
Cutting time selections in ripple editing mode

Events within the time selection are reproduced and placed on the clipboard. Also, the time information is placed on the clipboard. Existing events occurring after the time selection move forward in the project by the length of the time selection.



Cutting time and event selections in ripple editing mode

Events and portions of events within the time selection are reproduced and placed on the clipboard. Also, the time information is placed on the clipboard. Existing events occurring later than the time selection move forward by the length of the time selection. Only tracks containing selected events are affected by the ripple edit.

Events before cut	Clipboard contents	Events after cut	
			Existing events on the top track adjust to occur sooner in the project

Deleting events in ripple editing mode

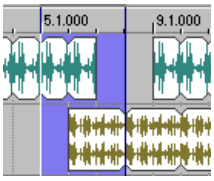
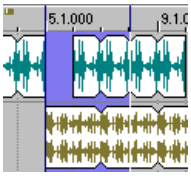
Deleting events or portions of events removes them and their time information from their respective tracks. However, this information is **not** placed on the clipboard. Existing events move forward when you delete material from a selected track.

1. From the **Options** menu, choose **Ripple Edits** to enter ripple editing mode.
2. Click the event to be deleted or make a time selection.

   To cut multiple events, use the Ctrl key, the Shift key, or the **Selection** ( ) tool to select the events. *For more information, see Selecting multiple events on page 42.*
3. Press Delete to delete the event(s).

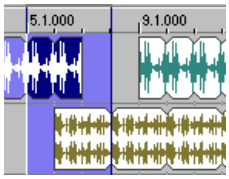
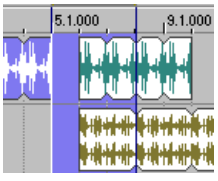
Deleting time selections in ripple editing mode

Events within the time selection and their time information are removed from the project. Existing events occurring after the time selection move forward in the project by the length of the time selection. When information is deleted, it is **not** placed on the clipboard.

Events before delete	Clipboard contents	Events after delete	
	Deleted information is not placed on the clipboard.		Existing events adjust to occur sooner in the project

Deleting time and event selections in ripple editing mode

Events within the time selection and their time information are removed from the project. Existing events occurring after the time selection move forward in the project by the length of the time selection. When information is deleted, it is **not** placed on the clipboard.

Events before delete	Clipboard contents	Events after delete	
	Deleted information is not placed on the clipboard.		Existing events on the top track adjust to occur sooner in the project

Pasting events in ripple editing mode

Once information is copied to the clipboard, you may choose a variety of ways to paste the clipboard items into tracks. *For more information, see Pasting events on page 59.* The following procedures explain pasting information in ripple editing mode.

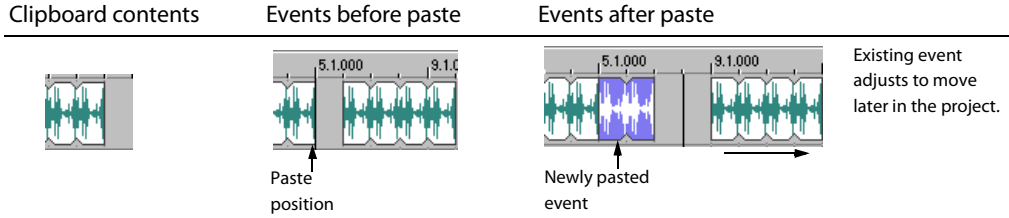
> **Note:** *Events are always pasted into their own tracks at the cursor position.*

1. From the **Options** menu, choose **Ripple Edits** to enter ripple editing mode.
2. Move the cursor to the desired timeline location.
3. Place the cursor within the track where you want to paste the event.
4. Click the **Paste** button ( ) on the toolbar to paste the event into the track.

Clipboard information is pasted at the cursor's position on the track. Existing events or portions of events after the cursor adjust to occur later in the project. The amount of adjustment is based on the total length of the information being pasted.

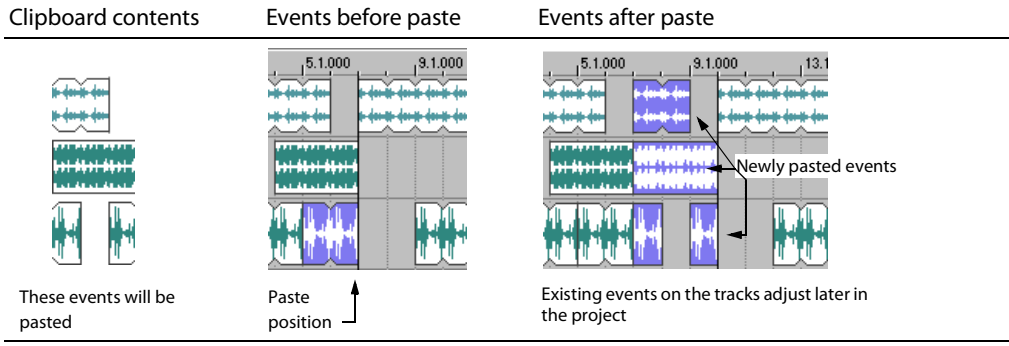
Pasting single track information in ripple editing mode

The information on the clipboard determines how many tracks are affected when you paste. If you have copied or cut information from one track, only the selected track is affected by the pasted event and time information.



Pasting multitrack information in ripple editing mode

Multiple events can be pasted as easily as single events.



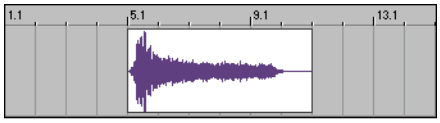
> **Note:** *Pasting in ripple editing mode ripples only the events on the tracks that receive the clipboard contents. If you want to ripple all tracks at the paste position, use the* **Paste Insert** *command from the* **Edit** *menu.*

Slipping and sliding events

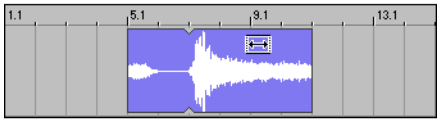
To help you picture what happens when you slip and slide events, think of an event as a window to a media file. The window can display the entire media file or a small section. When the window displays only a portion of the media file, you can move either the window or the underlying media to adjust the media played by an event:

- When you **slip** an event, your event maintains its place on the timeline, but the media file moves in the direction you drag.

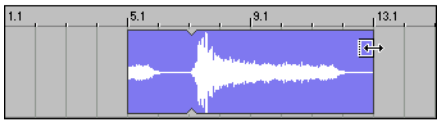
- When you **slide** an event, the media file maintains its place on the timeline, but the event moves in the direction you drag.



Original loop event



Slipping the event two measures to the right



Slip-trimming the event two measures to the right

Sliding the event two measures to the right

Shifting the contents of (slipping) events

Hold Alt while dragging an event. The slip cursor appears ( ).

As you drag the event, the contents of the event shift, but the event does not move. You can use this technique when you want to maintain an event's length and position but want the to event play a different section of the source media file.

For creative ways to use event slipping, see Duplicating with offset on page 243.

Slip-trimming events

Hold Alt while dragging the right or left edge of an event. The slip-trim cursor appears ( ).

As you drag the event edge, the media moves with the event edge.

Sliding events

Hold Ctrl+Alt while dragging an event. The slide cursor appears ( ).

As you drag, the relative position of the media remains fixed on the track, and the event position changes. You can use this technique when you want to maintain an event's length but want the event to play a different section of the source media file at a different point in your project.

Changing event properties

To access event properties, right-click the event and choose **Properties** from the shortcut menu.

These properties are saved in the project but are not saved into the file when you save changes to a clip in the Clip Properties window. *For more information, see Saving file properties on page 118.*

The following table describes each of the settings in the Event Properties dialog.

Item	Description
Start offset	The Start offset for an event specifies a playback starting position that is different than the beginning of the file. This is especially useful for loops; you can change the feel of a loop by simply starting on beat two rather than beat one.

Item	Description
Pitch shift	The Pitch shift value specifies a pitch shift for the selected event. Event-based pitch shift is calculated after the project key and any pitch shift assigned to a track. For more information, see Changing tempo, time signature, and key on page 93.
Quick fade edges to prevent clicks	When you add an offset to an event so that it does not end on a loop point, you can introduce an audible click at the edges of the event. Select the Quick fade edges to prevent clicks check box, and a quick fade-in or fade-out is performed on the event edges. To adjust a quick fade, zoom into the event and hover over the upper-left or upper-right corner of an event until the cursor is displayed as . Drag the edge of the fade to adjust its duration. For more information, see Setting an event's fade-in and -out envelope curve on page 69.
Reverse	Select the Reverse check box to reverse the event's audio and peak data. An arrow appears on the event in the timeline to indicate that it has been reversed.

Using event envelopes

You can use envelopes on individual events. Envelopes give you the ability to control each event's fade-in, fade-out, and overall volume. Envelopes are useful for transitional effects between events by subtly fading out one event's volume while another fades in.

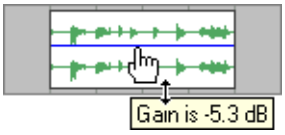
These envelopes are different than track envelopes because they affect only the event whereas track envelopes can affect multiple events on the track. *For more information, see Using track automation envelopes on page 111.*

The event's volume level and fade curves are represented by a line on the event.

Setting an event's volume envelope

You can control an event's overall volume by setting an envelope at the desired decibel (dB) level.

1. Place the mouse pointer at the top of the event. The envelope cursor ( ) appears.
2. Drag the volume line to the desired level. As you drag the volume line, the event's decibel level is displayed.



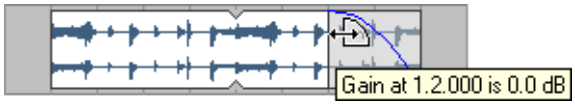
3. Release the mouse to set the event's dB level.

After you set the event volume level, you may change it later by dragging the envelope line.

Setting an event's fade-in and -out envelope curve

You can control an event's envelope fade-in and -out characteristics by adjusting the event's envelope handles. These handles allow you to control the length and dB level of fade-ins and fade-outs. Also, you can change the type of curve that the event uses to control the volume's fade characteristics.

1. Place the mouse pointer on the upper corner of the event. The envelope cursor ( ) appears.
2. Drag the envelope cursor and position the envelope curve. As you drag the cursor, the following information is displayed:
   - The event decibel level.
   - The length (in measures.beats.ticks) of the fade-in or fade-out.



3. Release the mouse to set the fade-in or fade-out characteristics.

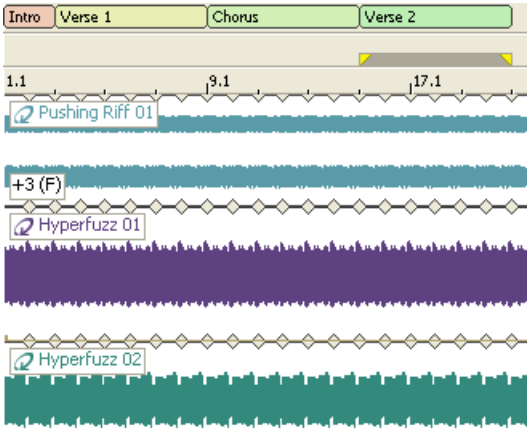
Changing the event's fade curve type

You can set an event's fade curves (fast, linear, slow, smooth, or sharp) that are used to raise or lower the volume over time. Right-click the fade region, select **Fade In Type** or **Fade Out Type** from the shortcut menu, and choose the appropriate fade curve from the submenu.

Using sections

With sections, you can create different arrangements using simple drag-and-drop operations.

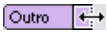
Each section header above the timeline represents a segment of your project. When you drag a section header to a new location of the timeline, all events, envelopes, regions, markers, and commands within the section follow.



Inserting a section

1. Create a time selection that includes the portion of the timeline that you want to use as a section.
2. From the Insert menu, choose **Section** (or press Shift+S). A section label is added above the marker bar.
3. Type a name to identify the section and press Enter.

Adjusting a section's length

1. Hover over the end of a section label. The mouse pointer is displayed as a  .
2. Drag the end of the section: 

to extend or shorten it.

Tips:

- *Hold Shift to override snapping.*
- *As you drag the edge between two adjacent sections, both will be adjusted simultaneously.*

Renaming a section

1. Right-click the section label and choose **Rename** from the shortcut menu. The section label changes to an edit box.

Tip: *Press F2 to rename the selected section.*

2. Type a new name in the edit box.
3. Press Enter.

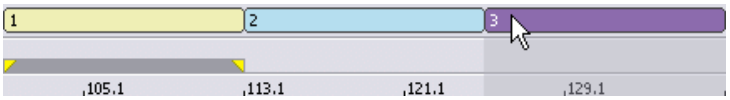
Changing a section's color

1. Right-click the section label and choose **Color** from the shortcut menu.
2. Choose a color from the menu. The color of the section header is updated, but event colors do not change.

Moving (shuffling) sections

Shuffling sections allows you to move all events, envelopes, regions, commands, and markers within a section in a single operation. *For more information, see Ripple editing on page 65.*

1. Drag a section label to a new position on the timeline. A I is displayed to indicate where the section will be moved.
2. When you drop the section, events are split at each end of the section, and all events within the section are moved to the position where you dropped the section. Downstream events ripple to make room for (or fill the space of) the section you dragged.



Notes:

- *Hold Ctrl or Shift to select and shuffle multiple selections*
- *When shuffling envelope points, the shape of the envelope is copied to the new location and additional points are created at each end of the section if necessary.*
- *The tempo, time signature, and key of the section will be preserved during shuffling, and tempo, time signature, and key markers will be created if necessary.*

Copying a section

Copying sections lets you copy all events within a section in a single operation. *For more information, see Ripple editing on page 65.*

1. Hold Ctrl and drag a section header, or multiple section headers, to a new position on the timeline. A I is displayed to indicate where the section will be copied.
2. When you drop the section, it is copied to the position where you dropped it.

Note: *Hold Ctrl or Shift to select and copy multiple selections.*

Deleting a section

Deleting a section removes the section and all events are removed from the timeline.

Right-click a section label and choose **Delete** from the shortcut menu. Events are split at each end of the section, and all events, envelope points, regions, commands, and markers within the section are deleted. Downstream events ripple to fill the space of the section you deleted. *For more information, see Splitting events on page 62.*

Moving a section label

Hold Alt while dragging a section label to move the selected labels without affecting the contents of the timeline.

Hold Ctrl+Alt while dragging a section label to create copies of the selected labels without affecting the contents of the timeline.

Removing a section label

Removing a section label removes the section label from the timeline without affecting the section's events.

Right-click a section label and choose **Remove Label** from the shortcut menu.

Clearing all events from a section

Clearing events removes the events from a section while leaving the section label intact.

Right-click a section label and choose **Clear Events** from the shortcut menu. Events are split at each end of the section, and all events within the section are deleted. *For more information, see Splitting events on page 62.*

Chapter 4 Using the Media Manager

This chapter covers the management and tagging of your media files in ACID using the Media Manager feature.

Creating a new media library

You can create multiple media libraries as necessary to organize your media. Each media library is maintained by the Media Manager software as a separate database that stores information about the media contained within it.

1. From the Media Manager window, click the **Media Library actions** button ( ) and choose **New Media Library** from the menu. The New Media Library dialog is displayed.
2. In the **Name** box, type the name you want to use to identify the library.
3. The **Folder** box displays the path to the folder where the library will be created. Click **Browse** to choose a different location.
4. Click the **Create** button to create the new library.

Opening a media library

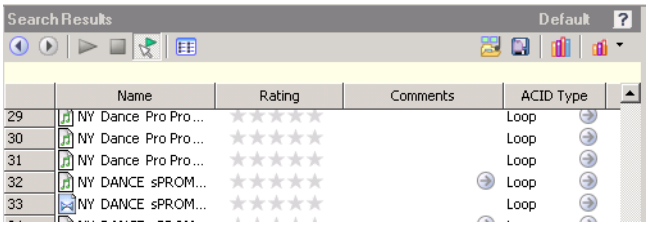
The Media Manager window displays the contents of the current media library. You can open a different library at any time.

Important: *When you open a media library, the Media Manager tool creates a transaction log file. This file is created in the same folder as the .medialib file and uses the same base name as the .medialib file. For example, the transaction log file for default.medialib would be default_log.ldf.*

Do not delete these log files. Doing so will prevent you from opening the associated library. When the Media Manager tool closes, it automatically removes the log file. If the application terminates inappropriately, close all running ACID windows, restart ACID, and close the application to clear the log file.

1. In the Media Manager window, click the **Media Library Actions** button ( ) and choose **Open Media Library** from the menu. The Open Media Library dialog is displayed.
2. Choose the folder where the library you want to open is stored:
   - Choose a drive and folder from the **Look in** drop-down list.

   —or—
   - Use the bar on the left side of the window to browse to a folder.
3. Select a library from the list.
4. Click the **Open** button to open the selected library. The name of the current library is displayed in the upper-right corner of the Search Results pane:



Adding media files to a library

Before you can search or organize your media files, you'll need to add them to a media library.

When the Sony Sound Series Loops & Samples™ reference library is installed and set as the active reference library in the Media Manager Options dialog, tags and custom properties from the reference library will be applied to media from existing Sony Sound Series Loops & Samples or Loops for ACID collections when you add media to your library. For more information on Media Manager options, see *Setting Media Manager options on page 84*.

Note: *The Sony Sound Series Loops & Samples reference library is not installed by default, but you can install it from the ACID CD or download it from the Sony Media Software Web site (http://mediasoftware.sonypictures.com/reference). After installing the library, go to the Media Manager Options dialog and choose the reference library from the* **Reference library** *drop-down list.*

Tip: *If the Save media-usage relationships in active media library check box is selected on the General tab of the ACID Preferences dialog, you can add individual files to a library by previewing the files in the ACID Explorer window.*

1. Click the **Add Files to Media Library** button ( ). The Add Files to Media Library dialog is displayed.
2. Choose the folders that will be searched for media:
   a. If it isn't displayed automatically, click the **Add Folder** button ( ) to display the Browse for Folder dialog.
   b. Select the folder you want to search.
   c. Click **OK**.

Tips: *If you want to change an item in the folder list, select it and click the Browse button ( ) in the Folders column. If you want to remove a folder from the list, select it and click the Remove Folder button ( ).*

3. Repeat step 2 for each folder you want to search.
4. Select the **Include subfolders** check box if you want to search folders within the selected folders.
5. Select the **Audio**, **Video**, **Images**, or **MIDI** check boxes to indicate the types of media you want to add. Clear a check box to exclude that type of media file.

   Files that contain audio and video streams will be added if either or both of the **Audio** or **Video** check boxes are selected.
6. Specify whether you want to search for new files or all files:
   - Select the **New files only** radio button if you want to search only for new media files. Files that already exist in the media library will be skipped.

   —or—
   - Select the **All files** radio button if you want to search for all media files in the specified folder. New media files will be added, and files that already exist in the media library will be searched to determine whether their properties have changed.
7. Select the **Add tags and custom properties from files** check box if you want to add tags and custom columns saved in the media files to your library. *For more information about tagging media, please see Tagging media files on page 75. For information about adding custom columns to the Search Results pane, see Adding custom columns on page 84.*
8. Select the **Use file and folder names to apply tags automatically** check box if you want to automatically tag files based on the file path.

   For example, when this check box is selected, a loop saved in the d:\loops\drums\hi-hats\ folder would have the tags Drums and Hi-Hats applied when it is added to the library. Some synonyms (and variant spellings) will be resolved automatically. If you need to modify the pattern-matching, you can edit the AutoTagPatterns.xml file, which is created in your My Documents\Sony Media Libraries folder the first time the application starts.

Note: *Changing the selection of the* **Add tags and custom properties from files** *and* **Use file and folder names to apply tags automatically** *check boxes also changes the settings in the Media Manager Options dialog.*

9. Click the **Search** button to start adding files to the library.
10. Click the **Close** button when you're finished.

    A tag is automatically added to the tag tree when you search. The tag name will include the date and time of the search, and all files that were added or updated in the library are marked with this tag.

Removing media files from a library

You can remove a reference to a media file from a library without affecting the media file itself.

1. Select files in the Search Results pane to choose the files you want to delete:
   - To select a single file, click the file.

   —or—
   - To select multiple consecutive files, click the first file, hold the Shift key, and then click the last item.

   —or—
   - To select multiple files that are not consecutive, hold the Ctrl key and click each file.
2. Right-click a selected file and choose **Remove from Library** from the shortcut menu (or press the Delete key on your keyboard). A confirmation dialog is displayed.
3. Click **OK** to remove the selected files from the library.

Tagging media files

Tagging helps you classify your media files. For example, if you wanted to keep track of loops played by a specific instrument, you could create a tag with the name of the instrument and apply it to the appropriate loops. Similarly, you could create tags for genres, moods, seasons, client names, locations, scenes, performer names, and so on.

When you create a new library, a default tag tree is displayed in the Tags pane. You can create your own tags to customize the tags for your needs. Tags are the fastest way to search a media library, and they require very little disk space.

Tags are saved in your media library. If a media file exists in multiple libraries, tagging the media file in one library has no effect on the other libraries unless you save the tags to the files and use the Add Files to Media Library dialog to update tags and custom properties for all files.

Tip: *If you want to see which tags are associated with a file as you're adding or removing tags, drag the Tags column in the Search Results pane to the left so you can see the Name and Tags columns at the same time.*

Creating a tag

Adding tags creates new tags in the current library only.

1. Click the **Add Tag** button ( ) to add a new tag to the tree.

   If a tag is selected, the new tag will be added below the selected tag. If no tag is selected, the new tag will be added to the bottom of the tag tree.
2. Type a name for the tag.
3. Press Enter.
4. If you want to change the icon used to display the tag, right-click it and choose **Edit** from the shortcut menu to display the Tag Editor dialog.
5. If you want to change the tag's location, drag it to a new location in the tag tree.

Applying a tag to a media file

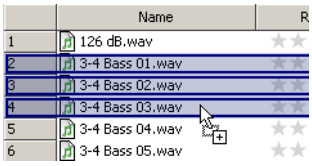
You tag media by dragging a tag from the tag tree to a media file in the Search Results pane (or by dragging a media file to a tag) when the **Add Tag Mode** button ( ) is selected.

1. Select media files to tag in the Search Results pane:
   - To select a single file, click the file.

   —or—
   - To select multiple consecutive files, click the first file, hold the Shift key, and then click the last item.

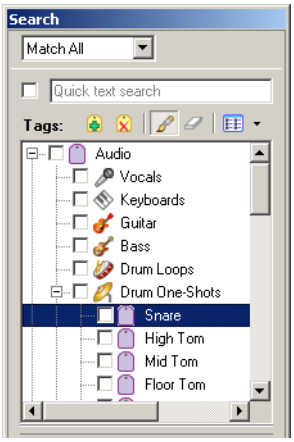
   —or—
   - To select multiple files that are not consecutive, hold the Ctrl key and click each file.

2. Click the **Add Tag Mode** button ( ) in the Search pane.
3. Drag a tag from the tag tree to the selected file(s).



Tip: *You can also right-click a selection in the Search Results pane and choose* **Add Tag** *from the shortcut menu to add a tag to all selected media. The Tag Chooser dialog will be displayed. Select the tag you want to add, and then click the* **OK** *button.*

When you add a subtag to a media file, the tag's hierarchical position in the tag tree is applied implicitly.



In this example, adding the "Snare" tag to a media file would mean that a search for "Audio," "Drum One-Shots," or "Snare" would find your tagged media. If the user rearranged the tag tree so that the "Snare" tag did not appear below the "Audio" and "Drum One-Shots" tags, searching for "Audio" or "Drum One-Shots" would not find your tagged media.

If you add all three tags to your media file, a search for "Audio," "Drum One-Shots," or "Snare" would find your tagged media even if the tag tree had been rearranged, though this behavior is not always desirable.

Removing a tag from a media file

You remove tags from media by dragging a tag from the tag list to a media file in the Search Results pane (or by dragging a media file to a tag) when the **Remove Tag Mode** button ( ) is selected.

1. Select media files in the Search Results pane:
   - To select a single file, click the file.

   —or—
   - To select multiple consecutive files, click the first file, hold the Shift key, and then click the last item.

   —or—
   - To select multiple files that are not consecutive, hold the Ctrl key and click each file.
2. Click the **Remove Tag Mode** button ( ) in the Search pane.
3. Drag a tag from the tag tree to the selected file(s). The tag is removed from the file(s).

Deleting a tag from a library

Deleting the selected tag(s) affects the current library only.

1. In the Search pane, select the tag(s) to be removed:
   - To select a single tag, click the tag.

   —or—
   - To select multiple consecutive tags, click the first tag, hold the Shift key, and then click the last tag.

   —or—
   - To select multiple tags that are not consecutive, hold the Ctrl key and click each tag.
2. Click the **Delete Selected Tag** button ( ) to delete the tag from the current library. A confirmation dialog is displayed.
3. Click **OK** to remove the selected tags from the library.

Merging subtags

Merging tags combines a selected tag with its subtags and removes the subtags from your library permanently.

To merge a tag with its subtags, right-click the tag and choose **Merge Subtags into Selected Tag** from the shortcut menu.

All subtags are combined with the main tag, and the subtags are removed from the library. All media formerly associated with the subtags is associated with the main tag.

Arranging tags in the tag tree

Tags are displayed in a tree view in the Media Manager window. You can organize tags hierarchically: click the **Expand** button ( ) in the Search pane to expand a list, or click the **Collapse** button ( ) in the Search pane to hide an expanded list.

You can drag, copy, and paste tags within the list to arrange them and create parent and child tags.

You can also display tags in a palette view by clicking the **Change Tags View** button ( ).

Editing tag names or images

1. Double-click a tag (or right-click a tag and choose **Edit** from the shortcut menu) to display the Tag Editor dialog.
2. In the **Tag name** box, type the name you want to display for the tag.
3. Select a thumbnail image to choose the icon that will be displayed for the tag in the Search pane and in the Search Results pane when the tag is added to a media file.
4. Click the **OK** button to apply your changes and close the Tag Editor dialog.

Viewing or creating palettes

The palette view provides another way of working with tags that can be useful for more focused searching. You can use a palette to concentrate on a portion of the current tag tree.

In the palette view, tags are displayed as a grid of buttons instead of the standard hierarchical tag tree.

1. Click the **Change Tags View** button ( ) to toggle the display of the tag tree and palette view.
2. Click the down arrow next to the button to choose a saved palette or create a new palette.

Creating a palette

1. Click the down arrow next to the **Change Tags View** button ( ) and choose **New Palette** from the menu. The New Palette dialog is displayed.
2. In the **Name** box, type the name you want to use to identify the palette.
3. In the **Rows** box, specify the number of rows of buttons you want to display in the palette.
4. In the **Columns** box, specify the number of columns of buttons you want to display in the palette.
5. Click **OK** to create the palette. The palette is displayed as a grid with empty buttons.

Assigning palette buttons

1. Perform either of the following actions to display the Tag Chooser dialog:
   - Click an empty palette button.

   —or—
   - Click an existing button and choose **Choose Tag** from the shortcut menu.
2. Select the tag you want to assign to the button.
3. Click the **OK** button.

Clearing a button

Right-click a palette button and choose **Clear** from the shortcut menu.

Deleting a saved palette

1. Right-click a palette button and choose **Delete Current Palette** from the shortcut menu.
2. Click the **OK** button when prompted to delete the palette from your library.

Saving tags and properties to media files

Saving tags and properties to files makes all your organization portable: if tags and custom properties are saved to files, that information will be preserved in the files and can be added to the library by selecting the **Add tags and custom properties from files** check box in the Add Files to Media Library dialog.

Saving tags and properties to files affects only the current media library and libraries that you create after saving the information. If you have multiple libraries, you can add embedded tags and custom columns to existing libraries by opening the desired library and rescanning your media folders with the **Add tags and custom properties from files** check box selected in the Add Files to Media Library dialog. Embedded file properties are also updated when you preview or add media to a project.

The following file formats can store this type of information internally:

- MP3
- Windows Media Format (WMA and WMV)
- WAV
- WAV64
- SFA
- PCA
- Scott Studios

For other file types, the Media Manager tool will save metadata to an .sfl file (using the same base name as your media file).

Follow these steps to save tag and property information in your media file(s):

1. In the Search Results pane, select media files for which you want to save tags and properties:
   - To select a single file, click the file.

   —or—
   - To select multiple consecutive files, click the first file, hold the Shift key, and then click the last item.

   —or—
   - To select multiple files that are not consecutive, hold the Ctrl key and click each file.
2. Click the **Save Tags and Properties to File(s)** button ( ) in the top right corner of the Search Results pane. Tags and other information from the Search Results pane is saved for the selected file(s).

Backing up your media libraries

Media Manager software automatically saves your library as you make changes, so you don't need to tell the application explicitly to save your library as you're working.

However, you can create a backup of the current library as a restore point or as a template to create new libraries.

1. Click the **Media Library Actions** button ( ) and choose **Back Up Media Library** from the menu. The Back Up Media Library dialog is displayed.
2. Choose a drive and folder from the **Save in** drop-down list, or use the browse window to locate the folder where you want to save your backup.
3. In the **File name** box, type the name you want to use to identify the library.
4. Click the **Save** button.

To restore the backup at a later time, open the backup file.

Opening a Reference Library

A reference library contains information about media from an outside source or vendor.

You can also use a reference library to search media files that you aren't part of your collection. For example, if you're unable to find the perfect loop for an ACID project in your own collection, you could use the Sony Sound Series Loops & Samples reference library to search the entire Sony Sound Series Loops & Samples catalog and purchase a new loop library.

You can use the **Media Reference Library** drop-down list in the Media Manager Options dialog to determine which library is opened when you click the **Switch to Media Reference Library** button ( ).

1. Click the **Switch to Media Reference Library** button ( ). The reference library specified in the Media Manager Options dialog is opened. Media in a reference library is displayed in gray text to indicate that the files are not available on your computer.
2. Find the media you're looking for with a standard or advanced search.
3. Tag media from the reference library as needed. *For more information on tagging, see Tagging media files on page 75.*
4. When you select a file in a reference library, the Product Information pane displays information about the selected file and a link you can use to purchase the media.

Using the Sony Sound Series Loops & Samples reference library

If you have the Sony Sound Series Loops & Samples reference library loaded when you search your computer for media, media from existing Sony Loops and Samples or Loops for ACID collections will inherit tags and custom properties from the reference library.

The Sony Sound Series Loops & Samples reference library is not installed by default, but you can install it from the ACID CD or download it from the Sony Media Software Web site (*http://mediasoftware.sonypictures.com/reference*). After installing the library, go to the Media Manager Options dialog (click the **Media Library Actions** button ( ) and choose **Options** from the menu) and choose the reference library from the **Reference library** drop-down list.

Searching for media files

You can use the Media Manager tool to search the current media library for media files using keywords or tags.

Tips: *You can use the* **Search Results Limit** *box in the Media Manager Options dialog to determine the maximum number of media files you'd like to have returned in the results of your searches. Increasing the* **Search Results Limit** *setting increases the amount of time required to search a library and can significantly decrease performance if set excessively high.*

When performing complex searches, consider creating temporary tags to classify the results. If you apply a tag to the files found by a complex search, you can return to those files easily by searching on the tag. The Media Manager tool can search for tags more quickly than it can perform keyword or advanced searches.

Searching using a keyword

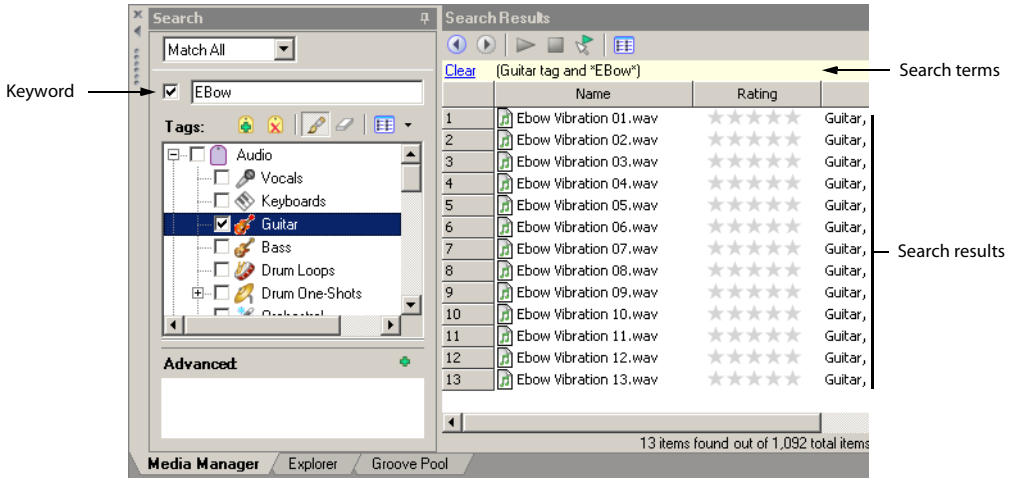
1. Select the **Quick text search** check box in the Search pane and type a keyword (or keywords) in the edit box.

Tip: *You can separate search terms using quotation marks and other operators. If quotes or wildcard characters are not applied, an * is automatically added before and after each search term.*

2. Press Enter.

The Media Manager tool searches your media files and displays the results in the Search Results pane on the right side of the window. Any file that contains your keywords in the file name or attributes is displayed (tags are not searched as keywords).

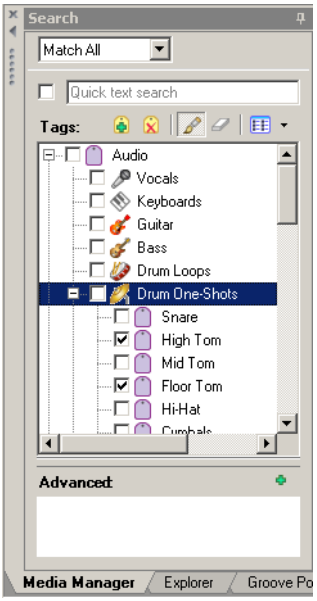
Your search terms are displayed in the yellow bar below the Search Results toolbar.



3. You can refine the search results using any of the following methods:

- Select tag check boxes.
- Use the Advanced search controls. *For more information, see Using advanced search options on page 81.*
- Choose **Match Any** from the **Match Any/Match All** drop-down list to display all media that matches any of your keyword, tag, or advanced search criteria. Using this option in the search displayed in step 2, the Search Results pane would display all files that contain the keyword "EBow" OR the "Guitar" tag.
- Choose **Match All** from the **Match Any/Match All** drop-down list to display only media that matches all of your keyword, tag, and advanced search criteria. Using this option in the search displayed in step 2, the Search Results pane would display all files that contain the keyword "EBow" AND the "Guitar" tag.

Searching using tags



In the Search pane, select the check box for each tag you want to find. The Media Library searches your media files and displays the results in the Search Results pane on the right side of the window.

Choose **Match Any** from the **Match Any/Match All** drop-down list if you want to display all media that contains any keyword, tag, or advanced search criteria. In the example to the right, the Search Results pane would display all files that contain the tag "High Tom" OR the tag "Floor Tom."

Choose **Match All** from the **Match Any/Match All** drop-down list if you want to display only media that includes all keyword, tag, and advanced search criteria. In the preceding example, the Search Results pane would display only files with tags "High Tom" AND "Floor Tom."

Note: *If you have check boxes selected for parent and child tags, those tags will be treated as an OR relationship regardless of whether* **Match Any** *or* **Match All** *is selected.*

Sorting search results

Click a column heading to sort the results in ascending or descending order based on that column.

Viewing previous searches

Click the **Previous Search** button ( ) in the top left corner of the Search Results pane to navigate through your recent searches and update the contents of the Search Results pane.

After viewing previous searches, click the **Next Search** button ( ) in the top left corner of the Search Results pane to navigate back to your current search.

Using advanced search options

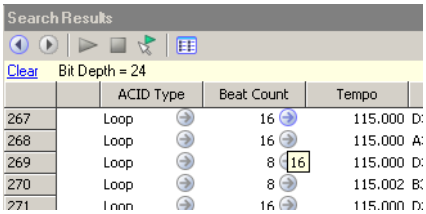
If your media library contains many files and you're searching for a very specific media file, the Advanced section of the Search pane can help you zero in on exactly the file you want.

If you want to perform an advanced search to refine the results of a previous search, start by creating a quick search or tag-based search and then perform the following steps.

Tips: *You can use the* **Search Results Limit** *box in the Media Manager Options dialog to determine the maximum number of media files you'd like to have returned in the results of your searches. Increasing the* **Search Results Limit** *setting increases the amount of time required to search a library and can significantly decrease performance if set excessively high.*

When performing complex searches, consider creating temporary tags to classify the results. If you apply a tag to the files found by a complex search, you can return to those files easily by searching on the tag. The Media Manager tool can search for tags more quickly than it can perform keyword or advanced searches.

1. Add your search criteria:
   a. Click the **Add New Search Criteria** button ( ) in the Search pane. The Search Criteria Chooser is displayed.
   b. Double-click an item in the Search Criteria Chooser or drag it to the Advanced section of the Search pane.



Tips: *If an item in the Search Results pane displays a button, you can click it to find related media. For example, clicking the button in the following example adds an item to the Advanced section to help you find other media with a beat count of 16.*

You can also drag a column heading from the Search Results pane to the Advanced section of the Search pane.

2. Set parameters for each of your search criteria. If the item displays an edit box, type the parameter you want to search for. If the item is displayed as a hyperlink, click the value to display a control you can use to set the value.
3. Choose whether you want to display files that match any or all of your search criteria:
   - Choose **Match Any** from the **Match Any/Match All** drop-down list if you want to display all media that matches any of your keyword, tag, or advanced search criteria.

   —or—

   - Choose **Match All** from the **Match Any/Match All** drop-down list if you want to display only media that matches all of your search criteria.
4. Select the check boxes for the advanced search criteria you want to include in your search, or clear a check box to exclude that item.

Previewing media

You can use the transport controls in the Media Manager window to preview media files.

1. Select files in the Search Results pane to choose the files you want to preview:
   - To select a single file, click the file.

   —or—
   - To select multiple consecutive files, click the first file, hold the Shift key, and then click the last item.

   —or—
   - To select multiple files that are not consecutive, hold the Ctrl key and click each file.
2. Start playback:
   - If the **Auto Preview** button ( ) is selected, playback will begin automatically.
   - If the **Auto Preview** button is not selected, click the **Start Preview** button ( ) to begin playback.

   If you have multiple files selected, they will be played back sequentially. Each file's icon will change to a play icon ( ) during playback.
3. Click the **Stop Preview** button ( ) to stop the preview, or turn off the preview feature by deselecting the **Auto Preview** button.

If the file is offline, you'll be prompted to locate the file or choose a replacement.

Tip: *To preview a media file in its associated media player, right-click the file and choose* **Open with Player** *from the shortcut menu.*

Adding media to your project

After you've added media to your library, tagged it, and searched for specific files or related media, you've probably found just the right piece of media for your current project.

You can add media to your project from the Search Results pane by performing any of the following actions:

- Dragging a file from the Search Results pane to the project timeline. The file is added wherever you drop it.

Tip: *You can also drag files from the Search Results pane to the Windows desktop, a folder, or to another application that is an OLE (object linking and embedding) drop target.*

- Double-clicking a media file in the Search Results pane (if the **Double-click in Search Results pane adds media to project** check box is selected in the Media Manager Options dialog). The file is added to the bottom of the track list.
- Right-clicking a media file in the Search Results pane and choose Add to Project from the shortcut menu. The file is added to the bottom of the track list.

If the file is offline, you'll be prompted to locate the file or choose a replacement. *For more information, see Resolving offline media files below.*

Resolving offline media files

An offline media file is a file that is no longer available to the Media Manager. Media may be classified as offline if you eject removable storage after adding a file to your library or change a file's name or location.

1. Add media to your project or preview media files. If any of the files are not accessible, the Resolve Offline Media dialog is displayed with a listing of offline files and their status:

Icon	Status	Description
	Offline	The file listed in the Offline File column cannot be found. The status will be Offline if you did not search or browse for a replacement file.
	Probable Match	The file listed in the Offline File column will be replaced by the file listed in the Replacement File column. A status of Probable Match indicates that the Media Manager tool found a likely replacement file when you clicked Smart Search.

Icon	Status	Description
	Found	The file listed in the Offline File column will be replaced by the file listed in the Replacement File column. A status of Found indicates that you chose the file you want to use after clicking the Browse button.

2. Select the files you want to resolve:
   - To select a single file, click the file.

   —or—
   - To select multiple consecutive files, click the first file, hold the Shift key, and then click the last item.

   —or—
   - To select multiple files that are not consecutive, hold the Ctrl key and click each file.
3. Specify how you want to resolve the selected files:
   - Click the **Smart Search** button to search quickly and allow the Media Manager tool to suggest the replacement file.
   - Click the **Browse** button to choose a specific replacement file.
   - Click the **Leave Offline** button to leave the file offline. The file will not be added to your project.
   - Click the **Remove** button to remove the file from the media library. The file will not be added to your project. The original media file is not deleted.
4. Repeat step 3 for each file in the list.
5. Click the **OK** button to preview the files or add the files to your project and update the media library with the replacement files.

Customizing the Media Manager window

Much of what you see in the Media Manager window can be customized to suit your preferences.

Automatically hiding the Search pane

Click the push pin button () in the title bar of the Search pane if you want to save space in the Media Manager window by automatically hiding the search pane:

- The push pin is displayed as a () when the Search pane is anchored in the Media Manager window.
- The push pin is displayed as a () when the Search pane is set to hide automatically.

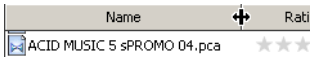
When the Search pane is set to hide automatically, you can hover over the **Search** tab on the left edge of the Media Manager window to show the pane. When you move your mouse away from the Search pane, it hides automatically.

Docking and undocking the Search pane

You can undock the Search pane from its location in the Media Manager window to float it over the ACID window, or you can change the docking position of the pane within the Media Manager window. To undock and move the Search pane, drag its title bar to the desired location.

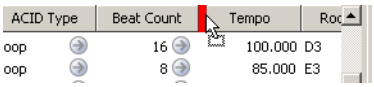
Resizing columns

You can resize the columns in the Search Results pane by dragging the splitter between columns to the desired size. To resize a column automatically, double-click a splitter.



Moving columns

To move a column in the Search Results pane to a different location, drag the column header to the desired location. A red indicator shows where the column will be dropped.



Showing or hiding columns

1. Right-click the column headings and choose **Column Chooser** from the shortcut menu.
2. Drag the columns you want to see from the Column Chooser dialog to the Search Results pane.
3. To hide a column, right-click a column heading and choose **Remove this Column** from the shortcut menu.

Adding custom columns

You can add custom columns to the Search Results pane to store additional information about media files. When you add custom columns, they are added to the current library only.

For example, if you wanted to keep track of which removable hard drive contained a media file, you could create a custom **Drive Number** column to assign any numeric rating to a media file. You could then use the Advanced section of the Search pane to search using the **Drive Number** value.

When adding media to a library, you can choose to add this information by selecting the **Add tags and custom columns from files** check box in the Add Files to Media Library dialog.

1. Right-click the column headings and choose **Custom Columns** from the shortcut menu.
2. Click the **Add New Column** button ( ) to add a custom column. A new entry is added to the list.
3. In the **Name** box, type the name you'd like to display as a column heading.
4. Select the **Type** box and choose **Text** or **Integer** from the drop-down list to indicate whether you'll store text or numeric data in the column.
5. If you want to remove a custom column, select an entry in the list and click the **Delete Selected Columns** button ( ). The column and all data stored in the column is removed from the library.
6. Click the **OK** button. The column is added to the media library, and the Search Results pane is scrolled to the right to display your new column.

Setting Media Manager options

Use the Media Manager Options dialog to set options for working with the Media Manager tool.

1. Click the **Media Library Actions** button ( ) and choose **Options** from the menu. The Media Manager Options dialog is displayed.
2. From the **Reference library** drop-down list, choose the library you want to load when you click the **Switch to Media Reference Library** button in the upper left corner of the Search Results pane. *For more information about using reference libraries, see* *Opening a Reference Library on page 79*.
3. In the **Search results limit** box, type the maximum number of media files you'd like to have returned in the results of your searches.

> **Note:** *Increasing the* **Search Results Limit** *setting increases the amount of time required to search a library and can significantly decrease performance if set excessively high.*

4. Select the **Double-click in Search Results pane adds media to project** check box if you want to add files to the current project by double-clicking a file in the Search Results pane.

5. Select the **Shut down database service on exit** check box if you want to stop the database service when you close ACID.

> **Note:** *Stopping the service can conserve system resources when you aren't using any applications that use the Media Manager tool. However, the application will take longer to start when the check box is selected.*

6. Set your options for adding media to a library:
   a. Select the **Add tags and custom properties from files** check box if you want to add tags and custom columns saved in the media files to your library. *For more information about tagging media, see* *Tagging media files on page 75**. For information about adding custom columns to the Search Results pane, see* *Adding custom columns on page 84*.
   b. Select the **Use file and folder names to apply tags automatically** check box if you want to automatically tag files based on the file path.

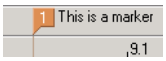
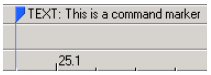
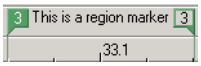
   For example, when this check box is selected, a loop saved in the d:\loops\drums\hi-hats\ folder would have the tags Drums and Hi-Hats applied when it is added to the library. Some synonyms (and variant spellings) will be resolved automatically. If you need to modify the pattern-matching, you can edit the AutoTagPatterns.xml file, which is created in your My Documents\Sony Media Libraries folder the first time the application starts.
7. Click the **OK** button to close the dialog.

Chapter 5 Working in the Track View

This chapter introduces you to several ACID® features that increase your productivity, such as markers, regions, and snapping options. You'll also learn about the different ways to change a project's tempo, key, and time signature. Finally, you'll learn several options for adjusting the project timeline.

Using project markers and regions

ACID markers and regions identify areas of your project and provide navigational cues for quickly finding those areas. After you insert markers and regions, you may adjust their position along the project's timeline and label them with meaningful names for your reference.

Marker type		Description
Marker (standard)		Markers identify specific reference points in your project. Points that you may want to identify are introductions, bridges, refrains, choruses, or whatever you choose.
Time marker		Time markers are fixed to the time ruler and mark absolute time in your project. They are very useful when scoring video.
Command marker		Command markers indicate when an instruction or function occurs in a streaming media file.
Regions		Regions subdivide your project into time segments. Regions have in and out points, which allow them to function as permanent time selections.

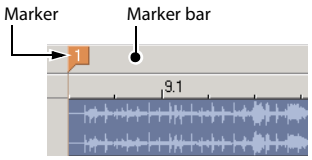
Working with standard markers

Markers are tools that can make creating music easier by identifying specific points along the project's timeline. They can be named, moved, and serve as snap and navigational points for the cursor and events. When you place markers, they are automatically numbered (up to 99) in the order that you place them.

Placing markers

Markers are placed at the cursor position. You may place a marker in one of the following ways:

- From the **Insert** menu, choose **Marker**.
- Right-click the marker bar, choose **Markers/Regions** from the shortcut menu, and choose **Insert Marker** from the submenu.
- Press M. You may use this method to place a marker while the project is playing.



Moving markers

1. Place the mouse pointer on the marker to be moved. The hand cursor (☝) appears.
2. Drag the marker to the desired position.

Naming markers

You can name markers in your project. You may want to name markers based on parts of the project. For example, you may want to identify choruses, refrains, bridges, or instrument solos as reference points along the timeline.

1. Place the mouse pointer on the marker to be named. The hand cursor (☝) appears.
2. Right-click the marker and choose **Rename** from the shortcut menu. A box appears next to the marker.

3. Type a marker name in the box and press Enter to save the name.

Tip: *You can use the same steps to rename a marker. Alternately, you can double-click the marker and enter a new name.*

Navigating to markers

While you are working on your project, you may have scrolled to a portion of the project where the cursor is not visible. There are two ways to move the cursor directly to the selected marker:

- Right-click the marker and choose **Go To** from the shortcut menu.
- Click the marker once.
- Press the number key (not on the numeric keypad) corresponding to the marker number.

Tip: *You may also navigate from one marker to the next by pressing Ctrl+left/right arrow key.*

Adjusting tempo to match cursor to marker

Position the cursor, right-click the marker tab, and choose **Adjust tempo to match cursor to marker** from the shortcut menu. The project tempo changes so that the cursor position matches the selected marker.

Deleting markers

You may remove markers from the project at any time. Because markers are automatically numbered (up to 99) when they are placed, the remaining markers are not renumbered when one is deleted. Rather, the remaining markers retain their numbers. However, if you add markers later, numbering begins to fill the sequence gap.

For example, if you have five markers in your project and delete markers three and four, the remaining markers are listed as one, two and five. When you add markers again, the markers are numbered as three and four.

1. Place the mouse pointer on the marker to be deleted. The hand cursor (☝) appears.
2. Right-click the marker and choose **Delete** from the shortcut menu. The marker is removed from the project.

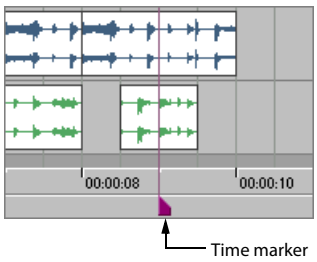
Working with time markers

Unlike standard markers, time markers are tied to absolute time within your project. They are added differently than standard markers and appear on the time ruler at the bottom of the track view. Otherwise, time markers can be manipulated just like other markers.

Placing time markers

Time markers are placed at the cursor position. You may place a time marker in one of the following ways:

- From the **Insert** menu, choose **Time Marker**.
- Press H. You may use this method to place a time marker while the project is playing back.



Note: *Time markers are not numbered.*

Adjusting tempo to match marker to cursor

Using this function with time markers is particularly useful when scoring video. *For more information, see Scoring video on page 209.*

Position the cursor, right-click the marker tab, and choose **Adjust tempo to match marker to cursor** from the shortcut menu. The project tempo changes so the time marker matches the cursor position.

You can also align the marker and cursor by holding Alt while dragging the marker. For example, hold Alt while dragging a time marker to a location on the beat ruler. The project tempo adjusts so the time at the marker occurs on a specific beat. For example, if you place a time marker at 10 seconds on the time ruler and hold Alt while dragging the marker to 5.1 on the beat ruler, the project's tempo is adjusted so the first beat of measure five occurs at ten seconds.

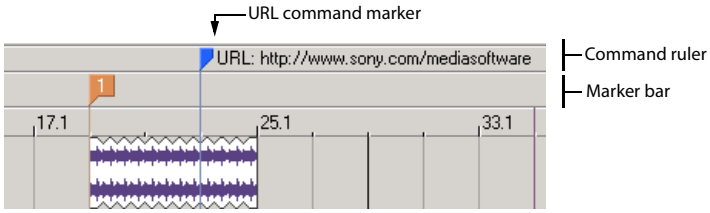
Working with command markers

Command markers add interactivity to a multimedia presentation streamed over the Internet. As your media plays, any number of other actions can be programmed to execute. These commands are a part of the Windows Media® and RealMedia™ streaming formats. Most frequently, these actions add text or open a related Web site. The specific commands available vary depending on the final format of your project.

> **Note:** *Streaming media files can be played back from a hard drive or CD-ROM, but in order to stream properly across the Internet, the file must be on a streaming media server. Check with your internet service provider for details and availability of this service.*

Placing command markers

Command markers appear on the command ruler, which is above the marker bar.



1. Position the cursor where you want to place the command marker.
2. From the **Insert** menu, choose **Command**.
3. Complete the Command Properties dialog:
   - From the **Template** drop-down list, choose a custom template. *For more information, see Saving command properties as a custom template on page 89.*
   - From the **Command** drop-down list, choose the type of command. *For more information, see Defining streaming media commands on page 90.*
   - Enter parameters in the **Parameter** box to define the behavior of the command.
   - Enter your own notes or comments in the **Comment** box.
   - Specify the timing of the command in the **Position** box. Command markers are automatically set to the current cursor position unless you change this value.
4. Click **OK**. The new command marker appears on the command bar.

   After you create a command marker, you can move the marker by dragging it to a new location.

Editing command marker properties

Double-click any command marker to open the Command Properties dialog and edit its contents. You can also right-click a command marker and choose **Edit** from the shortcut menu.

Saving command properties as a custom template

If you plan to use a command more than once, you can save command properties as a template. You can then reuse the command properties by selecting the template from the **Template** drop-down list.

1. Create a command and complete the Command Properties dialog.
2. Click in the **Template** box and enter a name for the template.
3. Click the **Save Template** button ( ).

Tip: *Your metadata command templates are saved in the cmdtemp.xml file in the ACID program folder. You can edit this file directly to modify your templates.*

Defining streaming media commands

In a streaming media file, command markers can be used to display headlines, show captions, link to Web sites, or any other function you define.

Several command types are included that you may add to a streaming media file. Some command types are exclusive to either the Windows Media or the RealMedia file types.

Command	Player Type	Description
URL	Windows Media and RealMedia	Indicates when an instruction is sent to the user's Internet browser to change the content being displayed. With this command, you enter the URL that displays at a specific time during the rendered project's playback.
TEXT	Windows Media	Displays text in the captioning area of the Windows Media Player located below the video display area. You enter the text that displays during playback. **Note:** To view captions during playback in Windows Media Player 9, choose **Captions and Subtitles** from the Windows Media Player Play menu, and then choose **On if Available** from the submenu.
WMClosedCaption	Windows Media	Displays the entered text in the captioning window defined by an HTML layout file.
WMTextBodyText	Windows Media	Displays the entered text in the text window defined by an HTML layout page.
WMTextHeadline	Windows Media	Displays the entered text in the headline window defined by an HTML layout file.
Title	RealMedia	Displays the entered text on the player's title bar. **Note:** When rendering Windows Media files, title information is based on the settings on the Summary tab of the ACID Project Properties dialog or the Index/Summary tab of the Custom Template dialog. The summary information from the Project Properties dialog will be used if information has been specified in both places. To view this information during playback, choose **Now Playing Options** from the Windows Media Player View menu and select the items you want to display.
Author	RealMedia	Displays the entered text (author's name) when a user selects About this Presentation from the RealPlayer shortcut menu or Properties from the Windows Media shortcut menu. **Note:** When rendering Windows Media files, author information is based on the settings on the Summary tab of the ACID Project Properties dialog or the Index/Summary tab of the Custom Template dialog. The summary information from the Project Properties dialog will be used if information has been specified in both places. To view this information during playback, choose **Now Playing Options** from the Windows Media Player View menu and select the items you want to display.

Command	Player Type	Description
Copyright	RealMedia	Displays the entered copyright information when a user selects About this Presentation from the RealPlayer shortcut menu or Properties from the Windows Media shortcut menu. **Note:** When rendering Windows Media files, copyright information is based on the settings on the Summary tab of the ACID Project Properties dialog or the Index/Summary tab of the Custom Template dialog. The summary information from the Project Properties dialog will be used if information has been specified in both places. To view this information during playback, choose **Now Playing Options** from the Windows Media Player View menu and select the items you want to display.
HotSpotPlay	RealMedia	Allows you to define an area in the RealPlayer video display that users can click to jump to another RealMedia file.
HotSpotBrowse	RealMedia	Allows you to define an area in the RealPlayer video display that users can click to jump to a Web page that you specify.
HotSpotSeek	RealMedia	Allows you to define an area in the RealPlayer video display that users can click to jump to a point in the current RealMedia file.

