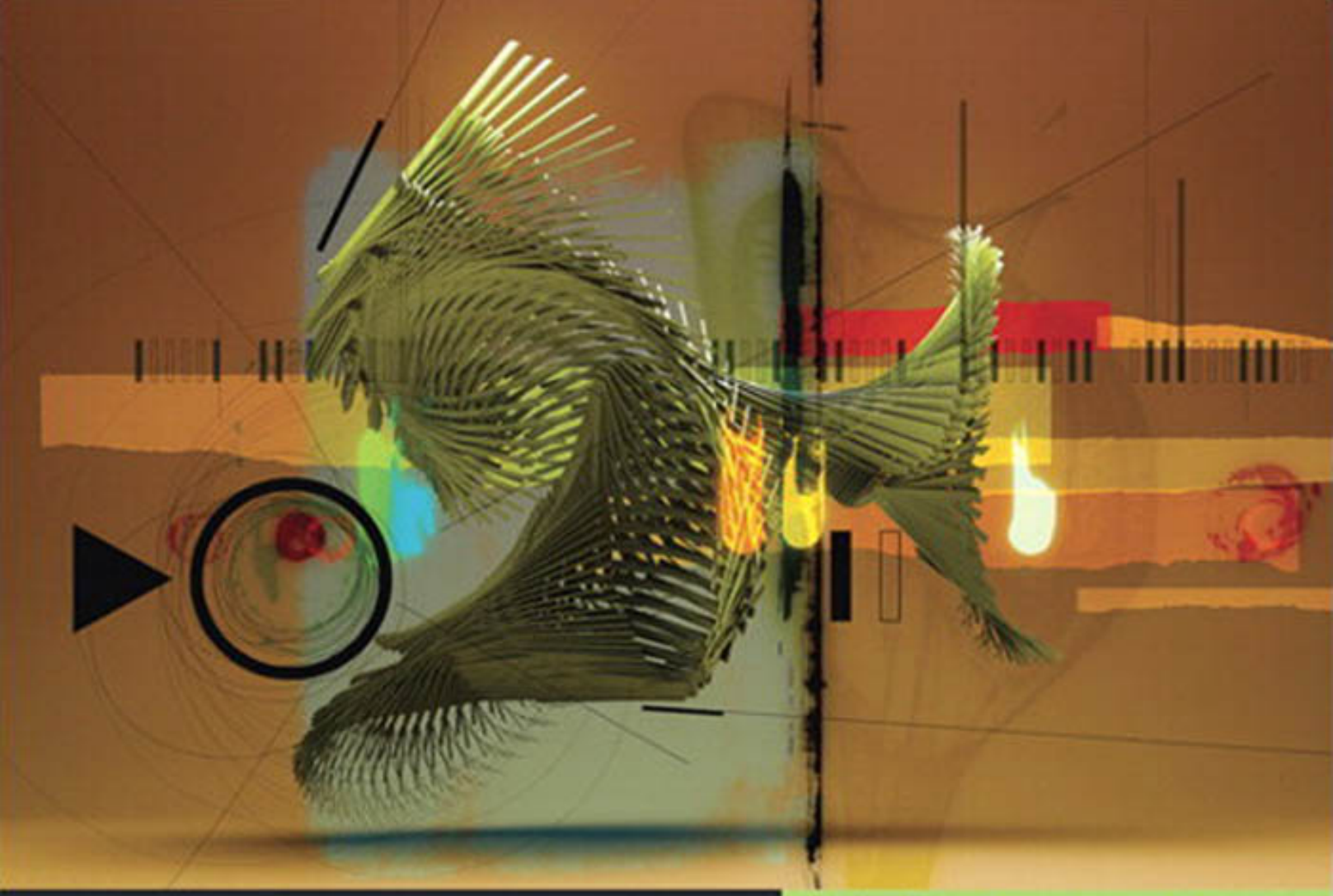

Apple Pro Training Series

Logic Pro 9 and Logic Express 9

Professional Audio Production

David Nahmani

Apple Certified

Level One Certification

DVD-ROM with lesson and media files included

Find the media files for this eBook at:
http://www.peachpit.com/ebookfiles/0321684451