Defining HotSpot commands

Hotspots are defined using the following parameter syntax:

HotSpotPlay MM:SS (LEFT, TOP, RIGHT, BOTTOM) "LABEL" FILENAME

HotSpotBrowse MM:SS (LEFT, TOP, RIGHT, BOTTOM) "LABEL" URL

HotSpotSeek MM:SS (LEFT, TOP, RIGHT, BOTTOM) "LABEL" MM:SS

The **Parameter** box for a typical HotSpotBrowse command for a hotspot rectangle that is 50 pixels wide by 20 pixels tall and lasts for 10 seconds would look like this:

HotSpotBrowse 00:10 (0, 0, 50, 20) "Sony" http://www.sony.com/mediasoftware

All parameters are optional except the last. The hotspot defaults to the entire duration of the file and the entire video frame if the duration and dimensions are not specified.

Adjusting tempo to match cursor to marker

Position the cursor, right-click the marker tab, and choose **Adjust tempo to match cursor to marker** from the shortcut menu. The project tempo changes so that the cursor position matches the selected command marker.

Deleting command markers

To delete a command marker, right-click the marker and choose **Delete** from the shortcut menu.

Working with regions

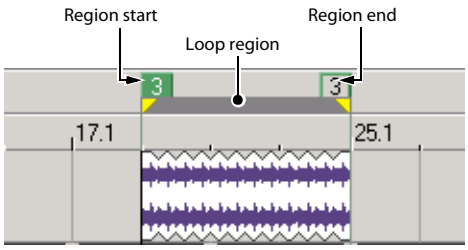
Regions are useful tools that allow you to subdivide your project into time sections by designating in and out points along the timeline. Regions can function as permanent time selections for playback and editing purposes. Like markers, regions can serve as reference points and may be moved, named, and provide snap points for the cursor and events.

When you place regions, they are automatically numbered in the order that you place them.

Placing and moving regions

Regions are placed at the start and end points of a loop region (time selection). You may place a region in one of the following ways:

- From the **Insert** menu, choose **Region**.
- Right-click the marker bar, choose **Markers/Regions** from the shortcut menu, and choose **Insert Region** from the submenu.
- Press R.



After you place a region, you may change its position by dragging the region tag to the desired position.

Tip: *You can move a region without changing its size by holding Alt while dragging either region tag.*

Naming regions

You can name the placed regions in your project. You may want to name regions based on parts of the project or to define the amount of time that the regions encompass. For example, you may want to identify introductions, solos, or special time-related features in your project as reference points.

1. Right-click the region's start tag and choose **Rename** from the shortcut menu. A box appears next to the tag.
2. Type a region name and press Enter to save the name.

Navigating to regions

While you are working on your project, you may have scrolled to a portion of the project where the cursor is not visible. You may click in the track view to move and view the cursor or you may use region tags to bring the cursor into view.

To move the cursor to the selected region tag, right-click the region tag and choose **Go To** from the shortcut menu.

Tip: *You may also navigate between regions in your project by pressing Ctrl+left/right arrow key or the number key (not on the numeric keypad) corresponding to the region number.*

Selecting regions

You may use the region's start and end tags to make a time selection across all tracks in your project. The information within the time selection can then be used for playback or editing.

To select a region, right-click a region tag and choose **Select Region** from the shortcut menu. The loop bar appears between the region tags and the tracks are highlighted.

Deleting regions

You may remove regions from the project at any time. Because regions are automatically numbered when they are placed, the existing regions are not renumbered when one is removed. Rather, the existing regions retain their numbers. However, if you add regions later, numbering begins to fill the sequence gap that exists.

For example, if you have six regions in your project and delete regions four and five, the remaining regions are listed as one, two, three and six. When you add regions again, the regions are numbered as four and five.

To remove a region from a project, right-click the region tag marker and choose **Delete** from the shortcut menu.

Using snapping

Snapping helps you to align events in your project with other items. Event edges are preset to snap to the project's grid lines as you drag an event along the track. If snapping is enabled and the **Grid Only** option is turned off, the event's edges automatically align to these designated snap points:

- Cursor position
- Grid lines
- Markers
- Regions start and end points

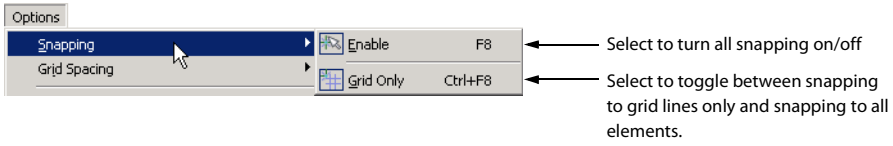
- Loop region (time selection) in and out points

You may turn on snapping for these elements in the project or limit snapping to grid lines.

Choosing snapping options

If the snap function is preventing you from placing an event precisely where you want it, you may turn snapping off. Turning off snapping prevents events from automatically aligning to the cursor, grid lines, markers, regions, and time selections.

The **Options** menu allows you to toggle snap functions. The button image next to the **Enable** command indicates when snapping is turned on. The button image next to the **Grid Only** command indicates the type of snapping in use.



Tip: *You can temporarily suspend snapping while dragging by holding down the Shift key.*

Turning snapping on and off

You may turn snapping on and off in one of the following ways:

- Click the **Enable Snapping** button ( ) on the Toolbar.
- From the **Options** menu, choose **Snapping**, and choose **Enable** from the submenu.
- Press F8.

Snapping to grid lines

With snapping turned on, you may choose to snap only to grid lines. From the **Options** menu, choose **Snapping**, and choose **Grid Only** from the submenu. The button image next to the command indicates that it is active.

Snapping to all elements

With snapping turned on, you may choose to snap to all elements. From the **Options** menu, choose **Snapping**, and choose **Grid Only** from the submenu. The button image next to the **Grid Only** command appears deselected when snapping to all elements.

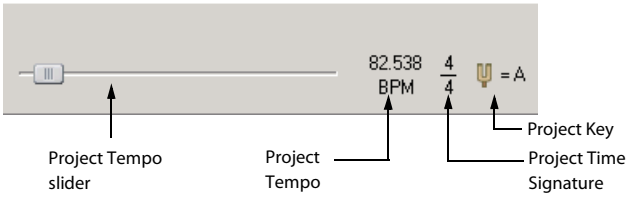
Tip: *Press Ctrl+F8 to toggle between grid only and all elements.*

Changing tempo, time signature, and key

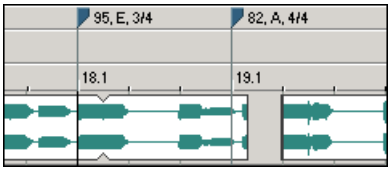
You can set a tempo, time signature, and key for your ACID project. You can also make adjustments during playback.

You can add specific tempo, time signature, and key changes within a project using tempo/key/time signature change markers. These markers appear on the marker bar above the track view. When the cursor passes over one of these markers, the master project tempo, key, and/or time signature changes in real time.

Set the tempo, time signature, and key for the whole project...



...or change these elements dynamically in the timeline.



Changing project tempo

You can change the tempo of a project without affecting the project's key.

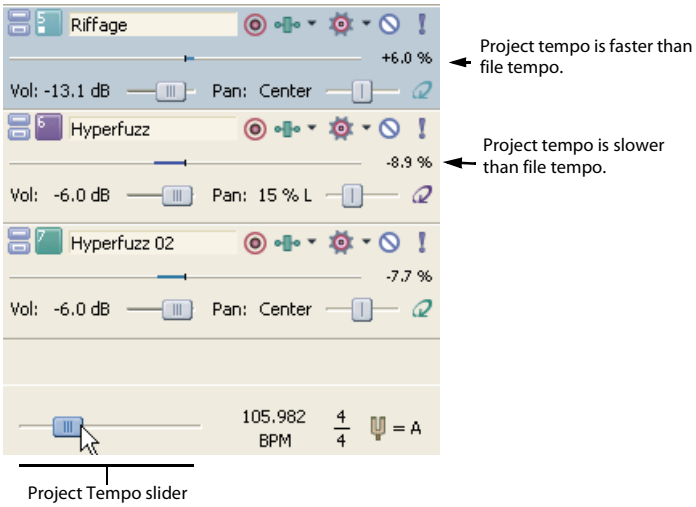
Changing tempo using the Project Tempo slider

Drag the **Project Tempo** slider at the bottom of the track list. Dragging the slider to the left slows the tempo, while dragging it to the right speeds the tempo.

Tip: *Double-click the tempo value next to the* **Project Tempo** *slider to enter an exact value. Press Enter when you are finished.*

As you drag the **Project Tempo** slider, a colored bar appears under each track's name to represent the amount a track is being stretched to match the project tempo. The mark in the center of the bar represents the original tempo of a file. When the bar appears to the right of the mark, the project tempo is faster than the original file; when the bar appears to the left of the mark, the project tempo is slower than the original file. The amount of change also displays as a percentage at the right end of the bar.

As you drag the slider, a colored bar appears for each track.



Changing project tempo to match file tempo

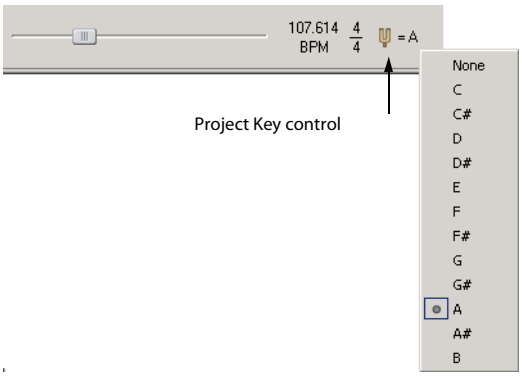
Each track's shortcut menu contains the option **Use Original Tempo**. The original tempo of the file used on the track appears to the right of this option in the shortcut menu. To change the project's tempo to match the original file tempo, simply choose **Use Original Tempo** from the shortcut menu.

Changing project time signature

Click the **Project Time Signature** control and select a time signature from the menu to adjust a project's time signature. Select **Other** from the menu to enter a custom time signature.

Changing project key

Click the **Project Key** control and select a key from the menu to adjust a project's key.



This feature makes it possible to use media that are in different keys in the same project: each loop that has a specified root note is transposed to the key indicated by the **Project Key** control.

For example, if three loops have root notes of A, B, and C, and your **Project Key** control is set to D, the loops are pitch-shifted by five, three, and two semitones, respectively.

Note: *If the root note for a track is set to* **Don't Transpose** *in the Clip Properties window, the track does not pitch shift with the rest of the project.*

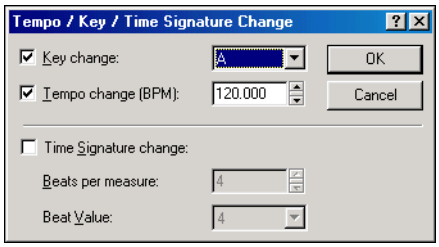
Working with tempo/key/time signature change markers

Tempo/key/time signature change markers allow you to make changes to the tempo, key, and/or time signature at specified points in your project.

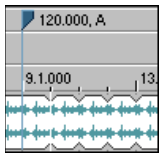
Note: *Time signature changes must occur on the first beat of a measure.*

Adding tempo/key/time signature change markers

1. Position the cursor where you want the change to occur.
2. From the **Insert** menu, choose **Tempo/Key/Time Signature Change**. The Tempo/Key/Time Signature Change dialog appears.
3. Select the check boxes for the types of changes you want to occur at the cursor position.



   - **Key Change** changes the key of all tracks until another tempo/key/time signature change marker is encountered.
   - **Tempo Change** changes the tempo of all tracks until another tempo/key/time signature change marker is encountered.
   - **Time Signature Change** changes the time signature of all tracks until another tempo/key/time signature change marker is encountered.
4. Specify the desired change information and click **OK** to close the dialog. A marker appears in the marker bar at the cursor position that displays the change information.



Editing tempo/key/time signature change markers

There are several ways to edit the tempo/key/time signature change marker:

- Position the cursor on or after the marker and adjust the **Project Tempo**, **Project Time Signature**, or **Project Key** controls. The marker's text reflects the change.

- Right-click the marker, choose **Edit** from the shortcut menu, and enter the appropriate change in the Tempo/Key/Time Signature Change dialog.
- Double-click the marker and enter the appropriate change in the Tempo/Key/Time Signature Change dialog.

Adjusting tempo to match cursor to marker

Position the cursor, right-click the marker tab, and choose **Adjust Tempo to Match Cursor to Marker** from the shortcut menu. The project tempo changes so that the cursor position matches the selected marker.

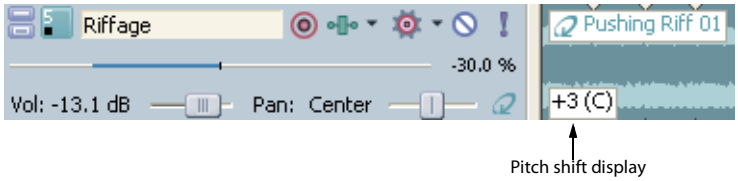
Deleting tempo/key/time signature change markers

To delete a marker, right-click the marker and choose **Delete** from the shortcut menu.

Changing a clip's key

You can change the key of a clip on a track without affecting the project's key. *For creative ways to use track key changes, see Detuning paired tracks on page 243.*

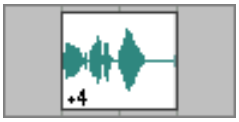
1. Right-click the track and choose **Properties** from the shortcut menu. The Track Properties window appears.
2. Double-click the event you want to edit.
3. On the **General** tab of the Clip Properties window, enter the number of semitones by which to adjust the key in the **Pitch Shift** box or use the spinner control. Use the minus (-) key for negative values.
4. Close the Track Properties window. The pitch shift displays in the event.



Tip: *Another way to change the key of the track is to select the track in the track list and press + (plus) or - (minus) on the numeric keypad.*

Changing an event's key

You can change the key of an individual event without affecting the pitch of the track or project.



Right-click the event in the track view, choose **Pitch Shift** from the shortcut menu, and choose **Up Semitone** or **Down Semitone** from the submenu. The pitch shifts one semitone in the direction specified, and the amount of shift displays on the event itself.

You can also change an event's key using keyboard shortcuts. *For more information, see Event editing commands on page 24.*

Adjusting time

Two commands are provided for adjusting your project's timeline: Insert Time and Fit to Time.

Inserting time

Use the Insert Time command to insert a specified amount of blank space into the project at the current cursor position. This feature can be used to create space in the project for new events.

1. Position the cursor where you want to insert time.
2. From the **Insert** menu, choose **Time**. The Insert Time dialog appears.
3. Enter the amount of time you want to insert and click **OK**.

> **Note:** *The Insert Time dialog uses the measures.beats.ticks format used by the beat ruler.*

Fitting to time

The **Fit to Time** command allows you to adjust the project's overall length to a specified amount of time.

> **Note:** *The maximum and minimum length is limited to reduce the possibility of creating audible artifacts through the compression/expansion process.*

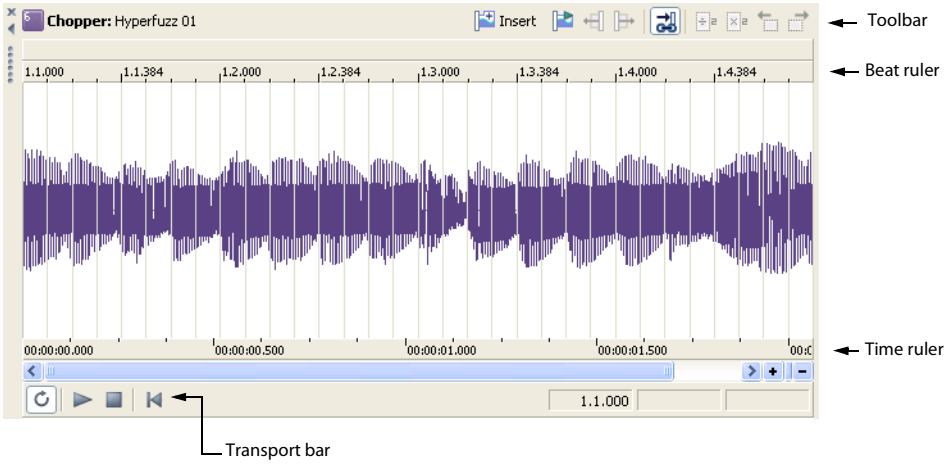
1. From the **Edit** menu, choose **Fit to Time**. The Fit to Time dialog appears with the current project length displayed in the **New length** box.
2. Enter the new project length in the **New length** box. The length is always entered in time format, regardless of the format used on the time ruler.
3. Click **OK**. The dialog closes and the tempo is adjusted to alter the project's length.

Chapter 6 Using the Chopper

The Chopper™ feature in ACID® allows you to quickly create slice-and-dice effects. *For creative ways to use the Chopper, see* *Slicing and dicing in the Chopper on page 247*.

Working in the Chopper window

Selecting an event loads its clip in the Chopper.



Viewing the Chopper

To display the Chopper, choose **Chopper** from the **View** menu or press Alt+2.

Changing the Chopper grid

The Chopper's grid uses the same increments available on the track view. To change the grid display, right-click the waveform area of the Chopper, choose **Grid Spacing** from the shortcut menu, and choose the desired display from the submenu.

Changing Chopper snapping options

The snapping behavior of the track view and Chopper are linked. To enable snapping in both components, choose **Snapping** from the **Options** menu and choose **Enable** from the submenu, or press F8.

When snapping is turned on, you can choose between snapping only to the grid or snapping to all elements. *For more information, see* *Using snapping on page 92*.

Magnifying the Chopper

There are three ways of adjusting the magnification of the Chopper.

- Click the **Zoom In Time** (+) and **Zoom Out Time** (-) buttons located in the lower-right corner of the window.
- Click within the Chopper and use the mouse wheel.
- Quickly magnify a selection by right-clicking and choosing **Zoom to Loop Region** from the shortcut menu.

Previewing in the Chopper

The Chopper contains a dedicated transport bar that can be used to preview selections prior to inserting them into the project.

Using Chopper toolbar and keyboard commands

In addition to the transport bar, the Chopper contains a toolbar that is designed to make creating selections quick and easy. The following table briefly describes the toolbar buttons and the associated keyboard commands.

Button	Keyboard	Function
	/ (front slash) or A	Inserts the Chopper selection in the track view at the current cursor position.
	Ctrl + , (comma)	Shifts the track view's cursor position to the left by the length of the increment arrow.
	Ctrl + . (period)	Shifts the track view's cursor position to the right by the length of the increment arrow.
	N	Links the length of the increment arrow with the length of the selection. When toggled on, the length of the increment remains equal to the length of the selection. When toggled off, you can configure the increment independently of the Chopper selection.
	; (semicolon)	Halves the length of the Chopper selection.
	" (apostrophe)	Doubles the length of the Chopper selection.
	< or , (comma)	Shifts the Chopper selection to the left by the length of the selection.
	> or . (period)	Shifts the Chopper selection to the right by the length of the selection.
	Ctrl + Shift + , (comma)	Shifts the selection left by the increment length.
	Ctrl + Shift + . (period)	Shifts the selection right by the increment length.
	Ctrl + ; (semicolon)	Doubles the length of the increment arrow.
	Ctrl + " (apostrophe)	Halves the length of the increment arrow.
	R	Inserts a region.
	M	Inserts a marker.
	I	Marks the start point of a loop region.
	O	Marks the end point of a loop region. Once the endpoint is established, the loop region becomes highlighted.

Inserting markers and regions in the Chopper

When working with events in the Chopper, you can drop markers and create regions just like in the track view. *For more information, see Using project markers and regions on page 87.*

These markers and regions are saved with the project when it is saved. They can also be saved back to the original media file by clicking the **Save File** button () in the Track Properties window. *For more information, see Saving file properties on page 118.*

Creating selections in the Chopper

After you place a file in the Chopper, you can use the toolbar, transport bar, and mouse (or their keyboard equivalents) to create and preview selections within the file. When have made the selection you want, you can insert the selection into the track view.

Placing files in the Chopper

To place a file in the Chopper, do any of the following:

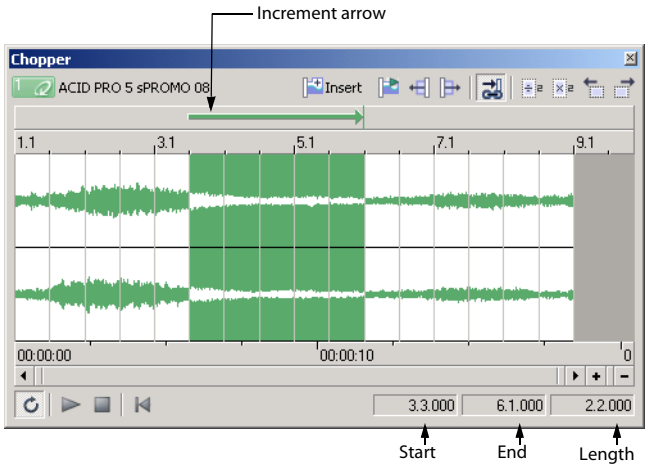
- Select a track in the track list.
- Select an event.

- Right-click an event and choose **Select in Chopper** from the shortcut menu.

Note: *If you choose* **Select in Chopper** *on an event that contains only a portion of a file, the entire contents of the file are placed in the Chopper. The part of the waveform selected, however, matches the contents of the selected event. This allows you to see the event in the context of the entire media file.*

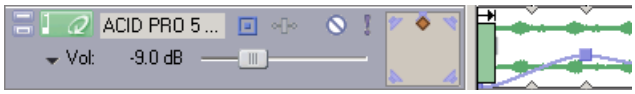
Creating selections

To create a selection, drag the mouse, or hold Shift while pressing the arrow keys. A shaded region appears in the Chopper to indicate the current selection, and its start point, end point, and length display at the bottom-right corner of the window in measures.beats.ticks format. You can preview the selection at any time by clicking the **Play** button ( ) on the Chopper's transport bar or pressing Space.



Note: *In addition, an increment arrow appears on the track view above the selected block. For more information, see Inserting increments on page 101.*

As you make a selection in the Chopper, a colored block appears in the track view. This block indicates where the selection will be placed on the track view when you insert it from the Chopper.



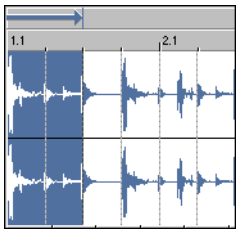
Creating selections of a specific musical length

You may want to create a selection with a length corresponding to a musical value. You can easily do this in the software using the Chopper's selection shortcut menu.

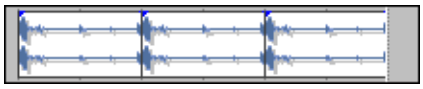
1. Create a selection or place the cursor in the Chopper. *For more information, see Creating selections on page 101.*
2. Right-click and choose the desired musical length from the shortcut menu. A selection is created equal to the specified musical length.

Inserting increments

In addition to creating selections, the Chopper feature allows you to configure the sections of silence between selections painted on a track. When you click the **Link Arrow to Selection** button ( ), the increment arrow length is incremented with the selection length. This forces the increment and selection lengths to remain equal, thereby allowing you to insert selections seamlessly, end-to-end, in the project.



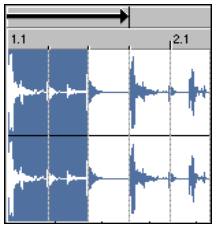
Selection and increment length linked



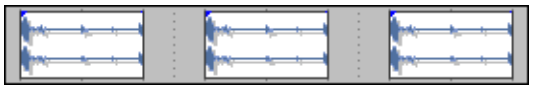
Chopper selection inserted end-to-end three times

When the **Link Arrow to Selection** button is toggled off, the increment arrow is displayed in black and you are able to establish a increment length that is independent of the selection length. The increment arrow can be set by dragging either end of the arrow or by using the increment shortcut menu.

When the increment length is greater than the length of the selection, an appropriate amount of silence is inserted following the selection when you insert it in the track view. This affects the track's insert position and allows you to paint selections separated by the specified increment.

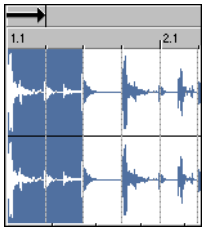


Increment greater than selection



Selection inserted with specified increment three times

When the increment length is less than the length of the selection, the selections are overlapped as you insert them in the track view.



Increment less than selection

Selection overlaps when inserted three times

Creating increments

1. Verify that the **Link Arrow to Selection** button ( ) is toggled off and the increment arrow is displayed in black.
2. Drag the point of the arrow to configure an increment of the desired length.

> **Tip:** *While dragging the increment arrow, the Chopper's middle status value temporarily displays the length of the increment.*

Creating increments of a specific musical length

The increment shortcut menu, like the selection shortcut menu, allows you to create increments that correspond to the specified musical length.

1. Verify that the **Link Arrow to Selection** button ( ) is toggled off and the increment arrow is displayed in black.
2. Right-click the increment arrow and choose the desired musical value from the shortcut menu. The increment length is automatically configured to the selected value in both the Chopper and the track view.

Creating increments of a custom musical length

1. Verify that the **Link Arrow to Selection** button ( ) is toggled off and the increment arrow is displayed in black.
2. Right-click the increment arrow and choose **Custom** from the shortcut menu. The Custom Length dialog appears.
3. Choose the desired increment format from the drop-down menu.
4. Enter an appropriate value in the adjacent box and click **OK**. The increment length is automatically configured to the selected value in both the Chopper and the track view.

Note: *It is possible to set an increment value that results in the increment arrow extending beyond the scope of the Chopper. If this occurs, an accurate depiction of the increment still appears in the track view.*

Inserting selections in the track view

You can add selections from the Chopper to your project in several ways.

Using the Insert Selection button

After you create the desired selection and increment, you can insert the selection in the project at the track view's cursor position by clicking the **Insert Selection** button (Insert). After the Chopper inserts the audio, the cursor moves to the end of the increment.

- If the increment length is equal to the selection length, selections are painted end-to-end.
- If the increment length is greater than the selection length, an appropriate amount of silence is painted prior to the next insert position.
- If the increment length is less than the selection length, selections overlap.

Using copy and paste

You can right-click the selection in the Chopper and choose **Copy** from the shortcut menu to copy the current selection to the clipboard. You can then use the **Paste** command to insert the selection in the track view. After the event is pasted, the cursor advances to the end of the pasted event.

Note: *When you paste a selection from the Chopper to the track view, the increment setting is ignored.*

Dragging selections

You can drag a Chopper selection from the Chopper to the track view. Release the mouse at the location where you want to insert the selection.

Moving the insert position in the track view

Click the **Move Track View Cursor Left** button ( ) and the **Move Track View Cursor Right** button ( ) to move the current insert position in the track view left/right by the increment length.

Saving Chopper selections as new files

You can quickly create a new loop by making a selection in the Chopper and saving the selection as a new file. The file is added to your project as a new track.

1. Make a selection in the Chopper.
2. Right-click the selection and choose **Chop to New Track** or **Chop to New Clip** from the shortcut menu. The Chop to New dialog appears.

Tip: *You can also drag a selection from the Chopper to the track list.*

3. In the **File name** box, enter a name for the new file.

4. From the **Save as type** box, choose a file format for the new file.
5. From the **Template** drop-down list, choose a template for rendering the file, or click **Custom** to create custom rendering settings. *For more information, see Creating custom rendering settings on page 54.*
6. Click **Save**.

   If you chopped to a new clip, a new clip is added to the current track. *For more information, see Using clips with tracks on page 105.*

   If you chopped to a new track, the file is added as a new track in the project. *For more information, see Using assignable effects on page 140.*

Using the Chopper with one-shots

Selections of loops and Beatmapped files transfer flawlessly between the Chopper and the track view because the beats are clearly identified. However, one-shot files present more of a problem. You can use the following method to create accurate single-hit selections in one-shot files.

1. Verify that the snapping options are active. If snapping is not active, choose **Snapping** from the **Options** menu and choose **Enable** from the submenu, or press F8.
2. Verify that the **Link Arrow to Selection** button ( ) is selected.
3. Create a selection of the desired musical length in the Chopper. *For more information, see Creating selections of a specific musical length on page 101.*
4. From the **Options** menu, choose **Snapping**, and choose **Enable** from the submenu, or press F8 to toggle all snapping options off.
5. Click the **Link Arrow to Selection** button ( ) to toggle the linking option off. You can now adjust the selection without changing the increment.
6. Drag the middle of the increment arrow to reposition selection length in the Chopper.
7. Use the mouse and/or keyboard to fine-tune the selection. The increment arrow does not change.
8. Insert the desired selection data in the track view. *For more information, see Inserting selections in the track view on page 103.*
9. Repeat steps six through eight to insert all desired selections in the track view.

Chapter 7 Working with Tracks

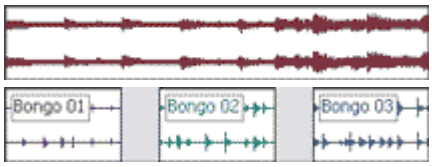
This chapter covers advanced track features including using clips, track effect chains, track envelopes, groove mapping™, and stereo panning modes. You'll also learn more about track types, track properties, track folders, and rendering tracks to new files.

Using clips with tracks

In previous versions of ACID®, each track in your project corresponded to a single media file. If you're comfortable with the track-equals-media model, this version of ACID can behave in much the same way: when you add media to your project, a new track is created for the media file. You can use the Draw and Paint tools to create events using the track's media.

In this version of ACID, you can now add multiple media files — or clips — to one track. Think of clips as the palette you can dip your paintbrush in when you paint on the timeline. For example, if you want to use one track for all the guitar loops in your project, you can create a single guitar track and add each guitar loop as a separate clip. When a track has multiple clips, the Draw and Paint tools create events using the active clip.

A single audio track can contain any combination of loops, one-shots, or Beatmapped clips. MIDI tracks can contain only MIDI clips. *For more information, see Understanding clip types on page 38.*



On a track with a single clip, events are always created using the track's media.

On a track with multiple clips, each event can point to a different media file. In this example, each event represents one of the track's three clips.

The banner at the top of each event (i.e. Bongo 01, Bongo 02, and Bongo 03) displays the name of the event's source clip.

Adding clips to tracks

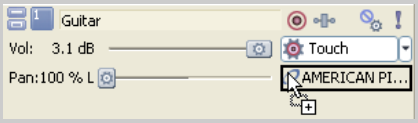
Drag a file from the Windows Explorer, Explorer Window, or Media Manager window to an existing track in the timeline to add a clip to the track and add an event where you drop the clip. The new clip is set as the active clip for creating events with the Draw or Paint tool.

You can drag single-stream MIDI files to a track to add clips. When you drag multistream MIDI files to a track, tracks and events are created.

You can also record into a track to create a new clip.

Tips:

- *You can use the Chopper window to create new clips from the track's existing media.*
- *If you want to add a clip to a track without creating an event, drag a file from the Windows Explorer, Explorer Window, or Media Manager window and drop it on the* **Paint Clip Selector** *button.*

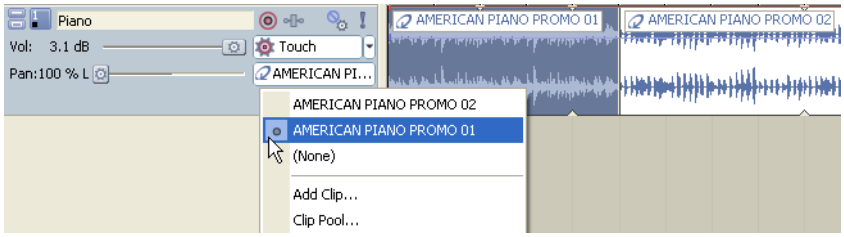


- *Hold Shift while clicking the* **Paint Clip Selector** *button to display the Open dialog, where you can add a new clip.*

Setting the active clip and creating events

It is simple to set active clips and create events with ACID.

1. Click the **Paint Clip Selector** button in the track header. A menu is displayed to list the track's current clips.



2. Choose a clip from the menu. The selected clip is used for creating events with the **Draw** or **Paint** tool.

Copying clips and events across tracks

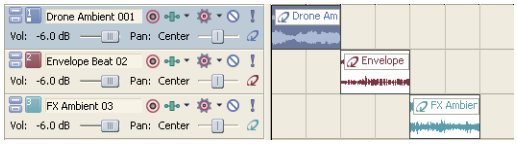
In previous versions of ACID, you could only copy and paste events within the same track. Now you can use clips to copy events between tracks.

Tip: *You can also use the* **Cut** , **Copy** , *and* **Paste** *buttons in the Clip Pool tab in the Track Properties window to cut, copy, and paste clips across tracks.*

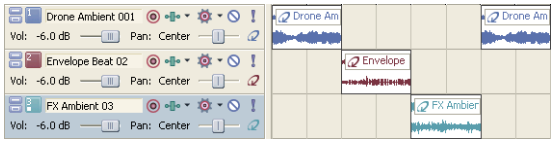
1. Select the events you want to copy.

Tip: *Hold* **Ctrl** *or* **Shift** *to select multiple events. You can select multiple events that use different clips.*

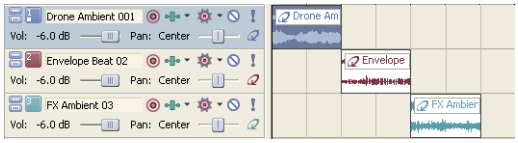
2. Click to position the cursor where you want to paste the events.
3. Click the track header of the track where you want to paste the contents of the clipboard.
4. From the Edit menu, choose Paste. Events are added at the cursor position, and clips are added to the track for the pasted events as needed.



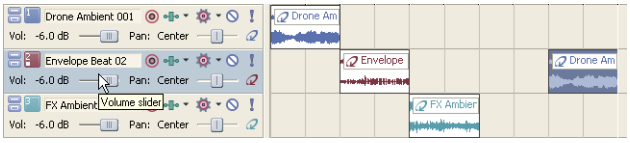
If you copy an event from track 1. ..



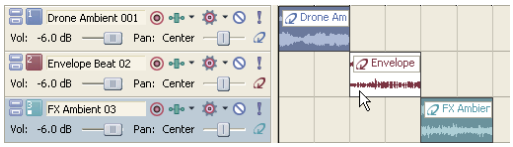
. . . and paste it into track the same track, a new event is created on the same track. No clips are created.



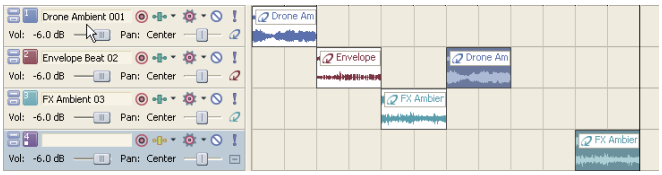
If you copy an event from track 1. . .



... and paste it into track 2, the event from track 1 is added to track 2, and a new clip is created for the new event.



If you copy events from tracks 1 and 3. . .

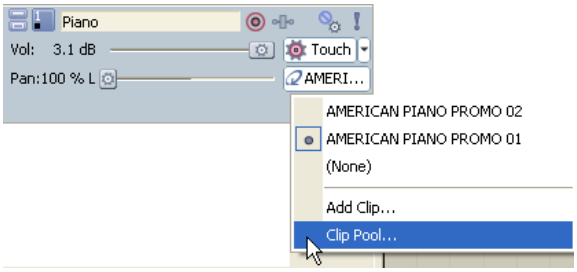


.. . and paste them into track 2, the event from track 1 is added to track 2, and a new clip is created for the new event. A new track is created for the event from track 3.

Copying clips across tracks without copying events

You can use the **Cut** , **Copy** , and **Paste** buttons on the audio Track Properties or MIDI Track Properties window to cut, copy, and paste clips across tracks:

1. Click the **Paint Clip Selector** button on the track header and select **Clip Pool**.



2. In the Clip Pool, select the clip you want to cut or copy, and then click **Cut** or **Copy**.
3. Click the **Paint Clip Selector** button in the track header where you want to paste clips, and then choose **Clip Pool** from the menu.
4. Click the **Paste** button in the Clip Pool.

Previewing clips

Select a clip in the clip list, and then click the **Play** button to play it. Click the **Stop** button to stop playback.

Changing an event's clip

1. Select the events you want to change.
2. Right-click a selected event and choose **Event Clip**. The track's current clips are displayed in a submenu.
3. Choose the clip you want to use from the submenu. All selected events are updated to use the new clip.

Tip: *Press C or Shift+C to change the selected event's clip by cycling forward or backward through the track's clips.*

Pitch shifting audio clips

You can use the Clip Properties window to pitch-shift all events on the track associated with a specific clip. *For more information, see Adjusting pitch shift on page 114.*

Using the Clip Pool

You can use the Clip Pool to organize each track's media. In the track header, click the **Paint Clip Selector** button and then choose **Clip Pool**.

The clip list displays each track's clips, the number of times the clip is used on the track, and the path to the media file.

Clear a clip's check box to remove it from the Paint Clip Selector menu without removing it from the track. To make the clip available again, select the check box.

To set the active clip, click the space next to a clip's check box. The icon indicates which clip will be used for creating events with the Draw or Paint tool.

Click the **Remove Unused Clips** button to remove all unused clips from the track.

> **Tip:** *To remove the unused media from your project, choose* **Remove All Unused Clips** *from the Tools menu.*

Click the **Open** button to display the Open dialog, where you can browse to clips you want to add to the track.

Select a clip in the Clip Pool and click the **Delete** button. Only clips with a Use Count of 0 can be deleted.

You can use the **Cut** , **Copy** , and **Paste** buttons in the Clip Pool window to cut, copy, and paste clips across tracks.

Selecting events that use a specified clip

Right-click an event and choose **Select Events Using This Event's Clip** from the shortcut menu to select all events on the track that use the same clip as the selected event.

Right-click the timeline, choose **Select Events Using Clip**, and then choose a clip from the submenu to select all events on the track that use the specified clip.

Using track effects

ACID allows you to use DirectX® and VST plug-ins at the track level. Track-level plug-ins process everything on the selected track.

You can create plug-in chains, adjust the order of plug-ins on a chain, bypass plug-ins, remove plug-ins, and save frequently used chains as presets.

> **Tips:**
>
> - *If the VST plug-in you want to use isn't displayed in the Plug-In Chooser, you can use the VST Effects tab in the Preferences dialog to add the plug-in's folder and then click the* **Refresh** *button to scan for plug-ins. For more information, see* *Using the VST Effects tab on page 236*.
> - *If the DirectX plug-in you want to use isn't displayed in the Plug-In Chooser, hold Ctrl+Shift while restarting ACID and then select the* **Delete all cached application data** *check box to reset your preferences and rescan for DirectX plug-ins.*

Using track effects

The Sony Track EQ plug-in effect is assigned to all tracks by default; however, it does not use CPU power or affect the sound until you adjust its settings. You can remove the EQ plug-in if desired. *For more information, see* *Removing plug-ins from chains on page 110*.

In addition, you can use effect plug-ins in the Mixer window by applying effect chains to busses or soft synths, or by creating assignable effect chains and routing tracks to them. *For more information, see* *Using the Mixer on page 139*.

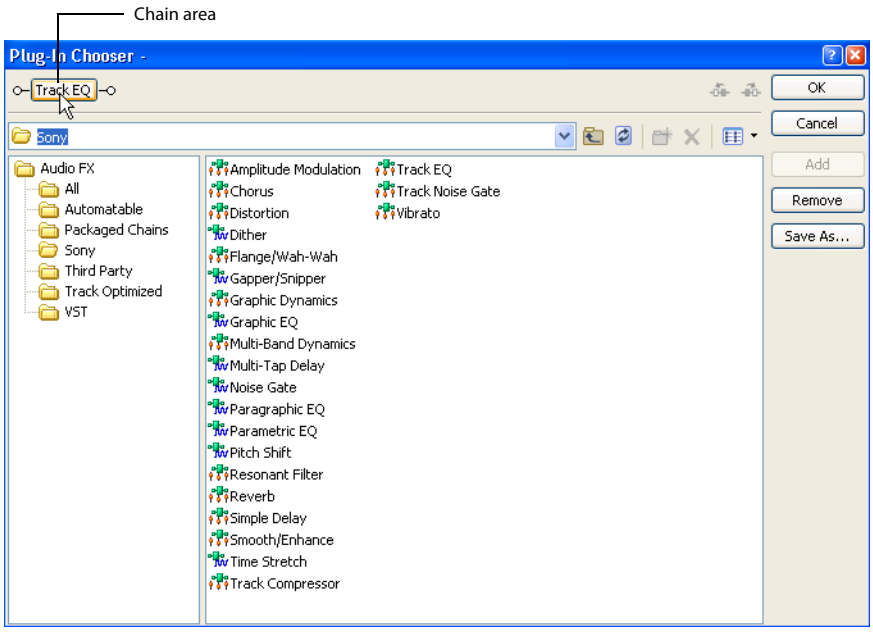
> **Important:** *Be aware that using non-in-place plug-ins (such as Time Stretch, Pitch-Shift without preserving duration, and some Vibrato settings) will cause audio to play out of synchronization with the waveform display in the timeline and with other tracks. If an effects chain includes non-in-place plug-ins, the effects chain icon will be displayed as a .*
>
> *When using ACID as a ReWire device, any effects chain that includes non-in-place plug-ins will be automatically bypassed to prevent synchronization problems with the ReWire mixer application. The effects chain icon will be displayed as a . Apply the plug-ins within the ReWire mixer application.*

Creating or adding to track plug-in chains

A plug-in chain can contain one or more plug-ins. When you add multiple plug-ins, you may set the processing sequence that the track's events go through when the project is played back. Moreover, the plug-ins that you add to the chain may be added more than once. For example, a plug-in chain could look something like this: Track EQ, Track Compressor, Track EQ, and Track Noise Gate.

After you create a plug-in chain, the track's events are processed by each plug-in in its respective order on the chain. The events' effects processing is cumulative, so in some cases, you may want to rearrange the order of plug-ins to achieve the desired sound. *For more information, see* *Arranging plug-in chain order on page 110*.

1. Click the **Track FX** button ( ). The Audio Plug-In window appears.
2. Click the **Edit Chain** button ( ) to display the Plug-In Chooser dialog.



3. Select the plug-ins that you want to add. There are three ways to add a plug-in to the chain:
   - Double-click the plug-in.
   - Drag the plug-in to the chain area.
   - Select the plug-in and click the **Add** button.
4. Rearrange the order of plug-ins as needed by dragging plug-ins to different locations in the chain or by selecting a plug-in and clicking the **Shift Plug-In Left** ( ) and **Shift Plug-In Right** ( ) buttons.
5. Click **OK**. The Plug-In Chooser dialog closes. The Audio Plug-In window displays the plug-in chain and the settings for the plug-in last selected on the Plug-In Chooser dialog.
6. Click a specific plug-in and adjust the effect's parameters manually, or choose one of the presets from the **Preset** drop-down list. For more information about effect parameters, click the **Plug-In Help** button ( ) in the Audio Plug-In window.

> **Tip:** *You can save an effect's parameters as a preset to be used in other projects. To save a preset, enter a name in the* **Preset** *box and click the* **Save Preset** *( ) button.*

7. Click the **Close** button ( ) to close the Audio Plug-In window.

You can use a track effect chain as a default for all new tracks you create. *For more information, see* *Setting default track properties on page 229*.

Automating plug-in parameters

You can automate the parameters of certain plug-ins by adding envelopes to the track. *For more information, see Adding or removing track effect automation on page 128.*

Arranging plug-in chain order

The plug-ins are cumulative during playback. For example, when the track's signal passes through the EQ, it carries the EQ's settings as it passes through the compression plug-in, then the signal carries both those plug-in settings to the next plug-in.

Because of this cumulative effect, you may need to arrange plug-ins in a certain order so that one plug-in's processing does not adversely affect the next plug-in on the chain. There is no right or wrong way to order plug-ins, although some plug-ins work better when they follow another. However, the plug-in order in the chain is strictly based on your preferences and desired output.

1. Click the **Track FX** button ( ). The Audio Plug-In window appears.
2. There are three ways to arrange plug-ins in your chain:
   - Drag the plug-in to a new location in the chain.
   - Right-click the plug-in and choose **Move Left** or **Move Right** from the shortcut menu.
   - Click the plug-in and then click the **Shift Plug-In Left** ( ) and **Shift Plug-In Right** ( ) buttons.
3. Click the **Close** button ( ) to close the Audio Plug-In window.

Bypassing plug-ins in a chain

You can bypass a plug-in without removing it from the chain by clearing the check box for the plug-in. Alternately, right-click the plug-in and choose **Bypass** from the shortcut menu.

Tip: *To bypass (or re-enable) all plug-ins in a chain, right-click the* **Track FX** *button ( ) and choose* **Bypass All** *or* **Enable All**.

Bypassing effect automation

For plug-in chains that include effect automation using envelopes, you can bypass automation by clicking the **Bypass FX Automation** button ( ) on the Audio Plug-In window. This does not remove any effect automation envelopes from the track, but rather temporarily bypasses processing of the effect automation. You can toggle this button on and off to hear the difference between the plug-in chain as a standard (non-automated) effect versus an automated effect.

Removing plug-ins from chains

1. Click the **Track FX** button ( ). The Audio Plug-In window appears.
2. Right-click the plug-in and choose **Remove** from the shortcut menu, or click the **Remove Selected Plug-In** button ( ).
3. Click the **Close** button ( ) to close the Audio Plug-In window.

Tip: *To remove all plug-ins in a chain, right-click the* **Track FX** *button ( ) and choose* **Delete All**.

Saving plug-in chains as packages

You can save plug-in chains as packages so that you may use them again with other projects. If you use a combination of plug-ins often, saving them as a package saves you time. Effect packages retain their chain order and individual plug-in settings.

You may save plug-in chains as packages from existing chains on tracks or when you are creating a plug-in chain. The plug-in chains that you save as packages appear in the Plug-In Chooser dialog in the **Packaged Chains** folder. You can apply an effect package to a track the same way you assign a plug-in to a track.

Once you have created custom presets for effects or effect chains, you can use the Preset Manager to back up, transfer, or delete custom presets from any of the plug-ins you use in ACID. *For more information, see Using the Preset Manager on page 149.*

1. Click the **Track FX** button ( ). The Audio Plug-In window appears.

> **Note:** *If the track has no plug-in chain, clicking the* **Track FX** *button ( ) displays the Plug-In Chooser dialog.*

2. Click the **Edit Chain** button ( ) to display the Plug-In Chooser dialog.
3. Add and arrange plug-ins to create a plug-in chain and click **OK**.
4. Click a specific plug-in and adjust the effect's parameters manually, or choose one of the presets from the **Preset** drop-down list. For more information about effect parameters, click the **Plug-In Help** button ( ) in the Audio Plug-In window.
5. Click the **Save Chain Preset** button ( ). The Save Plug-In Package dialog appears.
6. Enter a name for the package.
7. Click **OK** to save the plug-in chain as an effect package.

Removing or bypassing all effects on tracks

You can clear a track of all effects by right-clicking the **Track FX** button ( ) and choosing **Delete All** from the shortcut menu.

You can bypass all of a track's effects without removing them by right-clicking the **Track FX** button ( ) and choosing **Bypass All** from the shortcut menu. To apply them again, right-click the **Track FX** button ( ) and choose **Enable All** from the shortcut menu.

Using track automation envelopes

Track envelopes allow you to control volume, panning, assignable effect send levels, bus send levels, and effect parameters (for effects that support automation) for a specific track. You can distinguish the various envelopes by their color.

For more information, see Using Automation on page 125.

Choosing stereo pan types

When you pan a track using the pan slider or a pan envelope, you can choose among several pan types to determine how the track is panned.

> **Note:** *When applying stereo pan types, a monaural track is interpreted as a stereo track with the same data in both channels.*

1. Click the pan slider label and choose a pan type from the submenu:
   - The **Add Channels** pan type is most useful for panning stereo source material. This pan type makes the stereo image appear to move as a unit between the speakers. As the fader is moved from the center to a side, more and more of the signal from the opposite side is folded into the side you are panning towards, until at the extreme, both channels are fed at full intensity into a single channel. This pan type uses a linear panning curve.
   - The **Balance** pan type is most useful for adjusting the relative signal levels of the right and left channels in stereo source material. In this pan type, moving from the center to a side, the opposite side starts at a base dB level (either 0 dB, -3 dB, or -6 dB) and decays to no signal level. The signal in the side you are panning towards starts at the base dB level (either 0 dB, -3 dB, or -6 dB) and increases to 0 dB. When the stereo source is panned fully to one side, that side plays at 0 dB while the other side provides no signal at all. This pan type uses a linear panning curve.

- The **Constant Power** pan type is most useful for panning mono source material. As you move the fader from side to side, this pan type creates the illusion of the source moving around the listener from one side to the other, in a semi-circle. This pan type uses the constant-power panning curve.
- The **Film** pan type allows you to pan between pairs of adjacent speakers using a constant power model. This mode is optimized for theater-style speaker placement. In stereo projects, **Film** mode functions identically to **Constant Power**. As you drag the pan point to the center speaker, the sound becomes diffused through the front and rear speakers. When the track is panned fully to the center speaker, there is no output from the front and rear speakers. Dragging the pan point to the center of the surround panner sends the signal to all speakers.

You can choose a pan type as a default for all new tracks you create. *For more information, see Setting default track properties on page 229.*

Using the Beatmapper

When you add a file to a project that is longer than 30 seconds, the Beatmapper™ Wizard starts. This allows you to decide whether or not to add tempo information to the file.

The Beatmapper identifies a file's downbeats and measures, allowing the file to stretch/compress in conjunction with the project's tempo. A file added without the Beatmapper behaves as a one-shot, maintaining its original length regardless of the project tempo.

1. Add the file to your project. The Beatmapper Wizard starts if the file is longer than 30 seconds.

> **Note:** *You can change the file length that triggers the Beatmapper in the* **Audio** *tab of the Preferences dialog. For more information, see Using the Audio tab on page 232.*

2. Specify whether you want to use the Beatmapper Wizard:
   - Select the **Yes** radio button and click **Next** to detect measures and downbeats.
   - Select the **No** radio button and click **Finish** to close the Beatmapper and add the file as a one-shot.
3. Click the **Play** button ( ) to verify the downbeat marker's position. If the marker is positioned on a downbeat, click **Next**. Otherwise, drag the marker to the appropriate location and click **Next**. The Beatmapper draws the file's waveform and places a region to indicate the length of the first measure.

> **Tip:** *The* **Reset** *button sets the downbeat marker back to its detected position.*

4. Click the **Play** button ( ) to verify the measure's length.
   - Select the **Metronome** check box to preview the measure with the assistance of a metronome.
   - Click the **Halve Loop Region** ( ) or **Double Loop Region** ( ) button to change the length of the selection. If the Beatmapper misdetects the length of the measure, it may be off by either half or double the actual amount.
   - If the region is positioned correctly, click **Next**. Otherwise, drag the region markers to the appropriate locations and click **Next**.

   The waveform appears with measure lengths selected.
5. Drag the **Measure** slider to scroll through the song and click the **Play** button ( ) to verify each measure's length. If the song's tempo is consistent, the measures are placed correctly. If the tempo fluctuates, you can drag the end of the measure selection to change the measure's position.

   Changing the measure length affects the entire song; if adjusting the last measure of the song causes the first measure to be incorrect, the downbeat may not be positioned correctly, or the song's tempo may not be consistent enough for the Beatmapper.
6. Click **Next** when the measure lengths are correct. The Beatmapper adds tempo information to your file and displays some additional options.
7. Specify your preferences for the following options:
   - Select the **Change project tempo to match Beatmapped track** check box if you want to set your project tempo to match the tempo calculated by the Beatmapper Wizard. Selecting the check box ensures that your Beatmapped track plays at the original tempo.

- Select the **Preserve pitch of the Beatmapped track when tempo changes** check box to maintain the track's original pitch regardless of the project's tempo.
- Select the **Save Beatmapper information with file** check box if you want the file to open with the Beatmapper settings each time you use the file.

8. Click **Finish** to close the Beatmapper Wizard. The file is added to the project as a Beatmapped track.
9. Draw the event in the track view.

Tip: *You can place the entire event by using the Paint ( ) tool. With the Paint tool selected, press Ctrl while you click once in the track to place the Beatmapped file.*

Understanding stretching properties

All loops on the ACID installation disc (as well as all loop collection CD-ROMs) contain stretching properties. This means that tempo and key information is stored in the loops, allowing the application to accurately perform its time stretching/compressing and pitch-shifting functions on these loops when placed in a project.

Keep in mind that you do not need to designate stretching properties for loops that you create for ACID projects. The application typically makes an accurate estimate regarding the loop file's tempo. In addition, you can temporarily assign a root note to the file to allow it to be transposed to the project's key. However, when creating custom loops for use in multiple projects, you should define stretching properties.

You can set the stretching properties for loops and Beatmapped clips. *For more information, see Adjusting stretching properties for loop or Beatmapped clips on page 114.*

Configuring track properties

From the **View** menu, choose **Track Properties** to display the Track Properties window. The contents of the Track Properties window reflect the currently selected audio or MIDI track.

If you want to edit media properties and stretching information, use the Clip Properties window.

Audio track properties

For audio tracks, the Track Properties window displays the Clip Pool. The Clip Pool is used to organize each track's media.

For more information, see Using the Clip Pool on page 107.

MIDI track properties

You can use the Output Settings tab to adjust MIDI controllers, voices, and drum maps. You can use the Input Filters tab to set up MIDI message, velocity, or quantize filters. You can use the Clip Pool tab to organize each track's media and enable looped or one-shot drawing for MIDI events. By right-clicking a clip in the Clip Pool, you may access the Clip Properties window to use the **Piano Roll Editor** and **List Editor** tabs. The **Piano Roll Editor** and **List Editor** tabs allow you to view and edit all MIDI data.

Configuring clip properties

1. Double-click a track icon (such as) to display the Track Properties window and the clips used on the track.

Note: *This section addresses clip properties for non-MIDI clips. For information on MIDI clip properties, see Processing and filtering MIDI events on page 171.*

2. Double-click a clip to open the Clip Properties window.

Once you modify the properties of a clip, the information is saved with your project, but does not alter the original media file. If you want, you can save your changes to the media file as well. *For more information, see Saving file properties on page 118.*

Note: *When you edit a clip in an external editor, changes to the sound file are reflected immediately after you save the file. Changes to a media file's ACID properties are not updated in your ACID project until you click* **Reload** *on the Clip Properties window.*

Managing a track's clips

Each track in your ACID project can contain multiple, distinct media files, called clips. Use the Clip Pool tab in the Track Properties window to add, remove, and preview clips. *For more information, see Using clips with tracks on page 105.*

Adjusting general clip properties

The General tab displays information about the file associated with a clip and allows you to change the ACID type, apply pitch shifting to all events on the track that use the same clip, and adjust time-stretching for Beatmapped clips.

Changing clip type

Choose a setting from the **ACID type** drop-down list to change the way the clip is handled.

Track Type	Description
Loop	When you select Loop, the clip is transposed to the key of the project and stretches to fit the project tempo. Loops can be drawn across the track and will repeat end-to-end.
One-Shot	When you select One-Shot, the clip is streamed from the hard disk rather than storing it in RAM if it is longer than thirty seconds. One-shot files do not change tempo with the rest of the loops and are not transposed to the project key. The Stretch tab is not available when One-Shot is selected.
Beatmapped	When you add a file that is longer than 30 seconds to a project, the Beatmapper Wizard allows you to add tempo information to the file.

Adjusting time stretching (Beatmapped clips only)

If you want to preserve the clip's pitch while you adjust the tempo, select the **Preserve pitch when stretching** check box. When the check box is cleared, you can still adjust the tempo of the clip, but the pitch is also affected.

Adjusting pitch shift

Enter a value in the **Pitch Shift (semitones)** box (or use the spinner control) to adjust the pitch of all events that use the clip.

Adjusting stretching properties for loop or Beatmapped clips

The Stretch tab allows you to specify how pitch-shifting and time stretching is handled for loop or Beatmapped clips.

After you have edited a file's properties, click the **Save File** button ( ) to embed ACID information with the file.

Tip: *To save to a different file, click the* **Save File As** button ( ).

If you cannot or do not wish to embed ACID information with the file, you can set the properties to suit your needs, and they will be saved with the ACID project (but not with the file). This means, however, that you must set the properties for every project where you use the loop. Configuring the stretching properties and clicking the **Save File** button ( ) allows you to "set and forget" the properties so the properties will be set for any project.

If you edit the file in another audio-editing program, ACID-specific data may be removed. If this occurs, simply set the stretching properties again and click the **Save File** button ( ).

Note: *The Stretch tab for Beatmapped clips is essentially the Beatmapper without the wizard.*

Stretching properties for loop files

The following table describes the settings on the Stretch tab for loop files.

Item	Description
Root note	Choose a note from the drop-down list to set the base note for loops that you want to conform to the project key. If you do not want a clip transposed to the project key (a clip that contains a drum sample, for example) choose Don't transpose.
Number of beats	Choose a setting from the drop-down list to specify the length of the original file. Selecting a value that does not match the actual file causes the loop to play at a different speed. For example, specifying a length of 8 beats for a 4-beat loop causes the loop to play at half-speed at any given tempo. You can misinform the software regarding the beat length of a loop for creative ends. For more information, see Playing double time/half time on page 244.
Stretching method	Stretching properties determine how time compression and expansion is performed on audio events. If you hear audio anomalies due to time compression, try editing the stretching properties of the track. Looping segments is the default stretching method, and it works well with most types of material. The clip media is divided into sections that are crossfaded, and some sections may be looped if necessary to achieve the necessary length. Choose Nonlooping segments for sustaining material such as synthesizer pads and held notes. The clip media is divided into sections that are crossfaded, but no sections are looped. Choose Pitch shift segments to shift the pitch of the clip to adjust for increases or decreases in tempo. Using this option, you can eliminate some of the problems that occur with extreme tempo changes just create new sounds from existing loops. For example, if you have slowed the project tempo down and hear echo artifacts, choosing Pitch shift segments can eliminate these artifacts. Choose Sliced segments for material such as drum loops where silence exists between notes. Instead of crossfading the segments, silence is added between beats to reduce warbling or other artifacts. When you set the stretching method to Sliced segments, beat markers represent divisions in the clip media where silence will be inserted to accomplish stretching. Stretch-only markers are not used in this mode and are displayed in gray. You can adjust stretching properties creatively. For more information, see Overriding compress/expand on page 247.
Transient sensitivity	Type a value in the box or use the spinner control to adjust the sensitivity for beat detection. Higher settings increase sensitivity and lower settings decrease sensitivity. When you set the control to 100, beat markers ( ), stretch markers (or), and beat anchors ( ) are created for every transient. As you decrease the setting, markers are created for only strong transients. Increasing this setting can be advantageous when working with audio that has complex rhythms. Lower settings are more suitable for synthesizer pads and other basic material.
Timing tightness	Choose a setting from the drop-down list to specify the resolution for beat anchors ( ).
Stretch spacing	Choose a setting from the drop-down list to specify how many stretch markers ( ) will be displayed along the bottom of the waveform display. Audio that contains rapid notes—such as drum rolls—benefits from setting the divisions at a smaller fraction of a beat. Slower-paced material, however, may actually suffer from high resolution.
Redetect Beats	Click to automatically detect the beats in the current file. Use this button to apply the ACID beat-detection algorithm to existing media.

Stretch markers for loop clips

Stretch markers ( ) correspond to subdivisions of beats in the audio file. These markers tell ACID where to divide the audio when performing time stretching to match tempo. Accurately detecting these beats is the key to making the time-compression process sound good.

Each beat marker ( ) on the beat ruler corresponds to a combination beat/stretch marker ( ) on the timeline. If you want to convert a combination beat/stretch marker to a stretch-only marker, double-click the marker (or right-click the marker and choose **Convert to Stretch Marker** from the shortcut menu).

> **Tip:** *Use the Zoom In Time (Up) ( ) and Zoom Out Time (Down) ( ) buttons to change the magnification of the waveform.*

As a general rule, markers that are excessively close to each other may cause clicks in the audio. However, markers should not be more than one second apart, or pitch and echo artifacts may result.

You can add, move, and delete stretch markers on the Stretch tab. If snapping is enabled, markers will snap to the current grid spacing.

Moving markers

You can drag any marker to a new location. If you move a combination stretch/beat marker ( ), its associated beat marker ( ) will also be moved.

Adding markers

Double-click the marker bar at the bottom of the waveform display to create a new marker. It is advantageous to add new markers if the software does not detect any quick subdivisions in beats.

The biggest cause of audio artifacts due to time compression is a lack of beat detection. Make sure that you add markers anywhere the application fails to put one on a pronounced beat.

Deleting markers

You can remove a user-defined marker by right-clicking and choosing **Delete** from the shortcut menu (or by double-clicking a disabled marker).

Reset stretching markers

Click the **Reload** button (Reload...) to reset the markers to their last-saved positions.

Beat anchors and markers for loop clips

Beat anchors ( ) correspond to musical beats on the ruler at the top of the waveform display. Beat markers ( ) correspond to points in time on the ruler at the bottom of the waveform display. Each beat marker corresponds to a combination beat/stretch marker ( ) on the timeline. If you want to convert a combination beat/stretch marker to a stretch-only marker, double-click the marker (or right-click the marker and choose Convert to Stretch Marker from the shortcut menu).

Beat anchors and markers are used only when a groove is applied to a track.

Offsets between beat anchors and beat markers indicate that the beat represented by an anchor is actually played at the marker position, which may occur before or after the beat. This mapping represents the difference required to remove an existing groove from a media file and return the media to straight machine time so that grooves can be applied accurately.

If you want to hear the results of editing beat anchors and markers, select the **Play Quantized** button ( ) at the bottom of the Clip Properties window and use the Clip Properties transport controls to preview the loop. Playing the clip in **Play Quantized** mode demonstrates how the clip sounds when the **Quantize to Straight groove** is applied.

In most cases, you won't need to edit beat anchors.

Tip: *Use the Zoom In Time (+) and Zoom Out Time (-) buttons to change the magnification of the waveform.*

Important: *Grooves are not applied using the markers on the Stretch tab. Autodetected stretch markers are used to establish a baseline for applying other grooves with the Groove Pool window and Groove tool. User-defined markers have no effect on groove quantization.*

You can add, move, and delete beat anchors and markers on the Stretch tab.

Moving anchors

You can drag beat anchors and stretch markers to map the sample data in the waveform to a specific beat:

- Moving a beat marker ( ) changes the audio that will be played at a beat anchor location.
- Moving a beat anchor ( ) changes the beat on which the audio represented by a stretch marker will be played. Beat anchors snap to the current grid spacing. Hold Shift while dragging to bypass snapping (press Shift after you click).

Adding anchors

Double-click the marker bar (above or above the beat ruler) to create a new anchor and marker.

Deleting anchors

You can remove a marker by right-clicking and choosing **Delete** from the shortcut menu (or by double-clicking it).

Reset beat anchors

Right-click the beat marker bar and choose **Reset All** from the shortcut menu to reset the markers to their last-saved positions.

Stretching properties for Beatmapped tracks

The following table describes the settings on the **Stretch** tab for Beatmapped tracks.

Item	Description
Root note	Choose a note from the drop-down list to set the base note for tracks that you want to conform to the project key. If you do not want a track transposed to the project key, choose Don't transpose.
Original tempo	Displays the original tempo of the track as determined by the Beatmapper Wizard. Enter a value in the box or use the spin control to adjust the tempo.
Downbeat offset	Displays the location of the track's first downbeat as determined by the Beatmapper wizard. Enter a value in the box or use the spin control to adjust the location.
Beatmapper Wizard	Click the Beatmapper Wizard button to adjust a track's tempo information. For more information, see Using the Beatmapper on page 112.

Reloading files

Clicking the **Reload** button (Reload...) restores all settings from the media file. Any setting changes made on the **Stretch** tab of the Clip Properties are discarded.

Clicking this button also updates the Clip Properties window when changes are made to the properties from an external editor.

Replacing files

Clicking the **Replace File** button () displays the Replace File dialog and allows you to replace the audio file on the current clip with a new audio file. This feature only replaces the actual audio. All track timing, effects, and envelopes remain.

> **Tip:** *You can also replace a file by dragging an audio file from the Explorer and dropping it on the track name of an existing track.*

Saving file properties

When you make changes in the Clip Properties window, the changes you have made are saved in the project file, but does not alter the original media file. To save clip property changes in the media file, click the **Save File** button ().

You can also click the **Save File As** button () to save the changes to a new file. The media is saved with the modified track properties to a new file, and renames the track in the track list to reflect the change.

All the information in the Clip Properties window is saved to your file except for any pitch-shifting you have applied. Any regions or markers you have created in the Chopper™ are also saved. *For more information, see Inserting markers and regions in the Chopper on page 100.*

Adjusting clip properties for MIDI tracks

From the View menu, choose Clip Properties to display the Clip Properties window. The contents of the Clip Properties window will change to display properties for the currently selected clip in the timeline.

You can use the Clip Properties window to edit MIDI data using the OPT list editor or piano roll.

For more information, see MIDI Track Envelopes and Keyframes on page 181.

For more information, see Editing duration on page 173.

Working with grooves

From the **View** menu, choose **Groove Pool** to toggle the display of the Groove Pool window. The top portion of the Groove Pool window displays the available groove maps in your project. The bottom portion shows the selected groove map so you can edit it.

> **Note:** *The grooves listed in the Groove Pool are specific to your project. If you've deleted grooves and saved your project, those grooves will be unavailable unless you import the grooves again. For more information, see Importing a groove on page 121.*

A groove refers to the rhythmic pattern of a piece of music. Groove maps in ACID expand on the software's ability to match the rhythm and timing of files nondestructively and in real time:

- Breathe new life into your collection of loops and MIDI files by creatively applying grooves to change the rhythmic feel.
- Adjust the timing of a track to add or remove a human feel.
- Quantize and map multiple tracks or loops to a common groove.
- Extract the groove from an existing audio file.
- Create new grooves from scratch.
- Different grooves can be applied to an entire track or portions of a track so you can easily match loops with incompatible feels and tighten/loosen grooves nondestructively.

> **Note:** *Grooves cannot be applied to tracks that contain Beatmapped clips.*

Applying or removing grooves

From the **View** menu, choose **Groove Pool** to toggle the display of the Groove Pool window.

With the Groove Pool and Groove tool ( ), you can use groove maps to adjust the timing of entire tracks or portions of tracks.

Tips: *If you want to get really creative, try setting a clip's stretching method to* **Pitch shift segments** *(on the Stretch tab of the Clip Properties window). When a groove adjusts a beat so it plays early, the pitch will be raised. When a beat is played late, its pitch will be lowered.*

If a groove map does not seem to work correctly on a loop, the beats in the file may not be properly detected. Click the **Redetect Beats** *button on the Stretch tab of the Clip Properties window to apply the ACID beat-detection algorithm to the loop.*

Note: *Groove maps are applied nondestructively. If you want to change a media files's inherent groove, use the* **Render to new track** *command to render a new, grooved media file.*

Important: *Grooves cannot be applied to Beatmapped clips.*

Applying a groove to an entire track

1. From the **View** menu, choose **Groove Pool** to display the Groove Pool window if it isn't already visible.
2. Drag a groove from the Groove Pool window to a track. You can drop the groove in the track list or on the timeline.

   A groove event is displayed at the bottom of the track to indicate that a groove has been applied to the track.

   To toggle the height of the groove strips, choose **Show Full-Size Groove Strips** from the **View** menu.

Tips:

- Drag a groove from the Groove Pool to an existing groove event to change the event's groove.
- Right-click and drag with the Groove tool ( ) to erase a groove event.
- Hold Ctrl and right-click a groove event with the Groove tool to erase the entire event.
- Hold Ctrl and click a groove event with the Groove Erase tool ( ) to erase the entire event.

Setting a default groove for new tracks

If you have a groove that you'd like to use to set the overall feel of a project, you can set it as a default for your project.

1. From the **View** menu, choose **Groove Pool** to display the Groove Pool window if it isn't already visible.
2. Choose a setting from the **Default groove for new tracks** drop-down list.

   When you add a new loop, one-shot, or MIDI track to your project, the selected groove will be applied to the entire track. Existing tracks are not affected.

Applying multiple groove events to a track

Groove events allow you to apply grooves to portions of tracks or apply different grooves to various portions of a track. The groove is applied where the groove event overlaps the media event.

The edges of groove events are boundaries for grooves, and audio cannot be grooved beyond the event edges.

1. Select the Groove tool ( ).
2. Click the down arrow next to the Groove toolbar button and choose a groove from the menu (or double-click a groove in the Groove Pool).
3. Click and drag over a track to paint groove events in the same way you create other events on the timeline.

   Groove events are displayed at the bottom of the track to indicate where a groove will be applied.
4. Repeat steps 2 and 3 to paint groove events as needed.

To toggle the height of the groove strips, choose **Show Full-Size Groove Strips** from the **View** menu

Tips:

- Drag a groove from the Groove Pool to an existing groove event to change the event's groove.
- Drag a groove from the Groove Pool to a space between two groove events to create a new groove event to fill the space between the events.
- Hold Ctrl while clicking the space between two groove events to create a new groove event to fill the space between the events.
- Right-click and drag with the Groove tool to erase a groove event.
- Hold Ctrl and right-click a groove event with the Groove tool to erase the entire event.
- Hold Ctrl and click a groove event with the Groove Erase tool ( ) to erase the entire event.
- Zoom in to see groove markers in the groove events. The markers represent the amount and direction of offset applied to beats.

Erasing groove events

1. Select the Groove Erase tool ( ).
2. Click and drag the Groove Erase tool to erase a groove, or hold Ctrl while clicking a groove event to erase the entire event.

Tips:

- Right-click and drag with the Groove tool ( ) to erase a groove event.
- Hold Ctrl and right-click a groove event with the Groove tool to erase the entire event.
- Hold Ctrl and click a groove event with the Groove Erase tool ( ) to erase the entire event.
- Zoom in to see groove markers in the groove events. The markers provide a visual cue to the mapped groove.
- You can also right-click a track header and choose **Remove Groove from Track** from the shortcut menu to remove all groove events from a track.

Removing unused grooves from your project

Click the **Remove All Unused Grooves from Project** button ( ) to remove any grooves that have not been used in your project.

Removing a groove from your project

1. Select a groove in the Groove Pool window.
2. Click the **Remove Selected Grooves from Project** button ( ). The selected groove is removed from your project.

   If the groove is in use, a confirmation will be displayed if the **Confirm groove deletion when still in use** check box is selected on the General tab of the Preferences dialog.

Creating grooves

You can add grooves to your project by using an existing track, duplicating existing grooves, importing grooves, or by creating an entirely new groove from scratch.

Using Groove Cloning to create a new groove using a track in your project

ACID can analyze a clip's audio to extract its groove so you can apply its feel to other clips.

Note: *Groove cloning can extract grooves from loop clips only.*

1. Right-click a track header in the track list and choose Paint Clip from the shortcut menu.
2. Choose **Add to Groove Pool** from the submenu.

A new groove will be added to the Groove Pool window using the name of the clip you selected in step 1.

Note: *Grooves that you create from existing clips will be available only in the project where they were created. If you want to make a groove available to other projects, export it to a .groove file.*

Tip: *You can also click the* **Add to Groove Pool** *button (*) *in the Clip Properties window to add a loop groove to the Groove Pool.*

Duplicating a groove

Existing grooves can serve as templates for creating your own grooves.

1. Select the grooves you want to duplicate. Hold Ctrl or Shift to select multiple grooves.
2. Click the **Duplicate Selected Grooves** button ( ). The duplicated grooves are added to the Groove Pool.
3. To change the name of a duplicated groove, right-click a groove and choose **Rename** from the shortcut menu.
4. You can then edit the duplicated grooves as needed.

Importing a groove

You can use the **Import Grooves** button to add grooves from .groove files or other media files to the Groove Pool of your project.

1. Click the **Import Grooves** button ( ) in the Groove Pool window. The Import Groove dialog is displayed.
2. Select the .groove or media file you want to add. Information about the file is displayed at the bottom of the dialog.
3. Click the Open button to add the new groove to the Groove Pool.

Tip: *You can extract a groove quickly by dragging a file from the Explorer window or Media Manager window to the Groove Pool.*

Exporting a groove

Grooves are stored with your ACID project. Exporting a groove allows you to save a groove in a file that you can use in other projects or share with other ACID users.

1. Select a groove in the Groove Pool window.
2. Click the **Export Selected Grooves** button ( ). The Export Groove to File dialog is displayed.
3. Choose a drive and folder from the **Save in** drop-down list, or use the browse window to locate the folder where you want to save your groove.

Note: *By default, grooves will be saved in the folder specified in the* **Default groove folder** *box on the Folders tab of the Preferences dialog.*

Grooves in this folder will be available in the Groove Pool window when you create a new ACID project.

4. Type a name in the **File name** box, or select a file in the browse window to replace an existing groove.
5. Click the **Save** button to save your groove.

Creating a new groove

1. Click the **New Groove** button ( ). A new groove is added to the Groove Pool window.
2. Type a name for your groove in the edit box, and then press Enter.

Use the Groove Editor at the bottom of the Groove Pool window to adjust the length and feel of your groove. For more information about editing grooves, please see below.

Editing grooves

You can use the bottom portion of the Groove Pool window to edit grooves.

Your edits are saved with your project. If you want to use the edited groove in other projects, you'll need to export it as a .groove file and import the edited groove in each project where you want to use it.

1. From the **View** menu, choose **Groove Pool** to display the Groove Pool window.
2. Select a groove in the top portion of the window.

> **Tip:** *If you want to audition your edits in real-time, apply the groove to an event and start looped playback before you start editing the groove.*

The bottom half of the Groove Pool window displays your groove as a timeline with beat anchors and groove markers to represent how beats will be adjusted.

You'll notice that this view is similar to the Stretch tab in the Clip Properties window. Both windows contain beat anchors ( ); however, the markers on these windows perform opposite functions: the beat markers ( ) on the Stretch tab are used to remove an existing groove from a file, and the groove markers ( ) on the Groove Editor window represent a new groove that can be applied with the Groove Pool window and Groove tool.

- In the Groove Editor window, a beat anchor ( ) represents the beat that will be adjusted, or the source of your groove adjustment.
- A groove marker ( ) represents the point in time when a beat will be played. This is the destination of your groove adjustment. A groove marker can occur before or after the beat anchor. A line connects a groove marker to its associated beat anchor.

3. Use the **Length** spinner control to adjust the length of the groove. Decreasing the setting will remove beat anchors and groove markers from the file; increasing the setting will add anchors and markers.
4. Add or remove markers as needed:
   - If you want to add a marker, press M or double-click the beat ruler. A beat anchor and groove marker are added to the nearest division on the beat ruler.
   - If you want to delete a marker, right-click it and choose **Delete** from the shortcut menu.

> **Tip:** *Use a single beat anchor/groove marker to adjust all beats forward or back equally. This produces an effect similar to slipping an event.*

5. Adjust beat anchors and groove markers as necessary. Adjusting anchors and markers during looped playback helps you hear the results of your edits.
   a. Drag a beat anchor ( ) (or insert a new one) to indicate which beat you want to adjust.

      If snapping is enabled, beat anchors snap to the current grid spacing. Hold Shift while dragging to bypass snapping (press Shift after you click).
   b. Drag a groove marker ( ) to adjust when the beat will be played. Drag to the left if you want a beat to be played early, or drag left if you want it to be played late.

      You cannot drag groove markers past each other, but multiple markers can exist at the same point in time. When the **Allow snapping for Post-Groove Markers** check box is selected on the General tab of the Preferences dialog, groove markers will snap to the current grid spacing if snapping is enabled. Hold Shift while dragging to bypass snapping.
   c. Double-click a beat anchor or groove marker to reset the marker to the beat anchor position.

> **Tip:** *Hover over a beat anchor or groove marker to display a ToolTip that explains the effect of groove marker adjustments.*

Using folder tracks

You can use the folder track feature to help organize your track list and timeline by grouping tracks so they can be quickly and easily minimized or expanded.

When the folder track is minimized, you can perform edit operations on clustered events in the group, but you cannot create events with the Draw or Paint tools or perform edge-trimming. Expand the folder track to edit individual events.

Tip: *You can also use folder tracks to maintain alternate mixes of a project. For example, create two distinct drum parts and move the tracks to separate folder tracks. Mute one of the drum folder tracks to choose which beat is used when you play or render your project.*

Creating a folder track

From the **Insert** menu, choose **Folder Track**. A folder track is added below the currently selected track.

You can create nested folder tracks by dragging a folder track to an existing folder track.

Adding existing tracks to a folder track

To add an existing track to a folder track, drag the track to the folder track. When the folder track is expanded, you can specify the location of the track by dragging it to the desired position. When the folder track is minimized, dragging the track to the folder track header places the track at the top of the list within the folder track.

Removing tracks from a folder track

To remove a track from the folder track, expand the folder track and drag the track to another location in the track list.

Muting a folder track

To mute all tracks in a folder track, click the **Mute** button ( ) on the folder track's header. To unmute the folder track, click the **Mute** button again.

Soloing a folder track

To solo only the tracks in a folder track, click the **Solo** button ( ) on the folder track's header. To unsolo the folder track, click the **Solo** button again.

Editing events in a folder track

When the folder track is minimized, you can also perform edit operations on clustered events in the group. The following edit operations will affect clustered events:

- Pitch-shifting events.
- Dragging events.
- Cutting, copying, pasting, and deleting events.

Click to select a clustered group of events, or hold Ctrl or Shift while clicking to select multiple clusters of events. Selected events are displayed in a darker color than unselected events.

Events that overlap are treated as a single event when the folder track is minimized.

Mixing multiple tracks to a single track

You can mix a selected group of tracks or an entire project to a single-track stereo event. If your project includes any muted tracks, however, those events are not mixed into the new track. The original tracks and their events are unaffected when you mix to a single track.

Typically, you would use this feature when you are finished refining a few tracks and want to combine them to conserve processing power. Also, when you mix multiple tracks to a single stereo track, any envelope or track effects that you applied are rendered into the newly mixed-down track. You can also use this feature to downmix 5.1 surround projects to stereo.

This option also allows you to destructively process any track effect plug-ins.

1. Solo the tracks you want to mix. To mix down the whole project, skip to step two.

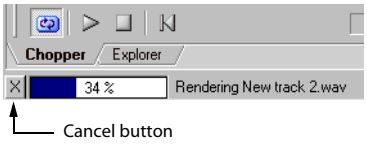
2. From the **Tools** menu, choose **Render to New Track** or press Ctrl+M. The Render to New Track dialog appears.
3. Complete the Render to New Track dialog:
   - From the **Save in** drop-down list, choose the location where you want to save the new media file.
   - Enter a name for the track in the **File name** box.
   - From the **Save as type** drop-down list, choose a file format.
   - From the **Template** drop-down list, choose an audio format from the template list, or click **Custom** to create custom rendering settings.

Note: *If you want to downmix a 5.1 surround project, choose a stereo rendering format.*

   - Select the **Render loop region only** check box if you want to render only the loop region to the new mixed down track. Clear the check box to render the full length of the project.
4. Click **Save**. The time selection or project is mixed down to a new track and a copy of the file is saved in the folder specified.

   As the tracks are being mixed down, a status bar appears in the lower-left corner of the ACID window.

Tip: *You may cancel the rendering process by clicking the* **Cancel** *button (⊠) on the status bar.*



   After the new track is mixed down, it appears at the bottom of the track view. If you mixed down the entire project, you may delete or mute the other tracks from the project, as they are all contained on the new track.
5. Use the Draw ( ) tool to paint the waveform on the new track.

Exporting loops

From the **File** menu, choose **Export Loops** to create new loops using the original loop media files in your ACID project.

A new loop file is created for every tempo change in the project, which can result in multiple loop files being created from a single loop media file.

1. From the **File** menu, choose **Export Loops**. The Export Loops dialog appears.
2. From the **Save in** drop-down list, choose the drive or folder to which the new files will be saved.
3. From the **Save as type** drop-down list, choose the file format.
4. From the **Template** drop-down list, choose an audio format, or click **Custom** to create custom rendering settings.
5. Click **Save**. A progress dialog appears for each track as it is rendered to a file. Tempo information is included in the file name of each loop file created (e.g., bass 120.000 BPM. wav).

Chapter 8 Using Automation

Automation allows you to control audio and video levels, panning, and effect parameter automation over time. You can create fades, apply stereo panning, and vary effect parameters throughout your project. Automation is represented on the ACID® timeline as an envelope or set of keyframes. You can create automation by adding envelopes or keyframes to your tracks (including bus tracks), or you can record automation parameters by adjusting controls in the ACID interface (or on a control surface) during playback.

Showing or hiding automation controls

The controls in the track list can function as trim controls or automation controls for track volume, panning, assignable effects send, and bus send levels. Adjusting the trim control affects the level of the entire track.

To display trim controls in the track header, deselect the **Automation Settings** button.

Track automation

Track automation will always affect all events on the track. This means that any event envelopes will be calculated after the track automation. *For more information, see Using event envelopes on page 69.*

> **Tip:** *Choose a fade type from the* **Audio default** *drop-down list on the Editing tab of the Preferences dialog to set the default fade type that will be used when you add volume and panning envelopes. This setting is used only when you create new envelopes—when you add a point to an existing envelope, the new point always uses the same fade type as the preceding envelope point. Also, this setting is not used for event envelopes.*

Mute automation

Mute automation changes a track's mute state throughout your project. Mute automation is either on or off with no fade between. If you want to use fades, apply volume automation.

When you apply mute automation to a track, it's possible to have a track that is muted and soloed simultaneously. The mute state overrides the solo state:

- If a track's **Solo** button is selected, the track is included in the solo group, but it will be muted whenever the mute automation is set to mute the track.
- If the track's **Mute** button is selected, the track is muted regardless of the mute automation settings.

Adding or removing mute automation

1. Select a track.
2. From the **Insert** menu, choose **Audio Envelopes** or **Video Envelopes**, or right-click in the track list and choose **Insert/Remove Envelope** from the shortcut menu.
3. From the submenu, choose **Mute**. A check mark is displayed next to the command, and an envelope is added to the timeline.
4. You can adjust the automation by editing the envelope in the timeline or by using the **Mute** button in the track header when the **Automation Settings** button is selected.

Adjusting mute automation settings

1. Select the **Automation Settings** button. The **Mute** button is displayed as .
2. Click the **Mute** button to change the track's mute automation state at the cursor position.

   The button behaves differently depending on the track automation recording mode:

   - When the track automation mode is set to **Off**, the button mutes the entire track.
   - When the track has a mute envelope and the track automation mode is set to **Read**, the button changes state to reflect the envelope setting during playback but cannot be adjusted.
   - When the track has a mute envelope and the track automation mode is set to **Touch** or **Latch**, the button edits the envelope setting at the cursor position.

   If you click the **Mute** button during playback, the behavior varies depending on the selected automation recording mode. *For more information, see Automating 5.1 surround projects on page 134.*

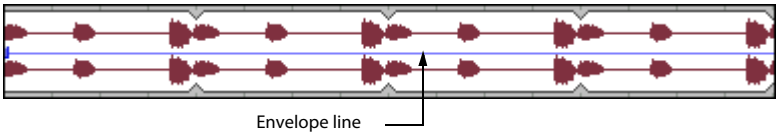
Volume or pan automation

You can change a track's volume or position in the stereo field throughout a project using automation envelopes.

Adding volume or pan envelopes

1. Select the track to which you want to add the envelope. (You may select multiple tracks.)
2. Add the envelope to the selected track(s) in one of following ways:
   - From the **Insert** menu, choose **Envelopes**, and choose **Volume** or **Pan** from the submenu.
   - Right-click the track header in the track list, choose **Insert/Remove Envelope** from the shortcut menu, and choose **Volume** or **Pan** from the submenu.
   - Press Shift+V (volume envelope) or Shift+P (pan envelope).

   A blue line appears across the track(s) for a volume envelope, and a red line appears across the track(s) for a pan envelope.



Note: *Because the default panning mode is additive, you can introduce clipping when panning a track to the left or right. Choose an appropriate pan type and adjust the track volume accordingly. For more information, see* *Choosing stereo pan types on page 111*.

Adjusting volume or pan automation settings

1. If you want to change volume or pan settings by recording automation, select the **Automation Settings** button. The fader/slider handle is displayed as a in automation mode.
2. Drag the **Vol** fader to control how loud a track is in the mix or drag the **Pan** slider to control the position of the track in the stereo field.

   The fader and the slider behave differently depending on the track automation recording mode:
   - When the track automation mode is set to **Off**, the fader adjusts the volume of the entire track and the slider pans the entire track. In this mode, the automation control acts as a second trim control.
   - When the track has a volume envelope and the track automation mode is set to **Read**, the fader/slider will follow the envelope during playback but cannot be adjusted.
   - When the track automation mode is set to **Touch** or **Latch**, the fader/slider edits the envelope setting at the cursor position. If the track does not have a volume/pan envelope, an envelope will be added when you adjust the fader/slider.

If multiple tracks are selected, all selected tracks are adjusted.

If you adjust the fader/slider during playback, the behavior varies depending on the selected automation recording mode. *For more information, see* *Automating 5.1 surround projects on page 134*.

Bus automation

You can use bus automation envelopes to vary the level of a track sent to a bus.

Adding bus envelopes

A bus envelope controls the level of a track sent to a particular bus. Before you can add a bus envelope, you must add busses to the project. *For more information, see* *Adding busses to the project on page 139*.

1. Select the track to which you want to add the bus envelope. (You may select multiple tracks.)
2. Add the envelope to the selected track(s) in one of the following ways:
   - From the **Insert** menu, choose **Envelopes**, and choose the bus for which you want to add an envelope from the submenu.
   - Right-click the track header in the track list, choose **Insert/Remove Envelope** from the shortcut menu, and choose the appropriate bus from the submenu.

A purple line representing the envelope appears across the track(s).

Adjusting bus automation levels

1. Select the **Automation Settings** button. The fader handle is displayed as a in automation mode.
2. Click the label on the multipurpose slider and choose a bus from the menu.

3. Drag the fader to control the level of the track sent to each of the assignable FX chains that you have created. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.

   The fader behaves differently depending on the track automation recording mode:

   - When the track automation mode is set to **Off**, the fader adjusts the send level of the entire track. In this mode, the automation control acts as a second trim control.
   - When the track has a bus envelope and the track automation mode is set to **Read**, the fader will follow the envelope during playback but cannot be adjusted.
   - When the track has a bus envelope and the track automation mode is set to **Touch** or **Latch**, the fader edits the envelope setting at the cursor position. If the track does not have an envelope, one will be created when you adjust the fader.

If multiple tracks are selected, all selected tracks are adjusted.

If you adjust the fader during playback, the behavior varies depending on the selected automation recording mode. *For more information, see* *Automating 5.1 surround projects on page 134*.

Assignable effects automation

You can use assignable effects automation to vary the level of a track sent to an assignable effects chain.

Adding assignable effect envelopes

An assignable effect envelope controls the level of a track sent to a particular assignable effect chain. Before you can add an assignable effect envelope, you must add an assignable effect chain to the project. *For more information, see* *Adding assignable effect controls on page 140*.

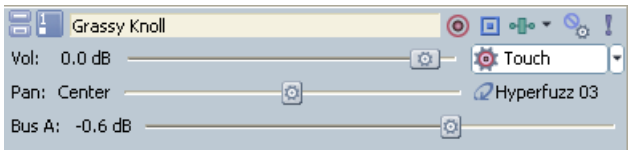
1. Select the track to which you want to add the assignable effect envelope. (You may select multiple tracks.)
2. Add the envelope to the selected track(s) in one of following ways:

   - From the **Insert** menu, choose **Envelopes**, and choose the assignable effect chain for which you want to add an envelope from the submenu.
   - Right-click the track header in the track list, choose **Insert/Remove Envelope** from the shortcut menu, and choose the appropriate assignable effect chain from the submenu.

   A green line representing the envelope appears across the track(s).

Adjusting assignable effects automation levels

1. Select the **Automation Settings** button. The fader handle is displayed as a in automation mode.
2. Click the label on the multipurpose slider and choose an assignable effects chain from the menu.



3. Drag the FX fader to control the level of the track sent to each of the assignable FX chains that you have created.

   The fader behaves differently depending on the track automation recording mode:

   - When the track has an assignable effects envelope and the track automation mode is set to **Off**, the fader adjusts the send level of the entire track. In this mode, the automation control acts as a second trim control.
   - When the track has an assignable effects envelope and the track automation mode is set to **Read**, the fader will follow the envelope during playback but cannot be adjusted.
   - When the track has an assignable effects envelope and the track automation mode is set to **Touch** or **Latch**, the fader edits the envelope setting at the cursor position. If the track does not have an envelope, one will be created when you adjust the fader.

If multiple tracks are selected, all selected tracks are adjusted.

If you adjust the fader during playback, the behavior varies depending on the selected automation recording mode. *For more information, see Automating 5.1 surround projects on page 134.*

Adding or removing track effect automation

If a plug-in supports automation, you can dynamically adjust effect parameters over time.

Adding effect automation envelopes

If a plug-in supports automation, you can use envelopes to adjust effect parameters over time. The appearance of the plug-in in the Plug-In Chooser window indicates whether the plug-in supports automation. Plug-ins with this icon  support automation, while plug-ins with this icon  do not. In addition, you can quickly locate plug-ins that support automation in the **Automatable** subfolder.

For creative ways to use effect automation envelopes, see Creating wah-wah effects with automated Track EQ on page 245 and Turning automated effects on and off on page 246.

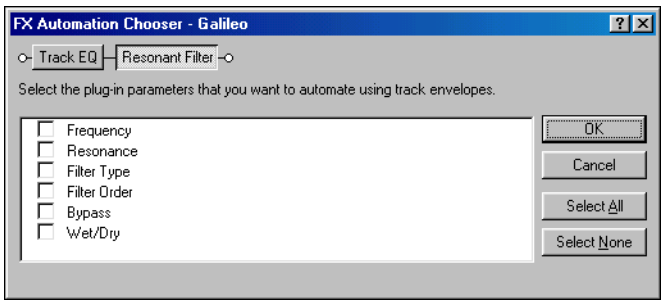
1. Click the **Track FX** button () on a track to open the Audio Plug-In window.

   If no track effects exist, clicking the **Track FX** button displays the Plug-In Chooser. Use the Plug-In Chooser to create an effect chain including an automatable plug-in. *For more information, see Creating or adding to track plug-in chains on page 109.*

2. Click the **Configure FX Automation** button () to display the FX Automation Chooser.

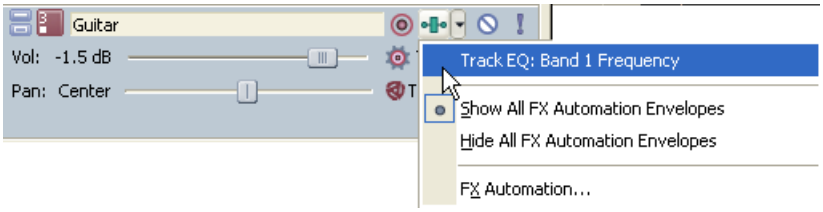
3. Click a plug-in at the top of the FX Automation Chooser. A list of the effect's automatable parameters appears.

4. Select the check box for each parameter that you want to control with an envelope. You can use the **Select All** and **Select None** buttons to quickly change your selections to all or none of the parameters.



5. Click **OK** to close the FX Automation Chooser.

   Envelopes display on the track for parameters that you selected in the FX Automation Chooser. To control which effect parameter envelope displays on the track, click the arrow adjacent to the **Track FX** button () and choose an envelope from the menu.



Tip: *Press E to toggle through the display of all effect parameter automation envelopes.*

Adjusting effect automation settings

You can adjust automated effect parameters by editing the envelopes in the timeline or by recording automation with the controls in the Audio Plug-In Window.

If you've enabled the **Bypass** parameter for a plug-in, you can click the **Bypass** button in the plug-in's banner to toggle the Bypass envelope at the cursor position.

Note: *When you automate an effect's frequency parameter, such as the frequency parameters in the track EQ effect, you may notice that the frequency changes are more apparent when moving through the lower frequencies. This is because frequency scales in track EQ and other plug-ins use a logarithmic scale, but effect automation uses linear interpolation. To make the automated frequency changes sound more natural, change the fade curve types to change the interpolation rates between envelope points. For high-to-low frequency sweeps, use a fast fade curve; for low-to-high frequency sweeps, use a slow curve. For more information, see* *Changing envelope fade curves on page 132*.

MIDI controller automation

You can use envelopes to adjust MIDI controllers throughout a project.

Adding or removing MIDI controller automation

1. Right-click the track header, choose **Insert/Remove Envelopes**, and then choose **Configure Controllers** from the menu. The MIDI Track Controllers Automation dialog is displayed.
2. Select the check box for each controller you want to automate with an envelope.

   If the controller you want to automate isn't displayed, select the **Show all controllers** check box at the bottom of the dialog.
3. Click the down arrow ▼ in the **Envelope** box and choose a command from the menu:
   - Insert Envelope
   - Show/Hide Envelope
   - Reset All Envelope Points
   - Delete Envelope

For more information, see *You can use the Output Settings tab on the configure which controllers can be automated; add, remove, or hide envelopes; set default values, and set each envelope's default fade curve. on page 174*.

Adjusting MIDI controller automation settings

Track-level MIDI input filters—available on the Input Filters tab in the Track Properties window—allow you to control exactly which MIDI messages you want to record or exclude.

For more information, see *Setting up MIDI message input filters on page 177*.

You can also use an external MIDI controller (or the keyboard/drum list between the track header and timeline) to record MIDI into your ACID project.

For more information, see Using MIDI merge recording on page 164.

MIDI program change automation

You can use keyframes to change the track voice throughout your project.

For more information, see Adding a program change keyframe on page 182.

Working with track envelopes

Envelopes represent volume, audio panning, bus send levels, effect send levels, MIDI controllers, and effect parameter automation settings in the timeline.

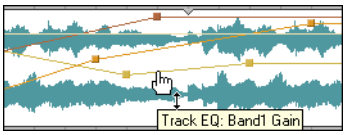
Envelope type	Description	Color
Volume	Controls track volume.	Blue
Bus send volume	Controls track level sent to bus.	Lilac
Assignable effects send volume	Controls track level sent to assignable effects control.	Green
Pan	Controls the position of a track in the stereo field (pan).	Red
MIDI controller	Adjusts MIDI controller values	Various

Adjusting envelopes

To adjust the overall level of an envelope, simply drag the envelope line up or down. A tooltip displays the amount of the adjustment as you drag. You can adjust envelopes in real time.

You can also change the level of an envelope over time by adjusting individual envelope points that you place along the envelope line.

Tip: *If you have multiple envelopes on a track, hover over an envelope to display a tooltip indicating the name of the envelope.*



Adding envelope points

After you have inserted an envelope, you can add envelope points to control the level of signal or amount of panning at specific points in time.

1. Place the mouse pointer on the envelope line. The envelope cursor ( ) appears.
2. Add an envelope point in one of the following ways:
   - Double-click the envelope.
   - Right-click the envelope and choose **Add Point** from the shortcut menu.

Tip: *If you add too many points, you may delete a point by right-clicking it and choosing* **Delete** *from the shortcut menu. You may also clear all envelope points by selecting* **Reset All** *from the shortcut menu.*

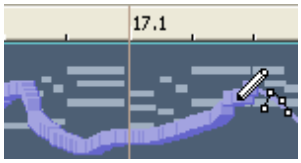
Drawing envelope points

To create an envelope quickly, you can draw freehand envelope curves in the timeline.

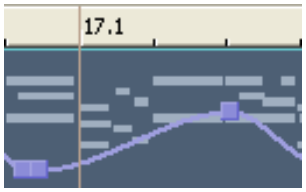
1. With the Draw , Envelope , or Time Selection tool active, hover over an envelope.
2. Hold Shift, and then click and drag over the envelope. As you drag, a trail of envelope points is created.
3. Release the mouse button when you're finished drawing.

   If the **Smooth and thin automation data after recording or drawing** check box is selected on the External Control

and Automation tab of the Preferences dialog, the number envelope points will be reduced when you release the mouse.



Unthinned envelope



Thinned envelope

Thinning envelope points

Thinning envelope points decreases the number of points on an envelope while retaining the envelope's overall settings. Right-click an envelope and choose **Thin All Points** from the shortcut menu to thin the entire envelope.

To apply thinning to a section of the envelope, create a time selection, right-click the envelope, and then choose **Thin Selected Points** from the shortcut menu.

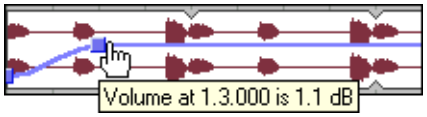
> **Note:** *Thinning is intended to reduce the number of envelope points created through automation recording and will have little or no effect if you create envelopes by adding and editing points manually.*

Deleting envelope points

You can delete a point by right-clicking it and choosing **Delete** from the shortcut menu. If you want to delete all envelope points, right-click a point and choose **Reset All** from the shortcut menu.

Adjusting individual envelope points

You can set the level of each envelope point by dragging it up or down. As you move an envelope point, a tooltip displays both the point's occurrence on the timeline and its level.



Other ways to set the level include:

- Right-click an envelope point and choose a setting from the shortcut menu.
- Choose **Select All** from the shortcut menu to raise or lower all points on the envelope.
- Right-click an envelope point and choose **Set To** from the shortcut menu. This displays a box in which you can specify a setting.

You can adjust an envelope point's location on the timeline by dragging it right or left. If snapping is enabled, the envelope point snaps to time divisions as you drag. Hold Shift while dragging to override snapping (press Shift after you click). *For more information, see Using snapping on page 92.*

Flipping envelopes

You can flip an envelope to invert the envelope around its center.

1. Right-click an envelope. A shortcut menu appears.

2. From the shortcut menu, choose **Flip All Points**.

> **Tip:** *If you want to flip only particular points on an envelope, select the points using the Envelope tool, right-click, and choose* **Flip Selected Points** *from the shortcut menu. For more information on the Envelope tool, see* *Using the Envelope tool on page 132*.

Changing envelope fade curves

You may set the type of fade curve that occurs between envelope points: linear, fast, slow, smooth, sharp, or hold. To change the fade curve, right-click an envelope between two envelope points and choose the appropriate fade curve from the shortcut menu.

Locking envelope points to an event

From the **Options** menu, choose **Lock Envelopes to Events** if you want envelope points to move with an event when it is moved along the timeline.

Using the Envelope tool

The Envelope tool ( ) is designed to manipulate multiple envelope points. Use the Envelope tool when you want to edit envelope points but do not want to change other elements of the project. With the Envelope tool selected, events cannot be moved or edited.

Selecting and moving envelope points

To select multiple envelope points using the Envelope tool, click the track that contains the envelope and drag your cursor in the track view to select the points you want to move. Selected points display in an alternate color. Click any selected point and drag it to the new position; all selected points will follow.

To deselect the points, click anywhere outside the selection.

Cutting, copying, and pasting envelope points

1. Select the Envelope tool using one of the following methods:
   - From the **Edit** menu, choose **Editing Tool**, and choose **Envelope** from the submenu.
   - Click the **Envelope Tool** button ( ) on the toolbar.
2. Click within a track to select it.
3. Drag along the timeline to select envelope points.
4. From the **Edit** menu, choose **Cut** or **Copy**.
5. Position the cursor where you want to paste envelope points across a track.
6. From the **Edit** menu, choose **Paste**.

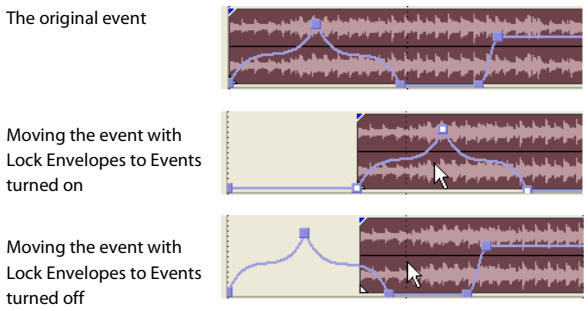
Copying envelopes to another track

1. Select the Envelope tool using one of the following methods:
   - From the **Edit** menu, choose **Editing Tool**, and choose **Envelope** from the submenu.
   - Click the **Envelope Tool** button ( ) on the toolbar.
2. Click within a track to select it.
3. From the **Edit** menu, choose **Select All**.
4. From the **Edit** menu, choose **Cut** or **Copy**.
5. Click within a track to select it.
6. Click the **Go to Start** button ( ) if you want the envelope to appear exactly as it was in the original track, or click to position the cursor where you want the envelope to start.
7. From the **Edit** menu, choose **Paste**.

Locking envelopes to events

Track envelopes extend for the length of a track and are independent of the events on the track. This means that the envelope remains in place when you move the events in the track. However, track envelopes can be set to move with the underlying events, thus preserving the timing of envelope points in relation to events.

To lock all of the envelopes in a project to the events in which they occur, click the **Lock Envelopes to Events** button ( ) or, from the **Options** menu, choose **Lock Envelopes to Events**. You can turn this feature off by clicking the button again.



Hiding track envelopes

After you have created your envelope and set your envelope points, you may hide the envelope. Hiding an envelope does not affect the envelope point settings or track playback.

Hiding volume, pan, bus, or assignable effect envelopes

1. Select the track(s) whose envelope(s) you want to hide.
2. From the **View** menu, choose **Show Envelopes**. A submenu appears. A check mark next to an envelope type indicates that it is visible in the track view.
3. From the submenu, choose the type of envelope you want to hide. The specified envelope type no longer appears in the track view for the selected track.

   You can use the same steps to display the envelope again.

Tip: *Select a track and press V to hide a volume envelope or P to hide a panning envelope. Press the key again to display the envelope.*

Hiding effect automation envelopes on a track

To hide effect parameter envelopes, click the arrow adjacent to the **Track FX** button ( ) and choose **Hide All FX Automation Envelopes** from the menu. To display envelopes again, click the arrow adjacent to the **Track FX** button ( ) and choose **Show All FX Automation Envelopes** from the menu.

Tip: *Press E to toggle through the display of all effect parameter automation envelopes.*

Removing track envelopes

You can remove envelopes from tracks quickly and easily.

Note: *When you remove an envelope from a track and then add it again, you must recreate its envelope points.*

Removing volume, pan, bus, or assignable effect envelopes

1. Select the track(s) from which you want to remove the envelope(s).

2. From the **Insert** menu, choose **Envelopes**. A submenu appears showing a check mark next to the envelopes being used.
3. From the submenu, choose the type of envelope you want to remove. The envelope type is removed from the selected track(s).

> **Tip:** *Press Shift+V to remove a volume envelope or press Shift+P to remove a pan envelope.*

Deleting MIDI controller envelopes

Click the down arrow ▾ next to the **Insert/Hide Envelope** button  next to the controller's slider in the track header and choose **Delete Envelope**.

If you want to show or hide an envelope without deleting its settings, click the **Insert/Hide Envelope** button  .

You can also remove continuous controller envelopes on the Output Settings tab in the Track Properties dialog.

Removing effect automation envelopes

1. Click the arrow adjacent to the **Track FX** button () and choose **FX Automation** from the menu. The FX Automation Chooser appears.
2. Click the plug-in whose automation envelopes you want to remove. The parameters for the effect appear in the dialog.
3. Clear the check boxes for the envelopes to be removed.
4. Click **OK**.

> **Tip:** *You can bypass effect automation without removing envelopes. For more information, see Bypassing effect automation on page 110.*

Automating 5.1 surround projects

In a 5.1 surround project, you can automate the center channel's volume and surround panning using keyframes. *For more information, see Automating panning on page 219.*

Automation recording modes

Automation recording allows you to edit envelope and keyframe settings by using the controls in the ACID interface. When combined with a control surface, you can create fades and adjust control parameters with a level of control that only a tangible control can provide.

Automation recording is available for the following settings:

- Audio track envelopes (using the controls in the track header). *For more information, see Working with track envelopes on page 130.*
- MIDI track envelopes (using the controls in the track header). *For more information, see MIDI Track Envelopes and Keyframes on page 181.*
- Audio track effect parameters for automatable effects (using the controls in Audio Plug-In window). *For more information, see Adding effect automation envelopes on page 128.*
- Bus, soft synth, and assignable effects output and panning levels (using the controls in the Mixer window or bus track header).
- VSTi parameters (using the controls in the Soft Synth Properties window).

- Surround panning keyframes. *For more information, see Using the Surround Panner window on page 216.*

Tips:

- *If you want to record MIDI controller envelopes into a track using a hardware controller, you can use MIDI merge recording to record the envelopes.*
- *If you want to thin envelope points after recording automation, you can select the* **Smooth and thin automation data after recording or drawing** *check box on the External Control & Automation tab of the Preferences dialog or right-click the envelope and choose* **Thin All Points** *or* **Thin Selected Points** *from the shortcut menu.*

Recording automation settings

1. Add an envelope or automatable/keyframeable effect to a track.

   For automatable audio track effects, you must add and effect automation envelope for each parameter you want to automate.
2. Select the **Automation Settings** button in the track header.
3. Click the **Automation Settings** button and choose **Automation Write (Touch)** or **Automation Write (Latch)** from the menu.

Automation Recording Mode	Track Icon	Description
Automation Write (Touch)		Envelope points or keyframes are created only while a control is being adjusted. When you stop adjusting the control, automation recording stops and the existing envelope points/keyframes are unaffected.
Automation Write (Latch)		Envelope points or keyframes are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's current setting overwrites the existing envelope points/keyframes.

4. Click to position the cursor in the timeline, and click the **Play** button to start playback.
5. Adjust the control that corresponds to the envelope point or keyframe you want to adjust.

   During playback, adjusting a control will create envelope points or keyframes at the cursor position. As long as you're adjusting the control, new envelope points/keyframes will be created for each change of the play cursor's position.
6. Click **Stop** to end playback and stop recording automation.

Editing sections of your recorded settings in Touch mode

In Touch recording mode, envelope points or keyframes are created only while a control is being adjusted. When you stop adjusting the control, automation recording stops and the existing envelope points/keyframes are unaffected.

Use Touch mode for touching up sections of your recorded automation settings.

1. Select the **Automation Settings** button in the track header.
2. Click the **Automation Settings** button and choose **Automation Write (Touch)** from the menu. The icon in the track header is displayed as a .
3. Click to position the cursor in the timeline, and click the **Play** button to start playback.
4. When you're ready to start editing, adjust the control that corresponds to the envelope point or keyframe you want to adjust. Envelope points/keyframes are updated at the cursor position, and when you stop adjusting the control, the original settings are preserved.
5. Click **Stop** to end playback and stop recording automation.

Overwriting recorded settings in Latch mode

In Latch mode, envelope points or keyframes are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's current setting overwrites the existing envelope points/keyframes.

Use Latch mode to overwrite automation settings with new values.

1. Select the **Automation Settings** button in the track header.
2. Click the **Automation Settings** button and choose **Automation Write (Latch)** from the menu. The icon in the track header is displayed as a .
3. Click to position the cursor in the timeline, and click the **Play** button to start playback.
4. When you're ready to start editing, adjust the control that corresponds to the envelope point or keyframe you want to adjust.

   Envelope points/keyframes are updated at the cursor position until you stop playback.
5. Click **Stop** to end playback and stop recording automation.

Editing individual envelope points or keyframes

Editing individual envelope points or keyframes gives you fine control over your recorded settings.

1. Select the **Automation Settings** button on the track you want to edit.
2. Click the **Automation Settings** button and choose **Automation Write (Touch)** or **Automation Write (Latch)** from the menu.
3. Select the parameter you want to edit:
   - For a track envelope, select the envelope tool and click the envelope point you want to edit. You can right-click a point and choose **Properties** from the shortcut menu to display an effect's property page.
   - For a keyframe, double-click a keyframe to open its property page.
4. Adjust the control that corresponds to the envelope point or keyframe you want to adjust. The selected envelope point/keyframe is edited, and all others are unaffected.

   For track envelopes, you can also edit the envelope directly in the timeline.

Setting the automation recording mode for a track

1. Select the **Automation Settings** button in the track header.
2. Click the **Automation Settings** button and choose a command from the menu to choose the automation mode.

Mode	Track Icon	Description
Off		Automated parameters are ignored during playback. When you switch to Off mode, the control setting from the cursor position is used as a static setting, and the envelope/keyframe is dimmed to indicate that it is unavailable.
Read		The envelope/keyframe value is applied during playback, and the control reflects the envelope/keyframe settings at the cursor position. Adjustments to the control are not recorded.
Automation Write (Touch)		The envelope/keyframe value is applied during playback, and the control follows the envelope/keyframe settings during playback and when you position the cursor. Envelope points or keyframes are created only while a control is being adjusted. When you stop adjusting the control, automation recording stops and the existing envelope points/keyframes are unaffected.

Mode	Track Icon	Description
Automation Write (Latch)		The envelope/keyframe value is applied during playback, and the control follows the envelope/keyframe settings during playback and when you position the cursor. Envelope points or keyframes are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's last setting overwrites the existing envelope points/keyframes.

Chapter 9 Using the Mixer

In the Mixer window, you'll manage the project's busses, assignable effects, and soft synth controls. In this chapter, you'll learn how to add each of these controls to the mixer and route individual tracks to them. You'll also learn about working with the mixer controls, including adjusting levels, muting, soloing, and adding effects. This chapter also describes how to automate mixer controls by viewing them in the track view and adding envelopes.

Using busses

Think of busses as virtual pathways where signals from multiple tracks or effects can be mixed. You can add as many as 26 busses to the Mixer window, which provides you with a great deal of flexibility and mixing power.

Busses are the last stage of the ACID® signal flow and as such can be used to output audio signals to specific hardware. *For more information, see Routing busses to system hardware on page 139.*

Adding busses to the project

Add a bus to a project by clicking the **Insert Bus** button (

) in the Mixer window or by choosing **Bus** from the **Insert** menu.

Adding multiple busses

1. Display the Project Properties dialog using one of the following methods:
   - Choose **Properties** from the **File** menu.
   - Press Alt+Enter.
2. Click the **Audio** tab.
3. Enter a value in the **Number of stereo busses** box and click **OK**. The busses are added to the Mixer window.