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David Nahmani
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Contents at a Glance

Getting Started 1

Building a Song

Lesson 1 Make Music with Logic Now! 11
Lesson 2 Recording Audio 59
Lesson 3 Editing Audio 101
Lesson 4 Recording MIDI 141
Lesson 5 Programming and Editing MIDI 169
Lesson 6 Programming Drums 213
Lesson 7 Manipulating Tempo and Time Stretching 253

Arranging and Mixing

Lesson 8 Arranging and Preparing for the Mix 285
Lesson 9 Mixing 329
Lesson 10 Automating the Mix and Using Control Surfaces 379
Lesson 11 Troubleshooting and Optimization 409
Appendix A Using External MIDI Devices 449
Appendix B Keyboard Shortcuts (U.S. Preset) 461

Index 485

Table of Contents

Getting Started 1

Building a Song

Lesson 1 Make Music with Logic Now! 11
Opening Logic 12
Exploring the Interface 15
Starting a Project with Apple Loops 18
Navigating the Project 23
Building an Arrangement 29
Mixing the Song 44
Exporting the Mix 53
Lesson Review 56

Lesson 2 Recording Audio 59
Setting Up Digital Audio Recording 60
Recording a Single Track 64
Recording Additional Takes 75
Recording Multiple Tracks 79
Punching In and Out 85
Changing Recording and Metronome Settings 93
Lesson Review 98

Lesson 3 Editing Audio 101
Comping Takes 102
Assigning Mouse Tools 110
Editing Audio Regions in the Arrange Area 113

Deleting Unused Audio Files 121
Quantizing an Audio Drum Recording 124
Manipulating the Waveform with the Flex Tool 128
Editing Audio Destructively in the Sample Editor 131
Lesson Review 138

Lesson 4 Recording MIDI. 141
Recording MIDI 142
Quantizing MIDI Recordings 146
Merging Recordings into a MIDI Region. 148
Recording MIDI Takes 156
Using Punch Recording 158
Using Step Input Recording. 160
Filtering Incoming MIDI Events 165
Lesson Review 167

Lesson 5 Programming and Editing MIDI. 169
Programming in the Piano Roll Editor. 170
Editing a MIDI Recording 178
Using the Score Editor 181
Editing Notes with a MIDI Keyboard. 187
Editing Note Velocity Using Hyper Draw. 190
Editing MIDI Continuous Controller Events 193
Editing in the Event List. 205
Lesson Review 210

Lesson 6 Programming Drums 213
Programming a Drum Pattern in Ultrabeat. 214
Changing the Groove in the MIDI Editors 229
Creating a Snare Roll Using the Hyper Editor. 237
Converting a MIDI Sequence into an Audio Region. 246
Converting an Audio Region into a
Sampler Instrument Track. 248
Lesson Review 251

Lesson 7 Manipulating Tempo and Time Stretching 253
Matching the Project Tempo to an Audio Region's Tempo .. 254
Working with Apple Loops 257
Inserting Tempo Changes and Curves 262
Creating Apple Loops 266
Change the Playback Pitch and Speed with Varispeed 269
Time Stretching and Tempo Matching with Flex Time Editing 272
Creating a Turntable or Tape Slowdown Effect 279
Lesson Review 282

Arranging and Mixing

Lesson 8 Arranging and Preparing for the Mix 285
Previewing the Song 286
Using Existing Material to Fill In Parts 289
Adding and Deleting Sections 308
Muting Elements 312
Cleaning Up Noisy Recordings 315
Lesson Review 326