Routing tracks to busses

If your project contains multiple busses, you can assign tracks to specific bus outputs. To assign a track to a bus, click the **Bus Assignment** button () on the track header and choose the desired bus from the menu.

Assigning tracks to busses allows you to apply settings to a series of tracks and to route tracks to a particular hardware output.

> **Note:** *The* **Bus Assignment** *button only appears if you have more than one bus in the project.*

Adjusting the bus send level

You can adjust the level of a track sent to a bus with the multipurpose slider in the track list.

> **Tip:** *Bus sends are pre-volume by default. To change to post-volume, right-click the multipurpose slider label in the track list, choose the appropriate bus from the menu, and choose* **Post Volume** *from the shortcut menu.*

Routing busses to system hardware

You can route individual busses to specific system hardware for output. This allows you to configure busses to route output (projects or individual tracks) to sound cards, recording devices, mixing boards, etc.

By default, all busses are assigned to the Master bus. In this configuration, you can use busses for creating subgroups of tracks. For example, you could route all your drum tracks to a bus so you can adjust their levels together without changing their relative levels. However, you can also route busses to hardware outputs so you can use busses for sending tracks to external effects processors or for mixing on an external mixer.

> **Note:** *During startup, the application automatically identifies all hardware available for output on your computer and listed these components as options on the* **Audio Device** *tab in the Preferences dialog. For more information, see Using the Audio Device tab on page 232.*

To route busses to hardware, you must first verify whether you are using a Windows Classic Wave Driver, a DirectSound driver, or an ASIO driver as your audio device. Then you can choose the appropriate hardware device in the Mixer window.

1. From the **Options** menu, choose **Preferences** and click the **Audio Device** tab.
2. From the **Audio device type** drop-down list, choose **Windows Classic Wave Driver** or an ASIO driver.
3. Click **OK** to close the Preferences dialog.

Note: *If you have chosen* **Microsoft Sound Mapper** *in the* **Audio device type** *drop-down list on the* **Audio** *tab, you cannot assign the bus to a different device.*

4. In the Mixer window, click the **Playback Device Selector** button ( ) on the bus you want to route.
5. Choose a hardware device from the menu that appears.

Deleting busses

Just as you can add busses to a project at any time, you can also delete superfluous busses. When you delete a bus from a project, tracks assigned to it are reassigned to the Master bus.

Deleting a bus

Right-click the bus in the mixer and choose **Delete** from the shortcut menu.

Deleting multiple busses

1. Display the Project Properties dialog using one of the following methods:
   - Choose **Properties** from the **File** menu.
   - Press Alt+Enter.
2. Click the **Audio** tab.
3. Enter a value in the **Number of stereo busses** box and click **OK**. The busses are removed from the Mixer window.

Using assignable effects

You can use assignable effect controls to send various levels of multiple tracks to a single effect chain. Like busses, these controls reside in the Mixer window and support plug-in chains. In addition, assignable effect outputs can be routed to project busses. You can add up to 32 assignable effect controls to a project, and each control supports as many as 32 DirectX® or VST plug-ins on its chain.

For more information, see Adding depth with assignable effects on page 244..

Adding assignable effect controls

1. From the **Insert** menu, choose **Assignable FX** or click the **Insert Assignable FX** button (Insert FX...) in the Mixer window. The Plug-In Chooser dialog displays a list of the available plug-ins, and the assignable effect control is added to the Mixer window.

Important: *Be aware that using non-in-place plug-ins (such as Time Stretch, Pitch-Shift without preserving duration, and some Vibrato settings) will cause audio to play out of synchronization with the waveform display in the timeline and with other tracks. If an effects chain includes non-in-place plug-ins, the effects chain icon will be displayed as a .*

When using ACID as a ReWire device, any effects chain that includes non-in-place plug-ins will be automatically bypassed to prevent synchronization problems with the ReWire mixer application. The effects chain icon will be displayed as a . Apply the plug-ins within the ReWire mixer application.

2. Add all desired plug-ins using one of the following methods:
   - Double-click the desired plug-in.

- Drag the desired plug-in to the chain area.
- Select the desired plug-in and click **Add**.

Note: *If you have preset plug-in chains saved, double-click the* **Packaged Chains** *folder to view those presets. For more information, see* *Saving plug-in chains as packages on page 149*.

3. Click **OK**. The Plug-In Chooser dialog closes. The Audio Plug-In window opens and displays the plug-in chain.
4. Click a specific plug-in and adjust the effect's parameters manually, or choose one of the presets from the **Preset** drop-down list. For more information about effect parameters, click the **Plug-In Help** button (?) in the Audio Plug-In window.

Tip: *You can save an effect's parameters as a preset to be used in other projects. To save a preset, enter a name in the* **Preset** *box and click the* **Save Preset** *button ( ).*

5. Click the **Close** button ( ) to close the Audio Plug-In window.

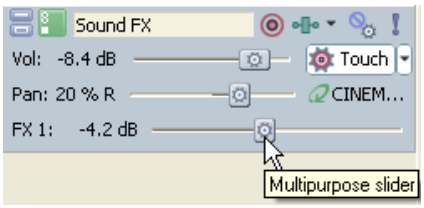
Working with assignable effects chains

After you add an assignable effect control, you can add plug-ins to the chain and modify them as needed. *For more information, see* *Adding effects to soft synth mixer controls on page 147*.

Routing tracks to assignable effect controls

Routing tracks to an assignable effect control allows you to assign multiple tracks to a plug-in chain.

1. Click the multipurpose slider label and choose the desired assignable effect control from the menu that appears. The slider changes to reflect the name of the assignable effect control.



2. Drag the fader to adjust the level of the track sent to the assignable effect chain.

Tip: *Assignable effect chains are post-volume by default. To change to pre-volume, click the multipurpose slider label in the track list, choose the appropriate assignable effect chain from the menu, and choose* **Pre Volume** *from the submenu.*

If you set the Dry Out faders in your effect chain to -inf, you can adjust the wet/dry balance using the volume and assignable effect settings on the multipurpose slider. The volume fader adjusts the dry signal and the assignable effect fader controls the effect signals.

Routing assignable effect controls to busses

By default, assignable effect controls are routed to the Master bus for output. The bus then mixes the assignable effect plug-ins with all tracks routed to the same bus and outputs the mixed signal to the appropriate output device. *For more information, see* *Routing busses to system hardware on page 139*.

To route an assignable effect control to a different bus, click the **Playback Device Selector** button ( ) on the assignable effect control and choose the desired bus from the drop-down list. The drop-down list displays all current busses in the project. *For more information, see* *Adding busses to the project on page 139*.

Deleting assignable effect controls

In the Mixer window, right-click the assignable effect control you want to delete and choose **Delete** from the shortcut menu, or select the control and press Delete. The assignable effect control is removed from the Mixer window.

Using soft synth controls

You can add soft synth bus controls in the mixer to control the routing of your MIDI tracks to software synthesizers. Soft synth controls allow you to control volume and voice mappings for your MIDI tracks and add effects to a software synthesizer. In the same way you can route a MIDI keyboard to an outboard synthesizer module, you can route each MIDI track to any soft synth control you have set up for your project.

> **Tip:** *You can also use soft synth controls to play MIDI from an external device. For more information, see* *Playing MIDI from external devices on page 195*.

There are three types of soft synth bus controls you can add: DLS (Downloadable Sounds), VSTi®, or ReWire™ devices.

A DLS or VSTi soft synth bus control is like a virtual synthesizer module where you can route tracks. In the same way you can route a MIDI keyboard to an outboard synthesizer module, you can route each MIDI track to any soft synth you have set up for your project or play a soft synth with an external MIDI controller.

A ReWire soft synth bus control connects a ReWire device application with ACID, which serves as a ReWire mixer application. When ACID hosts a ReWire device application, playback is synchronized between the two programs, and the panel application's audio is output through the ACID mixer. With ReWire 2.0 panel applications, you can also route MIDI tracks to ports (synths) in the ReWire device applications.

Use the soft synth bus control in the Mixer window to mute, solo, add effects to, and adjust the volume of each soft synth.

> **Note:** *If you receive an error that a MIDI port is currently in use when you try to play back your project, check the MIDI tab in the Preferences dialog and verify that your ReWire device applications are not trying to access the same MIDI ports ACID is configured to use.*

Adding soft synth controls to projects

If you have no external MIDI devices defined, a soft synth control is added with a default DLS voice set for you when you add a MIDI track to your project. You can add more soft synth controls to a project as needed.

1. Click the **Insert Soft Synth** button (

) in the Mixer window. The Soft Synth Chooser dialog appears.
2. To add a DLS or VSTi soft synth, click the **Soft Synths** tab and choose an available synth from the list. To add a ReWire device application in ACID Pro, click the **ReWire Devices** tab and choose an installed device application from the list.
3. Click **OK**.

> **Note:** *If the VST instrument you want to use does not appear in the list, click* **VSTi Preferences**. *For more information, see* *Locating VST instruments on page 144*. *If the ReWire panel application you want to use does not appear in the list, see* *Locating ReWire panel applications for use in ACID on page 151*.

Modifying soft synth control properties

Once you add a soft synth control to your project, you can use the Soft Synths Properties window to change the DLS, VSTi, or ReWire 2.0 soft synth used by the control, or you can configure soft synths for external input from a MIDI controller.

Soft synths that are routed to VST instruments or ReWire 2.0 panel applications inherit voicing information. Soft synths that are routed to the DLS (DirectX) soft synth can be voiced using DLS or DLS-2 files.

Accessing the Soft Synth Properties window

You can display the Soft Synth Properties window by double-clicking the soft synth icon on a Mixer control (), or by right-clicking the icon and choosing **Soft Synth Properties** from the shortcut menu.

Changing the soft synth control routing

1. Double-click the soft synth icon on a control ( ). The Soft Synth Properties window appears.
2. Click the **Edit Soft Synth** button (Edit Soft Synth...). The Soft Synth Chooser dialog appears.
3. Choose a soft synth type by:
   - Routing the soft synth control to a DLS or VSTi soft synth by clicking the **Soft Synths** tab and choosing an available soft synth from the list.

   -OR-
   - Routing the soft synth control to a ReWire device application; click the **ReWire Devices** tab and choose an installed ReWire 2.0 device from the list.
4. Click **OK** to return to the Soft Synth Properties window.

   If you selected a VST instrument, the VSTi synth is displayed in the Soft Synth Properties window, and you can adjust the controls as necessary. If you selected the DLS soft synth, you can click the **Open DLS Voice Set** button ( ) to choose a DLS voice set.

   If you selected a ReWire 2.0 device, the Soft Synth Properties window displays information about the synth's MIDI ports. Click the **Open ReWire Device** button ( ) to start the device (some applications cannot be started by a ReWire mixer), or select the Lock MIDI Port Configuration button ( ) to lock MIDI ports so the software does not lose port assignments due to dynamic changes from ReWire devices.

Changing voice mapping for DLS soft synth controls

You can choose a DLS set from anywhere on your system for output from a DLS soft synth control.

1. Double-click the soft synth icon on a control ( ). The Soft Synth Properties window appears.
2. Choose a DLS set from the **Voice set** drop-down list or click the **Open DLS Voice Set** button ( ) to browse to a DLS set.

> **Note:** *To set the current voice set as the default setting to be used whenever you add a DLS soft synth, click the* **Set as default DLS Voice Set** *button ( ). If the default voice set is unavailable, the Windows GS sound set will be used.*

Changing patches for DLS soft synth controls

The DLS soft synth **Available voices** pane displays the patch names, numbers, and other parameters of the voices included in the DLS set. You can choose a patch to play until the software receives a patch change from the MIDI file.

1. Select a channel from the **Channel** drop-down list.
2. Select a patch in the **Available voices** pane.

   The **Program** button Ice Galaxy in the track header will display the selected patch for all tracks routed to the channel you selected in step 1.

   If the track does not contain program change keyframes, the selected patch is used to play the entire track.

   If the track contains keyframes, the selected patch is assigned to the keyframe that occurs before the current cursor position.

> **Tip:** *You can create patch change events in the list editor in order to change patches within MIDI files. For more information, see* *Creating events on page 193*.

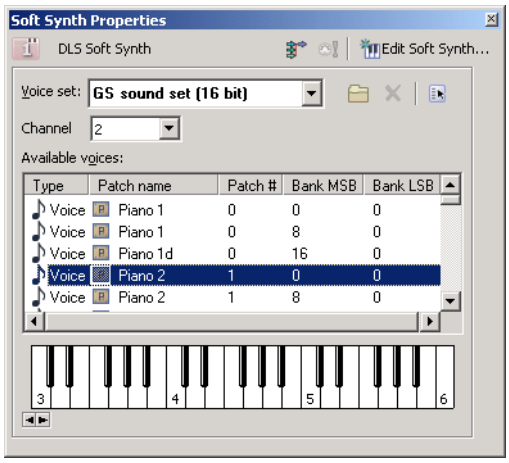
Adding patch changes to a MIDI file

You can add program change keyframes to tracks to change patches throughout the duration of your project. *For more information, see* *Adding a program change keyframe on page 182*.

You can also create patch events in the list editor to change patches and banks within MIDI files. *For more information, see* *Creating events on page 193*.

Previewing a DLS soft synth in the Soft Synth Properties window

When you're using a DLS soft synth, a keyboard is displayed at the bottom of the Soft Synth Properties dialog so you can play the synth with your mouse and audition patches. To display the Soft Synth Properties dialog, double-click the soft synth icon on a control ( ).



Note: *Audio driver latency can limit your ability to preview DLS voices in real time. Using low-latency drivers will produce the best results.*

Changing VST instruments for soft synth controls

You can choose a VST instrument from anywhere on your system for output from a soft synth control.

1. Double-click the soft synth icon on a control ( ). The Soft Synth Properties window appears.
2. Click the **Edit Soft Synth** button (Edit Soft Synth...). The Soft Synth Chooser dialog appears.
3. Choose a VST instrument from the list and click **OK**.

   If the VST instrument you want to use does not appear in the list, you may need to locate the files for use in the ACID application. *For more information, see Locating VST instruments on page 144.*
4. Select the **Enable** button ( ) to enable playback of the VST instrument.
5. Modify the VST instrument settings as needed using the buttons in the Soft Synth Properties window:

Opens an effect preset. Choose an .fxp file to replace the current instrument preset.	Opens an effect bank. Choose an .fxb file to replace the current effect bank.
Saves the current effect settings as a new effect preset.	Saves the current effect settings as a new effect bank.

Playing a soft synth with a MIDI device

1. Double click a soft synth icon on a control ( ) in the Mixer window. The Soft Synth Properties window is displayed.
2. In the Soft Synth Properties window, click the **External MIDI Input Port** button ( ) and choose a port from the menu.

Locating VST instruments

A folder is designated where you can store VST instrument files. However, if you have VST instrument files elsewhere on your system, you can direct the software to look for files in alternate locations.

1. From the **Options** menu, choose **Preferences**. The Preferences dialog appears.
2. Click the **VST Instruments** tab.

   The **Default VSTi search folder** box shows the default location of VST instrument files for use in ACID. VST instrument plug-ins located in this folder already appear in the **Select VST instruments to be available as soft synths** box at the

bottom of the dialog.

If the VST instrument you want to use appears in this box, select its check box. If the VST instrument does not appear in the box, continue with the following steps to locate the instruments for use in ACID.

3. Click the **Browse** button next to the **Alternate VSTi search folder 1** box. The Browse for Folder dialog appears.
4. Browse to the location of your VST instrument files and click **OK**. The VST instrument plug-ins are located and displayed in the **Select VST instruments to be available as soft synths** box at the bottom of the dialog.
5. Repeat steps three and four for the **Alternate VSTi search folder 2** box, if needed.
6. In the **Select VST instruments to be available as soft synths** box, select the check boxes for the VST instruments you want available in ACID.
7. Click **OK** to close the Preferences dialog.

Note: *Once you add a VSTi soft synth to a project, the VST instrument stays locked until you close the application. When a VST instrument is locked, you cannot clear its check box to make it unavailable in ACID.*

Configuring a soft synth for external input

Each soft synth bus control in the Mixer window can accept input from MIDI tracks and external MIDI devices. You can use your favorite controller to play a DLS soft synth or VST instrument for recording or step recording.

1. Double-click a soft synth icon on a control ( ) in the Mixer window. The Soft Synth Properties window is displayed.
2. Click the External MIDI Input Port button ( ) and choose a port from the menu.

   If the port you want to use isn't displayed, choose **External MIDI Device Preferences** from the menu. The MIDI tab in the Preferences dialog is displayed so you can select a port in the **Make these devices available for MIDI input** section of the dialog.

Note: *This step is necessary only if the Auto MIDI input routing check box on the MIDI tab of the Preferences dialog is not selected.*

3. If you're using a VSTi soft synth, select the **Enable** button ( ) on the Soft Synth Properties window to allow real-time MIDI playback.

Soloing external MIDI inputs

Your external MIDI devices can be routed to multiple soft synth bus controls and MIDI thru devices. Soloing an external input prevents your device from playing through other soft synths and MIDI thru devices.

1. Double-click a soft synth icon on a control ( ) in the Mixer window. The Soft Synth Properties window is displayed.
2. Click the **Solo Listen to MIDI Input** button ( ).

   You can select the **Solo Listen to MIDI Input** button on additional soft synth bus controls to add them to the solo group.

Note: *This button is unavailable if the Auto MIDI input routing check box on the MIDI tab of the Preferences dialog is selected, or if you have not selected an external MIDI input port.*

Deleting soft synth controls

Just as you can add soft synth controls to a project at any time, you can also delete superfluous soft synth controls. When you delete a soft synth control from a project, tracks assigned to it are reassigned to the first soft synth control in the Mixer window.

To delete a soft synth control, right-click the control in the mixer and choose **Delete** from the shortcut menu, or select the control and press Delete.

Routing MIDI tracks to soft synth controls

If your project contains multiple soft synth controls, you can assign each MIDI track to a specific soft synth control. To assign a track to a soft synth control, click the **MIDI Output** button ( ) on the track header and choose the desired soft synth control from the menu. *For more information, see Routing tracks to MIDI devices or soft synths on page 194.*

Using mixer controls

Although busses, assignable effects, and soft synth controls are used to accomplish different tasks, they have many features in common. You can adjust fader levels, mute or solo audio, and apply effects on all mixer controls. In addition, you can select multiple mixer controls to apply changes to several controls simultaneously. You can also view mixer controls in track view in order to automate them.

Working with mixer controls

You can adjust, solo, and mute mixer controls independently.

Adjusting faders

You can adjust mixer control levels during playback and preview the results in real-time. In addition, the stereo faders are split into two channels. This allows you to adjust the levels of the left and right channels independently of one another. *For more information, see Adjusting split faders in the mixer on page 51.*

Assignable effect controls contain two distinct faders, each of which is split into two channels. The left fader adjusts the level of the input signal entering the control, while the right fader adjusts the output level.

Changing meter resolution

You may specify the meter resolution at which mixer controls display their signal levels. When a mixer control's meter resolution is changed, all meters in the Mixer window automatically change to reflect the new resolution setting. To change the meter resolution, right-click the meter and choose the desired resolution from the shortcut menu.

Setting levels

When signals are routed through a mixer control, the signal levels may cause the meter to clip. If the meter clips, the level is displayed in red at the top of the meter and the audio is distorted. You can lower the mixer control level and click the red display to reset the meter. A better way to reduce clipping, however, is to adjust the volume of each track.

> **Tip:** *You can also reset the clip by right-clicking the meter and choosing* **Reset Clip** *from the shortcut menu.*

Muting mixer controls

Clicking the **Mute** button ( ) on a mixer control temporarily suspends playback of the control. When a mixer control is muted, it appears grayed out and the word **Muted** appears at the bottom of the meter. Clicking the **Mute** button a second time returns the mixer control to normal playback.

You can also press Z to mute a mixer control or group of controls.

> **Tip:** *Press Ctrl and click the* **Mute** *button to mute only the selected mixer control (and restore any other muted controls). If the selected mixer control is already muted, press Ctrl and click the* **Mute** *button to restore all controls.*

Soloing mixer controls

Clicking the **Solo** button ( ) on a mixer control isolates playback by muting all other mixer controls. For example, when you solo a bus, all remaining busses, assignable effects, and soft synths appear grayed out and the word **Muted** appears at the bottom of their respective meters. Clicking the **Solo** button a second time returns all mixer controls to normal playback.

You can also press X to solo a mixer control or group of controls.

> **Tip:** *Press Ctrl and click the* **Solo** *button to solo only the selected mixer control (and restore any other soloed controls). If the selected mixer control is already soloed, press Ctrl and click the* **Solo** *button to restore all controls.*

Adding effects to soft synth mixer controls

You can add DirectX- or VST-compatible plug-ins, either individually or as a chain, to a mixer control. You can build plug-in chains from any DirectX-compatible plug-ins installed on your system. You can add plug-ins (individually or as pieces of a chain) to a mixer control at any time, and once you have added them, you can reorder them, remove them, and combine them with additional plug-ins to achieve the desired effect.

Adding a plug-in to a mixer control results in the track signals assigned to that control being processed by the plug-in. However, plug-ins assigned at the track level are processed before plug-ins added at the mixer level. *For more information, see* *Using clips with tracks on page 105*.

> **Important:** *Be aware that using non-in-place plug-ins (such as Time Stretch, Pitch-Shift without preserving duration, and some Vibrato settings) will cause audio to play out of synchronization with the waveform display in the timeline and with other tracks. If an effects chain includes non-in-place plug-ins, the effects chain icon will be displayed as a*  .
>
> *When using ACID as a ReWire device, any effects chain that includes non-in-place plug-ins will be automatically bypassed to prevent synchronization problems with the ReWire mixer application. The effects chain icon will be displayed as a*  . *Apply the plug-ins within the ReWire mixer application.*

Adding plug-in chains

1. Click the **FX** button () on the mixer control. The Plug-In Chooser dialog appears.
2. Select the plug-ins that you want to add. The selected plug-ins appear in the chain area. There are three ways to add a plug-in to the chain:
   - Double-click the plug-in.
   - Drag the plug-in to the chain area.
   - Select the plug-in and click **Add**.

> **Tip:** *If you have saved any plug-in chain packages, double-click the* **Packaged Chains** *folder to view those packages. For more information, see* *Saving plug-in chains as packages on page 149*.

3. Click **OK** to close the Plug-In Chooser dialog. The Audio Plug-In window opens and displays the plug-in chain.
4. Click a specific plug-in and adjust the effect's parameters manually, or choose one of the presets from the **Preset** drop-down list. For more information about effect parameters, click the **Plug-In Help** button () in the Audio Plug-In window.

> **Tip:** *You can save an effect's parameters as a preset to be used in other projects. To save a preset, enter a name in the* **Preset** *box and click the* **Save Preset** *button ().*

5. Click the **Close** button () to close the Audio Plug-In window.

Adding plug-ins to existing plug-in chains

1. Click the **FX** button () on the mixer control. The Audio Plug-In window appears.
2. Click the **Edit Chain** button (). The Plug-In Chooser dialog appears.
3. Add the desired plug-in(s) to the chain.
4. Click **OK** to close the Plug-In Chooser dialog. The Audio Plug-In window opens and displays the plug-in chain.

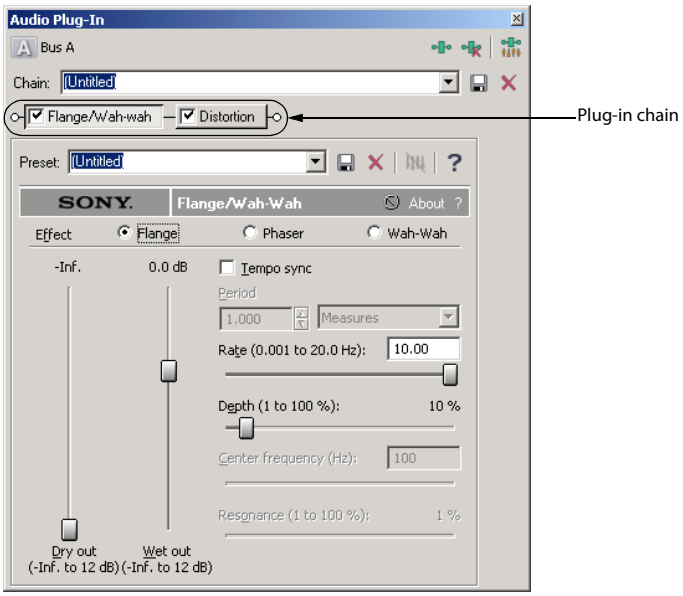
5. Click a specific plug-in and adjust the effect's parameters manually, or choose one of the presets from the **Preset** drop-down list. For more information about effect parameters, click the **Plug-In Help** button (?) in the Audio Plug-In window.
6. Click the **Close** button ( ) to close the Audio Plug-In window.

Arranging plug-ins on plug-in chains

The effect of plug-ins placed on a chain is cumulative. For example, when a signal passes through a plug-in, it carries those settings through the next plug-in, and carries both settings through the next plug-in, and so on. Because of this cumulative effect, you may need to rearrange the plug-ins on the chain so that one plug-in's processing does not adversely affect the next one in the chain.

There is no right or wrong way to order plug-ins, and the chain's plug-in order is strictly based on your preferences and desired output. However, certain plug-ins function better at specific points in the chain. For example, the dither plug-in typically works best as the last plug-in on a chain.

1. Click the **FX** button ( ) on the mixer control. The Audio Plug-In window appears.



2. There are two ways to arrange plug-ins in your chain:
   - Drag the plug-in to a new location in the chain.
   - Right-click the plug-in and select **Move Left** or **Move Right** from the shortcut menu.
3. Click the **Close** button ( ) to close the Audio Plug-In window.

Bypassing plug-ins on plug-in chains

You can bypass a plug-in without removing it from the chain by clearing the check box on the plug-in. Alternately, right-click the plug-in and choose **Bypass** from the shortcut menu.

Tip: *To bypass (or re-enable) all plug-ins in a chain, right-click the* **FX** *button ( ) on the mixer control and choose* **Bypass All** *or* **Enable All**.

Removing plug-ins from chains

You can remove a plug-in from a chain at any time.

1. Click the **FX** button ( ) on the mixer control. The Audio Plug-In window appears.

2. Right-click the plug-in and choose **Remove** from the shortcut menu, or click the **Remove Selected Plug-In** button ( ).
3. Click the **Close** button ( ) to close the Audio Plug-In window.

Removing or bypassing all effects on a mixer control

You can clear a mixer control of all effects by right-clicking the **FX** button ( ) and choosing **Delete All** from the shortcut menu.

You can bypass the effects on a mixer control without removing them by right-clicking the **FX** button ( ) and choosing **Bypass All** from the shortcut menu. To apply them again, right-click the **FX** button and choose **Enable All** from the shortcut menu.

Saving plug-in chains as packages

You can save plug-in chains as packages so that you may re-use them in other projects. If you use a combination of plug-ins often, saving them as a package saves you time. Effect packages retain their chain order and individual plug-in settings.

You may save plug-in chains as packages from existing plug-in chains or in the Plug-In Chooser dialog during the actual creation of the chain. The plug-in chains that you save as packages appear in the Plug-In Chooser dialog in the **Packaged Chains** folder.

1. Click the **FX** button ( ) on the mixer control. The Plug-In Chooser dialog appears if a plug-in chain does not already exist.

   To save an existing chain, click the **FX** button ( ) to open the Audio Plug-In window and skip to step four.
2. Add and arrange plug-ins to create a plug-in chain and click **OK**.
3. In the Audio Plug-In window, adjust the settings for each plug-in to achieve the effect you want. For more information about effect parameters, click the **Plug-In Help** button ( ) in the Audio Plug-In window.
4. Click the **Save Chain Preset** button ( ). The Save Plug-In Package dialog appears.
5. Enter a name for the package.
6. Click **OK** to save the plug-in chain as an effect package.

Organizing your plug-ins

You can create folders for organizing your plug-ins within the Plug-In Chooser dialog. You will notice that the Plug-In Chooser dialog functions similarly to Windows Explorer. However, the Plug-In Chooser dialog only allows you to work with plug-ins installed on your system.

Automating effect parameters

If a plug-in supports automation, you can add envelopes to a soft synth's bus track to automatically adjust effect parameters over time. *For more information, see Using track automation envelopes on page 111.*

Using the Preset Manager

Once you have created custom presets for effects or effect chains, you can use the Preset Manager to back up, transfer, or delete custom presets from any of the plug-ins you use in ACID. The Preset Manager is a standalone application that you can use to manage ACID, Sound Forge, and Vegas presets.

You can install the Preset Manager from the ACID installation disc. After you install the application, choose **Contents and Index** from the **Help** menu in the Preset Manager for instructions on how to manage your presets.

Working with multiple mixer controls

When you select multiple busses, assignable effect controls, or soft synth controls in the mixer, you can simultaneously perform functions on the controls. These functions include the following:

- Change bus or hardware routing
- Mute/solo bus or control
- Delete bus or control
- Change fader level

You can select multiple, nonadjacent controls by holding the Ctrl key while clicking each control's name. You can select multiple, adjacent controls by clicking the first control and holding the Shift key while clicking the last control in the range.

Note: *You cannot group the Preview fader in this manner with other mixer controls.*

Automating mixer controls in track view

You can automate bus, assignable effect, and soft synth controls in track view. You can view each of these controls on tracks at the bottom of track view and to add envelopes to automate functions such as volume, pan, and assignable effect chain input/output levels. You can also add envelopes to automate effect parameters for plug-ins that support automation. *For more information, see Track automation on page 125.*

For creative ways to use bus automation, see Fading in and out of mixes on page 245.

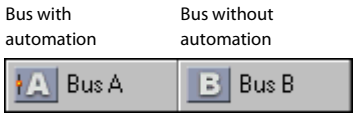
Viewing bus tracks

From the **View** menu, choose **Show Bus Tracks** or press B. The bus tracks appear at the bottom of the track view. A bus track appears for each mixer control in your project.

Adding track envelopes

Right-click the track header in the track list, choose **Insert/Remove Envelope** from the shortcut menu, and choose the appropriate envelope type from the submenu.

You can identify which mixer controls have envelopes by looking at each control's letter or number. An automated mixer control has a small fader icon on its letter or number in the Mixer window.



Modifying track envelopes

You can modify a track envelope for a bus, assignable effect, or soft synth in the same way you do with any other track. *For more information, see Using track automation envelopes on page 111.*

Working with ReWire

Using ReWire, you can stream audio between applications in real time, synchronize playback, and use either application's transport controls to control playback in the synchronized applications. The cursor position and loop region will be shared in the synchronized applications.

ACID can be used as a ReWire mixer (host) or a ReWire device (client):

When ACID is used as a ReWire mixer, a soft synth bus in the ACID mixer connects the ReWire device application with the ACID audio engine. During playback, song position data is sent from the ACID window to the ReWire device application, and the device will send its audio data back to the ACID soft synth bus control.

When ACID is used as a ReWire device, the ReWire mixer sends song position data to the ACID project, and ACID sends its audio to the ReWire mixer. ACID acts as a ReWire 1.0 device.

Using ACID as a ReWire mixer

ACID can act as a ReWire mixer application. After you enable a ReWire panel application to work within the software, you can insert it as a soft synth control in the mixer, and the soft synth bus connects ACID and the ReWire device and carries the data back and forth between them. The applications share timeline and cursor position data. ACID can mix or apply effects to your panel application's audio data output and then record the data.

Note: *The ReWire panel application data will not be included in playback or rendering if the panel application is not open.*

Locating ReWire panel applications for use in ACID

If you have ReWire panel applications installed on your PC, you can select them for use as soft synth controls.

1. From the **Options** menu, choose **Preferences**. The Preferences dialog appears.
2. Click the **ReWire Devices** tab.

   All installed ReWire panel applications appear in the **Select ReWire Device to be available as soft synths** box at the bottom of the dialog. To choose the ReWire panel application you want to use, select its check box.
3. Click the **OK** button.

Inserting a ReWire panel application as a soft synth

1. Insert a ReWire panel application as a soft synth on the mixer just as you would a DLS or VSTi soft synth. *For more information, see* *Adding soft synth controls to projects on page 142*.
2. The soft synth bus control is added to the Mixer window using the default settings, and ACID attempts to start the device. If the ReWire device application does not open, you can start it manually.
3. Use the ReWire device application's interface to open a project and adjust its settings.

Opening a ReWire device application

When you add a ReWire soft synth bus to your project, ACID attempts to start the device. There are several additional ways to open a ReWire panel application for use with ACID:

- Double-click the soft synth control icon on the Mixer ( ).
- Right-click the soft synth control icon ( ) and choose **Open ReWire Panel** from the shortcut menu.
- Double-click the soft synth control icon ( ) on the Mixer to display the Soft Synth Properties window and then click the **Open ReWire Device Application** button ( ). Click this button again to close the application when your editing is finished.

Note: *Click the* **Lock MIDI Port Configuration** *button ( ) to lock MIDI ports so port assignments are not lost due to dynamic changes from ReWire panels.*

- If ACID is unable to start your ReWire device application, you can start it manually.

Note: *For more information on working with your ReWire device application, please see the application's documentation.*

Starting playback of the ACID project and synchronized ReWire devices

ReWire device and mixer applications communicate song position data back and forth with sample-level accuracy.

Position the cursor (or create a loop region) in the ACID timeline to indicate where you want playback to begin, and then click Play ( ).

Displaying the Soft Synth Properties window for a ReWire 2.0 Device

When you add a ReWire 2.0 synths master bus as a soft synth bus, you can double-click the soft synth control icon ( ) to display the Soft Synth Properties window, where you can view the device's MIDI ports, start or close the application, or lock MIDI ports.

Click the **Open ReWire Device Application** button ( ) to start the device (some synths cannot be started by a ReWire mixer application). When you're finished editing in the ReWire device application, you can click this button again to close the ReWire application.

Select the **Lock MIDI Port Configuration** button ( ) to lock MIDI ports so your ACID project does not lose port assignments due to dynamic changes from ReWire devices.

Using ACID as a ReWire device

When ACID is used as a ReWire device, the output from your ACID mixer is output to a ReWire mixer application.

After you add the ACID synth to a ReWire mixer application, the mixer application sends song position data to the ACID synth, which sends its audio back to the ReWire mixer.

Because ACID supports ReWire 1.0, MIDI data is not sent to the mixer (MIDI tracks are output as audio data through soft synths).

Important notes:

- You must start your ReWire mixer application before starting ACID.
- When ACID is connected to a ReWire mixer application, the ACID project will automatically use the mixer application's bit depth and sample rate. Saving the ACID project in ReWire mode will not overwrite the project's original bit depth and sample rate.
- If a ReWire mixer application starts ACID, that ACID window will start in ReWire mode and cannot be switched from ReWire mode. If a ReWire mixer connects to an existing ACID window, that window will run in ReWire mode, and you can switch out of ReWire mode if necessary. If you exit that instance of the software and start ACID again, the new instance will start in ReWire mode, and you can switch out of ReWire mode if necessary. You can switch out of ReWire mode by choosing a new setting from the **Audio device type** drop-down list on the Audio tab of the Preferences dialog.
- The ACID **Tempo** control below the track list is not available in ReWire Device mode. Tempo information is provided by the ReWire mixer application.
- If a ReWire mixer application includes a tempo map, video and long one-shot tracks in your ACID project will lose synchronization with looped material. Using ACID as a ReWire mixer (or in an ACID project without ReWire) will resolve the issue.
- When using ACID as a ReWire device, any effects chain that includes non-in-place plug-ins will be automatically bypassed to prevent synchronization problems with the ReWire mixer application. The effects chain icon will be displayed as a . Apply the plug-ins within the ReWire mixer application.
- Before rendering from a ReWire mixer application, turn off the ACID metronome, or the metronome will be included in the rendered output.
- If the mixer has a **Render in Real-Time** option, this mode may reduce the possibility of drop-outs from the ACID ReWire device while rendering.

The ACID online help (from the **Help** menu, choose **Contents and Index**) provides setup information for several common ReWire mixer applications. This information is intended to help you get up and running with ACID as a ReWire device. For the most up-to-date information about using each ReWire mixer application, please refer to the manufacturer's documentation.

Chapter 10 Recording Audio

ACID® software can record audio into multiple mono or stereo audio tracks while simultaneously playing back existing audio and video tracks. You are limited only by the performance of your computer system and audio hardware. Audio is recorded to a media file on your computer and into an event on the timeline. You may record into an empty track, a time selection, an event, or a combination of time and event selection. Audio output from your computer during recording is not necessarily recorded with the new audio.

Recording does not alter any of the source media files in your project. Even when recording into an existing event, you are not overwriting the data in that event. Instead, the data is recorded into a new take for that event and saved to a media file on your hard drive.

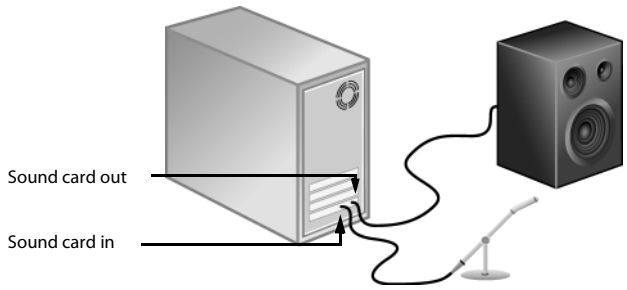
For information about real-time MIDI recording, MIDI merge recording, and MIDI step recording, see *Recording MIDI on page 162*.

Setting up your equipment

There are numerous ways to connect your equipment to your system. Refer to your equipment's documentation for specific setup instructions. The following are some possible general configurations.

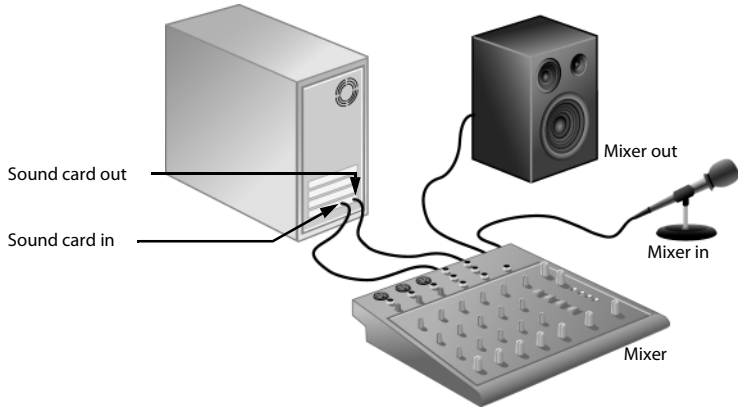
Basic setup

This setup includes a simple microphone and speaker that are connected to the computer's sound card. With a more sophisticated microphone, you would typically want to use a preamplifier for input to the sound card.



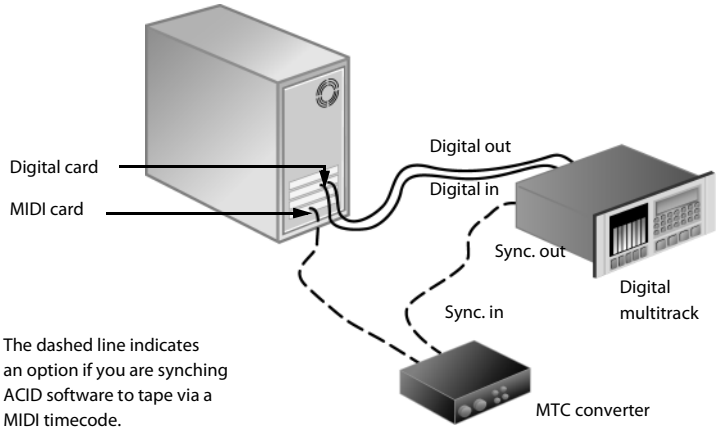
Setup with mixer

This setup includes a mixer where the speaker and microphone connect. The mixer is then connected to the computer's sound card. Mixers usually have preamps built into them. This diagram does not show you an instrument or a physical preamplifier, such as a rack-mounted component. The reason for this omission is because these types of setups vary widely based on your mixer, instrument, and pre-amp type. Refer to your components' documentation for specific setup configurations.



Setup with digital multitrack

This setup includes a digital multitrack recorder with an optional MIDI synchronization component. Usually you would have a mixer, a microphone, etc. connected to these components. Your particular setup will vary depending on your equipment. Refer to your components' documentation for specific setup configurations.



Preparing to record

Before you record, you must arm the tracks into which you will record the new audio. You must also select the recording settings for the tracks. You have the additional options of using a metronome or turning off playback during recording.

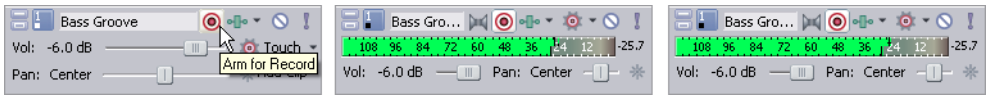
You may record into an empty track, a time selection, an event, or a combination of time and event selection. You can also record multiple takes for an event so you can maintain multiple versions of an event that you may play back and edit.

Arming the track for recording

Whether recording into an existing track, an empty track, a selected event, or a time selection, you must prepare a track for recording. You can arm multiple tracks prior to recording.

Click the **Arm for Record** button ( ) in the track list.

Once a track is armed, a record meter appears in the track list. Depending on your hardware, a record gain fader may also appear.



Arm the track first.

Track is ready for recording using the Sound Mapper.

Track is ready for recording from a specific device.

In addition, one of two **Record Device Selector** buttons appears: ( ) or ( ). The button that appears is based on the **Audio device type** selected in the **Audio** tab of the Preferences dialog. *For more information, see Using the Audio Device tab on page 232.*

Button	Description
Stereo **Mono left** **Mono right**	This button appears when Use Microsoft® Sound Mapper™ has been selected as the audio device type on the Preferences Audio tab. The Sound Mapper allows you to choose how the signal will be recorded: stereo or mono. Click this button to view a menu with **Stereo**, **Left**, or **Right**.
Stereo **Mono left** **Mono right**	This button appears when the Windows® Classic Wave Driver or an ASIO device has been selected as the audio device type on the Preferences Audio Device tab. When you choose this option, you can specify which device (e.g., sound card) you will record from on any given track prior to recording. Click this button to view a menu with **Stereo** or **Mono**, and a submenu with all available devices for either option.

Selecting recording settings

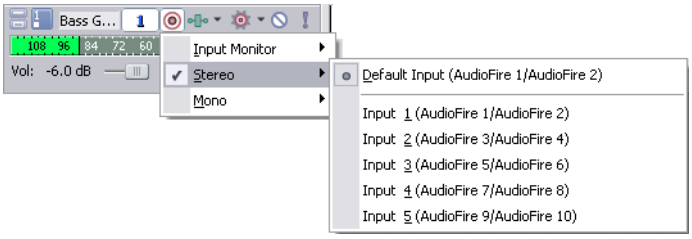
After the track has been armed for recording, select whether the track records the signal in stereo, in mono from the left channel, or in mono from the right channel. If you are using the Microsoft® Windows® Classic Wave Driver or an ASIO device, you also must select the device from which the track will record.

Selecting recording settings for Sound Mapper

1. Click the **Record Device Selector** button ( ). A menu appears.
2. From the menu, choose the recording method (**Stereo**, **Left**, or **Right**).

Selecting recording settings for the Windows Classic Wave Driver or an ASIO device.

1. Click the **Record Device Selector** button ( ). A menu appears.
2. Choose either **Stereo** or **Mono** from the menu.
3. From the submenu, choose the input device



Using the metronome

A built-in metronome marks time to help with the timing and tempo when recording a performance. The metronome's sound is not mixed in the final rendering of the project. Use the Preview fader in the Mixer window to control the metronome volume.

To use the metronome, from the **Options** menu, choose **Metronome** .

Recording

You may record into an empty track, a time selection, an event, or a combination of time and event selection. The recording is added to the timeline as new clip and is saved to a media file on your hard drive.

Notes:

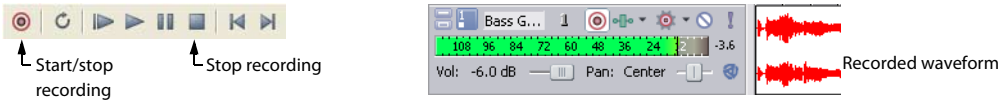
- Recorded files are in the folder specified on the Folders tab of the Preference dialog by default. If you want to choose a project-specific folder, you can use the Recorded files folder box on the Audio tab of the Project Properties dialog. *For more information, see Using the Audio tab on page 232.*
- You can use the **ACID type for recorded audio** drop-down list on the Audio tab of the Preferences dialog to indicate whether you want to create Beatmapped clips of one-shots when recording audio.
- Use the **Record action when nothing is armed** drop-down list on the Audio tab of the Preferences dialog to indicate whether you want to create an audio track, a MIDI track, or do nothing if you click the **Record** button when no tracks are armed.

Recording into an empty track

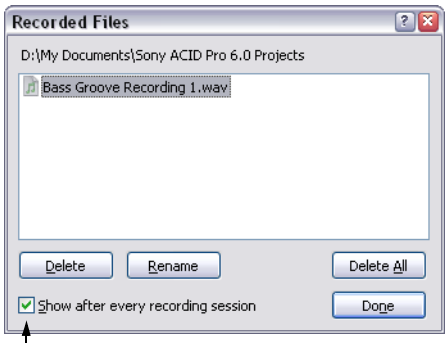
1. Select a track. Alternately, to record to a new track, choose **Audio Track** from the **Insert** menu.

2. Place the cursor on the timeline where you want to begin recording.
3. Arm the track by clicking the **Arm for Record** button ( ) on the track.
4. Start recording by clicking the **Record** button ( ) on the transport bar.

   Depending on the recording selection, a waveform is created along the timeline as you record into the armed track(s).



5. Stop recording by clicking the **Record** button ( ) again or the **Stop** button ( ) on the transport bar.
6. A small dialog opens displaying the name and location of the file or files that were just created. Click **Done** to return to the main workspace.

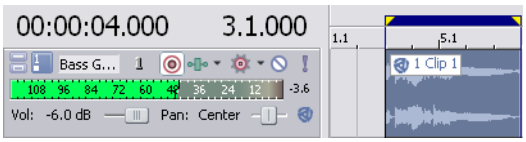


When a check mark appears in this box, ACID software displays this dialog after each recording session.

Delete—removes selected file
Rename—changes the name of a selected file
Delete All—removes all files in dialog
Done—returns to track view

Recording into a time selection

By making a time selection, you specify where along the timeline to record. The time selection also determines how long the software records. Any selected events that occur within the time selection are split and the recorded data is placed into the time selection.



Recorded waveform

The event's waveform is displayed as it is recorded and automatically stops recording when the cursor reaches the end of the time selection.

Recording into an event

By recording into an event, you automatically create a new clip containing the recorded material that is the same duration as the selected event. The edges of the selected event serve as the punch-in and -out points that are used for recording. Recording into an event allows you to establish a pre-roll before recording, which gives you time to prepare before recording starts.

Because the entire recording is saved to the media file (not just the material between the edges of the take), you are not limited to the recorded material contained in the length of the new clip. You can adjust the edges of the event or slip the contents of the event if necessary. *For more information, see Shifting the contents of (slipping) events on page 68.*

The existing event that you record into is not affected or deleted. Instead, the event now contains two media files, each listed as a separate clip in the track's Clip Pool. *For more information, see Using the Clip Pool on page 107.*

1. Place the cursor before the event to allow for pre-roll.

2. Press Ctrl and click the event to select it.

> **Tip:** *You can record into multiple events by pressing Ctrl and making selections.*

3. Click the **Arm for Record** button ( ) on the event's track. When recording into multiple selected events, arm their respective tracks at this time.
4. Click the **Record** button ( ) on the transport bar to begin recording.
5. Click the **Record** button ( ) again or the **Stop** button ( ) on the transport bar to stop recording.

Recording into an event with a time selection

Recording into a time selection allows for a pre- and post- roll during recording. The time selection is adjustable to increase or decrease the pre- and post-roll duration. During recording, the selected event's edges serve as the punch-in and -out points. You can create multiple punch-in and -out points by selecting more events within the time selection.

You may need to split an existing event into three pieces so that you can select a smaller portion of the event to record into. *For more information, see Splitting events on page 62.*

1. Click the **Arm for Record** button ( ) on the desired track(s).
2. Select the event to record into.

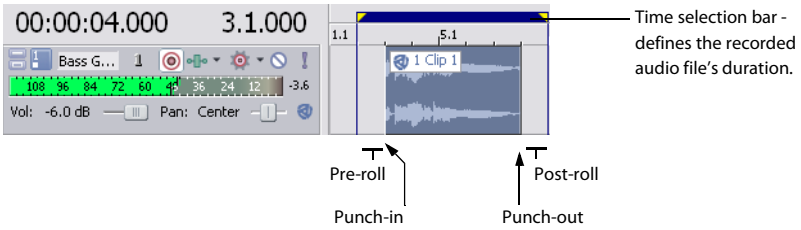
> **Tip:** *You may record into multiple events by pressing Ctrl and making your selections.*

3. On the marker bar, drag a time selection. You may adjust the time selection by dragging the selection bar's starting and ending points. Make the time selection start before the event for a pre-roll.
4. Click the **Record** button ( ) on the transport bar to begin recording.

   If input monitoring is turned on, the track's original audio is played until the cursor reaches the selected event. When the cursor plays through the selected event, you'll hear your recording input, and the track's original audio is played again when the cursor moves past the selected event.

Using pre-roll

The previous technique allows you to define the playback region with a time selection and sets the punch-in and punch-out points in the recording to the event boundaries. When you click the **Record** button, playback begins at the beginning of the time selection. The event is then filled with the newly recorded material. The audio file that is recorded to your hard disk is the full duration of the time selection. The event only contains a portion of the full recorded performance and can therefore be trimmed (both shorter and longer) and repositioned within the event.



Working with multiple recorded clips

Clicking the **Loop Playback** button ( ) on the transport bar enables you to continually create clips during recording. The last clip recorded is set as the track's active clip. You can use clips as different versions of a recorded event that you can quickly switch between to choose the best one.

During recording with loop playback enabled, the time selection continually repeats and starts recording a new clip until you stop recording. You can preview, select, rename, and delete clips in the Clip Pool pane of the Track Properties window to manage the clips. *For more information, see Using the Clip Pool on page 107.*

The Clip Properties window will display region markers to represent the selected event's clip in the waveform. *For more information, see Configuring clip properties on page 113.*

Specifying where recordings are stored

Recorded files are saved in the folder specified on the Folders tab of the Preferences dialog is used by default.

If you want to choose a project-specific recorded files folder, you can use the **Recorded files folder box** on the Audio tab of the Project Properties dialog.

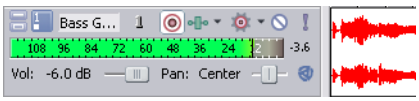
Changing where recorded files are stored for new projects

1. From the **Options** menu, choose **Preferences**.
2. Click the Folders tab.
3. Choose a setting from the **Record** drop-down list or click the **Browse** button to choose a folder.
4. Click **OK**.

Changing where recorded files are stored for individual projects

1. From the **File** menu, choose **Properties**. The Project Properties dialog appears.
2. Click the **Audio** tab to display the project's audio properties.
3. Click the **Browse** button next to the **Recorded files folder** box.
4. Browse for the location where you want to save recorded files.
5. Click **OK**.

Monitoring audio levels



While you're recording, a responsive meter is provided in the track header to monitor the incoming signal level of the selected recording device. It is important that you record with the highest signal possible without clipping.

A reading of 0 dB is the maximum for a digital signal. Clipping occurs when the incoming signal is too high to be represented as a digital value. The result is distortion in the recording. A clipped signal will be indicated by a red indicator warning at the end of the meters.

Right-click the meters and choose a command from the shortcut menu to adjust the display of the meters.

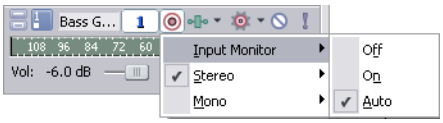
Using record input monitoring

If you're using a low-latency audio device and you want to hear your recording signal with real-time track effects, you can turn on input monitoring.

To turn on input monitoring, click the **Record Device Selector** button (or 1) and choose **Input Monitor** from the menu, and then choose **Auto** or **On** from the submenu. During recording, your signal will be played back with the current track effects chain, but a dry (unprocessed) signal is recorded.

When **Auto** is selected, you will hear the input monitor signal when playback is stopped and during recording. If you're recording into selected events, you'll hear the input monitor signal only when the cursor passes over the selected events.

When **On** is selected, the behavior is similar to **Auto** mode, but you will always hear the input monitor during recording—monitoring is not toggled on and off when recording in to a selected event.



Note: *Your ability to monitor effects in real time is dependent on your computer's performance. Effect automation envelopes are bypassed during record monitoring.*

Chapter 11 Working with MIDI

ACID® software allows you to record MIDI tracks and edit MIDI in your projects. The software provides two native OPT plug-ins: the piano roll editor and the list editor. You can also render projects with MIDI tracks, play MIDI from an external device, and synchronize to MIDI timecode (MTC).

Adding MIDI tracks and files

You can add MIDI files to your project or create new MIDI files from scratch. You can use MIDI tracks to record and play back data from synthesizers and other MIDI-compliant equipment. MIDI tracks can use .mid, .smf, .wav, and .rmi files.

Adding MIDI tracks

To add a new, blank MIDI track to your project do one of the following:

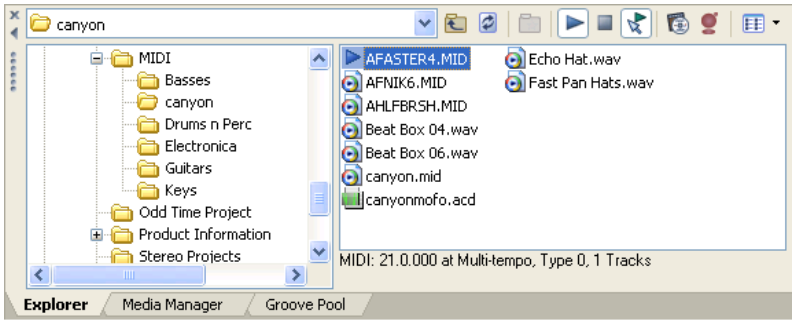
- From the **Insert** menu, choose **MIDI Track** .
- Right-click in the timeline and choose **Insert MIDI Track**.

Tip: *You can also add a MIDI track by pressing Ctrl+Alt+Q.*

Adding MIDI files to a project

You can add MIDI files to your project just as you would add audio files. You can double-click a MIDI file to create new tracks and events, or you can drag a MIDI file from the Explorer or Media Manager window to an existing track to add a new clip.

Note: *When you select a MIDI file in the Explorer window, its length, tempo, type, and number of tracks are displayed at the bottom of the window:*



When you right-click a MIDI file in the Explorer window, you can choose how you want to add it to your project:

1. **Add to Project** — Adds the file to the current ACID project and adds tracks to the track list. No events are created.
   - For Type 0 MIDI files, a separate track is created for each channel in the MIDI file, and all tracks are organized within a folder track.
   - For Type 1 MIDI files, a separate track is created for each track in the MIDI file, and all tracks are organized within a folder track.
2. **Add to Project with Events** — Adds the file to the current ACID project at the cursor position, adds tracks to the track list, and creates events for the MIDI note data on each track. Envelopes are added to the tracks to represent MIDI controller data.
   - For Type 0 MIDI files, a separate track is created for each channel in the MIDI file, and all tracks are organized within a folder track.
   - For Type 1 MIDI files, a separate track is created for each track in the MIDI file, and all tracks are organized within a folder track.

3. **Add to Project with Events Rippled** — Adds the file to the current ACID project at the cursor position, adds tracks to the track list, and creates events. Existing events are shifted downstream to make room for your MIDI file. Envelopes are added to the tracks to represent MIDI controller data.
   - For Type 0 MIDI files, a separate track is created for each channel in the MIDI file, and all tracks are organized within a folder track.
   - For Type 1 MIDI files, a separate track is created for each track in the MIDI file, and all tracks are organized within a folder track.
4. **Open as New Project** — Starts a new project, adds tracks to the track list, and creates events for the MIDI note data on each track.
   - For Type 0 MIDI files, a separate track is created for each channel in the MIDI file.
   - For Type 1 MIDI files, a separate track is created for each track in the MIDI file.

Recording MIDI

You can use an external MIDI controller (or the keyboard/drum list between the track header and timeline) to record MIDI into your ACID project.

You can record in real time during project playback by using step recording or MIDI merge recording to build MIDI tracks.

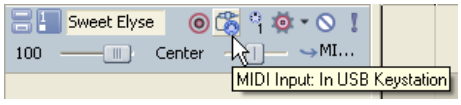
Track-level MIDI input filters allow you to control exactly which MIDI messages you want to record (or exclude).

Tip: *If you use the keyboard/drum list between the track header and timeline to input MIDI notes, note that the buttons are velocity sensitive: clicking toward the right side of a button plays the note with a higher velocity setting than clicking toward the left side. The keyboard/drum list is visible in inline MIDI editing mode.*

Important: *Attempting to record MIDI controller data over an existing event will overwrite existing note data. If you want to record controllers over an existing event, use MIDI merge recording. For more information, see* *Using MIDI merge recording on page 164*.

Setting up a MIDI controller for recording into a track

1. Select the MIDI track you want to record into, or press Ctrl+Alt+Q to add a new, blank MIDI track to your project.
2. Choose a MIDI input port by clicking the **MIDI Input** button on the track header. Choose a command from the menu:



   - Auto Input — Uses automatic input routing. The focus track will accept input from any MIDI device.
   - Input Off — Turns off MIDI input to the track.
   - Hardware Input Port List — Displays the devices that are selected in the **Make these devices available for MIDI input list** on the MIDI tab of the Preferences dialog. Choose the specific device you want to use to send MIDI to the track.

Note: *You must choose a specific input port to use MIDI input filters. For more information, see* *Configuring MIDI input filters on page 177*.

   - Soft Synth Input Port List — Displays the available soft synths in your project. Choose the soft synth you want to use to send MIDI to the track. *For more information, see* *Using soft synth controls on page 142*.

     Choose **Soft Synth** from the **Insert** menu and select a soft synth for your project from the Soft Synth Chooser dialog. You can also select **Insert Soft Synth** from the Mixer.
3. Choose a MIDI input channel:
   - Click the **MIDI Input** button on the track header.

- Choose **MIDI Channel** from the menu, and choose the MIDI channel you want to send data to the track, or choose **All** if you want the track to listen to all channels.

Tip: *If you want to select multiple input channels, hold Ctrl and select additional channels from the* **MIDI Channel** *submenu.*

4. Click the **MIDI Input** button on the track header and choose **Send MIDI Input Thru to MIDI Output** from the menu if you want to echo notes from the MIDI controller to the track's MIDI device or soft synth for monitoring.
5. Click the **MIDI Input** button on the track header and choose **MIDI Input Filters** from the menu to open the Track Properties window. Use the Input Filters tab to specify which MIDI messages you want to record (or exclude). *For more information, see* *Configuring MIDI input filters on page 177*.

Recording MIDI in real time

You can record MIDI in real time while your project plays back.

1. Connect a MIDI controller to your computer. If you don't have a MIDI controller, you can use the keyboard in the track view (when in MIDI timeline editing mode) or the keyboard in the Soft Synth Properties window.

Note: *Not all VSTi plug-ins can record using the keyboard in the Soft Synth Properties window.*

2. Select the **Arm for Record** buttons on the tracks where you want to record. Arming a track enables it for recording.
3. Choose a MIDI input device and channel for each armed track. *For more information, see* *Setting up a MIDI controller for recording into a track on page 162*.
4. Set up any desired MIDI message, velocity, or quantize filters for your armed tracks. *For more information, see* *Configuring MIDI input filters on page 177*.
5. Position the cursor where you want to start recording.
6. Click the **Record** button on the transport bar to start recording. MIDI messages from your controller are recorded as you play them.
   - Notes are added to an event in the timeline.
   - MIDI controller adjustments (such as pitch wheel and modulation wheel movements) are recorded as track envelopes. *For more information, see* *MIDI controller automation on page 129*.

     MIDI controllers are recorded in latch mode: envelope points are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's current setting overwrites the existing envelope points.

Note: *Envelope points are not thinned when recording MIDI controllers from a hardware device.*

7. To stop recording, click the **Record** button again or click the **Stop** button on the transport bar.
   A new clip is created for the recorded MIDI data on each armed track. You can use the Clip Pool tab in the Track Properties window to manage clips.

Note: *You can also record into time selections, punch into MIDI events, or record multiple clips (when recording into a selection with* **Loop Playback** *selected) in the same way you record audio.*

Using MIDI step recording

Click the **MIDI Step Record** button to open the MIDI Step Record dialog, where you can record by specifying the interval between MIDI messages. Step recording allows you to record notes with very precise timing.

1. Connect a MIDI controller to your computer. If you don't have a MIDI controller, you can use the keyboard in the track view (when in MIDI timeline editing mode) or the keyboard in the Soft Synth Properties window.

Note: *Not all VSTi plug-ins can record using the keyboard in the Soft Synth Properties window.*

2. Select the **Arm for Record** buttons on the tracks where you want to record. Arming a track enables it for recording. If you don't arm a track for recording, a new MIDI track will be created when you click the **MIDI Step Record** button.
3. Choose a MIDI input device and channel for each armed track. *For more information, see Setting up a MIDI controller for recording into a track on page 162*. If you're recording using the keyboard in the track view or the Soft Synth Properties window, choose **Auto Input**. Click the **MIDI Input** button on the track header and choose **Send MIDI Input Thru to MIDI Output** from the menu if you want to echo notes from the MIDI controller to the track's MIDI device or soft synth for monitoring.
4. Set up any desired MIDI message, velocity, or quantize filters for your armed tracks. *For more information, see Configuring MIDI input filters on page 177*.
5. Position the cursor where you want to start recording.
6. Click the **MIDI Step Record** button.

7. Use the MIDI Step Record dialog to set options for recorded MIDI notes.
   a. Click the **Step size** button and choose interval between the beginnings of notes.
   Select the **Tuplet** check box to set irregular intervals. For example, to set a triplet interval in 4/4 time, select the **Tuplet** check box and choose **3 in time of 4**.
   b. Click the **Duration** button and choose length of the note's sustain. When you choose a duration longer than the step size, notes will overlap.
   c. To set the note-on velocity for recorded notes, type a value in the **Velocity** box. If you want to record note-on velocity from your controller, select the **As Played** check box.
8. MIDI messages from your controller are recorded as you play them, and notes are added to an event in the timeline.

Notes:

- *MIDI controller adjustments (such as pitch wheel and modulation wheel movements) are not recorded in step record mode.*
- *If you press a key before releasing the current key, both notes will be recorded at the same timeline position. Release both keys to advance to the next step.*

9. To stop recording, close the MIDI Step Record dialog or click the **Stop** button on the transport bar.

Using MIDI merge recording

Click the **MIDI Merge Record** button to build a MIDI part by recording repeatedly into a loop region. MIDI merge data is recorded in real time, and you can add more notes each time recording passes through the loop region.

1. Connect a MIDI controller to your computer. If you don't have a MIDI controller, you can use the keyboard in the track view (when in MIDI timeline editing mode) or the keyboard in the Soft Synth Properties window.

Note: *Not all VSTi plug-ins can record using the keyboard in the Soft Synth Properties window.*

2. Select the **Arm for Record** buttons on the tracks where you want to record. Arming a track enables it for recording. If you don't arm a track for recording, a new MIDI track will be created when you click the **MIDI Step Record** button.
3. Choose a MIDI input device and channel for each armed track. *For more information, see Setting up a MIDI controller for recording into a track on page 162.*
4. Set up any desired MIDI message, velocity, or quantize filters for your armed tracks. *For more information, see Processing and filtering MIDI events on page 171.*
5. Click and drag in the marker bar or a blank area of the timeline to create a loop region.
6. Select the **Loop Playback** button.
7. Select the **MIDI Merge Record** button.
8. Position the cursor at the start of the loop region. If you want to record with pre-roll, you can position the cursor before the loop region.
9. Click the **Record** button on the transport bar to start recording.

   MIDI messages from your controller are recorded as you play them.

   - Notes are added to an event in the timeline.
   - MIDI controller adjustments (such as pitch wheel and modulation wheel movements) are recorded as track envelopes. *For more information, see MIDI controller automation on page 129.* MIDI controllers are recorded in touch timeout mode: envelope points are created or edited when you change a control setting. When you stop adjusting the control, existing envelope points on the timeline are preserved.

     MIDI controllers that are switches (such as a damper pedal) are always recorded in latched mode: envelope points are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's current setting overwrites the existing envelope points.

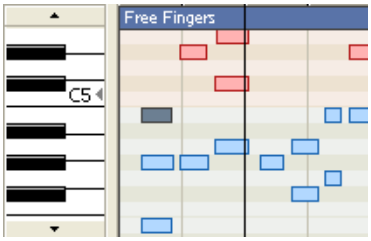
     When recording returns to the beginning of the loop region, existing MIDI controller envelopes are unaffected. For example, you could record note data the first time recording passes through the loop region, record pitch-bend controllers the second time, and modulation the third time.

Note: *Envelope points are not thinned when recording MIDI controllers from a hardware device.*

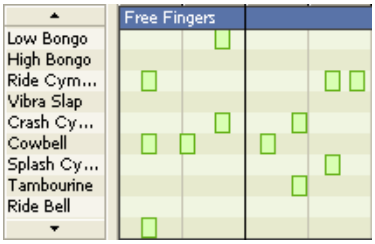
10. To stop recording, click the **Record** button again or click the **Stop** button on the transport bar.

Editing MIDI on the timeline

Click the **Enable Inline MIDI Editing** button to edit MIDI events directly on the timeline. In this mode, you can draw and erase notes in a piano roll or drum grid view.



A piano roll allows you to edit MIDI notes for most patches.

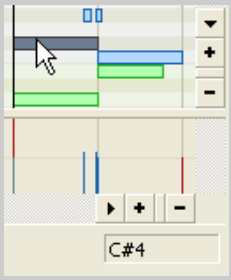


A drum grid allows you to edit MIDI notes for soft synths that have drum maps defined.

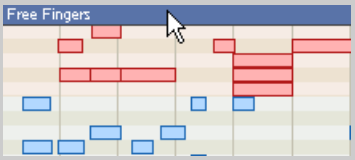
When you edit a MIDI event, all events that use the same clip will be updated. *For more information, see Using clips with tracks on page 105.*

Tips:

- *Hold Ctrl+Shift while double-clicking a MIDI event to enter inline editing mode.*
- *While in inline editing mode, drag over a blank area of the timeline with the Draw tool to create a new clip and draw an empty event.*
- *While in inline MIDI editing mode, you can hover over a note or velocity stem to view its value in the bottom-right corner of the timeline:*



- *If you want to move a MIDI event while in timeline MIDI editing mode, drag the top of the event with the Draw or Selection tool:*



If you want to edit a single event, right-click the event and choose **Copy to New Clip** from the shortcut menu.

Choosing a drum map or kit for a track

MIDI tracks can display a piano roll or a drum grid. *For more information, see Creating or editing drum maps on page 198.*

Tracks that are routed to the DLS soft synth will display a drum grid only if a drum map exists for the current patch. You cannot edit drum maps for GM2 drum kits.

Choosing a drum map or kit

1. Click the **Program** button on the track header.
2. Perform one of the following actions:
   - If your track is routed to the DLS soft synth, choose **Drum Kits** from the menu. A submenu displays the available drum kits.
   - If your track is routed to a MIDI device or a VSTi soft synth, choose **Drum Maps** from the menu, and then choose **Select Drum Map** from the submenu. The Output Settings page of the Track Properties dialog is displayed.
3. Choose the drum map or kit you want to use.

Displaying the piano roll

If your track is routed to a MIDI device or VSTi soft synth, you can switch from a drum grid view to a piano roll view. Click the **Program** button, choose **Drum Maps**, and then choose **None**.

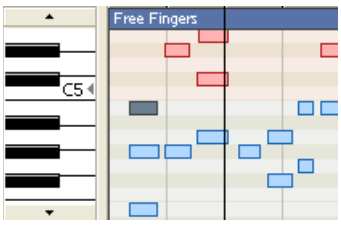
Navigating the piano roll or drum grid

In inline MIDI editing mode, adjusting the height of the track will allow you to see more or less of the piano roll or drum grid. After you set the height of the track, you can use the following methods to navigate.

Scroll vertically

Perform any of the following actions to scroll vertically within a track:

- Use the scroll buttons at the left edge of the track to scroll up or down:



Piano roll

Drum grid

- With the Draw or Selection tool, hover over the timeline and hold Ctrl while rolling the mouse wheel forward or back.
- Hold Ctrl while dragging the keyboard/drum list up or down.
- Hover over the keyboard/drum list and roll the mouse wheel forward or back.

Zoom note height

Perform either of the following actions to zoom note height:

- With the Draw or Selection tool, hover over the timeline and hold Ctrl+Alt while rolling the mouse wheel forward or back.
- Hover over the keyboard and hold Shift while rolling the mouse wheel forward or back.

Zoom note width

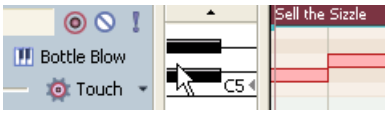
Note width is based on the horizontal zoom level of the timeline. Use the zoom controls in the lower-right corner of the timeline (or hover over the timeline and roll the mouse wheel forward or back) to zoom in or out.

Audition notes with the keyboard/drum grid

You can use the keyboard/drum grid between the track header and timeline to audition the track's MIDI output or record MIDI. When you click the keys, the note is played using the appropriate patch at the cursor position.

These buttons are velocity sensitive: clicking toward the right side of a button plays the note with a higher velocity setting than clicking toward the left side.

Clicking toward the right side of the keyboard (or drum list) plays the note with a higher velocity.



Clicking toward the left side of the keyboard (or drum list) plays the note with a lower velocity.

Audio driver latency can limit your ability to preview DLS voices in real time. Using low-latency drivers will produce the best results.

Selecting notes

You can select individual and groups of notes with the Draw and Selection tools.

Selecting individual notes

Click individual notes with the Draw or Selection tool to select them. Hold Ctrl while clicking to add or remove notes from the selection.

Selecting groups of notes

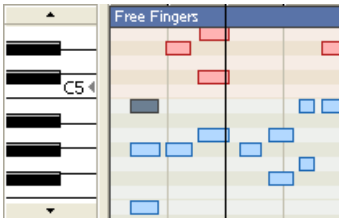
Drag with the Selection tool to draw selection boxes around the notes you want to include. The Selection tool can draw three types of selection boxes:

Free selection	The default behavior of the tool. Click to select individual notes (hold Shift or Ctrl to select multiple notes). Drag to draw a rectangular region that begins where you start drawing and ends where you release the mouse button. All notes inside the region will be selected. This method is good for selecting a group of notes that are close together.
Vertical	Can be used to easily select all notes that occur within a time range. The vertical selection box automatically selects all of the notes between your first mouse click and where you draw the selection box; even notes that are not visible at the current magnification are selected.
Horizontal	Can be used to easily select all notes on a single or multiple adjacent rows. The horizontal selection box automatically selects all notes on a row that is touched by the selection box; even notes that are not visible at the current magnification are selected.

To change the type of selection box you are using, right-click the mouse while holding down the left mouse button. Clicking the right mouse button will toggle through the three types of selection boxes.

Adding or deleting notes

1. Click the **Enable Inline MIDI Editing** button .
2. Use the scroll buttons at the left edge of the track to navigate the piano roll/drum grid:



Tip: *Drag the bottom border of the track header to increase the height of the track.*

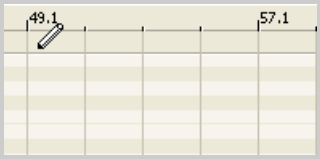
3. Select an editing tool.

Tool	Icon	Description
Draw		Allows you to insert, edit, select, and move notes. In drum-grid mode, the **Draw** and **Paint** tools both draw fixed-length note events.

Tool	Icon	Description
Paint		Allows you to insert notes of a specific length. The Paint tool is different from the Draw tool in that it can cross note row boundaries. Use the Paint tool to add a random element to your ACID projects. **Note:** In drum-grid mode, the Draw and Paint tools both draw fixed-length note events. Using the Paint tool: • Click the down arrow next to the Paint tool button and choose a note length from the menu. • Click the Paint tool button to select the tool. The Paint tool is selected, and notes will be painted using the selected note length. **Note:** Right-click with the Paint tool to erase notes.
Erase		Allows you to remove existing notes.

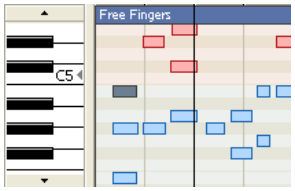
4. Inside an event, drag in the row for the pitch you want to create to create a new note, or click an existing note with the Erase tool to remove it. If you draw or paint notes beyond the event edge, the event is automatically extended. Hold Shift while dragging to override horizontal snapping (press Shift after you click).

Tip: *In inline MIDI editing mode, drag in the top portion of the track to create a new event using the active clip.*



Editing note positions

1. Click the **Enable Inline MIDI Editing** button .
2. Use the scroll buttons at the left edge of the track to navigate the piano roll/drum grid:



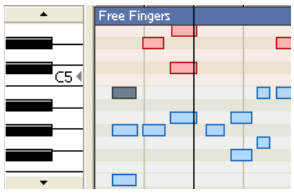
3. Select the notes you want to edit by doing either of the following:
   - Click a note with the Draw tool to select it. You can hold Ctrl while clicking to select multiple notes.
   - Use the Selection tool to select multiple events by clicking and dragging to create a selection box around the notes you want to edit.
4. Drag notes left or right to change their position on the timeline, or drag up or down to assign a note to a different pitch.

Tips:

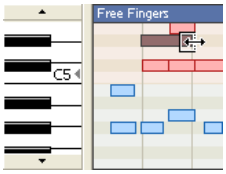
- *Hold Shift while dragging to override horizontal snapping (press Shift after you click).*
- *Hold Alt while dragging to constrain to horizontal or vertical movement.*
- *With the Draw and Selection tools you can cut, copy, and paste MIDI notes.*

Editing note duration

1. Click the **Enable Inline MIDI Editing** button .
2. Select the Draw tool .
3. Use the scroll buttons at the left edge of the track to navigate the piano roll/drum grid:



4. Drag either edge of a note. The edge of the note moves, changing its duration:



Hold Shift while dragging to override horizontal snapping (press Shift after you click).

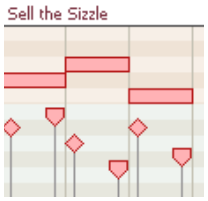
Editing note velocity

Note velocity is represented in the timeline by velocity stems. To show or hide velocity stems in inline MIDI editing mode, choose **Show Inline MIDI Editing** from the View menu, and then choose **Show Note-On Velocities** or **Show Note-Off Velocities** from the submenu.

1. Click the **Enable Inline MIDI Editing** button .
2. Select the Draw tool .
3. If velocity stems aren't already displayed, choose **Show Inline MIDI Editing** from the View menu, and then choose **Show Note-On Velocities** or **Show Note-Off Velocities** from the submenu.

Tips: *Press F while inline MIDI editing mode to toggle the display of velocity stems.*

4. Drag the top of the stem (for note-on velocity or for note-off velocity) up to increase the note's velocity, or drag down to decrease velocity. If multiple notes are selected, the velocities of all selected notes are adjusted at the same time.



Tips:

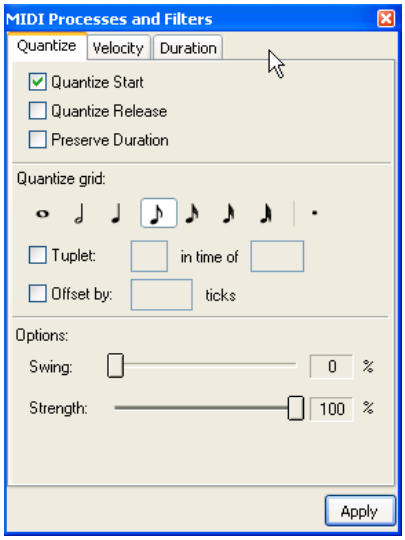
- *Double-click the top of a velocity stem to set the note's velocity to the default value (64).*
- *Right-click a note and choose* **Velocity** *from the shortcut menu. You can then choose a command from the submenu to set the note-on velocity.*
- *If multiple notes are selected, you can edit the velocities of all selected notes simultaneously.*

Processing and filtering MIDI events

From the Edit menu, choose **MIDI Processes and Filters** to apply destructive editing to MIDI events on the timeline. You can quantize data in events, edit velocity values, change the duration of an event, or transpose MIDI data.

Quantizing MIDI events

1. From the Edit menu, choose **MIDI Processes and Filters**. The MIDI Processes and Filters dialog is displayed.
2. Select the Quantize tab.



3. Select your quantization options:

Item	Description
Quantize start	Select this check box to force the beginning (note-on messages) of MIDI events to a specified resolution on the grid.
Quantize release	Select this check box to force the end (note-off messages) of MIDI events to a specified resolution on the grid.
Preserve duration	If you select **Quantize start** or **Quantize release**, you can select this check box to maintain the lengths of notes.
Quantize grid	Click an icon to select the resolution of the quantize grid.

Tuplet	Select this check box to set irregular beat boundaries for the quantize grid. For example, to quantize to triplet beat boundaries in 4/4 time, select the **Tuplet** check box and choose **3 in time of 4**.
Offset by	Select the check box and type a value in the box to offset the quantize grid by the specified number of ticks. You can type negative values to shift the grid backward.
Swing	Drag the slider to add a swing to the quantize grid. When you set this slider to 0, notes are quantized directly to the grid. Increasing the setting shifts every other grid boundary forward: set to 300% to shift every other grid boundary to the next grid division.
Strength	Drag the slider to adjust how strictly you want to quantize. For example, to quantize directly to the grid, set the slider to 100%. If you set the slider to 50%, a note that would be shifted 4 ticks is moved only 20 ticks.

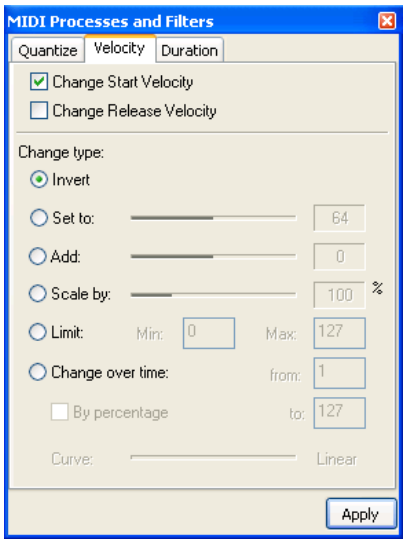
4. Select the tracks or events you want to quantize:
   - Select a track to quantize all events on the track. Hold Ctrl or Shift while clicking a track header to select multiple tracks.
   - If you want to quantize multiple events on multiple tracks, hold Ctrl or Shift while clicking the events to select them, and then select the tracks.
   - If a selected event has note events selected, only the selected notes will be quantized.

Note: *Muted tracks will not be quantized.*

5. Click the **Apply** button.

Editing velocity

1. From the Edit menu, choose **MIDI Processes and Filters**. The MIDI Processes and Filters dialog is displayed.
2. Select the Velocity tab.



3. Select a check box to indicate whether you want to edit note-on or note-off velocities:

Item	Description
Change Start Velocity	Select this check box to edit note-on velocities.
Change Release Velocity	Select this check box to edit note-off velocities.

4. Select a radio button to indicate how you want to change velocity:

Item	Description
Invert	Select this radio button to invert selected note velocities. When you invert a velocity, it is subtracted from 127 (negative values are forced to positive) so a note with a velocity of 127 will be 0 after inversion, a velocity of 10 will be 117, and so on.
Set to	Select this radio button and drag the slider to change note velocities to a specific value.

Add	Select this radio button and drag the slider to add (or subtract) a constant offset to selected note velocities.
Scale by	Select this radio button and drag the slider to multiply selected note velocities by a percentage. For example, setting this slider to 50% would reduce all note-on or note-off velocities by half.
Limit	Select this radio button and type values in the **Min** and **Max** boxes to restrict selected note velocities to the specified range. For example, if you type 40 in the **Min** box and 90 in the **Max** box, velocities below 40 will be set to 40, velocities greater than 90 will be set to 90, and velocities between 40 and 90 will be unaffected
Change over time	Select this radio button and type values in the **From** and **To** boxes to change velocity values gradually over time. The velocity for the first note in the selection is set to the **From** value, and the velocity for the last note in the selection is set to the **To** value. Select the **By percentage** check box to change velocity over time based on the current values. For example, to fade a selection in, select the **By percentage** check box and type 1 in the **From** box and 100 in the **To** box. To fade a selection out, type 100 in the **From** box and 1 in the **To** box. Drag the **Curve** slider to choose the fade curve that will be used to generate velocity for notes between the first and last note.

Note: *Note-on velocities are bound between 1 and 127 while note-off velocities are bound between 0 and 127.*

5. Select the tracks or events you want to edit:
   - Select a track to edit all events on the track. Hold Ctrl or Shift while clicking a track header to select multiple tracks.
   - If you want to edit multiple events on multiple tracks, hold Ctrl or Shift while clicking the events to select them, and then select the tracks.
   - If a selected event has note events selected, only the selected notes will be edited.

Note: *Muted tracks will not be edited.*

6. Click the **Apply** button.

Editing duration

1. From the **Edit** menu, choose **MIDI Processes and Filters**. The MIDI Processes and Filters dialog is displayed.
2. Select the Duration tab.
3. Select a radio button to indicate how you want to change a note duration:

Item	Description
Change by	Select this radio button, and then choose a setting from the drop-down list: • **Setting duration to** — Allows you to set notes to a specific duration. Click the down arrow next to the selected note size and choose the desired note duration from the menu. Choose **User size** to type a duration in beats.ticks in the edit box: for example, type 2.000 for two beats, or type 0.200 for 200 ticks. • **Adding to duration** — Allows you to add a constant value to existing note durations. Click the down arrow next to the selected note size and choose the amount you want to add to notes. • **Subtracting from duration** — Allows you to subtract a constant value from existing note durations. Click the down arrow next to the selected note size and choose the amount you want to subtract from notes.
Scale by	Select this radio button and drag the slider to multiply selected note durations by a percentage. For example, setting this slider to 200% would double note durations. Select the **Change start times** check box if you want to change the start times of notes while changing duration. For example, if you set the **Scale by** slider to 50% and select the **Change start times** check box, you can compress notes so they play in double time. If you set the **Scale by** slider to 50% and clear the **Change start times** check box, note durations will be shorter, but their positions on the timeline will not change.

Limit	Select this radio button and choose **Min** and **Max** values to restrict note durations to the specified range. For example, if you choose an eighth note as the **Min** setting and a half note as the **Max** setting, sixteenth notes will be changed to eighth notes, and whole notes will be changed to half notes. Notes between the **Min** and **Max** settings are unaffected.

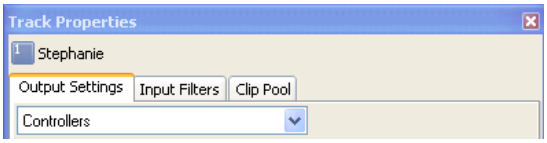
4. Select the tracks or events you want to edit:
   - Select a track to edit all events on the track. Hold Ctrl or Shift while clicking a track header to select multiple tracks.
   - If you want to edit multiple events on multiple tracks, hold Ctrl or Shift while clicking the events to select them, and then select the tracks.
   - If a selected event has note events selected, only the selected notes will be edited.

Note: *Muted tracks will not be edited.*

5. Click the **Apply** button.

Editing MIDI track properties

From the View menu, choose **Track Properties** to display the Track Properties window. The contents of the Track Properties window reflect the currently selected track.

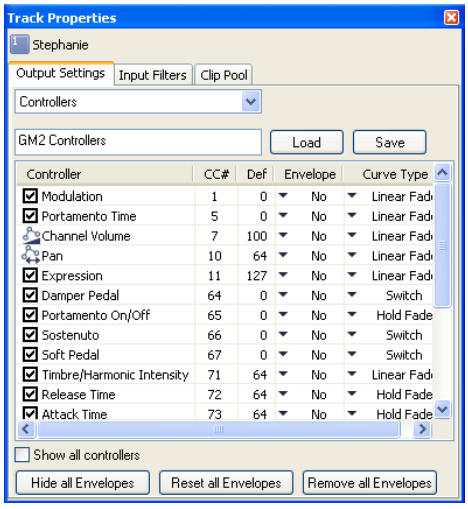


For MIDI tracks, you can use the Output Settings tab to adjust MIDI controllers, voices, and drum maps. You can use the Input Filters tab set up MIDI message, velocity, or quantize filters. You can use the Clip Pool tab to organize each track's media and enable looped or one-shot drawing for MIDI events. *For more information, see Audio track properties on page 113.*

Configuring MIDI track output settings

You can use the Output Settings tab on the configure which controllers can be automated; add, remove, or hide envelopes; set default values, and set each envelope's default fade curve.

Controller automation



1. From the **View** menu, choose **Track Properties**. The Track Properties dialog is displayed.

2. Select the check box for each controller you want to automate with an envelope. If the controller you want to automate isn't displayed, select the **Show all controllers** check box at the bottom of the dialog.
3. Click the down arrow in the **Envelope** box and choose a command from the menu:

Command	Description
Insert Envelope	If the controller does not have an automation envelope, **No** is displayed. Click the down arrow and choose **Insert Envelope** to add an automation envelope to the timeline.
Show/Hide Envelope	If the controller has an automation envelope, **Visible** or **Hidden** is displayed. Click the down arrow and choose **Hide Envelope** or **Show Envelope** to toggle its display. Click the **Hide all Envelopes** button at the bottom of the dialog to hide all controller envelopes on the track.
Reset all envelope points	If the controller has an automation envelope, you can click the down arrow and choose **Reset all envelope points** to restore all points to the default value Click the **Reset all envelope points** button at the bottom of the dialog to set all points on all controller envelopes on the track to the default value.
Delete Envelope	If the controller has an automation envelope, you can click the down arrow and choose **Delete Envelope** to remove the envelope all envelope points from the timeline. Click the **Remove all Envelopes** button at the bottom of the dialog to delete all controller envelopes on the track.

4. Double-click the **Def** box and type a new value to change the default setting for a controller. This value is used when you reset envelope points.
5. Click the down arrow in the **Curve Type** box to set the default fade curve for each controller's automation envelope. The new curve type will be applied to all segments on the envelope. You can right-click a segment and choose a new fade curve to override the default curve type.
6. Click the **Save** button if you want to save the current settings as a mapping file, or click **Load** to browse to a mapping file that will replace the current settings.

Note: *You can also select controllers by doing either of the following:*

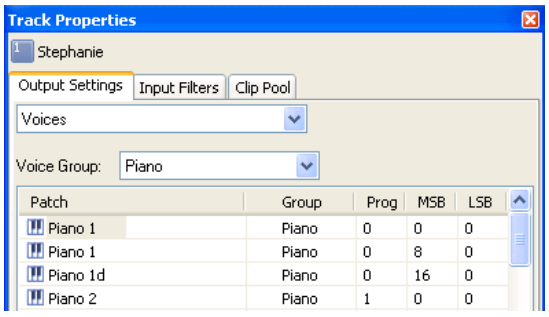
- *Double-click the MIDI track icon to open Track Properties dialog. On the Output Setting tab, choose* **Controllers** *from the drop-down menu.*
- *Click the* **Program** *button, choose* **Select Program Change**.

Tip: *You can MIDI merge recording to record MIDI controller values from a MIDI device. For more information, see* *Using MIDI merge recording on page 164*.

Setting the track voice

You can set the voice used to play the entire track, or you can add keyframes to add program changes.

1. Right-click the track header, choose **Insert/Remove Envelopes**, and then choose **Configure Controllers** from the menu. The Track Properties dialog is displayed.
2. On the Output Settings tab, choose **Voices** from the drop down menu.



3. Choose the voice you want to use.

Note: *You can also set the track voice by doing the following:*

- *Double-click the MIDI track icon to open Track Properties dialog. On the Output Setting tab, choose* **Voices** *from the drop-down menu.*
- *Click the* **Program** *button , choose* **Select Program Change**, *and then choose* **Voices** *from the drop-down menu.*

Changing the track voice

1. Click the **Program** button .
2. Choose a program from the menu, or choose **Select Program Change** to display the Output Settings tab in the Track Properties window, where you can select a patch.

   If the track does not contain program change keyframes, the selected patch is used to play the entire track. If the track contains keyframes, the selected patch is assigned to the keyframe that occurs before the current cursor position.

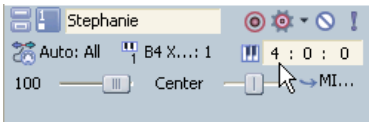
Note: *You can also select drum maps by doing either of the following:*

- *Double-click the MIDI track icon to open Track Properties dialog. On the Output Setting tab, choose* **Drum Map** *from the drop-down menu.*
- *Click the* **Program** *button , choose* **Drum Maps** *and then* **Select Drum Map**.

Changing the patch for a hardware synth

If your track is routed to a hardware synth, there are several ways to change patches:

- Click the **Program** button and choose **Synth Control of Patch** if you want to change patches using the synth's controls.
- Click the **Program** button and choose **Use Program Change and Bank** if you want to change patches by specifying the program, MSB, and LSB values. Double-click the values in the track header to edit them:

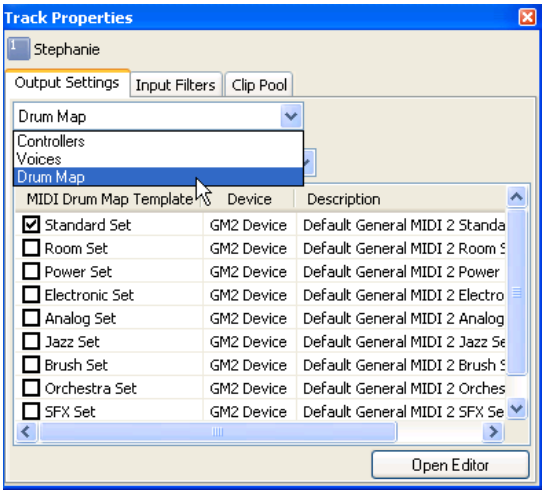


- If you've created a patch map for your device, click the **Program** button and choose **Use Device Patch Map** to return to the device's patch map. You can then choose a patch by clicking the Program button and choosing a patch from the menu. (For more information about creating patch maps and assigning them to hardware devices, click here.)

Selecting a drum map for a track

1. Right-click the track header, choose **Insert/Remove Envelopes**, and then choose **Configure Controllers** from the menu. The Track Properties dialog is displayed.
2. Under the Output Settings tab, select **Drum Map** from the drop down menu.

3. Choose the drum map you want to use.



Note: *You can also select drum maps by doing any of the following:*

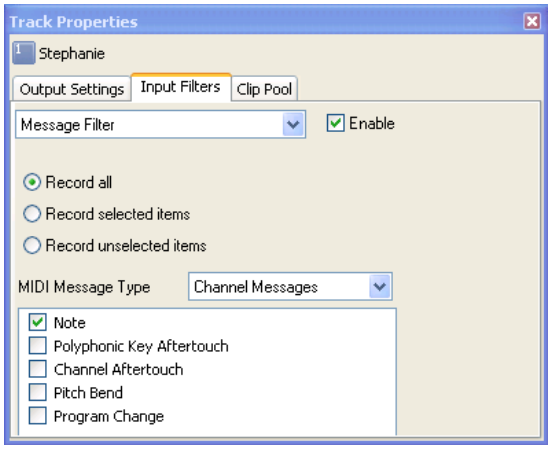
- *Double-click the MIDI track icon to open Track Properties dialog. On the Output Setting tab, choose* **Drum Map** *from the drop-down menu.*
- *Click the* **Program** *button, choose* **Drum Maps,** *and then choose* **Select Drum Map**.

Configuring MIDI input filters

You can use the Input Filters tab set up MIDI message, velocity, or quantize filters.

Setting up MIDI message input filters

Use the Input Filters tab to choose which notes or other MIDI messages you want to record or exclude from MIDI recordings.



1. Select the track where you want to apply the filter.
2. From the **View** menu, choose **Track Properties**.
3. In the Track Properties dialog, click the Input Filters tab.
4. Choose **Message Filter** from the drop-down list at the top of the page.
5. Select the **Enable** check box.

6. Select your recording options.

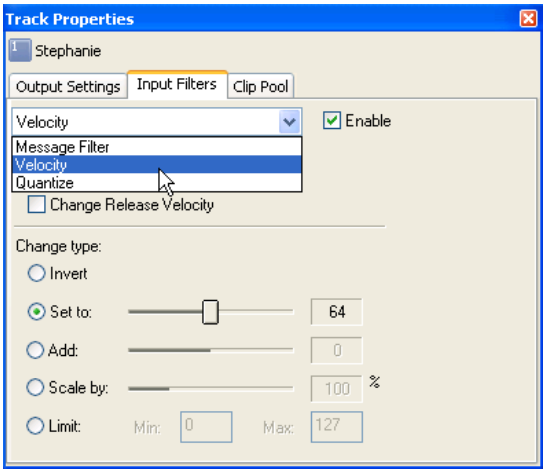
Item	Description
Record all	Select this radio button if you want to record all MIDI messages from the input port.
Record selected items	Select this radio button if you want to choose which MIDI messages you want to record.
Record unselected items	Select this radio button if you want to choose which MIDI messages you want to ignore when recording.

7. Choose a setting from the **MIDI Message Type** drop-down list. The box at the bottom of the page displays the available MIDI messages.
8. Select the check box for each MIDI message that you want to filter. When editing note messages, you can double-click the **Min** and **Max** boxes to type the notes you want to filter.

Tips:

- *If you're recording into two tracks, you can use note message filters to split your keyboard and create two separate parts. For example, set track 1 to record only notes A1 to B4, and set track 2 to record only notes C5 to C9. If you assign track 1 to a plucked string bass soft synth and track 2 to a grand piano synth, the low notes you play on your keyboard will be recorded only on track 1 and will be voiced by the bass. The high notes you play will be recorded only on track 2 and will be voiced by the piano.*
- *Filtering continuous controller messages allows you to control exactly which continuous controllers are recorded. For example, if you wanted to make sure you didn't accidentally record modulation automation by bumping your keyboard's modulation wheel, you could select the* **Record unselected items** *radio button, choose* **Continuous Controllers** *from the* **MIDI Message Type** *drop-down list, and then select the* **Modulation** *check box.*
- *Excluding system exclusive messages during recording can improve performance during real-time recording and when using MIDI thru.*

Setting up MIDI velocity input filters



Use the Input Filters tab to modify or limit note-on and note-off velocity from a track's MIDI input device during recording.

1. Select the track where you want to apply the filter.
2. In the Track Properties dialog, click the Input Filters tab.
3. Choose **Velocity** from the drop-down list at the top of the page.
4. Select the **Enable** check box.
5. Select a check box to indicate whether you want to edit note-on or note-off velocities:

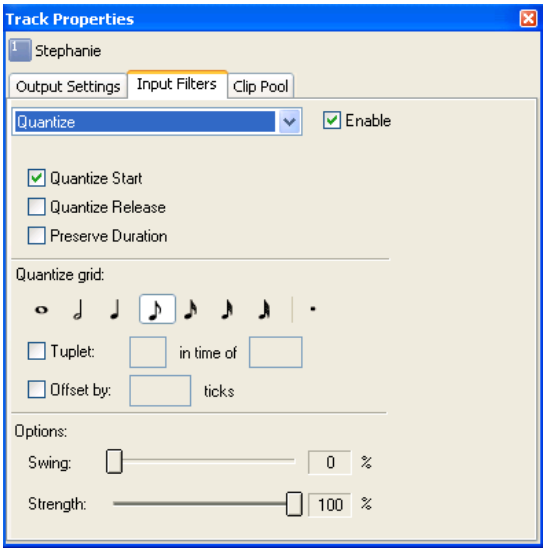
Item	Description
Change Start Velocity	Select this check box to edit note-on velocities.
Change Release Velocity	Select this check box to edit note-off velocities.

6. Select a radio button to indicate how you want to change velocity:.

Item	Description
Invert	Select this radio button to invert note velocities. When you invert a velocity, it is subtracted from 127 (negative values are forced to positive), so a note with a velocity of 127 will be 0 after inversion, a velocity of 10 will be 117, and so on).
Set to	Select this radio button and drag the slider to change note velocities to a specific value.
Add	Select this radio button and drag the slider to add (or subtract) a constant offset to note velocities.
Scale by	Select this radio button and drag the slider to multiply note velocities by a percentage. For example, setting this slider to 50% would reduce all note-on or note-off velocities by half.
Limit	Select this radio button and type values in the **Min** and **Max** boxes to restrict note velocities to the specified range. For example, if you type 40 in the **Min** box and 90 in the **Max** box, velocities below 40 will be set to 40, velocities greater than 90 will be set to 90, and velocities between 40 and 90 will be unaffected.

Note: *Note-on velocities are bound between 1 and 127, and note-off velocities are bound between 0 and 127.*

Setting up MIDI quantize input filters



Use the Input Filters tab to force notes from a track's input port to align with musical beats during recording.

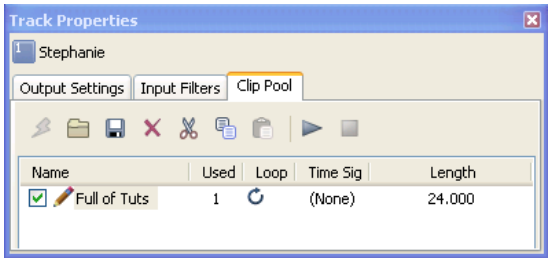
1. Select the track where you want to apply the filter.
2. In the Track Properties dialog, click the Input Filters tab.
3. Choose **Quantize** from the drop-down list at the top of the page.
4. Select the **Enable** check box.
5. Select your quantization options:

Item	Description
Quantize start	Select this check box to force the beginning (note-on messages) of MIDI events to a specified resolution on the grid.
Quantize release	Select this check box to force the end (note-off messages) of MIDI events to a specified resolution on the grid.
Preserve duration	If you select **Quantize start** or **Quantize release**, you can select this check box to maintain the lengths of notes.
Quantize grid	Click an icon to select the resolution of the quantize grid.
Tuplet	Select this check box to set irregular beat boundaries for the quantize grid. For example, to quantize to triplet beat boundaries in 4/4 time, select the **Tuplet** check box and choose **3 in time of 4**.

Offset by	Select the check box and type a value in the box to offset the quantize grid by the specified number of ticks. You can type negative values to shift the grid backward.
Swing	Drag the slider to add a swing to the quantize grid. When you set this slider to 0, notes are quantized directly to the grid. Increasing the setting shifts every other grid boundary forward: set to 300% to shift every other grid boundary to the next grid division.
Strength	Drag the slider to adjust how strictly you want to quantize. For example, to quantize directly to the grid, set the slider to 100%. If you set the slider to 50%, a note that would be shifted 4 ticks is moved only 20 ticks.

Using the clip pool

You can use the Clip Pool to organize each track's media and enable looped or one-shot drawing for MID events.



1. Select a track.
2. From the **View** menu, choose **Track Properties**. The Track Properties dialog is displayed.
3. Select the Clip Pool tab.

Tips: *You can also access the clip pool by doing the following:*

- *Double-click the MIDI track icon to open Track Properties dialog. Click the* **Clip Pool** *tab from the drop-down menu.*
- *Click the* **Paint Clip Selector** *button and then choose* **Clip Pool**.

For more information, see Using the Clip Pool on page 107.

Toggling looped or one-shot painting for a MIDI clip

Select the **Loop** button on the Clip Pool if you want a MIDI clip to repeat when painted on the timeline. Loop clips are displayed with a icon in the track list.

Deselect the **Loop** button if you want a MIDI clip to be treated as a one-shot. One-shot clips are displayed with a icon.

Editing a MIDI clip's time signature

To change a MIDI clip's time signature, right-click a clip on the Clip Pool tab, choose **Time Signature** from the shortcut menu, and then choose a time signature from the submenu.

The time signature you choose will be used to display the grid on the OPT piano roll editor and to display M.B.T (measure.beat.tick) values on the OPT list editor.

For more information, see Using the piano roll editor on page 185.

For more information, see Using the list editor on page 189.

MIDI Track Envelopes and Keyframes

With MIDI track envelopes, you can adjust volume, panning, controller parameters, program changes, or Sysex commands dynamically over the duration of a track.

You can automate VSTi parameters using envelopes on the soft synth bus track.

To record track automation using the controls in the track header, select the **Automation Settings** button . When the button is not selected, the controls adjust static (trim) levels.

Tips: *You can use the Display tab in the Preferences dialog to change the colors used to draw track envelopes. Using custom envelope colors can help you avoid getting lost in a maze of envelopes when you're using track envelopes to control MIDI controllers. For more information, see* *Using the Display tab on page 240*.

Adding a mute envelope

1. Select a MIDI track.
2. From the Insert menu, choose **Envelopes**, or right-click in the track list and choose **Insert/Remove Envelope** from the shortcut menu.
3. From the submenu, choose **Mute**. A check mark is displayed next to the command, and an envelope is added to the timeline.

   Mute automation is either on or off with no fade between the on and off states. If you want to use fades, apply volume automation.
4. If you want to change the track's mute state throughout the track, edit the envelope in the timeline. *For more information, see* *Adjusting envelopes on page 130*.
5. If you want to change the track's mute state by recording automation settings, select the **Automation Settings** button in the track header.
6. Click the **Mute** button in the track header to change the track's mute automation state at the cursor position.

   The button behaves differently depending on the track automation recording mode:

   - When the track automation mode is set to **Off**, the button mutes the entire track.
   - When the track has a mute envelope and the track automation mode is set to **Read**, the button changes state to reflect the envelope setting during playback but cannot be adjusted.
   - When the track has a mute envelope and the track automation mode is set to **Touch** or **Latch**, the button edits the envelope setting at the cursor position.

Notes: *When you apply mute automation to a track, it's possible to have a track that is muted and soloed simultaneously if you use the* **Mute** *and* **Solo** *buttons in the track header. The mute state overrides the solo state:*

- *If a track's* **Solo** *button is selected, the track is included in the solo group, but it will be muted whenever the mute automation is set to mute the track.*
- *If the track's* **Mute** *button is selected, the track is muted regardless of the mute automation settings.*

For more information, see Track automation on page 125.

Adding a MIDI controller envelope

1. Select the track where you want to add or remove the envelope.
2. Perform one of the following actions:
   - Click the **Insert/Hide Envelope** button next to the controller's slider in the track header.
   - From the Insert menu, choose **Envelopes**, and then choose a controller type.

- Right-click the track header, choose **Insert/Remove Envelope** from the shortcut menu, and then choose a controller type.

  If the controller you want to adjust is not displayed in the menu, choose **Configure Controllers** from the menu. You can use the Output Settings tab of the Track Properties window to configure which controllers are available on the track.

3. If you want to change the controller setting throughout the track, edit the envelope in the timeline. *For more information, see Adjusting envelopes on page 130.*
4. If you want to change controller settings by recording automation, click the **Automation Settings** button in the track header. The slider handles are displayed as in automation mode.

Tip: *If you want to record MIDI controller envelopes into a track using a hardware controller, you can use MIDI merge recording to record the envelopes. For more information, see Using MIDI merge recording on page 164.*

5. Drag a slider to edit automation settings at the cursor position.

   The track header controls behave differently depending on the track's automation recording mode:

   - When the track automation mode is set to **Off**, the controls adjust the level of the entire track. In this mode, the automation envelope is bypassed, and the control does nothing.
   - When the track has a controller envelope and the track automation mode is set to **Read**, the control will follow the envelope during playback but cannot be adjusted.
   - When the track automation mode is set to **Touch** or **Latch**, the control edits the envelope setting at the cursor position. If the track does not have an envelope, an envelope will be added when you adjust the control.

     If multiple tracks are selected, all selected tracks are adjusted.

For more information, see Recording automation settings on page 135.

Configuring MIDI track controller automation

You can use the Output Settings tab in the MIDI Track Properties dialog to configure which controllers can be automated; add, remove, or hide envelopes; set default values; and set each envelope's default fade curve. *For more information, see Configuring MIDI track output settings on page 174.*

Resetting a MIDI controller envelope's points

Perform either of the following actions to reset an envelope's points to their default values:

- Click the down arrow next to the **Insert/Hide Envelope** button next to the controller's slider in the track header and choose **Reset All Envelope Points**.
- Right-click the envelope and choose **Reset All** from the shortcut menu.

You can set the default value for each continuous controller on the Output Settings tab in the Track Properties dialog. *For more information, see Editing MIDI track properties on page 174.*

Deleting a MIDI controller envelope

Click the down arrow next to the **Insert/Hide Envelope** button next to the controller's slider in the track header and choose **Delete Envelope**.

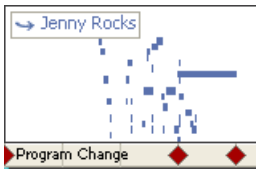
Adding a program change keyframe

If you want to show or hide an envelope without deleting its settings, click the **Insert/Hide Envelope** button .

To add a program change keyframe:

1. Click the **Program** button and choose **Insert Program Change Keyframe**. The program change keyframe row is displayed at the bottom of the track.

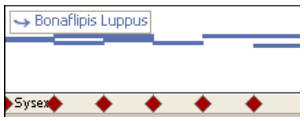
2. Using the Draw or Envelope tool, double-click in the track's keyframe row to add a keyframe.



3. To edit a keyframe, double-click it to display the Output Settings tab in the Track Properties window, and then select the patch you want to assign to the keyframe.

Add a Sysex keyframe

1. Right-click the track header, choose **Insert/Remove Envelope**, and then choose **Insert Sysex** from the submenu.
2. Using the Draw or Envelope tool, double-click in the track's keyframe row to add a keyframe.



3. To edit a keyframe, double-click it to display the System Exclusive Editor dialog.

Tip: *To hide the Sysex keyframe row without removing keyframes, right-click the track header, choose* **Insert/Remove Envelope***, and then choose* **Hide Sysex** *from the submenu. You can view the keyframe row again by right-clicking the track header, choosing* **Insert/Remove Envelope***, and then choosing* **Show Sysex***.*

Automating VSTi parameters

You can use the soft synth bus track to control parameter automation for VST instruments. *For more information, see Using soft synth controls on page 142.*

Adding parameter automation envelopes

1. Select the bus track header for a VSTi soft synth.
2. From the Insert menu, choose **Envelopes**, and then choose **Soft Synth Automation** from the submenu. The Soft Synth Parameter Automation dialog is displayed.
3. Select the check box for each parameter you want to automate with an envelope.
4. Click the down arrow in the **Envelope** box and choose a command from the menu:

Item	Description
Insert Envelope	If the parameter does not have an automation envelope, **No** is displayed. Click the down arrow and choose **Insert Envelope** to add an automation envelope to the timeline.
Show/Hide Envelope	If the parameter has an automation envelope, **Visible** or **Hidden** is displayed. Click the down arrow and choose **Hide Envelope** or **Show Envelope** to toggle its display. Click the **Hide all Envelopes** button at the bottom of the window to hide all envelopes on the bus track.
Reset All Envelope Points	If the parameter has an automation envelope, you can click the down arrow and choose **Reset All Envelope Points** to restore all points to the default value. Click the **Reset all Envelopes** button at the bottom of the window to set all points on all envelopes on the bus track to the default value.

Delete Envelope	If the parameter has an automation envelope, you can click the down arrow ▾ and choose **Delete Envelope** to remove the envelope and all envelope points from the timeline. Click the **Remove all Envelopes** button at the bottom of the window to delete all parameter envelopes on the bus track.

5. Click the down arrow ▾ in the **Curve Type** box to set the default fade curve for each parameter's automation envelope. The new curve type will be applied to all envelope segments. You can right-click a segment and choose a new fade curve to override the default curve type.

Editing parameter automation envelopes

You can edit mute automation settings by adding an envelope to the bus track or by using the controls in the Soft Synth Properties window. *For more information, see Modifying soft synth control properties on page 142.*

1. Select the **Automation Settings** button  .
2. Click to position the cursor in the timeline where you want to edit a parameter.
3. You can adjust automated parameters by editing the envelopes in the timeline or by recording automation with the controls in the Soft Synth Properties window. *For more information, see Adjusting envelopes on page 130.*

   The controls in the Soft Synth Properties window behave differently if the track has automation envelopes and when you change the track automation recording mode:

   - When the track automation mode is set to **Off**, the controls in the Soft Synth Properties window affect the entire bus track (and all tracks routed to the soft synth).
   - When the track has automation envelopes and the track automation mode is set to **Read**, the Soft Synth Properties controls change state to reflect the envelope setting during playback but cannot be adjusted.
   - When the track has automation envelopes and the track automation mode is set to **Touch** or **Latch**, the Soft Synth Properties controls edit the envelope setting at the cursor position.

For more information, see Track automation on page 125.

Editing MIDI clip properties

From the **View** menu, choose **Clip Properties** (or Ctrl+Alt+3) to display the Clip Properties window. You can also get to the Clip Properties window by double-clicking the track icon  and selecting the Clip Pool tab in the Track Properties window. Double-click one of the clips to open the Clip Properties dialog.

The contents of the Clip Properties window will change to display properties for the currently selected clip in the timeline. You can use the Clip Properties window to edit MIDI data using the OPT list editor or piano roll.

Tip: *When the Clip Properties window is undocked, you can double-click its title bar to toggle its size — especially handy when you're using the piano roll.*

For more information, see Using clips with tracks on page 105.

Editing a MIDI clip with OPT Piano Roll

The piano roll editor is an OPT plug-in that you can use to create and edit note events within the ACID Clip Properties window for a MIDI track. *For more information, see Using the piano roll editor on page 185.*

Editing a MIDI clip with OPT Piano Roll

The List Editor tab is an OPT plug-in that you can use to perform detailed filtering and editing within the Clip Properties window for a MIDI track. *For more information, see Using the list editor on page 189.*

Merging controller data from a MIDI clip

If you use MIDI clips that contain MIDI controller data, the controller data will not be displayed in the timeline by default.

Right-click the event on the timeline and choose **Merge Envelope Data** from the shortcut menu to represent MIDI controllers as envelopes on the timeline.