Lesson 9 Mixing 329
Previewing the Final Mix 330
Using the Amp Designer 330
Using the Pedalboard 339
Adjusting Levels 344
Choosing Pan Positions 351
Choosing EQ Settings 355
Using Delay and Reverberation 361
Using Dynamic Processing Plug-ins 367
A Few Tips and Tricks 375
Lesson Review 376

Lesson 10 Automating the Mix and Using Control Surfaces . 379
Creating and Editing Offline Automation 380
Recording Live Automation 392
Using Control Surfaces 401
Exporting the Mix 405
Lesson Review 407

Lesson 11 Troubleshooting and Optimization 409
Making Backups 410
Solving Audio and MIDI Routing Problems 422
Optimizing Hardware Performance 433
Addressing Unexpected Behaviors 440
Lesson Review 443

Appendix A Using External MIDI Devices 449
Configuring MIDI Hardware 450

Appendix B Keyboard Shortcuts (U.S. Preset) 461
Transport Controls 461
Zooming 462
Tools 462
Channel Strip, Track, and Region Operations 463
Views 465
Automation 466
Finder 467

Glossary 469
Index 485

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Getting Started

Welcome to the official Apple Pro Training Series course for Logic Pro 9 and Logic Express 9. This book is a comprehensive introduction to professional audio production with Logic Studio. It uses real-world music and hands-on exercises to teach you how to record, arrange, mix, produce, and polish audio and MIDI files in a professional workflow. So let's get started!

The Methodology

This book takes a hands-on approach to learning the software, so you'll be working through the project files and media on the accompanying DVD. It's divided into projects that methodically introduce the interface elements and ways of working with them, building progressively until you can comfortably grasp the entire application and its standard workflows.

Each lesson in this book is self-contained, so you can jump to any lesson at any time. However, each lesson is designed to support the concepts learned in the preceding lesson, and newcomers to audio production should go through the book from start to finish. The first seven lessons, in particular, teach basic concepts and are best completed in order.

Course Structure

The book is designed to guide you through the music production process as it teaches Logic. The lessons are organized into two sections:

Building a Song: Lessons 1–7

In this section, you'll learn the fundamentals of building a song. Lesson 1 starts you out with an overview of the entire process. You'll get familiar with the interface and the various ways to navigate a project while building a song from scratch using Apple Loops, and then arranging, mixing, and exporting the song to an MP3 file.

In each of the following lessons, you'll focus on a single topic in detail. You'll start by learning how to come up with the building blocks of your musical project: recording, editing, and programming both audio and MIDI files. Finally, you'll manipulate the project tempo, stretch audio files, and apply time and pitch effects.

Arranging and Mixing: Lessons 8–11

In Lessons 8–10, you'll arrange and mix audio and MIDI files into a final project: adding and deleting sections, muting elements, eliminating noise, adjusting levels, panning, EQing, adding reverb, and automating the mix. You'll also learn how to use hardware control surfaces to manipulate various parameters.

Lesson 11 concludes your exploration of Logic by describing useful troubleshooting techniques that can improve your Logic system's reliability and efficiency. You'll learn

effective backup procedures, how to resolve audio and MIDI routing problems, and ways to optimize your hardware. Appendix A covers how to use external MIDI devices, and Appendix B lists a wealth of useful keyboard shortcuts.

Using the DVD Book Files

The *Apple Pro Training Series: Logic Pro 9 and Logic Express 9* DVD (included with the book) contains the project files you will use for each lesson, as well as media files that contain the audio and video content you will need for each exercise. After you transfer the files to your hard disk, each lesson will instruct you in the use of the project and media files.

Installing Logic

The exercises in this book require that you install Logic Studio or Logic Express along with the default content pre-selected in the installer. To install Logic Studio or Logic Express, insert the first installation DVD in your computer, double-click the installer, and follow the installer's instructions to complete the installation.

> **NOTE ►** If you have already installed Logic Studio but did not install some of the content, you can run the installer again and choose to install only the Logic Studio Content.