Note: *The* **Merge Envelope Data** *command is not available in inline MIDI editing mode. For more information, see* *Editing MIDI on the timeline on page 165*.

Tip: *When* **Lock Envelopes to Events** *is selected from the Options menu, envelope points will move with an event as you move it along the timeline. When* **Lock Envelopes to Events** *is not selected, you can move events and envelopes independently.*

Using the piano roll editor

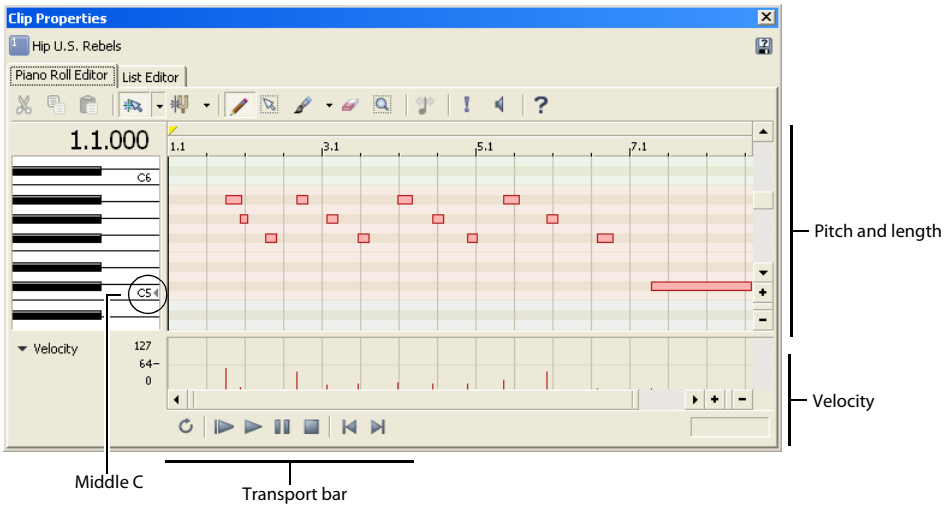
The piano roll editor is an OPT plug-in that you can use to create and edit note events within the Clip Properties window for a MIDI clip.

The top pane of the piano roll editor displays note information like a sequencer or a roll from a player piano. Each note is represented by a rectangular note event of a certain length and pitch. The piano keys along the left side of the window indicate the pitch of a note event. The beat ruler across the top of the window shows the length and location of a note event.

The lower pane of the piano roll editor displays velocity information for each note event. A transport bar for previewing MIDI appears at the bottom of the window.

Viewing the piano roll editor

1. Double-click the MIDI icon ( ) on the track header to open the Track Properties window.
2. Select the **Clip Pool** tab in the Track Properties dialog.
3. Double-click one of the listed clips to open the Clip Properties dialog.
4. Click the **Piano Roll Editor** tab. The piano roll editor appears.



Previewing MIDI

You can preview the entire MIDI file, a loop selection, or single notes using the piano roll editor.

Tip: *To control volume during playback in the piano roll editor, drag the Preview fader in the Mixer window.*

Previewing the MIDI file

Use the transport bar buttons at the bottom of the piano roll editor to play your MIDI.

Tip: *You can use the* **Solo** *button ( ) to solo a particular MIDI track during preview playback.*

Previewing a selection in looped playback

You can preview a selection in looped playback just as you would in the main ACID window.

1. Drag the handles of the loop bar in the piano roll editor to create the desired loop region.
2. Click the **Loop Playback** button ( ) to turn on looped playback.
3. Click the transport bar's **Play** button ( ) or press Space. The piano roll editor loops the playback of the selected area. To stop playback, click the transport bar's **Stop** button ( ) or press Space.

Adding note events

You can add note events using the Draw tool ( ) or the Paint tool ( ) in the same way you do in the main ACID window.

Tip: *As you drag to create new events, the event edge snaps to the divisions on the beat ruler. To snap to smaller divisions, click the* **Zoom In Time** *button ( ) at the bottom of the window to zoom in more tightly. Or, to turn off snapping altogether, click the* **Enable Snapping** *button ( ) to toggle it off.*

Drawing note events

The Draw tool limits you to drawing one pitch at a time. In other words, you cannot drag up and down with the Draw tool to draw note events across several pitches at once.

1. Click the **Draw Tool** button ( ). The Draw tool is selected.
2. Drag in the row for the pitch you wish to create. A new note event appears as you drag.

Painting note events

Unlike the Draw tool, the Paint tool allows you to create note events across multiple pitches with a single drag of the mouse. The Paint tool also allows you to select the note length you want to paint.

1. Click the arrow adjacent to the **Paint Tool** button ( ) and choose a note length to paint from the menu.
2. Click the **Paint Tool** button ( ). The Paint tool is selected.
3. Drag to create new note events. The new events appear as you drag.

Editing note events

You can change the length or pitch of a note event using the Draw tool. You can also cut, copy, and paste events in the same way you do in the main ACID window.

Changing pitch

With the Draw tool ( ) selected, drag a note event to a new row.

Changing length

With the Draw tool ( ) selected, drag the edge of a note event to a new location.

> **Tip:** *As you drag the edge of a note event, the event edge snaps to the divisions on the beat ruler. To snap to smaller divisions, click the* **Zoom In Time** *button ( ) at the bottom of the window to zoom in more tightly. Or, to turn off snapping altogether, click the* **Enable Snapping** *button ( ) to toggle it off.*

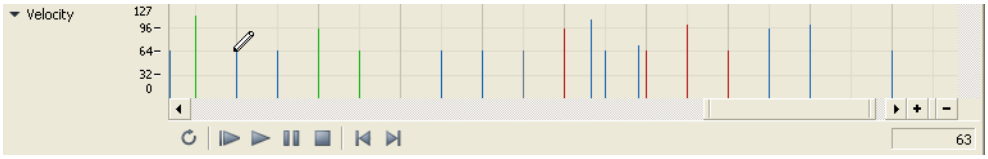
Specifying a velocity value for notes

To enter a specific velocity value, right-click a note event in the piano roll, choose Velocity from the shortcut menu, and choose the appropriate command from the submenu.

Command	Description
Set to Maximum	Sets the velocity to 127.
Set to Default	Sets the velocity to 64.
Set to Minimum	Sets the velocity to 0.
Set to...	Allows you to enter a custom velocity value.

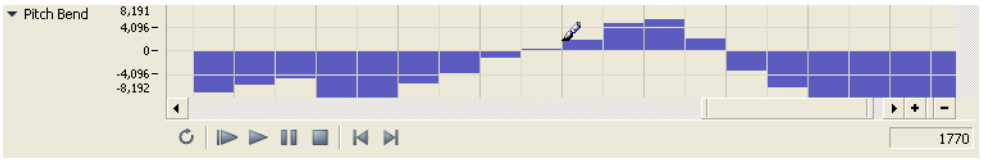
Changing velocity data

1. In the lower-left corner of the Piano Roll Editor tab, click the drop-down arrow and choose **Velocity** from the menu.
2. In the area at the bottom of the Piano Roll Editor tab, drag the top of a velocity bar up or down to change the velocity value. You can also drag across multiple bars to change their values at the same time.



Setting pitch bend

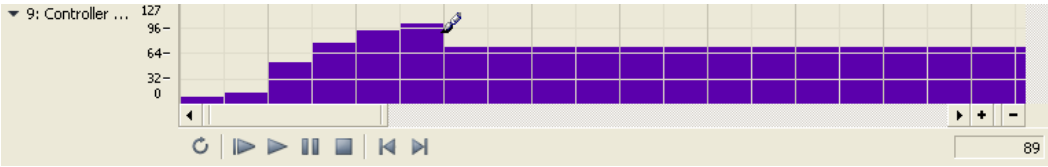
1. In the lower-left corner of the Piano Roll Editor tab, click the drop-down arrow and choose **Pitch Bend** from the menu.
2. In the area at the bottom of the Piano Roll Editor tab, drag to draw your pitch bend curve. To erase a curve, right-click and drag.



Changing continuous controller information

1. In the lower-left corner of the Piano Roll Editor tab, click the drop-down arrow, choose **All Continuous Controllers** from the menu, and choose a controller from the submenu.

2. In the area at the bottom of the Piano Roll Editor tab, drag to draw your controller information.



Selecting note events

With the Draw tool selected, you can select individual note events by clicking them. You can also use one of several methods to select multiple events:

- With the Draw tool selected, press Ctrl or Shift while clicking note events. Pressing Shift allows you to select the first and last note events of a range in order to select all notes in between, while pressing Ctrl allows you to select non-contiguous note events.
- Click the **Selection Tool** button ( ) and drag across note events you wish to select.
- Press Ctrl+A to select all note events on a track.

Moving note events

After you select note events, you can drag them to new positions.

Tip: *Press Alt while dragging note events to restrict your movement to vertical (change pitch) or horizontal (change location in time).*

Using cut, copy, and paste

After you select note events, you can click the **Cut** ( ) or **Copy** ( ) buttons to cut or copy the events. You can then position the cursor in a new location and click the **Paste** button ( ) to paste the events. Note events are always pasted at the same pitch as the original note event.

Toggling note snapping

Click the **Enable Snapping Notes to Specified Scale** button ( ) to toggle snapping.

If the button is selected, you can only draw or drag notes within the selected scale. Hold Alt while drawing or dragging notes to override snapping.

Click the down arrow ▾ next to the button to choose a root note and scale.

Quantizing note events

You can use the MIDI Quantize dialog to force notes to align with musical beats based on the parameters you specify.

1. Select the notes you want to quantize. *For more information, see Selecting note events on page 188.*
2. Click the **Quantize** button ( ). The MIDI Quantize dialog appears.
3. From the **Quantize resolution** drop-down list, choose the beat to which you want the selected notes to be quantized.
4. Select the **Start times** check box to snap start times to the beat selected in the **Quantize resolution** drop-down list.
5. Select the **Note durations** check box to snap note durations to the beat selected in the **Quantize resolution** drop-down list.
6. Click **Apply**.

Deleting note events

Use the Erase tool ( ) to erase events in the piano roll. Alternately, you can select events and press Delete. *For more information, see Selecting note events on page 188.*

Undoing and redoing

You can easily undo and redo actions in the piano roll editor by using keyboard shortcuts. Press Ctrl+Z to undo an action, and press Ctrl+Shift+Z to redo an action.

Using the list editor

The List Editor tab is an OPT plug-in that you can use to perform detailed filtering and editing within the Clip Properties window for a MIDI clip.

Events within the MIDI file are displayed in a table. Each event occupies one row, and the rows are sorted in chronological order. The columns in the List Editor tab display the contents of the events.

Viewing the list editor

1. Double-click the MIDI icon ( ) on the track header to open the Track Properties window.
2. Select the **Clip Pool** tab in the Track Properties dialog.
3. Double-click one of the listed clips to open the Clip Properties dialog.
4. Click the **List Editor** tab. The list editor appears.

Previewing MIDI

You can preview individual events or the MIDI file as a whole within the list editor.

> **Tip:** *To control volume during playback in the list editor, drag the Preview fader in the Mixer window.*

Previewing single events

When monitoring is enabled, the list editor will play events when you select them.

1. In the list editor, click the **Monitor** button ( ) to turn on the event monitor.
2. Click anywhere in an event row to play the event.

Playing MIDI files

In list editor, you may play your MIDI file by using the buttons on the transport bar:

Item	Icon	Description
Loop Playback		Click to toggle looped playback mode. When the button is selected, only the events between the mark in and mark out points will be played.
Play from Start		Plays the entire MIDI file from the beginning, regardless of cursor position.
Play		Plays from the current cursor position.
Pause		Halts playback. The next time you click Play, playback will begin with the last event played.
Stop		Halts playback. The next time you click Play, playback will begin with the first event in the list.
Go to Start		Moves the cursor to the beginning of the list.
Go to End		Moves the cursor to the end of the list.

Setting a loop region

When the **Loop Playback** button is selected, you can set a portion of the edit list to play repeatedly. The beginning, end, and length of the loop region are displayed in the Loop boxes in the lower-right corner of the List Editor tab.

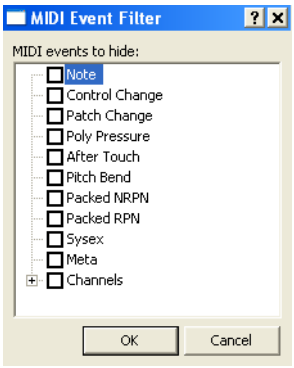
1. Select the **Loop Playback** button .
2. Select the first event you want to play.
3. Click the **Mark Loop Start** button .
4. Select the last event you want to play.
5. Click the **Mark Loop End** button .
6. Click the **Play** button to start playback. Select the event where you want to begin playback and click the transport bar's **Play** button ( ) or press Space. The piano roll editor begins playback and loops the marked selection.
7. To stop playback, click the transport bar's **Stop** button ( ) or press Space.

Filtering the list

A MIDI file can contain a dizzying number of individual events. You can speed the task of locating events in the list editor by applying a filter. You can filter what the list editor displays either by track or by event type.

Filtering the list by event type

1. Click the **Event Filter** button ( ). The MIDI Event Filter dialog appears.



2. Select the check box for an event type to hide that type, or clear the check box to display that event type.
3. Click **OK**. The list is filtered according to the criteria you selected.

Editing events

Once you have located a particular event, you can edit the parameters of the event as needed.

1. Click in the event row you want to edit.
2. Click the **Edit Event** button ( ). The Edit MIDI Event dialog appears.

> **Tip:** *You can also double-click an event's* **Message** *parameter to open the Edit Event dialog.*

3. Edit the values in the dialog. *For more information, see Event parameters on page 191.*
4. Click **OK**. The event updates to the new values.

> **Tip:** *You can edit individual parameters in columns other than* **Message** *by double-clicking the parameter and entering a new value.*

Event parameters

The table below describes the editable event parameters for different event types.

Event type	Editable parameter	Description
After Touch	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	Pressure	Amount of vibrato (0-127) you want to apply to each voice on the channel.
Control Change	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	Controller Change Number	Displays the number of the current controller change type. Choose a controller change type from the drop-down list to the right of the Event type drop-down.
	Controller Change Value	Controller value.
Note	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	Note	Numeric value of the note you want to play. For more information, see MIDI notes and frequencies on page 192.
	On Velocity	Speed of the note's attack (0-127). Low values produce a soft attack; high values produce a strong attack.
	Off Velocity	Speed of the note's release (0-127). Low values produce a soft release; high values produce a staccato release.
	Duration	Length of the note's sustain in measures.beats.ticks.

Event type	Editable parameter	Description
Packed NRPN*	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	NRP MSB	Parameter's most significant byte.
	NRP LSB	Parameter's least significant byte.
	Data MSB	Value for the most significant byte.
	Data LSB	Value for the least significant byte.
Packed RPN**	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	NRP MSB	Parameter's most significant byte.
	NRP LSB	Parameter's least significant byte.
	Data MSB	Value for the most significant byte.
	Data LSB	Value for the least significant byte.
Patch	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	Bank LSB	Least significant byte value for the bank.
	Bank MSB	Most significant byte value for the bank.
	Patch	Number of the patch you want to play.
Pitch Bend	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Pitch +/-	Number of cents by which you want to bend the pitch.
Poly Pressure	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	Note	Note to which you want to apply pressure.
	Pressure	Pressure (0-127) you want to apply to the note. Most devices will apply more vibrato to a note as the pressure increases.
Program Change	Start Time	Time (in measures.beats.ticks) where you want the event to begin.
	Channel	MIDI channel (1-16) where you want to send the event.
	Patch	Number of the new patch you want to play.

*Packed nonregistered parameter numbers (NRPN) are used to adjust settings such as vibrato and filtering, but are not part of the General MIDI specification. Refer to your MIDI device's documentation for more information about the required parameters.

**Packed registered parameter numbers (RPN) are used to adjust common settings such as pitch wheel range.

MIDI notes and frequencies

The following table shows the musical pitch and frequency associated with each MIDI note.

A5 is 440 Hz, and middle C is C5 at 261.63 Hz. These values can differ, often by one octave, from values used by other manufacturers. The following frequencies are based on equal temperament tuning.

Pitch	MIDI Key	Frequency	Pitch	MIDI Key	Frequency	Pitch	MIDI Key	Frequency
C0	0	8.176	G3	43	97.998	D7	86	1174.7
C#-0	1	8.662	G#3	44	103.82	D#7	87	1244.5
D0	2	9.177	A3	45	110.00	E7	88	1318.5
D#0	3	9.723	A#3	46	116.54	F7	89	1396.9
E0	4	10.301	B3	47	123.47	F#7	90	1480.0
F0	5	10.913	C4	48	130.81	G7	91	1568.0
F#0	6	11.562	C#4	49	138.59	G#7	92	1661.2
G0	7	12.250	D4	50	146.83	A7	93	1760.0
G#0	8	12.978	D#4	51	155.56	A#7	94	1864.7
A0	9	13.750	E4	52	164.81	B7	95	1975.5
A#0	10	14.568	F4	53	174.61	C8	96	2093.0
B0	11	15.434	F#4	54	184.99	C#8	97	2217.5

Pitch	MIDI Key	Frequency
C1	12	16.352
C#1	13	17.324
D1	14	18.354
D#1	15	19.445
E1	16	20.601
F1	17	21.826
F#1	18	23.124
G1	19	24.499
G#1	20	25.956
A1	21	27.500
A#1	22	29.135
B1	23	30.867
C2	24	32.703
C#2	25	34.648
D2	26	36.708
D#2	27	38.890
E2	28	41.203
F2	29	43.653
F#2	30	46.249
G2	31	48.999
G#2	32	51.913
A2	33	55.000
A#2	34	58.270
B2	35	61.735
C3	36	65.406
C#3	37	69.295
D3	38	73.416
D#3	39	77.781
E3	40	82.406
F3	41	87.307
F#3	42	92.499

Pitch	MIDI Key	Frequency
G4	55	195.99
G#4	56	207.65
A4	57	220.00
A#4	58	233.08
B4	59	246.94
C5	60	261.63
C#5	61	277.18
D5	62	293.66
D#5	63	311.13
E5	64	329.63
F5	65	349.23
F#5	66	369.99
G5	67	391.99
G#5	68	415.31
A5	69	440.00
A#5	70	466.16
B5	71	439.88
C6	72	523.25
C#6	73	554.37
D6	74	587.33
D#6	75	622.25
E6	76	659.26
F6	77	698.46
F#6	78	739.99
G6	79	783.99
G#6	80	830.61
A6	81	880.00
A#6	82	932.32
B6	83	987.77
C7	84	1046.5
C#7	85	1108.7

Pitch	MIDI Key	Frequency
D8	98	2349.3
D#8	99	2489.0
E8	100	2637.0
F8	101	2793.8
F#8	102	2960.0
G8	103	3136.0
G#8	104	3322.4
A8	105	3520.0
A#8	106	3729.3
B8	107	3951.1
C9	108	4186.0
C#9	109	4434.9
D9	110	4698.6
D#9	111	4978.0
E9	112	5274.0
F9	113	5587.7
F#9	114	5919.9
G9	115	6271.9
G#9	116	6644.9
A9	117	7040.0
A#9	118	7458.6
B9	119	7902.1
C10	120	8372.0
C#10	121	8869.8
D10	122	9397.3
D#10	123	9956.1
E10	124	10548.1
F10	125	11175.3
F#10	126	11839.8
G10	127	12543.9

Creating events

In addition to editing existing events, you can also create new events.

1. Click the **Insert Event** button (). The Insert MIDI Event dialog appears.
2. Choose an event type from the **Event type** drop-down list.
3. Enter a start time in the **Start time** box.
4. Enter values for the remaining event parameters.
5. Click **Insert**. The new event is inserted at the designated start time.

Quantizing events

You can use the MIDI Quantize dialog to force events to align with musical beats based on the parameters you specify.

1. To quantize only specific events, select the events you want to quantize in the list editor.

Tip: *Hold Shift or Ctrl while clicking event rows to select multiple events.*

2. Click the **Quantize** button ( ). The MIDI Quantize dialog appears.
3. From the **Quantize resolution** drop-down list, choose the beat to which you want the selected events to be quantized.
4. Choose the appropriate options for quantizing:
   - Select the **Start times** check box to snap event start times to the beat selected in the **Quantize resolution** drop-down list.
   - Select the **Note durations** check box to snap note durations to the beat selected in the **Quantize resolution** drop-down list.
   - Select the **Notes only** check box to quantize note events alone. When you select this check box, the list editor does not quantize after touch, control change, meta, NRPN, RPN, pitch bend, poly pressure, and program change events.
   - Select the **Apply to current selection only** check box to quantize only the selected events. Clear the check box to quantize all events within the list.
5. Click **Apply**.

Deleting events

Click an event row and click the **Delete** button ( ).

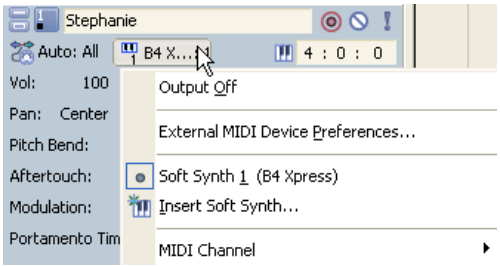
Undoing and redoing

You can easily undo and redo actions in the list editor by using keyboard shortcuts. Press Ctrl+Z to undo an action, and press Ctrl+ Shift+Z to redo an action.

Routing tracks to MIDI devices or soft synths

Each MIDI track can be played through any external MIDI port or any DLS, VSTi, or ReWire 2.0 soft synth bus control in the Mixer window. *For more information, see Using soft synth controls on page 142.*

1. Click the **MIDI Output** button. A list of all the available MIDI devices and software synthesizers is displayed.
   - If the soft synth you want to use does not appear in the menu, choose **Insert Soft Synth** to add a soft synth bus control to the project and route the track to the new synth. Click one of the following links for more information about DLS sets, VST instruments, or ReWire device applications.
   - If a MIDI device does not appear in the menu, choose **External MIDI Device Preferences** to open the MIDI tab of the Preferences dialog and verify that the check box for the device is selected. If a device is selected for generating MIDI timecode on the Sync Preferences tab, it will be unavailable as a playback device.



2. Choose a device from the list to send the current track to that device. To route to a specific port in a ReWire 2.0 device, choose your ReWire device application from the list, and then choose a port from the submenu.

Note: *In order to render projects that contain MIDI tracks, MIDI tracks must be routed to DLS, VSTi, or ReWire 2.0 soft synths. Tracks that are routed to external MIDI devices will not be included in the rendered file. For more information, see Using the Sync tab on page 238.*

3. To choose which MIDI channel will be used to send MIDI data, choose **MIDI Channel**, and then choose a channel from the submenu.

Tip: *If you want to select multiple input channels, hold Ctrl and select additional channels from the* **MIDI Channel** *submenu.*

Resetting MIDI ports

When a MIDI port is stuck playing a sustaining sound, a quick method to turn off MIDI ports is provided (much like the panic button on MIDI hardware devices). From the **Tools** menu, choose **Reset All MIDI Ports** to send a global Note Off command to all MIDI ports.

Tip: *Press Ctrl+Alt+F7 to reset all MIDI ports.*

Rendering projects with MIDI tracks

To render projects that contain MIDI tracks, route the MIDI tracks to soft synths (DLS sets) rather than to external MIDI devices; MIDI tracks that are routed to external MIDI devices are not included in the rendered file. *For more information, see Rendering projects on page 52.*

Playing MIDI from external devices

You can receive MIDI input from an external device such as a MIDI keyboard. You can then use a soft synth control (with its DLS set or VST instrument) or external MIDI device to output the sound from the external device.

Adding external devices as MIDI inputs

1. Verify that the **Enable Real-Time MIDI** command is selected in the **Options** menu.
2. From the **Options** menu, choose **Preferences**. The Preferences dialog appears.
3. Click the **MIDI** tab.
4. Select a device in the **Make these devices available for MIDI input** pane.
5. To enable MIDI thru for the selected input, right-click the entry in the **MIDI Thru** column and choose a MIDI thru device from the shortcut menu.

Note: *The MIDI thru device must be selected in the* **Make these devices available for MIDI track playback** *pane in order to appear in the menu. You can choose more than one MIDI device for MIDI thru output, if desired.*

6. Click **OK**.

Assigning MIDI inputs to soft synth controls

You can route MIDI input from an external device to any soft synth control in your project.

Note: *You can assign both individual tracks and external MIDI devices to a single soft synth.*

1. In the Mixer window, double-click the soft synth icon on a control ( ). The Soft Synth Properties window appears.
2. Click the **External MIDI Input Port** button ( ) and select the MIDI input device from the menu.

Soloing MIDI device inputs

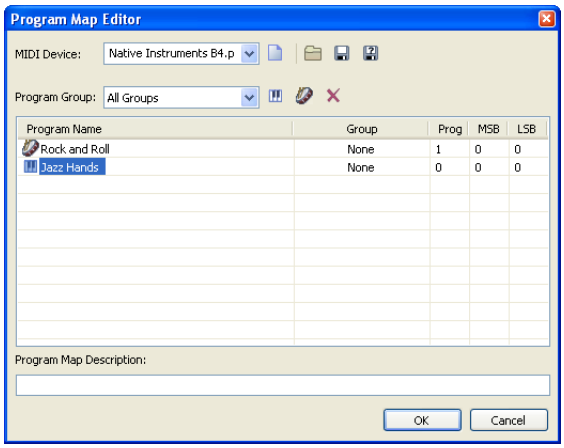
External MIDI devices can be routed to multiple soft synths or MIDI thru devices. Soloing a MIDI device input prevents your device from playing through other soft synths and MIDI thru devices, soloing the input through the selected soft synth control. You can solo MIDI input on more than one soft synth control, if desired.

1. Double-click the soft synth icon on a control ( ). The Soft Synth Properties window appears.
2. Click the **Solo Listen to MIDI Input** button ( ).

Creating or editing program maps

From the Tools menu, choose **Program Map Editor** to display the Program Map Editor dialog.

You can use the Program Map Editor dialog to create or edit program maps for external MIDI devices. A program map allows you to view program names in the track header and on the Output Settings tab of the Track Properties window when a MIDI track is routed to a hardware synth.



Creating program maps

1. From the Tools menu, choose **Program Map Editor** to display the Program Map Editor dialog.
2. Click the **New** button to create a new program map. You'll be prompted to choose a file name and location where you want to save the new map.

> **Tip:** *If you want to create a program map based on an existing map, load a program map and then click the* **Save As** *button to save a copy of the program map with a new name.*

3. Click the **Add New Program** or **Add New Drum Program** button to add a program to the table in the first available slot.

> **Note:** *If a group is selected from the* **Voice Group** *drop-down list, the table lists only programs that belong to the selected group. Any programs you add will automatically be associated with the selected group.*

4. Type a description of the program in the **Program** box. You can double-click an existing name to edit it.
5. If you want to assign the program to a group, right-click the **Group** box and choose a group from the shortcut menu. If you want to create a new group, choose **Add New Group** and type a name in the box.

6. Double-click the Prog, MSB, and LSB values to edit them and type the values that correspond to the appropriate program. Please refer to your device or its documentation to determine the correct values for each program.

Notes:

- *Within ACID, MIDI values range from 0-127. If your device uses 1-128, subtract 1 when editing the program.*
- *Devices that use Sysex messages to change programs are limited to 128 programs.*

7. Click OK to close the dialog and save your changes.

Editing program maps

1. From the Tools menu, choose **Program Map Editor** to display the Program Map Editor dialog.
2. Load the program map you want to edit:
   - Choose a setting from the MIDI Device drop-down list.
   - Click the **Load** button and browse to the map you want to edit.

Tip: *If you want to create a program map based on an existing map, load a program map and then click the* **Save As** *button*  *to save a copy of the program map with a new name.*

3. To add programs to the map, click the **Add New Program**  or **Add New Drum Program**  button to add a program to the table in the first available slot.

Note: *If a group is selected from the* **Voice Group** *drop-down list, the table lists only programs that belong to the selected group. Any programs you add will automatically be associated with the selected group.*

4. To remove a program from the map, select a program and click the **Delete** button  .
5. To edit a program name, double-click the name and type a new value in the box.
6. To change a program  to a drum program  , right-click the program name and choose **Drum Kit** from the shortcut menu. To change a drum program to a program, right-click the program name and choose **Drum Kit** from the shortcut menu to clear the check mark.
7. If you want to assign the program to a group, right-click the **Group** box and choose a group from the shortcut menu. If you want to create a new group, choose **Add New Group** and type a name in the box.
8. Double-click the **Prog**, **MSB**, and **LSB** values to edit them and type the values that correspond to the appropriate program. Please refer to your device or its documentation to determine the correct values for each program.

Notes:

- *Within ACID, MIDI values range from 0-127. If your device uses 1-128, subtract 1 when editing the program.*
- *Devices that use Sysex messages to change programs are limited to 128 programs.*

9. Click **OK** to close the dialog and save your changes.

Assigning a patch map to a MIDI device

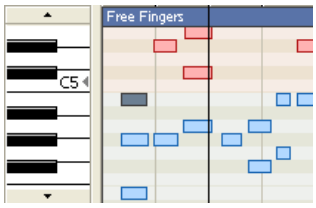
1. From the Options menu, choose **Preferences**.
2. Click the MIDI tab.
3. In the **Make these devices available for MIDI track playback** section of the dialog, verify the check box is selected for your MIDI device.
4. Right-click the **Device** value for your MIDI device and choose **Load Device Template** from the shortcut menu.

5. Browse to the patch map you want to use and click **Open**. The selected patch map will be used for any track that is routed to the MIDI device.

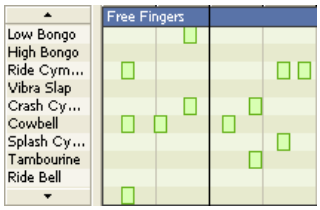
Creating or editing drum maps

From the **Tools** menu, choose **Drum Map Editor** to display the Drum Map Editor dialog.

You can use the Drum Map Editor dialog to create or edit drum maps. When a drum map is defined for a soft synth, you can use the drum grid in the timeline to edit MIDI data.



A piano roll allows you to edit MIDI notes for most patches.



A drum grid allows you to edit MIDI notes for soft synths that have drum

For more information, see Editing MIDI on the timeline on page 165.

Editing a drum map

1. From the **Tools** menu, choose **Drum Map Editor** to display the Drum Map Editor dialog.
2. Choose the drum map you want to edit.
   - Select a drum map in the MIDI Drum Map Template list.
     —or—
   - Click the **Open** button to browse to an XML drum mapping file.

> **Tip:** *Drum maps that belong to the GM2 kits are displayed with a and cannot be edited.*

3. If you want to edit the name of the drum map, double-click the name in the **MIDI Drum Map Template** column and type a new name in the box.
4. If you want to associate the drum map with a MIDI device, double-click the **Device** box and type the name of a MIDI device.

   When you associate a drum map with a MIDI device, the drum maps will be displayed automatically on the Output Settings tab of the Track Properties window when you choose **Drum Map** from the drop-down list at the top of the page. *For more information, see Editing duration on page 173.*

> **Note:** *Be sure to type the device name identically in the Drum Map Editor and the Patch Map Editor. For more information, see Creating or editing program maps on page 196.*

5. If you want to change the description of the map, edit the text in the **Drum Map Description** box.
6. Add keys as needed:
   a. Click the **Insert Key** button to add a key to the drum map.

      If a key is selected, the next available key will be inserted. For example, if you select C5 and click **Insert Key**, C#5 will be added if it does not exist in the current drum map. If C#5, D5, and D#5 already exist, E5 will be added.

   b. Double-click the name in the Instrument column and type the name of the instrument associated with the selected key.
7. Select a key in the table on the right side of the dialog and click the **Delete Key** button to remove it from the drum map.

8. If you want to copy key assignments from other drum maps, perform the following steps:
   a. In the MIDI Drum Map Template list, select the drum map that contains the keys you want to copy.
   b. Select the keys you want to copy. Hold Ctrl or Shift to select multiple keys.
   c. Click the **Copy Selected Keys** button .
   d. In the MIDI Drum Map Template list, select the drum map that you want to edit.
   e. Click the **Paste Copied Keys into Map** button .Select the keys you want to copy. Hold Ctrl or Shift to select multiple keys.

      If a key is selected, the next available key will be inserted. For example, if you select C5 and click **Insert Key**, C#5 will be added if it does not exist in the current drum map. If C#5, D5, and D#5 already exist, E5 will be added.
   f. Double-click the name in the **Instrument** column and type the name of the instrument associated with the selected key.
9. Click **OK** to close the dialog and save your changes.

Choosing a drum map for a track

Tracks that are routed to a VSTi soft synth or a MIDI device can display a piano roll or a drum grid.

Tracks that are routed to the DLS soft synth will display a drum grid only if a drum map exists for the current patch. You cannot edit drum maps for GM2 drum kits.

Synchronizing using MIDI timecode

ACID can generate MIDI timecode (MTC) and MIDI clock as well as trigger from MIDI timecode. These features allow ACID to be synchronized with other audio applications and external audio hardware.

Note: *The software cannot chase MTC or MIDI clock.*

Generating MIDI timecode

MIDI timecode is a standard timecode that most applications and some hardware devices use to synchronize themselves. Stable MTC is generated at all available frame rates for other applications to chase.

1. Specify a MIDI output device to which you will send timecode and a frame rate for the timecode. These options can be found on the **Sync** tab of the Preferences dialog. *For more information, see Using the Sync tab on page 238.*
2. From the **Options** menu, choose **Timecode**, and choose **Generate MIDI Timecode** from the submenu.

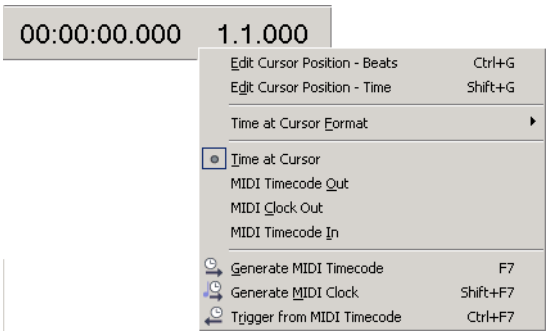
   MTC begins generating wherever you click the **Play** button ( ).

Generating MTC with an offset

In some cases, you may want to start sending timecode with an offset (e.g., 01:00:00:00) to allow time for multiple devices to synchronize. You can create an offset on the ACID time ruler to accomplish this. *For more information, see Using the ruler offset on page 225.*

Viewing outgoing timecode

You can view outgoing timecode in the time display located directly above the track list. Right-click the time display and choose **MIDI Timecode Out** from the shortcut menu to display outgoing MTC time.



Triggering from MIDI timecode

You can trigger ACID playback using MTC. This means that the software initiates playback by receiving timecode from another device.

1. Connect a word clock signal between your computer and triggering device to lock synchronization.

Note: *If the MIDI trigger device can output MIDI timecode, a timecode converter is not necessary; you can connect the trigger device directly to your computer.*

2. Configure your triggering device to send MTC to your computer.
3. From the **Options** menu, choose **Preferences** and select the **Sync** tab to configure the application to receive MTC.
   - From the **Input device** drop-down list, choose the port through which you receive MTC.
   - From the **Frame rate** drop-down list, choose the frame rate that your trigger device uses to send MTC to ACID.
4. From the **Options** menu, choose **Timecode**, and choose **Trigger from MIDI Timecode** from the submenu.

   When an incoming MTC signal is received, playback begins from the position indicated by the timecode. If MTC is not being received, you can play and edit normally.

Viewing incoming timecode

You can view the incoming timecode in the time display located directly above the track list. Right-click the time display and choose **MIDI Timecode In** from the shortcut menu to show the incoming MTC time.

This display also shows status and error information. If **Trigger from MIDI Timecode** is enabled but no MTC is detected, the display reads *Waiting...*; If the wrong frame rate of MTC is being detected, the display reads *Wrong format*.

Generating MIDI clock

MIDI clock differs from MTC in that it contains tempo as well as positional information. MIDI clock is essentially measured in ticks from the beginning of the project. MIDI clock sends 24 ticks per quarter note.

The advantage of using MIDI clock is that tempo changes are sent to the chasing application and they will be preserved.

1. Specify a MIDI output device to which you will send the clock. This option can be found on the **Sync** tab of the Preferences dialog. *For more information, see Using the Sync tab on page 238.*
2. From the **Options** menu, choose **Timecode**, and choose **Generate MIDI Clock** from the submenu.

   MIDI clock is generated when you click the **Play** button ( ).

Viewing outgoing MIDI clock

You can view the outgoing clock in the time display located directly above the track list. Right-click the time display and choose **MIDI Clock Out** from the shortcut menu to display the outgoing MIDI clock time.

Exporting MIDI files

By using the Clip Pool tab, you can save the selected clip to a new folder or with a new file name. When you export a MIDI file, the MIDI tracks in your project are saved to a standard MIDI file. Track names, track device names, and track voices are saved in the exported file

Saving MIDI clips for export

You may now export multiple MIDI tracks and individual clips to standard MIDI files. To export files:

1. Select **Paint Clip Selector** from the track header.
2. Choose **Clip Pool** to open the Track Properties dialog box.
3. Right-click on the clip you want to save and select **Save As**.
4. Name the file and choose **Save**.

Notes:

- *Files are saved in the MIDI Export folder but they can be saved to any location.*
- *Files are saved as standard MIDI files (.mid).*
- *All MIDI clips are exported as MIDI file type 0. The* **MIDI File Type** *box is greyed out.*
- *File resolution is set at 960 pulses per quarter note.* **Resolution** *can be set between 24 and 960 pulses per quarter note. All sequencers/players can read in any arbitrary resolution.*

Exporting the project to a standard MIDI file

1. From the **File** menu choose **Export MIDI**.
2. From the Export Project as Standard MIDI File screen, choose a drive and folder from the **Save in** drop down list, or use the browse window to locate the folder where you want to save your file.
3. Type a name in the **File name** box, or select a file in the browse window to replace an existing file.
4. Choose a setting from the **MIDI file type** drop-down list to indicate the type of file you want to save:
   - Choose **Standard MIDI File Type 1** to preserve tracks when exporting. This mode preserves the MIDI data in your ACID project.
   - Choose **Standard MIDI File Type 0** to save your project as a single-track, multichannel MIDI file. *For more information, see* *Adding MIDI files to a project on page 161*.

Note: *When you add a Type 0 MIDI file to your project, a separate track will be created for each channel in the file. If you have tracks routed to separate soft synths or MIDI devices, they will be preserved as separate tracks only if their MIDI outputs use different channels. For more information, see* *Routing tracks to MIDI devices or soft synths on page 194*.

5. Type a value in the **Resolution** box to set the resolution of file. The default is 960, but you can specify any value between 24 and 960.

Important: *Not all MIDI devices can read arbitrary resolutions.*

6. Click the **Save** button.

Using a control surface

A control surface is a hardware device that uses knobs, faders, and buttons to control user interface elements that are normally controlled with a mouse. Using a control surface lends a tactile feel to your editing sessions.

Unlike keyboard shortcuts—which determine the shortcut's behavior based on the portion of the ACID window that has focus—a control surface's mapped functions work no matter what part of the application has focus.

Connecting a control surface

You can use one Mackie® Control Universal with up to four Mackie Control Universal Extenders, one Frontier Tranzport, or up to five generic control surfaces with ACID software. Perform the following steps for each device.

1. Connect the MIDI Out port on your MIDI interface to the MIDI In port on your control surface.
2. Connect the MIDI In port on your MIDI interface to the MIDI Out port on your control surface.
3. Configure ACID software to use your control surface.
4. Use the **MIDI** tab in the Preferences dialog to select the device to which your control surface is connected. *For more information, see Using the MIDI tab on page 234.*
5. Add your device on the External Control & Automation tab. *For more information, see Using the External Control & Automation tab on page 241.*

Note: *If you're using a USB interface such as Frontier Tranzport, just plug in the USB cable. For information about your specific device, please refer to the manufacturer's documentation.*

Configuring ACID to use your control surface

Use the MIDI tab in the Preferences dialog to select the device to which your control surface is connected. *For more information, see Using the MIDI tab on page 234.*

1. From the Options menu, choose **Preferences** to display the Preferences dialog.
2. Enable your MIDI input and output ports:
   a. Select the MIDI tab in the Preferences dialog.
   b. In the **Make these devices available for MIDI track playback** box, select the check box for the MIDI port that is connected to your control surface's In port.
   c. In the **Make these devices available for MIDI input** box, select the check box for the MIDI port that is connected to your control surface's Out port.

Note: *MIDI ports that are in use by control surfaces display a icon to indicate that they are not available for MIDI track input or playback.*

3. Choose your control surface:
   a. Select the External Control & Automation tab in the Preferences dialog. *For more information, see Using the External Control & Automation tab on page 241.*
   b. Choose a device from the **Available devices** drop-down list and click the **Add** button. Adding a device loads its default profile. If you want to customize the behavior of the control surface, double-click its entry in the **Active control devices** list.
4. Click **OK** to apply your changes and close the Preferences dialog.
5. From the Options menu, choose **External Control** to enable your selected control surfaces.

Configuring or customizing your control surface

Use the External Control & Automation tab in the Preferences dialog to select the control surfaces you want to use and adjust their configuration. *For more information, see Using the External Control & Automation tab on page 241.*

1. From the Options menu, choose **Preferences** to display the Preferences dialog.
2. Select the External Control & Automation tab.
3. Choose a device from the **Available devices** drop-down list and click the **Add** button. The device is added to the **Active control devices** list.
4. Double-click the entry in the **Active control devices** list to display the configuration dialog.

   For information about configuring specific MIDI controllers, see *Configuring a Mackie Control Universal on page 203* or *Configuring a generic MIDI controller on page 204*.

Using your control surface

This section describes how to use your control surface in general terms.

For information about your specific device, please refer to the manufacturer's documentation.

1. From the Options menu, choose **External Control** to enable your selected control surfaces.
2. If necessary, press the **Automation** button on your control surface.
3. Click the **Automation Settings** button for each track you want to edit with the control surface and choose **Automation Write (Touch)** or **Automation Write (Latch)** to enable automation recording. *For more information, see Automation recording modes on page 134.*

   To enable automation recording for audio busses and soft synths, use audio bus tracks.
4. Use the functions on your control surface to edit your project.

Configuring a Mackie Control Universal

The Mackie Control Universal is fully supported by ACID. An overlay is available from Mackie that you can use to label the buttons and controls with their mapped functions in ACID.

The overlay identifies the default control mapping. You can also customize the buttons and controls on the Mackie Control Universal. When you use the default mapping, the Mackie Control is divided into several functional areas.

1. From the **Options** menu, choose Preferences to display the Preferences dialog.
2. Select the External Control & Automation tab.
3. Double-click your Mackie Control Universal in the Active control devices list to display the Configure Mackie Control dialog.
4. To add or change a function do the following:
   a. Select an item in the User defined surface control mappings list.
   b. Select an item in the Available host functions list.
   c. Click the **Assign** button.
5. To remove a function, select an item in the User defined surface control mappings list and click the **Clear** button.
6. To remove all functions, click the **Clear All** button.
7. To replace all custom functions with the default settings, click the **Default All** button.

Important: *The Mackie Control Universal can control either trim or automation settings. In order to control automation settings, the* **Automation** *button in the Audio/Video section must be selected, and the track or bus you want to edit must be set to* **Automation Write (Touch)** *or* **Automation Write (Latch)**. *Hold the F1 button while turning the V-Pot (or use the* **Automation Settings** *button) to change the automation recording mode for each track and bus track.*

Configuring a generic MIDI controller

You can configure up to five generic MIDI control surfaces to work with the ACID interface.

For information about your specific device, please refer to the manufacturer's documentation.

For more information, see Using a control surface on page 202.

Note: *If you have a MIDI controller that includes buttons and knobs or faders, you can use the device as an external control device and as a MIDI input device for recording MIDI — for example, you can use the buttons, knobs, and sliders on the device for external control, and still use the keyboard, pitch wheel, and modulation wheel for recording MIDI. For more information, see Recording MIDI on page 162.*

MIDI messages that are mapped to external control functions are filtered when you record MIDI. If a note message is assigned to a control surface function, both the note-on and note-off messages will be filtered.

1. From the **Options** menu, choose Preferences to display the Preferences dialog.
2. Select the External Control & Automation tab.
3. Double-click the Generic Control entry in the Active control devices list to display the Configure Generic Control dialog.
4. To load a configuration from a file, click the **Open** button and browse to the mapping file you want to use.
5. To add or change a function do the following:
   a. Choose a setting from the View function group drop-down list.
   b. Select the Learn check box.
   c. Select an command in the Host Command list and activate the control on your control surface.
   d. You can click the **Edit** button to fine-tune the MIDI message settings.
6. Repeat steps 3 and 4 for each command you want to make available on your control surface.
7. To remove a function, select an item in the Host Command list and click the **Reset** button.
8. To remove all functions, click the **Reset All** button.
9. Click the **Save As** button to save your updated configuration file.

Example of how you can set up MIDI keyboard as a generic control surface

If you have a MIDI device that has knobs, faders, and buttons, you can use assign those controls to adjust the tracks in your project.

For this example, let's set up a MIDI keyboard with 8 knobs to adjust track volume.

Notes:

- *You can use this same process to assign a controller to any configurable parameter. To adjust track volume, we're selecting* **Channel x Fader** *in the* **Host Command** *list in step 10 below. However, if you wanted to adjust panning, you could choose* **Channel x Pan**, *or if you wanted to adjust the bus send level, you could choose* **Channel x Send**.
- *Effect parameters cannot be controlled with a generic controller.*

1. From the Options menu, choose **Preferences** to display the Preferences dialog.
2. Select the MIDI tab, and verify that the port where your controller is connected is selected in the **Make these devices available for MIDI input** list.
3. Select the External Control & Automation tab.
4. From the **Available devices** drop-down list, choose **Generic Control**, and then click the **Add** button. The Generic Control is added to the **Active control devices** list.
5. Double-click the **Generic Control** entry in the **Active control devices** list to display the Configure Generic Control dialog.

6. Verify that the port where your controller is connected is selected from the **MIDI input** drop-down list at the bottom of the dialog.
7. Because the MIDI keyboard in our example has 8 knobs, type 8 in the **Number of channels** box.
8. Now, let's assign buttons to shift the channel banks up and down so you can control all the tracks in your project.

   For example, when you start using the controller, the knobs will adjust tracks 1-8. When you shift the banks down, you can control tracks 9-16, and so on.

   a. From the **View function group** drop-down list, choose **Channels**.
   b. Select the **Learn** check box.
   c. Select **Channel Bank Down** from the **Host Command** list.
   d. Press the button or key you want to use to switch to the next group of 8 tracks.
   e. Select **Channel Bank Up** from the **Host Command** list.
   f. Press the button or key you want to use to switch to the previous group of 8 tracks.
9. Choose **Audio Channels** from the **View function group** drop-down list.
10. Program each knob:

    a. Verify that the **Learn** check box is still selected.
    b. Select **Channel 1 Fader** from the **Host Command** list.
    c. Turn knob 1 on your MIDI keyboard. You'll notice that the **Channel**, **MIDI Message**, and **MIDI Data** columns are updated.
    d. Repeat steps 10a and 10b to program knobs 2 through 8 on your keyboard.
11. Now, let's assign a button to toggle the controller in and out of automation mode so we can use the knobs to adjust the track's volume (trim) or record volume automation:

    a. From the **View function group** drop-down list, choose **Assign**.
    b. Select **Toggle Automation Mode** from the **Host Command** list.
    c. Verify that the **Learn** check box is still selected, and then press the button or key you want to use to switch your control surface in and out of automation mode.

       You'll notice that the **Channel**, **MIDI Message**, and **MIDI Data** columns are updated.
12. Click **OK** to close the Configure Generic Control dialog, and then click **OK** to close the Preferences dialog.
13. From the Options menu, choose **External Control** to enable your controller.

You're ready to start using your controller.

- Turn each knob on your controller and notice that turning knob 1 adjusts the volume (trim) of track 1, turning knob 2 adjusts the volume of track 2, and so on.
- Press the button that you assigned to scroll the channel bank down in step 8.

  Turn each knob on your controller and notice that turning knob 1 now adjusts the volume (trim) of track 9, turning knob 2 adjusts the volume of track 10, and so on.
- Press the button that you assigned to scroll the channel bank up in step 8 so you can control tracks 1-8 again.
- Press the button that you assigned to toggle automation mode in step 11.

  Start playback, and turn each knob on your controller, and notice that turning knob 1 records volume automation on track 1, turning knob 2 records automation on track 2, and so on. *For more information, see Automation recording modes on page 134.*
- Press the automation mode toggle button once more, and you can use the knobs to adjust track trim levels again.

Chapter 12 Working with Video

By adding a video track to your ACID® project, you can use the software as a scoring tool.

Video is always added to the top track in the track list. Depending on your horizontal zoom level, each frame displayed in the video track may represent multiple frames from the source video. As you zoom in, marks display to represent each frame, and you can zoom further to view individual frames.

Managing video

ACID makes it easy to add video to a project and work with the video track.

Adding or replacing video files

Use the Explorer window to find the file you want to use, and then add it to the project by double-clicking it or dragging it into the track view. The video file is placed in the top track, and if the file has an audio stream, it is placed as a separate, one-shot track in the track view.

If your project already contains a video track, you are prompted to replace the existing video if you open another video file.

Tip: *You can also add a still image (such as a BMP, JPEG, PSD, GIF, PNG, or TGA file) to the video track.*

Removing the video track

Right-click anywhere in the video track and choose **Remove Video** from the shortcut menu.

Hiding and showing the video track

By default, video displays in the track view when you add it to a project. You can hide or show the video track at any time by choosing **Show Video Track** from the **View** menu. A check mark next to the command indicates that the video track displays.

Synchronizing audio and video

Editing the audio associated with a video file can cause it to become out of sync with the video. To resynchronize the audio and video, right-click the audio file and choose **Synchronize with Video** from the shortcut menu.

Note: *This does not work if you have changed the audio track to a loop.*

Removing the video's audio

Right-click the audio track in the track list and choose **Delete Track** from the shortcut menu. The audio track is removed, but the video remains.

Changing frame numbering

Each frame is numbered in the video track. You can change the numbering format or turn off frame numbering altogether.

1. From the **Options** menu, choose **Preferences**. The Preferences dialog appears.
2. Click the **Video** tab.
3. Choose a setting from the **Show source frame numbers on video thumbnails as** drop-down list.

Editing video events

You have several video editing options to help you score your video.

Moving video events

Drag the event to a new location along the video track.

Trimming video events

Drag either end of the video event. The video event stays in place, but the beginning or end of the video moves.

You cannot trim the beginning or end of the event past the event's original end. You cannot trim an event earlier than its starting point unless the event has been trimmed previously.

Slipping and sliding video events

To help you picture what happens when you slip and slide events, think of an event as a window to a media file. The window can display the entire media file or a small section. When the window displays only a portion of the media file, you can move either the window or the underlying media to adjust the media played by an event:

- When you **slip** an event, your event maintains its place on the timeline, but the media file moves in the direction you drag.
- When you **slide** an event, the media file maintains its place on the timeline, but the event moves in the direction you drag.

Shifting the contents of video events (slipping)

Hold Alt while dragging the video event to move the position of the video within the event. The event itself does not move.

Slip-trimming video events

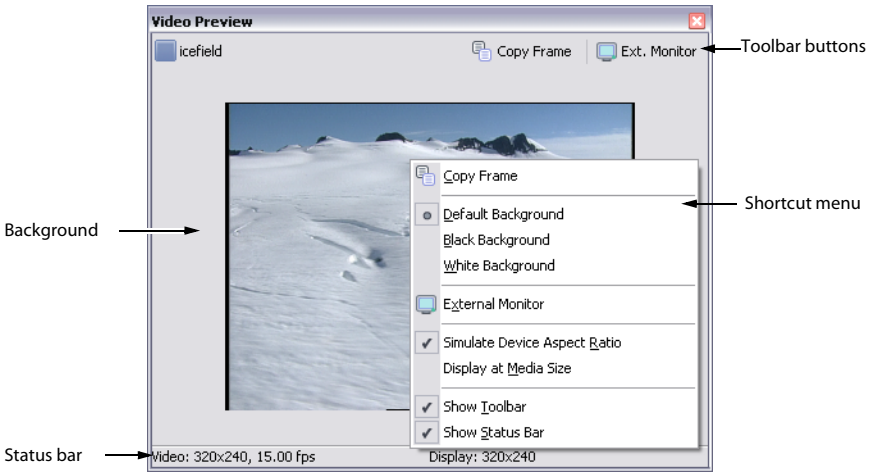
Hold Alt while dragging the beginning or end of a video event. The video moves with the event edge, and the opposite edge of the event remains fixed.

Sliding video events

Hold Ctrl+Alt while dragging the video event to move the event while leaving the video in place. The relative position of the video changes as when you slip an event.

Using the Video Preview window

The Video Preview window is used to view the video as it plays or to view the frame at the cursor position. To display the Video Preview window, choose **Video Preview** from the **View** menu, or press Alt+4.

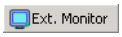


Copying a frame to the clipboard

The **Copy Frame** toolbar button in the Video Preview window allows you to copy the current frame to the Windows® clipboard.

Using toolbar buttons

The toolbar allows you to access two commonly used functions of the Video Preview window.

Button	Description
	Copies the current frame to the Windows clipboard.
	Sends the preview to an external monitor.

Using the shortcut menu

Right-click anywhere in the Video Preview window to display a shortcut menu with Video Preview window options.

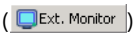
Item	Description
Copy Frame	Copies the current frame to the Windows clipboard.
Default Background	Sets the background color of the Video Preview window to the default color.
Black Background	Sets the background color of the Video Preview window to black.
White Background	Sets the background color of the Video Preview window to white.
External Monitor	Sends the preview to an external monitor.
Display Square Pixels	Compensates for any spatial distortions due to non-square pixel aspect ratios.
Display at Media Size	Displays video at the native resolution, clipping if necessary.
Show Toolbar	Toggles the display of the Video Preview window toolbar.
Show Status Bar	Toggles the display of the Video Preview window status bar.

Viewing the status bar

Right-click the Video Preview window and choose **Show Status Bar** from the shortcut menu to view the status bar. The status bar shows the video's frame size, frame rate, and display size.

Previewing on external monitors

You can use your system's external monitor for previewing video playback. You must have an OHCI IEEE-1394 adapter and a device to convert the DV signal to video, such as a DV camcorder, deck, or media converter.

To specify an external monitor, click the **External Monitor** button () on the Video Preview window, or choose **Preferences** from the **Options** menu and click the **Video** tab.

Other settings for the external monitor can also be found on the **Video** tab. *For more information, see Using the Video tab on page 236.*

Scoring video

ACID has tools that allow you to adjust the tempo of a project to easily synchronize audio with specific video frames.

1. Add your audio track(s) and video to your project.
2. If the Video Preview window is not displayed, choose **Video** from the **View** menu.
3. Click the **Play** button () to begin playback.
4. Press H each time you want to place a time marker at a frame you want to emphasize (where an explosion is heard, for example).

5. Click the **Stop** button ( ) to stop playback.
6. Return to the leftmost time marker and fine tune its placement so it coincides exactly with the desired video frame.

> **Tip:** *Holding Alt while pressing the right or left arrow keys allows you to step the cursor through your video by individual frames. You may need to drag your time marker to the cursor to get it on the desired frame.*

7. Place the cursor at the point to which you want to synchronize your time marker. For example, you might want the frame that you marked in step six to coincide with a downbeat.
8. Right-click the time marker and select **Adjust Tempo to Match Marker to Cursor** from the shortcut menu. The new tempo appears in the track list.
9. Press T to insert a tempo change marker. The adjusted tempo is detected and inserted into the tempo marker's box. The tempo change marker preserves synchronization between the time marker and location on the beat ruler as you perform editing further down the timeline. *For more information, see* *Adding tempo/key/time signature change markers on page 95*.
10. Repeat steps six through nine to synchronize the rest of your video.

Chapter 13 Working with 5.1 Surround

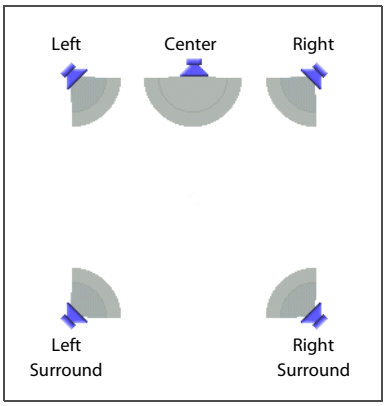
You can create 5.1-channel mixes to wrap a listener in your remixes or prepare audio for cinema, DVD-Video, DVD-Audio, or DTS 5.1 Music projects.

Note: *ACID plays and mixes uncompressed 5.1-channel audio. Authoring software such as the Sony 5.1 Surround Plug-In Pack is required to encode 5.1-channel audio for compressed delivery formats.*

What is 5.1 surround?

5.1 surround is a standard format consisting of three speakers across the front and two speakers in the rear. The ".1" is a sixth channel called low-frequency effects (LFE) that enhances the bass levels in the mix.

5.1 surround includes five main channels...



...and a sixth channel for low frequency effects.

The LFE channel is commonly used in motion pictures to enhance low audio frequencies for effects such as explosions or crashes. Audio in this channel is commonly limited to a range from about 25 Hz to 120 Hz. Unlike the five primary channels, the LFE channel adds no directional information. Depending on the speaker setup and audio levels, the sound assigned to the LFE channel may be routed among the five main speakers or to an additional subwoofer.

Setting up surround hardware

Before you create surround projects, you should set up your system to provide 5.1 surround playback. To play a 5.1 surround project, you must have an appropriate speaker setup such as:

- Six powered speakers
- Six passive speakers with a six-channel amplifier

Your system must also have an appropriate sound card setup such as:

- 5.1-compatible sound card
- Sound card with three stereo outputs
- Three stereo sound cards

There are several ways to set up your system, depending on the sound card and speaker setup you are using.

	Six powered speakers	Six passive speakers with a six-channel amplifier
5.1-compatible sound card	Connect powered speakers to your sound card's outputs as indicated by your sound card's documentation.	Connect your sound card's front, rear, and center/subwoofer outputs to the appropriate inputs on a six-channel amplifier/home theater receiver. Connect front, rear, center, and LFE speakers to the amplifier.
Sound card with three stereo outputs	Connect powered speakers to your sound card's outputs where you have routed each of the pairs of channels. The left channel of the Center/LFE pair is the center channel; the right channel is the LFE channel.	Connect your sound card's outputs to the appropriate inputs on a six-channel amplifier/home theater receiver. Connect front, rear, center, and LFE speakers to the amplifier.
Three stereo sound cards	Connect powered speakers to your sound cards' outputs where you have routed each of the pairs of channels. The left channel of the Center/LFE pair is the center channel; the right channel is the LFE channel.	Connect your sound card's outputs to the appropriate inputs on a six-channel amplifier/home theater receiver. Connect front, rear, center, and LFE speakers to the amplifier.

Setting up surround projects

You can configure an ACID project to use 5.1 surround in the Project Properties dialog. You can also choose to apply a low-pass filter for the LFE channel. Applying a low-pass filter approximates the bass-management system in a 5.1 decoder and ensures that you're sending only low-frequency audio to the LFE channel.

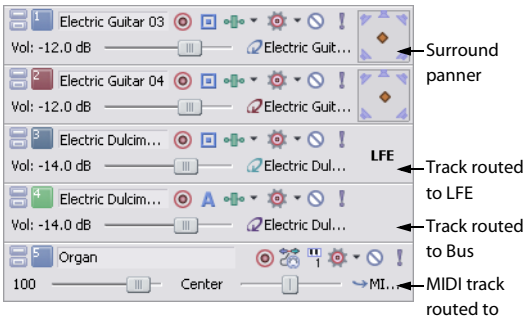
1. From the **File** menu, choose **Properties**.
2. Click the **Audio** tab.
3. From the **Master bus mode** drop-down list, choose **5.1 surround**.
4. To limit the audio sent to the LFE channel, do the following:
   - Select the **Enable low-pass filter on LFE** check box and enter a value in the **Cutoff frequency for low-pass filter** box. The low-pass filter isolates the audio sent to the LFE channel by limiting it to frequencies lower than the value entered in the **Cutoff frequency for low-pass filter** box.
   - Choose a setting from the **Low-pass filter quality** drop-down list to determine the sharpness of the filter's rolloff curve. **Best** produces the sharpest curve.

Note: *Before rendering your surround project, check your surround authoring application's documentation to determine its required audio format. Some encoders require a specific cutoff frequency and rolloff, while other encoders require that no filter be applied before encoding.*

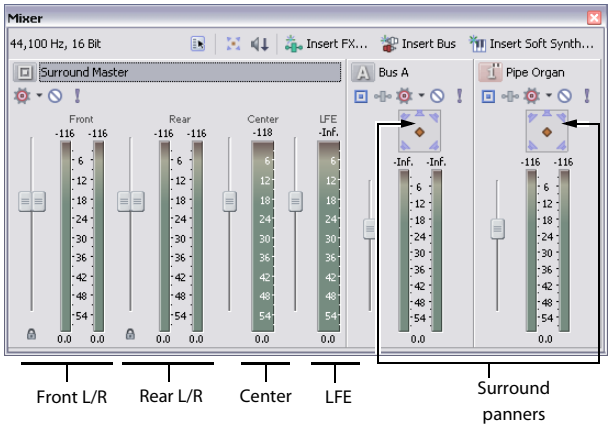
5. Click **OK**.

The track list and Mixer window switch to 5.1 surround mode. The Master bus becomes the Surround Master bus, which contains faders for each of the six surround channels. Surround panners appear on tracks and mixer controls. Tracks routed to mixer controls (busses, assignable effects, or soft synths) do not have surround panners; panning for these tracks takes place on the mixer control.

Track list in 5.1 surround mode



Mixer in 5.1 surround mode



Routing to hardware in the mixer

You must route the surround audio to the correct output in the mixer.

1. From the **Options** menu, choose **Preferences**.
2. Click the **Audio** tab.
3. From the **Audio device type** drop-down list, choose an audio device type other than **Microsoft Sound Mapper** (such as **Windows Classic Wave Driver**).
4. Choose the playback devices for the six surround channels:
   - From the **Default Stereo and Front playback device** drop-down list, choose the appropriate device for the front left and right surround channels.
   - From the **Default Rear playback device** drop-down list, choose the appropriate device for the rear left and right surround channels.
   - From the **Default Center and LFE playback device** drop-down list, choose the appropriate device for the center and LFE surround channels.
5. Click **OK**.

Overriding the default device routing

By setting up the device routing in the **Audio** tab of the Preferences dialog, you have set the defaults for surround routing. However, you can override the default device routing at any time using the Surround Master bus in the Mixer window.

1. In the Mixer window, click the **Audio Device Selector** button ( ) on the Surround Master control. A menu of surround channels (**Front L/R**, **Rear L/R**, and **Center/LFE**) appears.
2. In the submenu, match a surround pair with the appropriate output.
3. Repeat steps one and two to match each surround pair to the appropriate output.

Assigning audio to the LFE channel

Once the project is in 5.1 surround mode, you must decide whether a track will provide the “5” (surround panning) or the “1” (LFE channel) in 5.1 surround. Initially, all tracks in a surround project are set to provide surround panning, but you can assign a track to the LFE channel instead.

You can assign an individual track to the LFE channel or you can route the track to a mixer control (bus, soft synth, or assignable effect chain) and assign the mixer control to the LFE channel.

To assign audio to the LFE channel, right-click the surround panner on the track header or mixer control and choose **LFE Only** from the shortcut menu. The track or mixer control is assigned to the LFE channel.

To change a track or mixer control back to surround panning, right-click the **LFE** indicator and choose **Surround Pan** from the shortcut menu.

Note: *Before rendering your surround project, check your surround authoring application's documentation to determine its required audio format with respect to the LFE channel. For more information, see Setting up surround projects on page 212.*

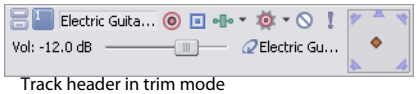
Adjusting volume

Adjusting track volume for 5.1 surround projects behaves almost identically to stereo projects. The controls in the track headers and Mixer window can function as trim controls that adjust the overall volume of the track, bus, or assignable effects chain, or they can adjust volume automation settings. *For more information, see Track automation on page 125.*

Adjusting track volume

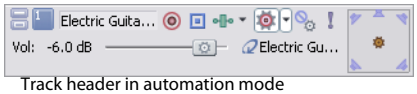
You can adjust track volume using the **Vol** fader in the track header the same way you do in stereo projects.

Deselect the **Automation Settings** button ( ) if you want to adjust trim levels.



Track header in trim mode

Select the **Automation Settings** button if you want to adjust volume automation. The fader handle is displayed as a in automation mode.



Track header in automation mode

Adjusting assignable effects send or bus send levels

You can adjust send levels for busses or assignable effects chains using the multipurpose fader in the track header. Click the fader label and choose an assignable effects chain or bus from the menu. The fader in the track header can function as a trim control that adjusts the overall send level of the track, or it can adjust send level automation settings.

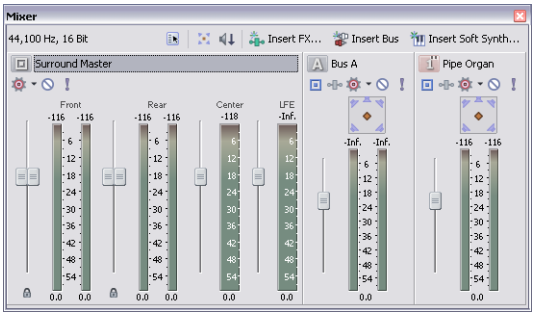
Deselect the **Automation Settings** button ( ) if you want to adjust trim levels.

Select the **Automation Settings** button if you want to adjust volume automation. The fader handle is displayed as a in automation mode.

Adjusting channel levels

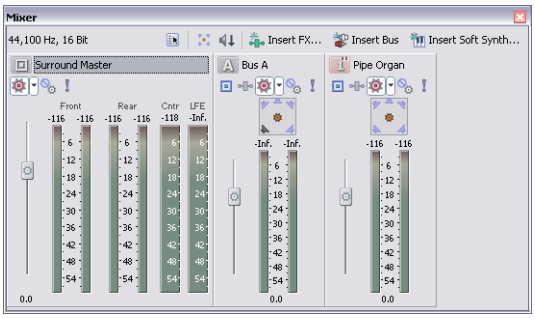
Use the Surround Master bus control in the Mixer window to adjust the individual levels of the 5.1 channels. The faders in the track bus control can function as trim controls that adjust the overall level of each channel, or you can automate the master volume of the Surround Master bus (individual channel levels cannot be automated).

Deselect the **Automation Settings** button ( ) in the bus control or bus track if you want to adjust trim levels.



Mixer controls header in trim mode

Select the **Automation Settings** button if you want to adjust volume automation. The fader handle is displayed as a in automation mode.



Mixer controls header in automation mode

Panning audio

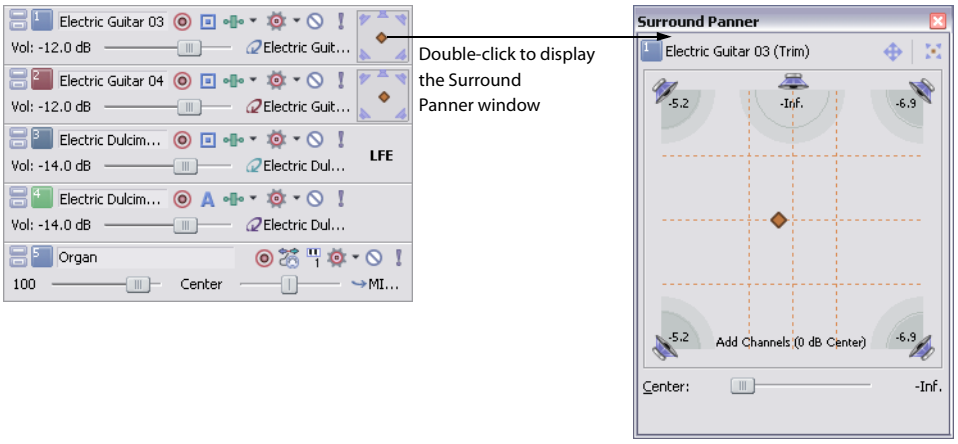
You can pan audio in a 5.1 surround project in two ways:

- Pan tracks individually using the Surround Panner window.
- Route tracks to mixer controls (busses, assignable effect chains, or soft synths) and pan the mixer controls using the Surround Panner window.

Note: *You cannot pan audio on tracks or busses that are routed to hardware outputs in a 5.1 surround project.*

Panning tracks

1. Deselect the **Automation Settings** button ( ) on the track you want to pan.
2. Double-click the surround panner on the track you wish to pan. The Surround Panner window appears.



3. Adjust the panning settings. *For more information, see Using the Surround Panner window on page 216.*

4. Close the Surround Panner window.

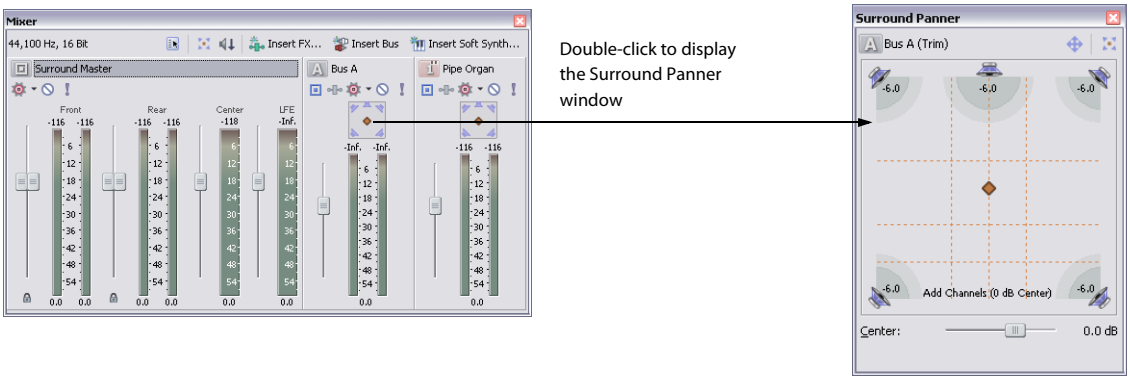
> **Tip:** *You can also use the surround panner in the track header to pan your track.*

Panning mixer controls

You may choose to route tracks to busses or other mixer controls (such as soft synths or assignable effect chains) and pan them as a group rather than panning each track individually.

> **Note:** *When you route a track to a bus or soft synth control, stereo (two-channel) output is sent to the mixer control and the mixer control sends 5.1 (six-channel) output to the Surround Master bus.*

1. Add a mixer control to the project. *For more information, see Using the Mixer on page 139.*
2. Route tracks to the mixer control. *For more information, see Routing tracks to busses on page 139.*
3. Double-click the surround panner on the mixer control to display the Surround Panner window.



4. Adjust the panning settings. *For more information, see Using the Surround Panner window on page 216.*
5. Close the Surround Panner window.

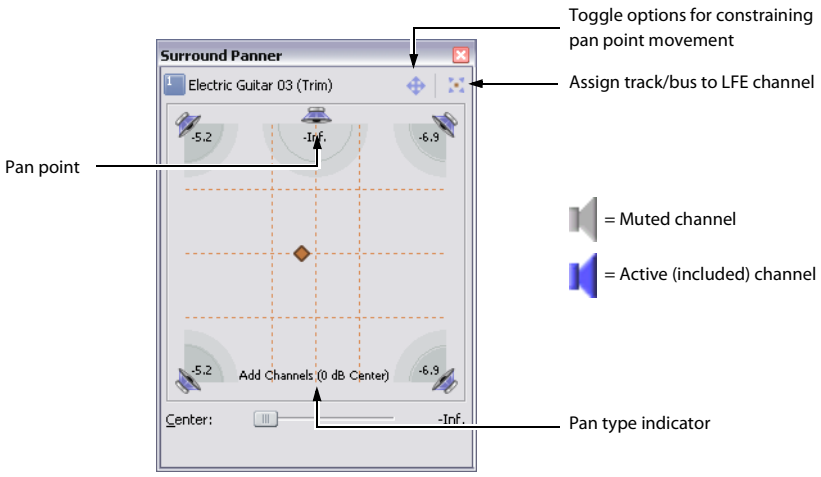
> **Tip:** *You can also use the surround panner on the mixer control to pan your track.*

Using the Surround Panner window

Whether you're adjusting track panning or mixer control panning, you use the same controls in the Surround Panner window.

View the Surround Panner window by double-clicking a surround panner on a track header or mixer control. Once the Surround Panner window is open, you can dock it in the ACID workspace. *For more information, see Docking and floating ACID windows on page 223.*

> **Tip:** *You can also choose* **Surround Panner** *from the* **View** *menu to display the Surround Panner window. Once the Surround Panner window is displayed, double-click the surround panner for a track or mixer control to view its pan settings.*



1. Click the speaker icons to mute or include channels.

   Muting a channel ensures that no audio bleeds through a channel. For example, you might want to mute all but the center channel when you're panning dialogue to the center channel.

Tip: *Ctrl + click a speaker icon to solo the channel.*

2. Drag the pan point to position the sound within the sound field. *For more information, see Moving the pan point on page 217.*
3. Click the center speaker icon to include the center channel and drag the **Center** fader to apply a gain to the center channel.

   Applying a gain to the center channel may make dialogue more present in the mix.

Note: *When automating panning using keyframes, you cannot automate the gain applied using the* **Center** *fader. For more information, see Automating panning on page 219.*

4. Drag the **Smoothness** slider to adjust the smoothness of the interpolation path between panning keyframes. The smoothness setting appears only when you are automating panning using keyframes. *For more information, see Adjusting the Smoothness slider on page 221.*

Moving the pan point

You have a variety of methods to help you position the pan point in the Surround Panner window.

Method	Description
	Click to toggle through three options for constraining pan point motion as you drag: Move Freely (), Move Left/Right Only (), and Move Front/Back Only ().
Double-click	Double-clicking the pan point resets it to the center front of the surround panner. Double-clicking in the Surround Panner window moves the pan point to the double-click location.
Ctrl+drag	Makes fine adjustments.
Shift+drag	Constrains motion to vertical, horizontal, or diagonal motion at 45 degree increments.
Alt+drag	Constrains motion to a constant radius from the center of the surround panner.
Shift+Alt+drag	Constrains motion to the maximally inscribed circle (a constant radius at the greatest possible distance from the center of the surround panner).

Method	Description
Arrow keys	Moves front/back/left/right.
Ctrl+Arrow keys	Makes fine adjustments.
Page Up/Page Down	Moves front/back.
Shift+Page Up/Page Down	Moves left/right.
Numeric keypad 1-9	Jumps to a corner, edge, or center of the surround panner.
Ctrl+Numeric keypad 1,3,7, 9	Jumps to a location on the maximally inscribed circle (a constant radius at the greatest possible distance from the center of the surround panner).
Mouse wheel	Moves front/back.
Shift+mouse wheel	Moves left/right.
Ctrl+mouse wheel	Makes fine front/back adjustments.
Ctrl+Shift+mouse wheel	Makes fine left/right adjustments.

Choosing pan types

When you pan a track or mixer control, you can choose among several pan types to determine how the audio is panned. The current pan type appears at the bottom of the Surround Panner window.

Right-click the Surround Panner window and choose a pan type from the shortcut menu.

- The **Add Channels** pan type makes the audio appear to move as a unit among the surround channels. As you move the pan point toward a channel (speaker icon), more and more of the signal from the other channels are folded into the channel you are panning towards, until at the extreme, all channels are fed at full intensity into a single channel. This pan type uses a linear panning curve.
- The **Balance** pan type is most useful for adjusting the relative signal levels of the channels. In this pan type, as you move the pan point from the center to a channel, the signal in the channel you are panning towards starts at the base dB level (either 0 dB, -3 dB, or -6 dB) and increases to 0 dB. The signal in the channel you are panning away from starts at a base dB level (either 0 dB, -3 dB, or -6 dB) and decays to no signal level. For example, when you pan fully to the right, only the right channel is audible. This pan type uses a linear panning curve.
- The **Constant Power** pan type maintains a constant volume as you move the pan point from channel to channel. This pan type, which uses the constant-power panning curve, is most useful for panning monaural source media.
- The **Film** mode allows you to pan between pairs of adjacent speakers in 5.1 surround projects using a constant power model. This mode is optimized for theater-style speaker placement. In stereo projects, Film mode functions identically to Constant Power.

  As you drag the pan point to the center speaker, the sound becomes diffused through the front and rear speakers. When the track is panned fully to the center speaker, there is no output from the front and rear speakers.

  Dragging the pan point to the center of the surround panner sends the signal to all speakers.

Note: *If you're panning fully to a single speaker in Film mode, you may notice that some signal is mixed to the opposite speaker. This is because the ideal placement for surround speakers does not match the representation in the surround panner. For example, panning to the front-left speaker produces a low-level signal in the rear-left speaker.*

This is because your front-left speaker should be positioned 30° left of center and the speaker in the surround panner is located 45° left of center. To produce a true 45° left-of-center pan, the signal is panned between the front- and rear-left speaker.

Using the grid to monitor panning

The grid in the Surround Panner window helps you to visualize how your panning will sound. The grid's spacing changes to match the current pan type.

The vertical lines represent the points where the left-to-right signal ratio is 6 dB, 0 dB, and -6 dB respectively: at the far-left line, the left channel is 6.0 dB louder than the right channel.

The horizontal lines represent the points where the front-to-rear signal ratio is 6 dB, 0 dB, and -6 dB respectively. As you adjust the **Center** fader, the lines move forward or backward to compensate for the center-channel gain.

Note: *The grid assumes that you're using a correctly set-up surround system (matched speakers and ideal positioning). Variations in your monitoring system will cause inconsistencies between the graph and perceived output.*

Automating panning

You can automate panning on a track or mixer control by adding keyframes. Keyframes are similar to envelope points in that they mark specific locations in the track where settings change. However, unlike envelope points, keyframes appears just below the track to which they apply.

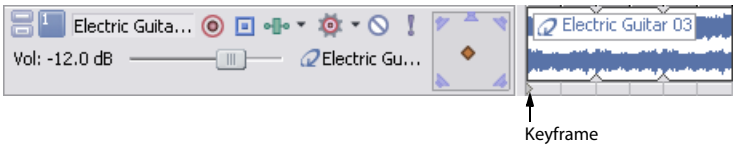
To add panning keyframes to a mixer control, you must first view the mixer control in track view. From the **View** menu, choose **Show Bus Tracks** to view the bus track at the bottom of the track view. *For more information, see Viewing bus tracks on page 150.*

Turning on panning keyframes

Before adding individual keyframes, you must first turn on the panning keyframes for the track or bus track.

1. Select the track or bus track for which you want to automate panning.
2. From the **Insert** menu, choose **Envelopes**, and choose **Surround Pan Keyframes** from the submenu.

   An additional row appears below the track with a single keyframe positioned at the beginning of the project. This single keyframe represents the current panning settings for the track.



Adding panning keyframes

With panning keyframes turned on, you can add keyframes at any location along the track or bus track.

1. Position the cursor where you want to begin panning the track.
2. Select the **Automation Settings** button (⚙) on the track you want to pan.
3. Double-click the surround panner to display the Surround Panner window.
4. Adjust the panning settings. *For more information, see Using the Surround Panner window on page 216.*

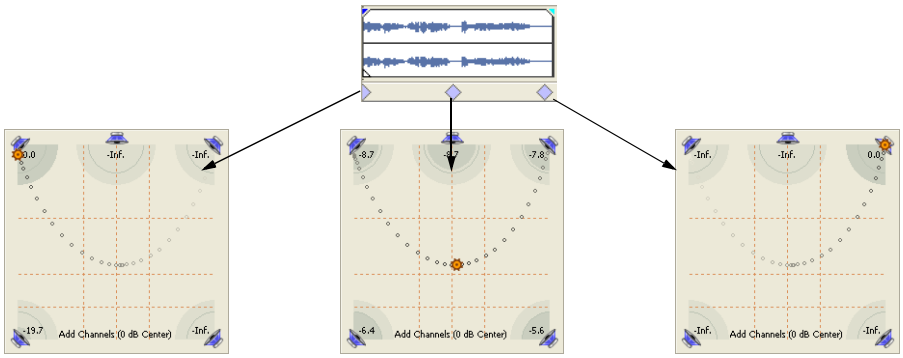
> **Note:** *You cannot automate muting/including channels.*

5. Close the Surround Panner window.

   A keyframe with the pan settings you created appears below the track at the cursor position.

> **Tip:** *You can also add keyframes by double-clicking the keyframe row or by right-clicking the row and choosing* **Add Keyframe** *from the shortcut menu. Once you've added the keyframe, double-click it to adjust panning settings in the Surround Panner window.*

As you add keyframes to a track or bus track, the Surround Panner window shows the path of the panning keyframes. The **Smoothness** slider controls the smoothness of the interpolation path between the keyframes. *For more information, see Adjusting the Smoothness slider on page 221.*



Working with keyframes

After you add keyframes, you can work with them in much the same way as envelope points. *For more information, see Using track automation envelopes on page 111.*

Moving keyframes

Drag a keyframe to a new position below its track.

Duplicating keyframes

Hold Ctrl and drag a keyframe to a new position below its track.

Editing keyframes

1. Double-click a keyframe to open the Surround Panner window.
2. Adjust the panning settings as desired and close the window.

Changing keyframe interpolation curves

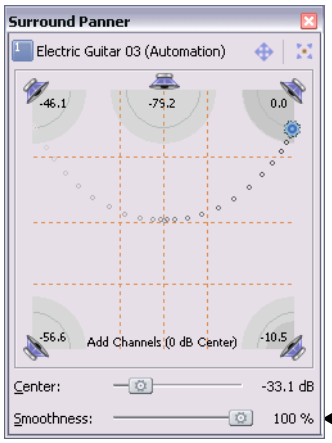
To control how the pan is interpolated between keyframes, right-click a keyframe and choose an interpolation curve type from the shortcut menu. Keyframe interpolation curves control how the pan occurs over time.

Keyframe	Interpolation curve	Description
	Hold	No interpolation takes place. The keyframe's settings are maintained until the next keyframe.
	Linear	Panning is interpolated in a linear path.
	Fast	Panning is interpolated in a fast logarithmic path.
	Slow	Panning is interpolated in a slow logarithmic path.
	Smooth	Panning is interpolated along a smooth, natural curve.

Adjusting the Smoothness slider

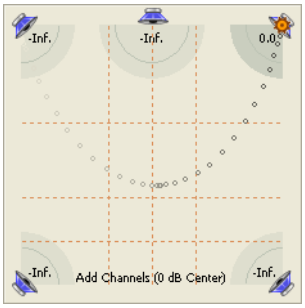
The **Smoothness** slider controls the perceived motion of sound within the sound field among three or more keyframes. When you drag the **Smoothness** slider to 0, the changes are interpolated between keyframes along a linear path. As you increase the smoothness value, the path between keyframes grows more curved and smooth.

1. Double-click a keyframe. The Surround Panner window appears.

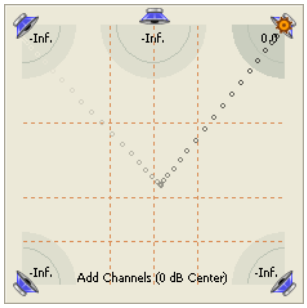


2. Drag the **Smoothness** slider to adjust the smoothness of the spatial interpolation path leading up to this keyframe.

Three keyframes with smoothness=100...



...and the same three keyframes with smoothness=0.



Locking keyframes to events

If you want keyframes to move with an event when it is moved along the timeline, choose **Lock Envelopes to Events** from the **Options** menu.

Hiding keyframes

1. Select the track for which you want to hide keyframes.
2. From the **View** menu, choose **Show Envelopes**, and choose **Surround Pan Keyframes** from the submenu.

Deleting keyframes

Right-click a keyframe and choose **Delete** from the shortcut menu.

Rendering surround projects

5.1 surround projects are rendered to produce six monaural files (WAV or AIFF). You can then use an authoring application to create the final cinema, DVD-Audio, DVD-Video, or DTS 5.1 Music project from the rendered files.

With the addition of the Sony 5.1 Surround Plug-In Pack, you can render AC-3 files and burn the resulting files to DVD.

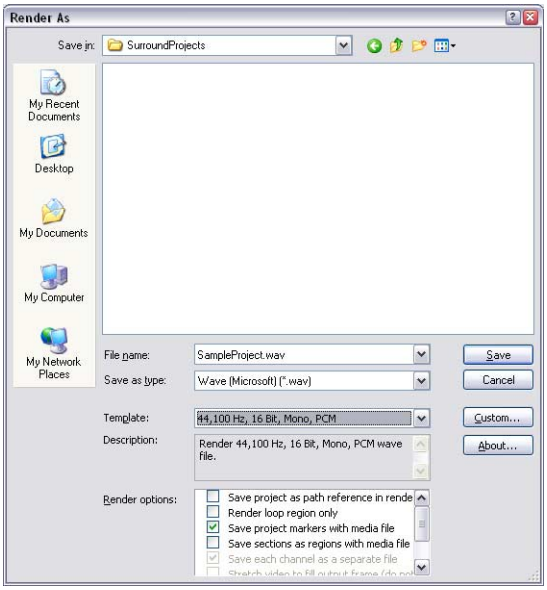
Note: *Before rendering your surround project, check your surround authoring application's documentation to determine its required audio format with respect to the LFE channel. For more information, see* *Setting up surround projects on page 212*.

1. From the **File** menu, choose **Render As**. The Render As dialog appears.
2. From the **Save in** drop-down list, choose the drive and folder where the file will be saved.
3. Enter a new name for the project in the **File name** box.
4. From the **Save as type** drop-down list, choose the desired file format (AIFF or WAV). If you have the Sony AC-3 Encoder, you can choose AC-3 from the list as well.
5. If necessary, click **Custom** to customize the rendering settings. *For more information, see* *Creating custom rendering settings on page 54*.

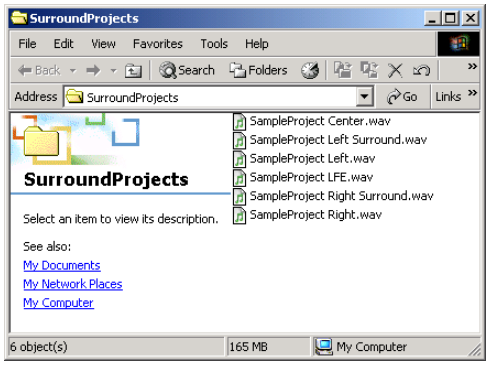
Note: *You are limited to creating monaural files when rendering a surround project.*

6. Click **Save**.

Rendering the surround project SampleProject.wav...



...results in six WAV files.



Burning AC-3 files to DVD

With the addition of the AC-3 DVD Burner included in the Sony 5.1 Surround Plug-In Pack, you can burn AC-3 files to a DVD.

1. From the **Tools** menu, choose **Start AC-3 DVD Burner**. The AC-3 DVD Burner application starts.
2. Follow the instructions for burning a DVD in the AC-3 DVD Burner online help. To access online help, click **Help** in the AC-3 DVD Burner screen.

Appendix A Customizing ACID Software

You can customize the software to suit your project needs and working preferences. You may change these settings at any time. If you use the same settings for all of your projects, you may set the ACID® application to use your settings as defaults.

In this chapter, you will find information about functions that allow you to customize and set the application's preferences.

Working with ACID windows

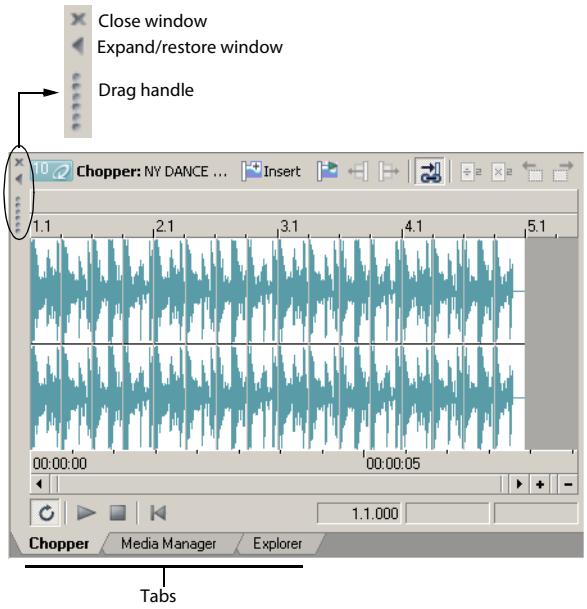
The software has various windows that allow you to perform specific tasks related to your project or manage your media. These windows can float on the workspace or be docked in the window docking area. All these windows may be viewed or hidden via the **View** menu or their respective shortcut keys.

Window	Shortcut keys	Description
Explorer	Alt+1	Allows you to view and access your media files without leaving the work area. You may also preview media files and place them in your project from this window.
Chopper™	Alt+2	Allows you to select portions of a media file that can be placed into tracks as events.
Mixer	Alt+3	Allows you to work with busses, assignable effect chains, and soft synth controls.
Video Preview	Alt+4	Displays a project's video output at the current cursor position in the timeline.
Media Manager	Alt+5	Displays the Media Manager™, which you can use to search for, manage, and tag your media files.
Track Properties	Alt+6	Allows you to view and edit track attributes. For MIDI tracks, allows you to edit MIDI using the piano roll editor, list editor or other OPT plug-ins.
Surround Panner	Alt+7	Allows you to control panning in a 5.1 surround project.
Soft Synth Properties	Alt+8	Allows you to change the attributes of soft synth controls in the Mixer window.
Audio Plug-In	Alt+5	Allows you to view and edit settings for assignable, bus, soft synth, and track effect chains.
Plug-In Manager	Ctrl+Alt+1	Allows you to view and choose effects plug-ins to be added to a track, bus, or assignable effects chain.
Groove Pool	Ctrl+Alt+2	Allows you to view and edit grooves in your project.
Clip Properties	Ctrl+Alt+3	For audio (non-MIDI) clips: allows you to change clip types (loop, one-shot, and Beatmapped), and adjust time stretching, pitch, root notes, tempo, and downbeat. For MIDI clips: allows you to edit data using the OPT list editor or piano roll.

Docking and floating ACID windows

The window docking area allows you to keep frequently used windows available but out of the way while you are working with a project. You can dock windows either in a single stack spanning the width of the screen or divide the window docking area into sections (e.g., right, middle, and left) and create several stacks. You can also create floating docks by dragging several windows to the same area on your screen.

Windows that are not currently visible in a stack display a tab that you can click to display it. You can also expand, restore, or close a window using the buttons in the window's upper-left corner. Windows are displayed in fixed positions in the lower portion of the window.



Note: *When the last window in the docking area is closed or removed, the docking area minimizes automatically. When the docking area is minimized, dragging a dockable window over the bottom of the ACID window causes the docking area to open again.*

Docking windows

1. If the window is floating on the workspace, grab the window by its title bar and drag it to the window docking area anywhere below the track list or track view. As you drag the window, the window's outline appears.
2. Position the window's outline in the docking area where you want it and release the mouse.

Floating windows

You may float a window so that it does not appear in the docking area.

1. Grab the window by its handle (the border along the left side) and drag the window to the workspace. As you drag the window, the window's outline appears.
2. Position the window anywhere in the workspace and release the mouse. You can move the floating window by dragging it to a new position or docking it again.

   If desired, you can create a floating dock with multiple windows by repeating steps 1 and 2.

Preventing windows from docking

Press Ctrl while dragging a window to prevent it from docking in the workspace.

Resizing the window docking area

You can resize the track list, track view and docking area sections of the ACID workspace by dragging the dividers between them.

Tip: *You can quickly hide or show the window docking area by pressing F11.*

Changing the time ruler format

You may specify a time format for the ACID time ruler to display. The ruler, located below the track view, displays real time in several formats. You may change the ruler format in one of the following ways:

- From the **View** menu, choose **Time Ruler**, and choose the desired format from the submenu.
- Right-click the time ruler and choose the desired format from the shortcut menu. In addition to right-clicking the time ruler in the track view, you can use this technique on the time rulers in the Chopper and Track Properties windows.

The following table describes the available time formats.

Time format	Description
Samples	Displays the time ruler in samples.
Time	Displays the time ruler in hours:minutes:seconds.milliseconds.
Seconds	Displays the time ruler in seconds.
Time & Frames	Displays the time ruler in hours:minutes:seconds.frames with a frame rate equal to that of your video.
Absolute Frames	Displays the time ruler in total frames from the beginning of the project.
Feet & Frames 16 mm	Displays the time ruler in feet+frames at a rate of 40 frames per foot.
Feet & Frames 35 mm	Displays the time ruler in feet+frames at a rate of 16 frames per foot.
SMPTE Film Sync (24 fps)	Displays the time ruler in hours:minutes:seconds:frames with a frame rate of 24 frames per second for synchronizing with film.
SMPTE EBU (25 fps)	Displays the time ruler in hours:minutes:seconds:frames with a frame rate of 25 frames per second for European Broadcasting Union.
SMPTE Non-Drop (29.97 fps)	Displays the time ruler in hours:minutes:seconds:frames with a frame rate of 29.97 frames per second.
SMPTE Drop (29.97 fps)	Displays the time ruler in hours:minutes:seconds;frames with a frame rate of 29.97 frames per second using dropped frame numbers.
SMPTE 30 (30 fps)	Displays the time ruler in hours:minutes:seconds:frames with a frame rate of 30 frames per second.
Audio CD Time	Displays the time ruler in tt+mm:ss:ff (track number +/- minutes:seconds:frames) with a frame rate of 75 fps.

Using the ruler offset

The ruler offset allows you to change the project ruler to start at a specific time. Typically, this feature is used in conjunction with SMPTE and MIDI projects when their timelines are the main reference. Basically, the ruler offset allows you to set the ACID time ruler based on another project's timeline for reference purposes, i.e., the SMPTE or MIDI timelines.

When you enter a new value along the timeline, the ruler's time units are adjusted at the cursor position and at the start of the timeline. For example, if the cursor is positioned at the 2:00 minute mark and you enter 15:00 minutes, the start of the project will begin at 13:00 minutes. The ruler offset feature works the same for all time formats.

1. Position the cursor anywhere along the timeline.
2. Right-click the time ruler to display a shortcut menu.
3. From the shortcut menu, choose **Set Time at Cursor**. A box opens at the cursor position.

4. Enter a time value.
5. Press Enter to set the cursor position's time value. The value that you enter at the cursor position affects all time values that precede and follow it.

Using the project grid

The project grid appears on the track view and is mainly used to align the events in your project. The grid divides your project into equal units based on the setting that you choose. The grid setting can be based on the project type or how you prefer to work.

It is important to remember that in some cases the grid lines and the ruler divisions do not match. This is because they are two independent functions. However, you may set the grid to align to the ruler, which is the default setting.

The grid can use the following formats:

Ruler Marks	16th Notes
Measures	16th Note Triplets
Half Notes	32 Notes
Quarter Notes	32nd Note Triplets
Quarter Note Triplets	64th Notes
8th Notes	64th Note Triplets
8th Note Triplets	

Setting the grid type

You may change the grid type at any time and apply it to your project. There are two ways to set the grid type for your project.

- From the **Options** menu, choose **Grid Spacing**, and choose the type of grid you want from the submenu.
- Right-click the marker bar, choose **Grid Spacing** from the shortcut menu, and choose the type of grid that you want from the submenu.

Using the toolbar

The toolbar is set to display below the menu bar. However, you may hide and customize the toolbar to suit your preferences. The settings that you apply to the toolbar remain set until you change them again.

Hiding and displaying the toolbar

If you prefer to use shortcut keys when working with your project, you may hide the toolbar to create more workspace. Choose **Toolbar** from the **View** menu to hide it. The check mark next to the command is removed and the toolbar disappears. The toolbar remains hidden until you choose **Toolbar** from the **View** menu to display it again.

Reordering toolbar buttons

You can change the toolbar's button order to suit your preferences. You may either reorder the buttons directly on the workspace or via the Customize Toolbar dialog.

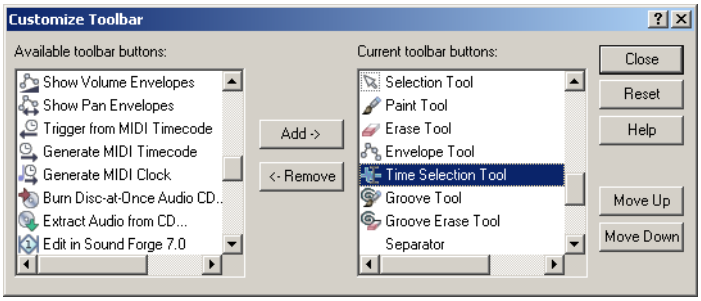
Reordering buttons on the ACID workspace

1. Hold Shift and drag the button that you want to move to the new location on the toolbar. A hand icon ( ) within an outline of the button indicates that you are moving the button.
2. Release the mouse to drop the button in its new location.

Reordering buttons in the Customize Toolbar dialog

The Customize Toolbar dialog allows you to control the order and functionality available on the Toolbar. You may return the toolbar to its default settings by clicking the **Reset** button.

1. From the **Options** menu, choose **Customize Toolbar**. The Customize Toolbar dialog appears.



2. On the **Current toolbar buttons** pane, select the button that you want to move and click **Move Up** or **Move Down**.
3. Click **Close** to save the toolbar changes and close the dialog.

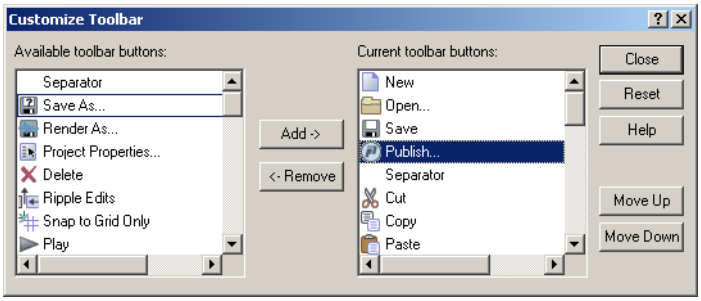
Adding buttons to the toolbar

A series of buttons are included that you may add to the toolbar. These buttons are listed in the Customize Toolbar dialog. You may also add separators on the toolbar to organize the buttons to suit your preferences.

You may return the toolbar to its default settings by clicking the **Reset** button on the dialog.

1. From the **Options** menu, choose **Customize Toolbar**. The Customize Toolbar dialog appears.
2. On the **Available toolbar buttons** pane, use the scroll bars to locate the button that you want to add and select it.
3. On the **Current toolbar buttons** pane, select the button that you want the newly added button to proceed in order.

   For example, if you want to add the **Save As** button and want it to precede the **Publish** button, select the **Publish** button in the **Current toolbar buttons** pane.



4. Click **Add**. The new button is added above the selected button on the **Current toolbar buttons** pane.

> **Tip:** *You may also double-click a button in the* **Available toolbar buttons** *pane to add it to the toolbar.*

5. Click **Close** to save the toolbar settings and close the dialog.

Removing buttons from the toolbar

You may remove buttons and separators from the toolbar. If you have added buttons to the toolbar, removing unused or unwanted buttons allows you to maximize the toolbar's space. You may remove toolbar buttons either directly on the workspace or via the Customize Toolbar dialog.

Removing buttons on the ACID workspace

1. Hold Shift and drag the button that you want to remove off the toolbar. A hand icon ( ) within an outline of the button indicates that you are removing the button.
2. Release the mouse to remove the button.

Removing buttons in the Customize Toolbar dialog

You may return the toolbar to its default settings by clicking the **Reset** button on this dialog.

1. From the **Options** menu, choose **Customize Toolbar**. The Customize Toolbar dialog appears.
2. On the **Current toolbar buttons** pane, select the button that you want to remove.
3. Click **Remove**. The button is removed from the **Current toolbar buttons** pane and will not appear on the toolbar.

> **Tip:** *You may also double-click a button to remove it.*

4. Click **Close** to save the toolbar settings and exit the dialog.

Using the time display

The time display above the track list reflects the cursor's position on the timeline.

Changing cursor position

You can edit the cursor position using time as it is displayed on either the beat ruler or time ruler:

- To set the cursor's position based on the beat ruler, right-click the time display and choose **Edit Cursor Position - Beats** from the shortcut menu.
- To set the cursor's position based on the time ruler, right-click the time display and choose **Edit Cursor Position - Time** from the shortcut menu.

Once you make your selection from the shortcut menu, a box appears for the appropriate time display. Enter the cursor's new position and press Enter.

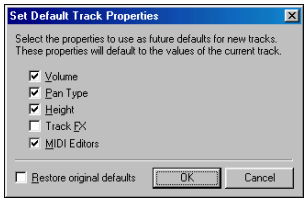
> **Tip:** *You can also edit the cursor position directly by double-clicking the desired time display value and entering the new cursor position.*

Changing the time display

The time display window always reflects the format of the time ruler. You may change the ruler settings for the time ruler via the time display window.

1. Right-click the time display window to display a shortcut menu.
2. Choose **Time at Cursor Format** to display a submenu.
3. Choose the desired time format.

   Both the time window and time ruler display the chosen time format.



Monitoring MIDI timecode

You can use the time display to monitor incoming or outgoing MIDI timecode. MIDI can be monitored in the following ways:

- Display MIDI timecode generated from external sources.
- Display MIDI timecode and MIDI clock information that is generated.

The time display settings work in conjunction with your project's properties and MIDI setup options.

1. Right-click the time display window to display a shortcut menu.
2. From the shortcut menu, choose the type of MIDI monitoring to be displayed. Once you have made your selection, the time display window displays both the MIDI code being input or output and a status message.

Setting default track properties

Each new track has certain default properties, including height, volume, pan type, and track effects. You can modify these track properties and then use the modified track as a standard for all new tracks you create.

1. Modify a track's volume (pg. 46), pan type (pg. 111), height (pg. 44), and track effects (pg. 105).
2. Right-click the track header and choose **Set Default Track Properties** from the shortcut menu.
3. Select the check boxes for properties you wish to set. Clear the check boxes for the properties you wish to leave as they are.

> **Tip:** *Select the* **Restore original defaults** *check box to return to the original track properties.*

4. Click **OK**.

Setting ACID preferences

From the **Options** menu, choose **Preferences** to display the Preferences dialog.

Using the General tab

Item	Description
Automatically open last project on startup	Select this check box if you want to reopen the project that was open the last time the software was closed. When you clear this check box, the software starts with a blank project.
Show logo splash screen on startup	Select this box if you want the ACID logo splash screen to display upon startup.
Use Net Notify to stay informed about Sony products	When you select this check box, information is periodically displayed from Sony at startup. Clear the check box to bypass the Net Notify dialog.
Draw contents of events	Select this check box if you want waveforms to be drawn in events. Clearing the check box can improve performance on some systems.
Create undos for FX parameter changes	Select this check box if you want Undos to be created when you change a plug-in parameter.
Confirm media file deletion when still in use	When you select this check box, a message box appears asking if you want to delete a media file that is currently in use by the project.
Close media files when ACID is not the active application	When you select this check box, you can edit files in external editors while the files are contained in events in ACID.
Close audio and MIDI ports when ACID is not the active application	Select this check box if you want to close ACID audio and MIDI ports when you switch to another application. Clear the check box if you want to leave ports open. For example, if you have a MIDI keyboard routed to an ACID soft synth, clearing the check box allows you to continue to hear the soft synth while you work with a sequencer.
Enable multimedia keyboard support	When you select this check box, you can use a multimedia keyboard to control playback of a project.
Automatically render large Wave files as Wave64	The WAV format is limited by a maximum file size of ~2GB. When you select this check box, you can render larger files as Sony Wave64 files.
Prompt for region and marker names if not playing	When you select this check box, a box appears so you can name markers and regions as you place them.
Create project file backups on save (.acd-bak)	When you select this check box, a backup of project files is made when you open them. Backup files are stored in the same folder as your project and use the same file name with the extension .acd.bak. You can use backup project files to revert to a project's previous state.
Preserve pitch for new Beatmapped tracks when tempo changes	Select the check box if you want to maintain the pitch of Beatmapped tracks when the project tempo changes.
Automatically start the Beatmapper Wizard for long files	Select the check box if you want to start the Beatmapper Wizard when you add a file that is longer than 30 seconds to your project.
Use slower updates to prevent playback clicks during editing	Select this check box if you want to update the ACID audio engine more slowly. Selecting this option can prevent unwanted artifacts during timeline editing.
Enable autosave	Select this check box to create a temporary project file that can aid in crash recovery. Your project information is autosaved every five minutes without overwriting your project file.
Use ASPI for CD burning and extracting	Select this check box if you want to use ASPI (Advanced SCSI Programming Interface) when burning and extracting CDs. ASPI enables host adapters and device drivers to share a single SCSI hardware interface.
Use SPTI for CD burning	Select this check box if you want to use SPTI (SCSI Pass-Through Interface) to communicate with your CD burning drive.
Autoname extracted CD tracks	Select this check box if you want file names to be automatically assigned to tracks that you extract from CDs. File names include the CD's ID number and track number.
Keep bypassed FX running (to avoid pause on bypass/enable)	Select this check box if you want effects to remain open so you can bypass/enable effects with no pause for A/B testing. When the check box is cleared, effects are fully bypassed, conserving processing power.
Confirm groove deletion when still in use	When this check box is selected, a message box will appear asking if you want to delete a groove that is currently in use by the project.

Item	Description
Enable Windows XP Theme support	When this check box is selected, the ACID window will inherit the appearance of the current theme when using Windows® XP. When the check box is cleared, user interface elements will maintain the classic Windows operating system appearance.
Save media-usage relationships in active media library	When this check box is selected, the Media Manager™ will save information about media usage so you can perform searches for media relationships. You can search for projects that use a media file, projects where a media file was previewed, media that was rendered with a media file, and so on.
Enable Media Manager (requires ACID restart)	When this check box is selected, the Media Manager will start when you start ACID. Clear the check box to turn off the Media Manager and prevent it from starting with the application. If you're not using the Media Manager, you may want to turn it off to conserve processing power or memory.
Allow snapping for post-groove markers	When this check box is selected, groove markers in the Groove Editor will snap to the current grid spacing if snapping is enabled. Hold Shift while dragging to bypass snapping (press Shift after you click). Clear the check box if you do not want groove markers to snap to the grid.
Check .acd file type association at startup	When this check box is selected, ACID automatically checks whether .acd, acd-bak, and .acd-zip are associated with ACID and prompts you to restore the file association if necessary.
Do not query Gracenote for CD information	When this check box is selected, ACID will not attempt to obtain disc information from Gracenote MusicID when you insert an audio CD.
Recently used project list	Select the check box and enter a number in the box if you want to list your most recently used projects at the bottom of the **File** menu.
Default All	Restores all general preferences to the default settings.

Using the Audio tab

Item	Description
Open files as loops between (seconds)	Enter a lower and upper limit to specify which files will be opened as loops if stretching properties are not saved in the file. Files that are shorter than the lower limit will be opened as one-shot tracks; files longer than the upper limit will the Beatmapper Wizard. (pg. 112)
Quick fade edit edges of audio events	When the check box is selected, ACID software will place a rapid fade on the edges of audio events (10 ms by default) to soften potentially harsh transitions. When the command is not selected, edges of new events are not faded (fades that were applied before the check box is cleared are not removed). Right-click an event and select or clear the Quick Fade Edges command to override the default event fade behavior for individual events. Note: Selecting or clearing the check box will not affect existing quick fades in your project. To remove all quick fades from a project, enter 0 in the Quick fade time box.
Quick fade time (ms)	Enter a time (in milliseconds) to specify the duration of fades applied to the edges of events. Important: Changing this setting will affect all existing quick fades in your project.
Waveform display while recording	Choose a setting from the drop-down list to specify whether you want to display waveforms in the timeline while recording audio. (pg. 155) Turning off waveform displays can improve performance.
ACID type for recorded audio	Choose a setting from the drop-down list to specify the type of clip that will be created when you record audio. (pg. 38)
Record action when nothing is armed	Choose a setting from the drop-down list to specify what happens if you click the Record button when no track is armed: New Audio Track Creates a new audio track where you can record. New MIDI Track Creates a new MIDI track where you can record. Do Nothing The Record button is unavailable unless an audio or MIDI track is armed for recording.
Include project name when naming recorded media	Select this check box if you want to use the project name to identify recorded clips. For example, if this check box is selected and you're working with My Remix.acd, recorded files will be named My Remix Track *X* Recording *X*.wav. If this check box is not selected, recorded files will be named Track *X* Recording *X*.wav.
Default All	Click to restore the Audio tab to the default settings.

Using the Audio Device tab

Item	Description
Audio device type	Choose a driver type from the drop-down list. Microsoft Sound Mapper. The default setting. Allows the Sound Mapper to choose an appropriate playback device. Direct Sound Surround Mapper. Allows the Surround Mapper to choose appropriate playback devices for the front, rear, and center/LFE channels in a 5.1 surround project. (pg. 212) Windows Classic Wave Driver. Allows you to choose a specific audio device using a classic wave driver. For stereo projects, choose a device from the Default Stereo and Front playback device drop-down list. For 5.1-surround projects, choose devices from the Default Stereo and Front playback device, Default Rear playback device, and Default Center and LFE playback device drop-down lists.

Audio device type (continued)	ASIO. Allows you to choose a specific audio device using a low-latency ASIO driver. For stereo projects, choose a device from the Default Stereo and Front playback device from the drop-down list. For 5.1-surround projects, choose devices from the Default Stereo and Front playback device, Default Rear playback device, and Default Center and LFE playback device drop-down lists. ReWire Device Driver. Allows you to use ACID software as ReWire device (pg. 152)in a ReWire mixer application. If a ReWire mixer application starts ACID software, that ACID window will start in ReWire mode and cannot be switched from ReWire mode. If a ReWire mixer connects to an existing ACID window, that window will run in ReWire mode, and you can switch out of ReWire mode if necessary. If you exit that instance of the software and start ACID software again, the new instance will start ReWire mode, and you can switch out of ReWire mode if necessary by choosing a different audio device type.
Default Stereo and Front playback device	Choose the device that you want to use for playing stereo sound data. In a 5.1 surround project, this device plays the right and left channels. Selecting a device such as the Microsoft Sound Mapper allows Windows to select an appropriate device to use for the current sound data. Note: If you have selected Microsoft Sound Mapper, you cannot assign busses to different devices.
Default Rear playback device	Choose the device that you want to use for playing the rear channels (right surround and left surround) in a 5.1 surround project.
Default Center and LFE playback device	Choose the device that you want to use for playing the center and LFE channels in a 5.1 surround project.
Playback buffering (seconds)	The Playback buffering (seconds) slider specifies the total amount of buffering that is used during playback. The larger the number, the more buffering that occurs during playback. This value should be as low as possible without gapping. To set it, start at 25 and play a typical song. Move some of the track faders. If the playback gaps at all, try increasing this slider in small increments until the gapping stops. As you increase this slider, the RAM meter at the bottom of the ACID window will indicate more RAM usage. If you simply cannot get playback to be free of gapping, you need to either decrease the number of tracks you are trying to play simultaneously, install more RAM in your computer so you can increase buffering, buy a faster access hard drive, or minimize the number of audio plug-ins you are trying to use simultaneously.
Enable track buffering	Select this check box and drag the Track buffering slider if you want to adjust the amount of audio that is prerendered ahead of the cursor position. When the check box is selected, a separate processing thread is used to render audio from tracks. On multiprocessor or multicore computers, a thread will be created for each logical processor. When the check box is cleared, a single processing thread is used to render audio from tracks and busses.
Default audio recording device	Choose the device that you want to use for recording sound data. Selecting the Microsoft Sound Mapper allows the operating system to select an appropriate device to use for the current sound data.
Automatically detect and offset for hardware recording latency	Select the check box to automatically compensate for offset between the time you initiate recording and when your sound card starts recording.
Advanced	Click this button to open the Advanced Audio Configuration dialog
Default All	Click to restore the Audio tab to the default settings.

Setting Advanced audio preferences from the Audio Device tab

Item	Description
Audio devices	This list displays all of the audio devices that are installed in your computer. Selecting a device allows you to set the options for that device.
Interpolate position	When you select this check box, the software attempts to compensate for inaccurate devices by interpolating the playback or recording position. If you notice that your playback cursor is offset from what you are hearing, select this option for the playback device.
Position bias	If the position of playback or record does not match what you hear after you enable Interpolate position, you can attempt to compensate using the Position bias slider. Moving this slider offsets the position forward or backward to compensate for the inaccuracies of the device.
Do not pre-roll buffers before starting playback	When you select this check box, buffers are not created prior to starting playback. Some devices do not behave properly if you clear this check box. If your audio stutters when you start playback, try selecting this option.
Audio buffers	Drag the slider to set the number of audio buffers that will be used. Adjusting this setting can decrease gapping or help you synchronize the input and output for record input monitoring.
Buffer size (samples)	Choose a setting from the drop-down list to indicate the buffer size you want to use.
Priority	Choose a setting from the drop-down list to set the priority that is assigned to your audio buffers. Increasing the buffers' priority can help you attain smoother playback, but it can also adversely affect other processes.

Using the MIDI tab

Item	Description
Make these devices available for MIDI track playback	In the Hardware Port column, select the MIDI devices that you want to be available for track playback (pg. 194) and generating MIDI clock (pg. 200). In the MIDI Thru From column, right-click an entry and choose a MIDI device from which the device selected in the Hardware Port column will accept incoming MIDI. To load a program map for a hardware synth, right-click the Device box for your MIDI device and choose Load Device Template from the shortcut menu. The selected program map will be used for any track that is routed (pg. 194) to the MIDI device. The device name will be displayed on the MIDI Output button on the track header, and the programs from the device map will be available when you click the Program button in the track header.
	To assign an input device to a MIDI output port, right-click the Device box, choose Input from the shortcut menu, and then choose an input device from the submenu. For example, by assigning an input device, you can choose which controller you want to use to play a MIDI device. When you assign an input device to a MIDI output port, the device name is displayed in the Device column in the appropriate row in the Make these devices available for MIDI input list.
	If you want an output device to receive MIDI thru data from an input device, right-click the MIDI Thru From column and choose a device from the shortcut menu. When you choose a MIDI Thru From device, the device name is displayed in the Device column in the MIDI Thru To column in the Make these devices available for MIDI input list.
Make these devices available for MIDI input	Select the check box for each MIDI device that you want to be available for recording MIDI (pg. 162) and controlling soft synths (pg. 195). To assign an output port to an input device, right-click the Device box, choose Output from the shortcut menu, and then choose an output device from the submenu.
	If you want a MIDI input device to echo its MIDI data to an output device, right-click the MIDI Thru To column and choose a device from the shortcut menu. You can select multiple devices to send MIDI thru data.

Item	Description
Auto MIDI input routing	Select the check box if you want to automatically route MIDI input devices to the soft synth that was viewed last in the Soft Synth Properties window. The Solo Listen to MIDI Input button in the Soft Synth Properties window is unavailable when this check box is selected.
Default All	Restores all MIDI preferences to the default settings.

Using the VST Effects tab

Item	Description
Default VST search folder	Displays the location where the software looks for VST effects.
Alternate VST search folder X	Click Browse to choose an alternate location where VST effects can be found.
Select VST effects to be available as audio plug-ins	Select the VST effects that you want available for use as ACID audio plug-ins. Only the VST effects located in the default or alternate search folders appear in this box.

Using the VST Instruments tab

Item	Description
Default VSTi® search folder	Displays the location where the software looks for VST instrument files.
Alternate VSTi search folder X	Click Browse to choose an alternate location where VST instrument files can be found.
Select VST instruments to be available as soft synths	Select the VST plug-ins that you want available for use as ACID soft synths. Only the VST instruments located in the default or alternate search folders appear in this box. After you add a VSTi soft synth to a project, the VST instrument stays locked until you close the software. When a VST instrument is locked, the lock icon for that VSTi displays as locked, and you cannot clear the VSTi's check box to make it unavailable in the software.

Using the ReWire Devices tab

Item	Description
Select ReWire™ devices to be available as soft synths	Select the ReWire client(s) that you want available for use as ACID soft synths.

Using the Video tab

Item	Description
Device	Choose a DV output device from the drop-down list. This is the interface to which your video device is connected.
Details	Displays information about the device selected in the External monitor device drop-down list.
If project format is invalid for DV output, conform to the following	If your source media does not conform to DV standards, choose a setting from the drop-down list.The video is adjusted to display properly on your external monitor.
Sync offset (frames)	If your audio is not synchronized with your external monitor, you can configure an offset for your hardware. Drag the slider to synchronize audio and video. This setting affects synchronization for previewing on an external monitor. Audio and video synchronization in your ACID project is unaffected.
Record engage delay (frames)	Drag the slider to specify the number of frames it takes your camcorder or deck to switch from Record Pause to Record mode. If you're missing frames from the beginning of your file after printing to tape, increase the setting. If you see duplicated frames at the beginning of your video, decrease the setting.
Default All	Restores all video preferences to the default settings.

Using the Editing tab

Item	Description
Project tempo range	Use the up and down arrows or enter a value in the boxes to specify the minimum and maximum tempo available in the ACID project. Changing this option affects the resolution of the Project Tempo slider.

Item	Description
Editing Application X	Enter the name of each editor you want to display in the track list shortcut menu. Right-click a track in the track list and choose Edit in [editor name] to edit the media file associated with a track. You can specify any editing tool you want to use; however, this feature was designed for use with destructive audio/MIDI editors.
Browse	Click Browse and select the .exe file for each editor you want to have available in the track list shortcut menu.
Name	Enter the name that you want to use to identify each editor. The name is displayed in the track list shortcut menu and the **Tools** menu.
Clear	Removes the specified editor from the Editing tab.
Check for latest versions of Sony editors	When you select this check box, the software automatically searches for the latest available Sony editors on your computer. If one is located, it appears as an available editor in the Editing Application X box.
Default All	Restores all editing preferences to the default settings.

Using the Sync tab

Setting sync preferences

Generate MIDI Timecode settings	
Output device	Choose a MIDI device from the drop-down list. MIDI timecode is sent to this device. The MTC slave should also be set to this device. This device will not be available for MIDI playback.
Frame rate	Choose a frame rate from the drop-down list. This frame rate is used to generate the MIDI timecode. The MTC slave must be set to the same frame rate.
Generate MIDI Clock settings	
Output device	Choose a MIDI device from the drop-down list. MIDI clock is sent to this device. The MIDI clock slave should also be set to this device.
Trigger from MIDI Timecode settings	
Input device	Choose a MIDI device from the drop-down list. MIDI timecode is received from this device. The MTC master should also be set to this device.
Frame rate	Choose a frame rate from the drop-down list. This value specifies the frame rate at which the MTC master sends timecode to ACID.
Advanced	Click to open the Advanced Sync Preferences dialog.
Default All	Restores all sync preferences to the default settings.

Setting advanced sync preferences

MTC Input	
Free-wheel for timecode loss	Select this check box if you want to continue to play if timecode is lost. Enabling this option can compensate for infrequent losses in timecode. If you frequently lose timecode, you should perform troubleshooting to determine the cause of the problem.
Free-wheel slack time	Use the up and down arrows or enter a value in the box to specify the amount of time that timecode can be lost before the free-wheel playback time starts. A longer time is more tolerant of breaks in the incoming timecode.
Free-wheel playback time	Use the up and down arrows or enter a value in the box to specify the amount of time that playback continues after the free-wheel slack time has been exceeded.
Synchronization delay time	Use the up and down arrows or enter a value in the box to specify the amount of time it takes for the software to synchronize itself to incoming timecode. On slower computers, this time should be set to approximately two seconds. On faster computers, it may be set lower. Setting this value too low can sometimes result in audible pitch shifting at the start of playback.
Offset adjust	If ACID is consistently behind or ahead of your MTC generator, enter a value in the box to adjust a synchronization offset with quarter-frame accuracy. If the software is behind, set this value to a negative number. A setting of - 4 is a common offset. If the software is ahead, set this value to a positive number. A setting of +4 is a common offset, although it is rare that the application will sync ahead.
MTC Output	
Full-frame message generation	Select a radio button to determine when full-frame timecode messages are sent while Generate MIDI Timecode is active. Full-frame messages are used by some external synchronizable audio devices to seek to a proper location prior to actually starting synchronization. Tape-based recorders especially benefit from seeking to full-frame messages because of the time it takes to move the transport to the proper location. However, full-frame messages are ignored by some devices, and may actually cause unexpected behavior in other devices. Refer to your hardware documentation to find out if your hardware supports full-frame messages.
MIDI Clock Output	

MTC Input	
Send Start instead of Continue when beginning playback	Select this check box if you want a Start command rather than a Continue command to be sent when Generate MIDI Clock is activated. When the check box is cleared, a Continue command is sent, as this type of command allows the chasing device to start from a specific time. However, some older sequencers that support MIDI Clock chase do not support the Continue command and must start playback from the beginning every time.
Song Position Pointer generation	Select a radio button to determine when Song Position Pointer messages are sent while Generate MIDI Clock is active. Song Position Pointer messages are used by MIDI applications and devices to seek to a proper location prior to starting synchronization.

Using the Display tab

Item	Description
Track colors	Use these controls to change the default colors used to display tracks in your project. Select a track from the **Track** drop-down list, and then click the color swatch to display a color picker. You can choose any color using the RGBA or HSLA controls, or click the eyedropper to sample a color from your screen. When you click **OK** or **Apply**, all tracks that used the selected color are updated.
Envelope colors	To customize an envelope's color, select an envelope from the Envelope type drop-down list. Click the color button to the right to display the Envelope Color dialog and choose a custom color.
Icon color saturation	Drag the slider to adjust the color intensity of icons in the ACID window. Drag to the left to decrease the color saturation, or drag to the right to increase it.
Icon color tint	Drag the slider to adjust the amount of tinting that is applied to the icons in the ACID window. Drag the slider to the right to add an average of the title bar colors to the icons. Drag to the left to decrease the amount of tinting applied.

Using the Other tab

Item	Description
Enable multiple-selection preview in Explorer window	Select this check box if you want to preview multiple selected files in the Explorer. Enter values in the Number of times to repeat each Loop, Seconds of each One-Shot to play, and Number of Beatmapped measures to play boxes to specify how different file types are previewed.

Using the Folders tab

Item	Description	
Default project folder	This box displays the path to the folder that will be used for creating new projects. Click the Browse button to choose a different folder.	
Default groove folder	This box displays the path to the folder where default grooves for new ACID projects are saved. Click the Browse button to choose a different folder. This folder is also used as the default location for saving exported grooves from the Groove Pool window.	
Use a single default folder for project media saves	Select this radio button if you want to save all project media in a single folder.	
Use separate defaults for each type of project media save	Select this radio button if you want to choose where to save each type of project media. The following boxes display the location where each type of media file will be saved.	
	Record	This box displays the path to the folder that will be used when you record new audio or MIDI tracks. Click the Browse button to choose a different folder. The folder you specify here is used by default for new projects, but if you want to choose a project-specific recorded files folder, you can use the Recorded files folder box on the Audio tab of the Project Properties dialog.
	Render to new	This box displays the path to the folder that will be used when you render to a new track. Click the Browse button to choose a different folder.
	Chop to new	This box displays the path to the folder that will be used when you create new tracks with the Chopper window. Click the Browse button to choose a different folder.

	New MIDI	This box displays the path to the folder that will be used when you export MIDI. Click the Browse button to choose a different folder. MIDI files are not created when you record MIDI or create new MIDI clips. MIDI data for clips is stored within the ACID project.
	Extract from CD	This box displays the path to the folder that will be used for tracks that you extract from audio CDs. Click the Browse button to choose a different folder.
	Render project	This box displays the path to the folder that will be used when you render your project. Click the Browse button to choose a different folder.
Temporary files folder	Displays the folder where temporary files are stored. Click Browse to specify a new folder. When you add a media file to a project from a removable device, a copy of the media file is stored in a temporary files folder. This keeps the media file available for use even if the source of the media is no longer accessible. Be aware that this folder is cleared when you close the software. However, the temporary files are not cleared if the software closes inappropriately.	
Free storage space in selected folder	This value displays the amount of space available in the folder specified in the Temporary files folder box.	

Using the External Control & Automation tab

Use the External Control & Automation tab to set up and customize control surfaces. From the **Options** menu, choose **Preferences** to display the Preferences dialog. Click the External Control & Automation tab. *For more information, see Using a control surface on page 202.*

Preference	Description
Smooth and thin automation data after recording or drawing	When recording automation or drawing envelope curves, ACID software creates as many envelope points or keyframes as possible to represent your control movements. Select this check box if you want to reduce the number of envelope points/ keyframes after recording or drawing is finished. For more information, see Recording automation settings on page 135. For more information, see Adding effect automation envelopes on page 128.
Set controls to default values when automation is turned off	Select this check box if you want controls to return to their default values when set the track's automation recording mode to **Automation Off.** Automated effect parameters do not have default settings and will retain their last-set values when you turn automation off. When the check box is cleared, controls will retain their last-set values when you turn automation off.
Available devices	Choose a device from the drop-down list and click **Add** to choose the control surfaces that will be available to ACID software. Adding a device loads its default profile.
Active control devices	Lists the control devices that you've added. Double-click a device name to customize its behavior.
Default all	Restores all control surface preferences to the default settings.

Note: *You can connect one Mackie Control Universal (with up to four Mackie Control Universal Extenders), one Frontier TranzPort, and up to five generic MIDI controllers.*

Customizing keyboard shortcuts

From the Options menu, choose **Customize Keyboard** to customize the keyboard shortcuts available in the ACID interface.

The **Keyboard mapping** box displays the currently assigned shortcut keys. Click a tab in the middle of the dialog to choose which shortcuts you want to see.

Editing or creating new shortcuts

1. Click a tab in the middle of the dialog to indicate the type of command you want to assign to a keyboard shortcut.
2. Select a command in the list.

> **Tip:** *You can type a word in the* **Show commands containing** *box to filter the list of commands to display only commands that contain the word you typed.*

3. Click the **Shortcut keys** box and press the key combination you want to assign to the selected command.
4. Click the **Add** button to assign the key combination in the **Shortcut keys** box to the selected command.

Saving a keyboard mapping

Click the **Save as** button and type a name to save your current keyboard shortcuts to an .ini file in the C:\Documents and Settings\[user name]\Local Settings\Application Data\Sony\ACID Pro\6.0 folder.

> **Tip:** *The Application Data folder is not visible unless the* **Show hidden files and folders** *radio button is selected on the View tab of the Windows Folder Options control panel.*

You can use this file as a backup or to share your keyboard shortcuts with other ACID users.

Deleting a keyboard mapping

Choose a mapping from the **Keyboard mapping** drop-down list and click the **Delete** button to remove the selected keyboard mapping.

> **Tip:** *You cannot delete the default ACID keyboard mapping.*

Importing a keyboard mapping

Copy an ACID 6.0 keyboard mapping .ini file to the C:\Documents and Settings\[user name]\Local Settings\Application Data\Sony\ACID Pro\6.0 folder.

> **Tip:** *The Application Data folder is not visible unless the* **Show hidden files and folders** *radio button is selected on the View tab of the Windows Folder Options control panel.*

The next time you start ACID, the new keyboard mapping will be available from the **Keyboard mapping** drop-down list in the Customize Keyboard dialog.

Resetting the default keyboard mapping

Choose **[Default]** from the **Keyboard mapping** drop-down list and click **OK** to restore the default configuration.

Appendix B ACID Tips and Tricks

The following sections contain some time-saving tips and creative suggestions for building ACID® projects.

Adding long media files quickly

You can paint an entire CD track or MIDI file on an ACID track with a single click.

1. Add a long file such as a CD track or MIDI file to your ACID project. *For more information, see Adding media to the project on page 35.*
2. Click the **Paint Tool** button ( ). The Paint tool is selected.
3. Press Ctrl and click in the track. The entire file is painted onto the track at the position you clicked.

> **Note:** *In a Beatmapped track, the file is painted starting from the location you identified as the downbeat. If the file contains pick-up notes, drag the left edge of the event to reveal audio before the downbeat.*

Playing with duplicate tracks

You can duplicate a track in your ACID project and then use the new track to create some interesting effects.

Detuning paired tracks

Detuning a paired track is a quick and easy way to thicken an audio track without adding the additional processing of effects. This trick works extremely well with synths, pads, strings and ambient sounds, but you can also experiment with it to add body to drums, basses, and horns.

1. Right-click a track and choose **Duplicate Track** from the shortcut menu. A copy of the track is added to the track list. The new track is the currently selected track.
2. Use the + (plus) and - (minus) keys on your numeric keypad to change the pitch of the duplicated track.

   Octave intervals (e.g., +12, -12, -24) typically sound best when working with pitched audio; however, experimenting with other, less ordinary intervals may produce surprising results. When working with non-pitched audio, intervals do not matter, thereby allowing you to freely experiment with radical pitch shifting.

   This technique typically works best when tuning the duplicate track to a lower octave than the original track, but you can also experiment with raising the pitch of the duplicate track.

Panning in conjunction with detuning

Few things are as uninteresting as a series of tracks panned down the middle of a stereo image. Particularly after detuning a paired track, you should experiment with spatially positioning the tracks using the panning control (on the multipurpose slider) or a pan envelope. Panning each track to a specific channel produces a nice, wide aural effect. If you are looking for something a little more dynamic, position the original track anywhere in the stereo image and use a pan envelope to sweep the duplicate track from the left channel to the right channel of the mix. *For more information, see Using track automation envelopes on page 111.*

Duplicating with offset

Another way to add interesting dynamics to a project is to duplicate tracks and add an offset to one of the pair. This trick works well with most instrument loops and allows you to create different levels of effect. For example:

- Configuring a slight offset between duplicate tracks creates a natural chorus effect.
- Configuring small offsets creates various reverb effects.
- Configuring larger offsets creates interesting echoes.

1. Right-click a track and choose **Duplicate Track** from the shortcut menu. A copy of the track is added to the track list.
2. Hold Alt while dragging the waveform of the duplicate track. Notice that the waveform moves within the event, which retains its size and position on the timeline.

3. Experiment with different offsets between the duplicate tracks.

> **Tip:** *As with most tricks, this method can be combined with pan and volume envelopes to produce an unlimited range of effects.*

Creating ping-pong pan effects

You can use a pair of tracks to ping-pong audio from one speaker to another.

1. Right-click a track and choose **Duplicate Track** from the shortcut menu. A copy of the track is added to the track list.
2. Use the multipurpose slider to pan the original track 100% right and the duplicate track 100% left.
3. Use the **Erase** tool ( ) to erase every other beat, alternating between the original and duplicate track.

> **Tip:** *You can also use a pan envelope on a single track to create the same effect. For more information, see Using track envelopes on page 122.*

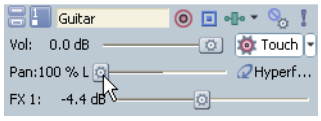
Adding depth with assignable effects

You can add depth to your mix by panning a dry signal (no effects) to one side and a wet signal (with effects such as chorus or reverb) to the other. You can pan the dry and wet signals by adding an assignable effects chain to your project.

1. Add an assignable effects chain containing an effect such as chorus or reverb to your project. *For more information, see Adding assignable effect controls on page 140.*
2. Press B to view bus tracks. *For more information, see Automating mixer controls in track view on page 150.*
3. Right-click the bus track for the assignable effect control, choose **Insert/Remove Envelope** from the shortcut menu, and choose **Pan** from the submenu. A pan envelope appears on the bus track.
4. Drag the envelope down to 100% right.
5. Use the multipurpose slider (on the track to which you want to apply the effect) to make three changes:
   - Pan the track 100% left.
   - Set the assignable effect send to approximately the same volume as the track.
   - Set the assignable effect send to **Pre Volume**.

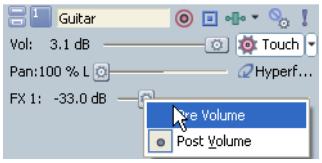
   Preview the effect. The dry signal is panned to the left, and the wet signal (with the chorus or reverb effect) is panned to the right.

Pan the track hard left...



...match the assignable effect send level to the track volume...

...and set the assignable effect send to Pre Volume



Playing double time/half time

You can also produce interesting effects by misinforming ACID regarding the number of beats in a file. Configuring a file with half its actual number of beats results in double-time playback. This is an easy way to add speed metal drum tracks to your project. This technique is also useful for adding a kick drum on every beat to producing a heavy dance foundation. Conversely, configuring a file with twice its actual number of beats results in half-time playback.

1. Right-click the desired track in the track list and choose **Clip Properties** from the shortcut menu. The Clip Properties window appears.
2. Click the **Stretch** tab.
3. Change the value in the **Number of beats** box.

Constructing the wall of sound

As mentioned previously, it is sometimes preferable to color and thicken mixes without resorting to effects and other digital processing. Working without the benefit of multitrack recording, music producer Phil Spector colored his songs by having several instruments play slightly different parts. For example, he might have an acoustic bass, an electric bass, and a piano play slight variations on the same basic riffs. These variations, along with the different timbre of the actual instruments, produced a dense sonic mass that became known as The Wall of Sound.

- To add this aural density to your projects, experiment with using two, three, or even four tracks of similar instrumentation.
- Alter the pitch of specific tracks to help them cut through the mix. *For more information, see Changing a clip's key on page 96.*
- Further differentiate specific tracks using pan and volume envelopes to color the project and simulate live performance. *For more information, see Using track automation envelopes on page 111.*
- Make the effects even more pronounced by setting a start offset within specific individual events. *For more information, see Changing event properties on page 68.*

Adding through subtraction

You can create dynamics by removing sections of events. You can erase sections of events from a project by using the **Erase** ( ) tool.

To demonstrate using subtractive arranging, add three or four similar drum loops to a project. Use the Erase tool to delete specific sections of each event. For example, erase all snares from one track, all basses from another, high hats from the third, and so on. This results in a tighter, more realistic drum sound for your project.

Experiment with taking this technique a step further and randomly remove sections from each track. When doing this, remember to keep at least one of the drum tracks playing at all times, unless you want the drums to completely drop out of the mix. Randomly removing sections of events adds realism to your projects by approximating how a drummer plays with slight variations throughout a song.

Tweaking the dynamics

You can use several techniques to adjust the dynamics of your mix.

Fading in and out of mixes

With bus tracks, you can use a volume envelope to fade in and out of the entire project.

1. Press B to view bus tracks. *For more information, see Automating mixer controls in track view on page 150.*
2. Select the Master bus track and press Shift+V to add a volume envelope.
3. Add and adjust envelope points to fade into and out of the project. *For more information, see Choosing stereo pan types on page 111.*

Adding build ups

If you are attempting to build projects that escape the perceived limitations of computer-generated loop-based music, you should concentrate on reproducing the subtle (and not so subtle) dynamics associated with live instrumentation.

One of the simplest, but most effective examples of this is the build up. When musicians play live, there is a tendency to increase dynamics as a song enters a chorus or refrain. Think of how a drummer uses accents, drum rolls, and fills that steadily increase in volume to enter a song or indicate an approaching change from verse to chorus or chorus to bridge.

This effect is easily reproduced by adding a volume envelope to the track. Add points at the various drum beats and adjust them so that the volume steadily increases. *For more information, see Adding volume or pan envelopes on page 126.*

Creating wah-wah effects with automated Track EQ

You can use the automatable Track EQ effect to create a custom wah-wah effect on a track. The example below provides sample values to use in the Track EQ plug-in, but you can adjust the settings to suit your taste.

1. Click the **Track FX** button ( ) on the track to which you want to add the effect. The Audio Plug-In window appears.

2. Adjust the settings for band 1 as follows:
   - Frequency: 20,000
   - Gain: -14.9
   - Rolloff: 24
3. Adjust the settings for band two as follows:
   - Gain: 15
   - Bandwidth: 0.9
4. Click the **FX Automation** button ( ). The FX Automation Chooser dialog appears.
5. Select the **Band2 Frequency** check box and click **OK**. An effect automation envelope appears on the track.
6. Add points to the envelope so that the **Band2 Frequency** parameter oscillates between about 100 Hz and 3000 Hz. *For more information, see Choosing stereo pan types on page 111.*

Making automated changes more stark

ACID envelopes allow you to change settings for a variety of features over time. While you may often use envelopes to transition smoothly from one setting to another, you can also create interesting effects by making stark changes between settings.

Abruptly changing volume or pan

By holding its setting until the next envelope point, the hold fade curve allows you to use volume and pan envelopes to make abrupt changes. *For more information, see Changing envelope fade curves on page 132.*

1. Select a track and press Shift+V (volume) or Shift+P (pan) to add an envelope.

> **Tip:** *You can also use this technique on a bus track. For more information, see Automating mixer controls in track view on page 150.*

2. Click the **Envelope Tool** button ( ) to select the envelope tool.
3. Right-click the first point on the envelope and choose **Hold** from the shortcut menu.
4. Add several more points by double-clicking the envelope. Note that each new point also has the hold fade curve.
5. Set each point to a different level. *For more information, see Adjusting individual envelope points on page 131.*

   You can repeat the pattern by copying and pasting the envelope points repeatedly. *For more information, see Cutting, copying, and pasting envelope points on page 132.*

Turning automated effects on and off

You can use effect automation envelopes to change effect settings over time, but you can create a simple, dramatic effect by simply automating whether the effect is processed (on) or bypassed (off).

1. Add an automatable effect to a track and adjust the effect's parameters to your liking. *For more information, see Using track effects on page 108.*
2. In the Audio Plug-In window, click the **FX Automation** button ( ) to display the FX Automation Chooser.
3. Click the automatable plug-in at the top of the FX Automation Chooser. A list of the effect's automatable parameters appears.
4. Select the **Bypass** check box and click **OK**. An envelope for the **Bypass** parameter of the effect appears on the track.
5. Add multiple points to the envelope. *For more information, see Adding envelope points on page 130.*
6. Adjust the envelope points to alternate between bypassing the effect (Bypass=True) and processing the effect (Bypass=False). *For more information, see Adjusting individual envelope points on page 131.*

   Preview the effect. The track alternates cleanly between processing the effect and bypassing the effect. You can repeat the pattern by copying and pasting the envelope points repeatedly. *For more information, see Cutting, copying, and pasting envelope points on page 132.*

Making automated frequency changes more natural

When you automate an effect's frequency parameters, such as the frequency parameters in the track EQ effect, you may notice that the frequency changes are more apparent moving through the lower frequencies than the higher frequencies. Without getting too technical, frequency scales in track EQ and other plug-ins use a logarithmic scale instead of a linear scale. Since effect automation uses linear interpolation, an effect's automated frequency parameter will sound as if it sweeps through the lower frequencies faster than the high frequencies. You can visualize this if you watch the plug-in settings in the Audio Plug-In window during automated effect playback.

To make automated frequency changes sound more natural, use envelope fade curves to change the rate at which interpolation happens between two envelope points. For a high-to-low frequency sweep, use a fast fade curve between points, and for a low-to-high frequency sweep, use a slow curve. Although the fast and slow curves are not logarithmic curves, they are similar enough to make the frequency transitions sound more even. *For more information, see Changing envelope fade curves on page 132.*

Overriding compress/expand

One of the most powerful features of the software is its ability to compress or expand a loop while maintaining the loop's original pitch. However, you can override this feature in order to produce specific effects in your projects.

1. Right-click an event and choose **Clip Properties** from the shortcut menu.
2. Click the **Stretch** tab.
3. From the **Stretching method** drop-down list, choose **Pitch shift segments**. The clip's pitch will change in relation to the tempo of the project.

While this may seem like just a way of producing old-school effects, it actually has practical applications as well. For example, specifying **Pitch shift segments** can actually improve the fidelity of drum loops recorded at a tempo near the project tempo. In addition, overriding the compress/expand feature allows you to create great bass grooves by slowing drum loops.

Slicing and dicing in the Chopper

You can use the Chopper™ to add creative slice-and-dice effects to your ACID project.

Chopping new loops for alternate time signatures

The Chopper makes it easy to clone a new loop from a song or sample. This feature can be particularly handy when you want to create a loop for a different time signature. In this example, you'll create a 3/4 pattern from a 4/4 loop.

1. Set the project time signature to 3/4. *For more information, see Changing project time signature on page 94.*
2. Place a 4/4 loop file in the Chopper. *For more information, see Placing files in the Chopper on page 100.*
3. Select a three-beat section of audio to be used for the new loop. Use the Chopper's transport bar to preview the new loop.
4. Right-click the selection and choose **Chop to New Track** from the shortcut menu. Alternately, press Ctrl+M. The Chop to New Track dialog appears.

> **Tip:** *You can also drag a selection from the Chopper to the track list.*

5. Complete the information in the Chop to New Track dialog and click **Save**.

   The selection is saved and the file is added as a 3/4 loop to a new track in the project. *For more information, see Saving Chopper selections as new files on page 103.*

Chopping multiple files into a new loop

Want to combine short segments of several loops into a new loop? You can use the Chopper to chop segments from several files into new loops and then combine the new loops into a single loop.

1. Place a file in the Chopper. *For more information, see Placing files in the Chopper on page 100.*

2. Select audio in the Chopper and press Ctrl+M to chop the audio to a new loop.
3. Repeat steps one and two for as many loop segments as you want.
4. Draw events on the new tracks to create a new melodic or rhythmic pattern.
5. Select the new tracks and from the **Tools** menu, choose **Render to New Track** to render the tracks to a single track. The Render to New Track dialog appears.
6. Complete the information in the Render to New Track dialog and click **Save**. *For more information, see Mixing multiple tracks to a single track on page 123.*

   The new composite loop is saved and adds it to your project as a new track.

Creating drum-roll build ups

1. Place a file in the Chopper. *For more information, see Placing files in the Chopper on page 100.*
2. Create a one-measure selection. *For more information, see Creating selections of a specific musical length on page 101.*
3. Click the **Insert Selection** button (Insert) once. The selection is pasted to the track view.
4. Click the **Halve Selection** button ( ). This decreases the selected portion of the waveform by half.
5. Click **Insert Selection** button (Insert) twice.
6. Click the **Halve Selection** button ( ).
7. Continue to double the number of inserts after each halving of the selection until you achieve the desired drum roll effect.

Creating drum fills

1. Place a file in the Chopper.
2. Create an eighth-note (or other length) selection of a drum track in the Chopper.
3. Click the **Insert Selection** button (Insert).
4. Use the **Shift Selection Left** ( ) and **Shift Selection Right** ( ) buttons to move the selection randomly through the drum track, clicking the **Insert Selection** button (Insert) to insert drum hits.

Creating one-track remixes

1. Place a Beatmapped track in the Chopper. *For more information, see Using the Beatmapper on page 112.*
2. Create a selection in the Chopper.
3. Click the **Insert Selection** button (Insert) twice.
4. Use the **Shift Selection Right** button ( ) to move through the track, clicking the **Insert Selection** button (Insert) as desired to insert events.

Creating pseudo-granular synthesis

1. Create a sixty-fourth note (or shorter) selection in the Chopper.
2. Click the **Insert Selection** button (Insert).
3. Use the **Shift Selection Left** ( ) and **Shift Selection Right** ( ) buttons to move the selection randomly through the track, clicking the **Insert Selection** button (Insert) to insert events.

Building instrument solos

The previous section described an extended technique to create challenging rhythmic variations in your projects. You can use a slightly different version of the slice-and-dice technique to build instrument solos for your projects. To demonstrate this, let's start with an event containing a simple bass riff.

1. Slice and dice the file in the Chopper to create new riffs and add them to the project. *For more information, see Using the Chopper on page 99.*

2. Use the pitch shifting to transpose some of the new events. *For more information, see Changing an event's key on page 96*.
3. Apply volume envelopes to simulate the varying attacks associated with live soloing. *For more information, see Adding volume or pan envelopes on page 126*.
4. Use tempo/key/time signature change markers to create passages with tempos that deviate from the project tempo. *For more information, see Working with tempo/key/time signature change markers on page 95*.

Building scales

Though it is well outside the intended scope of the application, you can build unique scales from audio loops. To do this, you must first isolate a note and determine what pitch it is. You can easily do this using the Spectrum Analysis tool in Sound Forge®. Once you isolate and identify the note, choose **Save As** from the **File** menu in Sound Forge to save the note as a new WAV file with a unique name. Finally, add the file to the ACID project and use pitch shifting to create all remaining notes in the scale.

Appendix C Glossary

The glossary contains terms and their definitions that you may come across in the manual. This glossary not only includes terms associated with ACID® software, but also includes relevant industry terms.

.acd-zip	An ACID project file that contains all information regarding the project including track layout, envelope settings, and effects parameters. In addition, all audio files used in the project are embedded into the project file.
Activation Code	This number is based on the Computer ID number of the computer on which the software is installed. Each computer has a unique number, similar to a license plate. When you register your copy of the software, Sony generates an activation code for you based on the Computer ID number. Once you enter the activation code, the ACID application will not time out. Since the activation number is based on the Computer ID, it is important that you have the software installed on the computer where you will be using it.
Adaptive Delta Pulse Code Modulation (ADPCM)	A method of compressing audio data. Although the theory for compression using ADPCM is standard, there are many different algorithms employed. For example, Microsoft's ADPCM algorithm is not compatible with the International Multimedia Association's (IMA) approved ADPCM.
Advanced Streaming Format (ASF)	See *Windows Media® Format*.
Aliasing	A type of distortion that occurs when digitally recording high frequencies with a low sample rate. For example, in a motion picture, when a car's wheels appear to slowly spin backward while the car is quickly moving forward, you are seeing the effects of aliasing. Similarly, when you try to record a frequency greater than one half of the sampling rate (the Nyquist Frequency), instead of hearing a high pitch, you may hear a low-frequency rumble. To prevent aliasing, an anti-aliasing filter is used to remove high-frequencies before recording. Once the sound has been recorded, aliasing distortion is impossible to remove without also removing other frequencies from the sound. This same anti-aliasing filter must be applied when resampling to a lower sample rate.
ASIO	ASIO™ (Audio Stream In/Out) is a low-latency driver model developed by Steinberg Media Technologies AG.
ASX File	ASF Stream Redirector file. See *Redirector File*.
Attack	The attack of a sound is the initial portion of the sound. Percussive sounds (drums, piano, guitar plucks) are said to have a fast attack. This means that the sound reaches its maximum amplitude in a very short time. Sounds that slowly swell up in volume (soft strings and wind sounds) are said to have a slow attack.
Attenuation	A decrease in the level of a signal.
Audio Compression Manager (ACM)	The Audio Compression Manager from Microsoft® is a standard interface for audio compression and signal processing for Microsoft Windows. The ACM can be used by Windows programs to compress and decompress WAV files.
Audio Interchange File Format (AIFF)	An audio file format developed by Apple®.
Audio Proxy File (.sfap0)	See *Proxy File*.
Bandwidth	When discussing audio equalization, each frequency band has a width associated with it that determines the range of frequencies that are affected by the EQ. An EQ band with a wide bandwidth affects a wider range of frequencies than one with a narrow bandwidth. When discussing network connections, refers to the rate of signals transmitted; the amount of data that can be transmitted in a fixed amount of time (stated in bits/second): a 56 Kbps network connection is capable of receiving 56,000 bits of data per second.

Beatmapped track	A file that has tempo information added to it as a result of going through the Beatmapper® Wizard.
Beats Per Minute (BPM)	The tempo of a piece of music can be written as a number of beats in one minute. If the tempo is 60 BPM, a single beat occurs once every second.
Bit	The most elementary unit in digital systems. Its value can only be 1 or 0, corresponding to a voltage in an electronic circuit. Bits are used to represent values in the binary numbering system. As an example, the 8-bit binary number 10011010 represents the unsigned value of 154 in the decimal system. In digital sampling, a binary number is used to store individual sound levels, called samples.
Bit Depth	The number of bits used to represent a single sample. For example, 8- or 16-bit are common sample sizes. While 8-bit samples take up less memory (and hard disk space), they are inherently noisier than 16-bit samples.
Buffer	Memory used as an intermediate repository in which data is temporarily held while waiting to be transferred between two locations. A buffer ensures an uninterrupted flow of data between computers. Media players may need to rebuffer when there is network congestion.
Bus	A virtual pathway where signals from tracks and effects are mixed. A bus's output can be a physical audio device in the computer from which the signal is heard.
Byte	Refers to a set of 8 bits. An 8-bit sample requires one byte of memory to store, while a 16-bit sample takes two bytes of memory to store.
Clipboard	The clipboard is the location where data cut or copied from ACID is stored. You can then paste the data back into the software at a different location.
Clipping	Occurs when the amplitude of a sound is above the maximum allowed recording level. In digital systems, clipping is seen as a clamping of the data to a maximum value, such as 32,767 in 16-bit data. Clipping causes sound to distort.
Codec	Coder/decoder: refers to any technology for compressing and decompressing data. The term codec can refer to software, hardware, or a combination of both technologies.
Compression Ratio (audio)	A compression ratio controls the ratio of input to output levels above a specific threshold. This ratio determines how much a signal has to rise above the threshold for every 1 dB of increase in the output. For example, with a ratio of 3:1, the input level must increase by three decibels to produce a one-decibel output-level increase: Threshold = -10 dB Compression Ratio = 3:1 Input = -7 dB Output = -9 dB Because the input is 3 dB louder than the threshold and the compression ratio is 3:1, the resulting signal is 1 dB louder than the threshold.
Compression Ratio (file size)	The ratio of the size of the original noncompressed file to the compressed contents. For example, a 3:1 compression ratio means that the compressed file is one-third the size of the original.
Computer ID	Each computer has a unique number, similar to a license plate. Sony creates an activation number based on that number. Since the activation number is based on the Computer ID, it is important that you have the ACID application installed on the computer where you will be using it. The Computer ID is automatically detected and provided to you when you complete the installation process. The Computer ID is used for registration purposes only. It doesn't give Sony access to any personal information and can't be used for any purpose other than for generating a unique activation number for you to use the software.
Crossfade	Mixing two pieces of audio by fading one out as the other fades in.

DC Offset	DC offset occurs when hardware, such as a sound card, adds DC current to a recorded audio signal. This current results in a recorded wave that is not centered around the zero baseline. Glitches and other unexpected results can occur when sound effects are applied to files that contain DC offsets.
Decibel (dB)	A unit used to represent a ratio between two numbers using a logarithmic scale. For example, when comparing the numbers 14 and 7, you could say 14 is two times greater than the number 7; or you could say 14 is 6 dB greater than the number 7. Where did we pull that 6 dB from? Engineers use the equation dB = 20 x log (V1/V2) when comparing two instantaneous values. Decibels are commonly used when dealing with sound because the ear perceives loudness in a logarithmic scale. In ACID, most measurements are given in decibels. For example, if you want to double the amplitude of a sound, you apply a 6 dB gain. A sample value of 32,767 (maximum positive sample value for 16-bit sound) can be referred to as having a value of 0 dB. Likewise, a sample value of 16,384 can be referred to having a value of -6 dB.
Device Driver	A program that enables Windows to connect different hardware and software. For example, a sound card device driver is used by Windows software to control sound card recording and playback.
Digital Rights Management (DRM)	A system for delivering songs, videos, and other media over the Internet in a file format that protects copyrighted material. Current proposals include some form of certificates that validate copyright ownership and restrict unauthorized redistribution.
Digital Signal Processing (DSP)	A general term describing anything that alters digital data. Signal processors have existed for a very long time (tone controls, distortion boxes, wah-wah pedals) in the analog (electrical) domain. Digital Signal Processors alter the data after it has been digitized by using a combination of programming and mathematical techniques. DSP techniques are used to perform many effects such as equalization and reverb simulation. Since most DSP is performed with simple arithmetic operations (additions and multiplications), both your computer's processor and specialized DSP chips can be used to perform any DSP operation. The difference is that DSP chips are optimized specifically for mathematical functions while your computer's microprocessor is not. This results in a difference in processing speed.
DirectX	A set of Application Program Interfaces designed by Microsoft for multimedia development. A DirectX® plug-in, such as the Sony Noise Reduction™ DirectX Plug-In, uses the DirectX Media Streaming Services (DMSS) API. Because DMSS is a standard API, a DirectX plug-in can be used in any application that supports DMSS.
Downbeat	This term is used in the Beatmapper to refer to the first beat of the first measure.
Downloadable Sound (DLS)	A DLS file stores a custom sound set that you can load into your soft synth, giving you another set of voices for MIDI playback.
Drag and Drop	A quick way to perform certain operations using the mouse. To drag and drop, you click and hold an item, drag it (hold the left mouse button down and move the mouse) and drop it (let go of the mouse button) at another position on the screen.
Dynamic Range	The difference between the maximum and minimum signal levels. It can refer to a musical performance (high-volume vs. low-volume signals) or to electrical equipment (peak level before distortion vs. noise floor). For example, orchestral music has a wide dynamic range, while thrash metal has a very small (always loud) range.
Envelopes	Envelopes allow you to automate the change of a certain parameter over time. In the case of volume, you can create a fade out (which requires a change over time) by adding an envelope and creating a point in the line to indicate where the fade starts. Then you pull the end point of the envelope down to -inf.
Equalization (EQ)	Equalizing a sound file is a process by which certain frequency bands are raised or lowered in level. EQ has various uses. The most common use for ACID users is to simply adjust the subjective timbral qualities of a sound.
Event	An instance of a media file on a track. An event may play an entire media file or a portion of the file.

File Format	A file format specifies the way in which data is stored. In Windows, the most common audio file format is the Microsoft WAV format.
Frame Rate	Audio uses frame rates only for the purposes of synching to video or other audio. To synchronize with audio, a rate of 30 fps (frames per second) is typically used. To synchronize with video, 29.97 fps drop is usually used.
Frequency Spectrum	The frequency spectrum of a signal refers to its range of frequencies. In audio, the frequency range is basically 20 Hz to 20,000 Hz. The frequency spectrum sometimes refers to the distribution of these frequencies. For example, bass-heavy sounds have a large frequency content in the low end (20 Hz-200 Hz) of the spectrum.
Groove	A groove refers to the rhythmic pattern of a piece of music. By deviating from a machine-quantized beat, individual beats may be played early or late to change the feel of the music. Applying a groove can simulate the timing patterns of human musicians, lending a human feel to MIDI-generated music or quantizing several distinct pieces of music to a common timing.
Hertz (Hz)	The unit of measurement for frequency or cycles per second (CPS).
In-place plug-in	An in-place plug-in processes audio data so that the output length always matches the input length. A non-in-place plug-in's output length need not match a given input length at any time: for example, Time Stretch, Gapper/Snipper, Pitch-Shift (without preserving duration), and some Vibrato settings can create an output that is longer or shorter than the input. Plug-ins that generate tails when there is no more input but otherwise operate in-place (such as reverb and delay) are considered in-place plug-ins.
Insert Increment	Sections of silence between selections that you can create using the Chopper and insert into the track view.
Insertion Point	The insertion point (also referred to as the cursor position) is analogous to the cursor in a word processor. It is where markers or commands may be inserted depending on the operation. The insertion point appears as a vertical flashing black line and can be moved by clicking the left mouse button anywhere in the track view.
Loop	Loops are small audio clips that are designed to create a repeating beat or pattern. Loops are usually one to four measures long and are stored completely in RAM for playback.
Marker	A marker is an anchored, accessible reference point in a file.
MIDI Channel	An informational pathway over which MIDI data can travel.
Media Control Interface (MCI)	A standard way for Windows programs to communicate with multimedia devices such as sound cards and CD players. If a device has an MCI device driver, it can easily be controlled by most multimedia Windows software.
Media File	Files that may be placed within the ACID project. After a media file is placed into the project, it is referred to as an event.
MIDI Clock	A MIDI device-specific timing reference. MIDI Clock is not absolute time like MIDI timecode (MTC); instead it is a tempo-dependent number of ticks per quarter note. MIDI clock is convenient for synchronizing devices that need to perform tempo changes mid-song. MIDI clock out is supported, but MIDI clock in is not.
MIDI Port	A MIDI port is the physical MIDI connection on a piece of MIDI hardware. This port can be a MIDI in, out or through. Your computer must have a MIDI-capable card to output MIDI timecode to an external device or to receive MIDI timecode from an external device.
MIDI Timecode (MTC)	MTC is an addendum to the MIDI 1.0 specification and provides a way to specify absolute time for synchronizing MIDI-capable applications. MTC is essentially a MIDI representation of SMPTE timecode.

Multiple-Bit-Rate Encoding	Multiple-bit-rate encoding (also known as Intelligent Streaming for the Windows Media platform and SureStream™ for the RealMedia™ G2 platform) allows you to create a single file that contains streams for several bit rates. A multiple-bit-rate file can accommodate users with different Internet connection speeds, or these files can automatically change to a different bit rate to compensate for network congestion without interrupting playback. To take advantage of multiple-bit-rate encoding, you must publish your media files to a Windows Media server or a RealServerG2.
Musical Instrument Device Interface (MIDI)	A standard language of control messages that provides for communication between any MIDI-compliant devices. Anything from synthesizers to lights to factory equipment can be controlled via MIDI.
Normalize	Refers to raising the volume so that the highest level sample in the file reaches a user defined level. Use normalization to make sure you are using all of the dynamic range available to you.
Nyquist Frequency	The Nyquist Frequency (or Nyquist Rate) is one half of the sample rate and represents the highest frequency that can be recorded using the sample rate without aliasing. For example, the Nyquist Frequency of 44,100 Hz is 22,050 Hz. Any frequencies higher than 22,050 Hz produce aliasing distortion in the sample if no anti-aliasing filter is used while recording.
Offline Media	A media file that cannot be located on the computer. If you choose to leave the media offline, you can continue to edit events on the track; the events point to the original location of the source media file.
One-Shot	One-shots are chunks of audio that are not designed to loop, and they are streamed from the hard disk rather than stored in RAM if they are longer than three seconds. Things such as cymbal crashes and sound bites could be considered one-shots. Unlike loops, one-shots do not change pitch or tempo with the rest of a project.
OPT Plug-In	A plug-in that uses the Open Plug-in Technology (OPT) standard from Yamaha. OPT plug-ins provide tools for working with MIDI such as edit views, effect processors and filters, arpeggiators, and real-time panel automation.
Pan	To place a mono or stereo sound source perceptually between two or more speakers.
Peak Data File	The file created when a media file is opened for the first time. This file stores the information regarding the graphic display of the waveform so that opening a file is almost instantaneous. This file is stored in the directory where the audio file resides and has a .sfk extension. If this file is not in the same directory as the audio file or is deleted, it is recalculated the next time you open the file.
Proxy File	Working with certain types of media files with particular audio compression schemes can be inefficient and slow. To compensate for this, audio proxy files are created for these formats to dramatically increase speed and performance. The file is saved as a proprietary .sfap0 file, with the same name as the original media file and the same characteristics as the original audio stream. The conversion happens automatically and does not result in a loss of quality or synchronization. You can safely delete audio proxy files at any time since these files are recreated as needed.
Pulse Code Modulation (PCM)	PCM is the most common representation of uncompressed audio signals. This method of coding yields the highest fidelity possible when using digital storage. PCM is the standard format for WAV and AIFF files.
Quantization	The correction of rhythms to align with selected note lengths or beats in a MIDI sequence.
Real-Time Streaming Protocol (RTSP)	A proposed standard for controlling broadcast of streaming media. RTSP was submitted by a body of companies including RealNetworks and Netscape®.

Redirector File	A metafile that provides information to a media player about streaming media files. To start a streaming media presentation, a Web page includes a link to a redirector file. Linking to a redirector file allows a file to stream; if you link to the media file, it downloads before playback. Windows Media redirector files use the .asx or .wax extension; RealMedia redirector files use the .ram, .rpm, or .smi extension.
Region	A region is a section of time used to subdivide your project into segments.
Rendering	The process in which the project is saved to a specific file format like WMA or MP3.
Resample	The act of recalculating samples in a sound file at a different rate than the file was originally recorded. If a sample is resampled at a lower rate, sample points are removed from the sound file, decreasing its size, but also decreasing its available frequency range. Resampling to a higher sample rate, extra sample points are interpolated in the sound file. This increases the size of the sound file, but does not increase the quality. When down-sampling, one must be aware of aliasing.
Sample	The word sample is used in many different (and often confusing) ways when talking about digital sound. Here are some of the different meanings: A discrete point in time which a sound signal is divided into when digitizing. For example, an audio CD-ROM contains 44,100 samples per second. Each sample is really only a number that contains the amplitude value of a waveform measured over time. A sound that has been recorded in a digital format; used by musicians who make short recordings of musical instruments to be used for composition and performance of music or sound effects. These recordings are called samples. In this manual, we try to use sound file instead of sample whenever referring to a digital recording. The act of recording sound digitally, i.e., to sample an instrument means to digitize and store it.
Sample Rate	The sample rate (also referred to as the sampling rate or sampling frequency) is the number of samples per second used to store a sound. High sample rates, such as 44,100 Hz provide higher fidelity than lower sample rates, such as 11,025 Hz. However, more storage space is required when using higher sample rates.
Sample Size	See *Bit Depth*.
Sample Value	The sample value (also referred to as sample amplitude) is the number stored by a single sample. In 16-bit audio, these values range from -32768 to 32767. In 8-bit audio, they range from -128 to 127. The maximum allowed sample value is often referred to as 100% or 0 dB.
Secure Digital Music Initiative (SDMI)	The Secure Digital Music Initiative (SDMI) is a consortium of recording industry and technology companies organized to develop standards for the secure distribution of digital music. The SDMI specification was created to answer consumer demand for convenient accessibility to quality digital music, enable copyright protection for artists' work, and enable technology and music companies to build successful businesses.
Shortcut Menu	A context-sensitive menu that appears when you right-click certain areas of the screen. The functions available in the shortcut menu depend on the object being right-clicked as well as the state of the program. As with any menu, you can choose an item from the shortcut menu to perform an operation. Shortcut menus are used frequently for quick access to many commands.
Signal-to-Noise Ratio	The signal-to-noise ratio (SNR) is a measurement of the difference between a recorded signal and noise levels. A high SNR is always the goal. The maximum signal-to-noise ratio of digital audio is determined by the number of bits per sample. In 16-bit audio, the signal to noise ratio is 96 dB, while in 8-bit audio the ratio is 48 dB. However, in practice this SNR is never achieved, especially when using low-end electronics.
Society of Motion Picture and Television Engineers (SMPTE)	SMPTE timecode is used to synchronize time between devices. The timecode is formatted as hours:minutes:second:frames, where frames are fractions of a second based on the frame rate. Frame rates for SMPTE timecode are 24, 25, 29.97 and 30 frames per second.

Soft Synth	A soft synth is a software-based synthesizer. Downloadable Sounds (DLS) and Virtual Studio Technology Instruments (VSTi) are two types of soft synths. You add a soft synth control in the Mixer window for each software synthesizer you want to use in a project.
Streaming	A method of data transfer in which a file is played while it is downloading. Streaming technologies allow Internet users to receive data as a steady, continuous stream after a brief buffering period. Without streaming, users must download files completely before playback.
Tempo	Tempo is the rhythmic rate of a musical composition, usually specified in beats per minute (BPM).
Threshold	A threshold determines the level at which the signal processor begins acting on the signal. During normalization, levels above this threshold are attenuated (cut).
Time Format	The format by which the time ruler and selection times are displayed. These can include: time, seconds, frames, and all standard SMPTE frame rates.
Track	A discrete timeline for audio data. Audio events sit on tracks and determine when a sound starts and stops. Multiple audio tracks are played together to give you a composite sound that you hear through your speakers.
Track List	The track list contains the master controls for each track. From here you can adjust the mix, select playback devices, and reorder tracks.
Track View	The majority of the track view is made up of the space where you draw events on each track.
µ-Law	µ-Law (mu-Law) is a companded compression algorithm for voice signals defined by the Geneva Recommendations (G.711). The G.711 recommendation defines µ-Law as a method of encoding 16-bit PCM signals into a non-linear 8-bit format. The algorithm is commonly used in European and Asian telecommunications. µ-Law is very similar to A-Law, however, each uses a slightly different coder and decoder.
Undo/Redo	These commands allow you to change a project back to a previous state or reapply changes after you have undone them.
Virtual MIDI Router (VMR)	A software-only router for MIDI data between programs. The VMR is used to receive MIDI timecode and send MIDI clock. No MIDI hardware or cables are required for a VMR, so routing can only be performed between programs running on the same PC.
VST Instrument (VSTi)	A Virtual Studio Technology instrument (VSTi®) is software synthesizer plug-in technology for outputting MIDI developed by Steinberg Media Technologies AG.
WAV	A digital audio file format developed by Microsoft and IBM®. One minute of uncompressed audio requires 10 MB of storage.
Waveform	A waveform is the visual representation of wave-like phenomena, such as sound or light. For example, when the amplitude of sound pressure is graphed over time, pressure variations usually form a smooth waveform.
Waveform Display	Each event shows a graph of the sound data waveform. The vertical axis corresponds to the amplitude of the wave. For 16-bit sounds, the amplitude range is -32,768 to +32,767. For 8-bit sounds, the range is -128 to +127. The horizontal axis corresponds to time, with the leftmost point being the start of the waveform. In memory, the horizontal axis corresponds to the number of samples from the start of the sound file.
Windows Media® Format	A Microsoft® file format that can handle audio and video presentations and other data such as scripts, URL flips, images and HTML tags. Advanced Streaming Format files can be saved with .asf, .wma, or .wmv extensions.

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