Using Default Preferences and the U.S. Key Command Preset

All the instructions and descriptions in this book assume that you are using the default set of preferences (unless instructed to change them) and the U.S. key command preset. If you have changed some of your preferences or have not selected the factory U.S. key command preset, you may not get the same results described in the exercises. To make sure you can follow along with this book, it's best to revert to the initial set of Logic preferences and choose the U.S. shortcut preset before you start the lessons. Keep in mind that when you initialize your preferences, you will lose your custom settings, and later you may want to reset your favorite preferences manually.

1 From the main menu bar, choose Logic Pro > Preferences > Initialize All Except Key Commands.

   A confirmation message pops up.

LOGIC EXPRESS ► When instructed to choose an item from the Logic Pro menu, choose the same item from the Logic Express menu.

2 Click Initialize.

Your preferences are initialized. To choose your key commands preset, you need to open the Key Commands window.

3 In the main menu bar, choose Logic Pro > Preferences > Key Commands.

The Key Commands window opens.

4 Click the Options pop-up menu and choose Presets > U.S.

5 Close the Key Commands window.

Screen Resolution

If you are using a small screen resolution, some of the project files may appear different on your screen than they do in the book. When you open a project, if you can't see the whole Arrange window, move the window until you can see the three window controls at the left of the title bar, and click the zoom button (the third button from the left) to make the window fit the screen.

When using a small screen resolution, you may also have to zoom or scroll more often than instructed in the book to perform some of the exercise steps. In some cases, you may have to temporarily resize or close an area of the Arrange window to perform an action in another area.

Installing the Logic Lesson Files

On the DVD, you'll find a folder titled Logic 9 Files, which contains three subfolders: Lessons, Media, and Apple Loops for Logic Express Users. The first two folders contain the lessons and media files for this course. (See the section "Instruction for Logic Express Users" for an explanation of the third folder.) Make sure you keep these two folders together in the Logic 9 Files folder on your hard disk. If you do so, Logic should be able to maintain the original links between the lessons and media files.

1 Insert the *Logic Pro 9 and Logic Express 9* DVD into your DVD drive.

2 Drag the Logic 9 Files folder from the DVD to your desktop to copy it. The Media folder contains about 3 GB of media.

3 Wait for the "Copy" Progress indicator to close, and eject the DVD to make sure that you don't work with the files on the DVD, but with the files you copied on your desktop.

Each lesson will explain which files to open for that lesson's exercises.

Instructions for Logic Express Users

If you're using Logic Express 9, most of the instructions in this book are exactly the same as those for Logic Pro 9. When there are differences, you'll find a note in the exercises addressed specifically to Logic Express users. Keep in mind that Logic Express doesn't come with the same instruments, effects, and sound library as Logic Studio, and sometimes your screen may look different from the pictures in this book (for example, you may see different settings in the Library, different Apple Loops in the Loop Browser, and different names on tracks and channel strips).

To install files from the *Logic Pro 9 and Logic Express 9* DVD, follow the instructions in the previous section and then install the additional Apple Loops as explained in the steps below.

LOGIC EXPRESS ► The additional Apple Loops for Logic Express Users were taken from the Remix Tools, Rhythm Section, and World Music Jam Packs, which come standard with Logic Studio. The loop Trip Hop Jungle Beat 01 was modified to use a GarageBand instrument available to Logic Express users and sounds different from the original Trip Hop Jungle Beat 01 included in the Remix Tools Jam Pack.

1 Open Logic Express.

The Templates dialog opens (if you have used Logic Express before, and a Logic project automatically opens, skip to step 4).

2 Click the Empty Project template.

An empty template opens, and a New Tracks dialog comes down from the Arrange window's title bar. Don't worry about the settings in that dialog; you just need to create at least one track (of any kind) to continue.

3 In the New Tracks dialog, click Create.

The dialog disappears and a track is created.

4 From the main menu bar, choose Window > Loop Browser.

The Loop Browser opens.

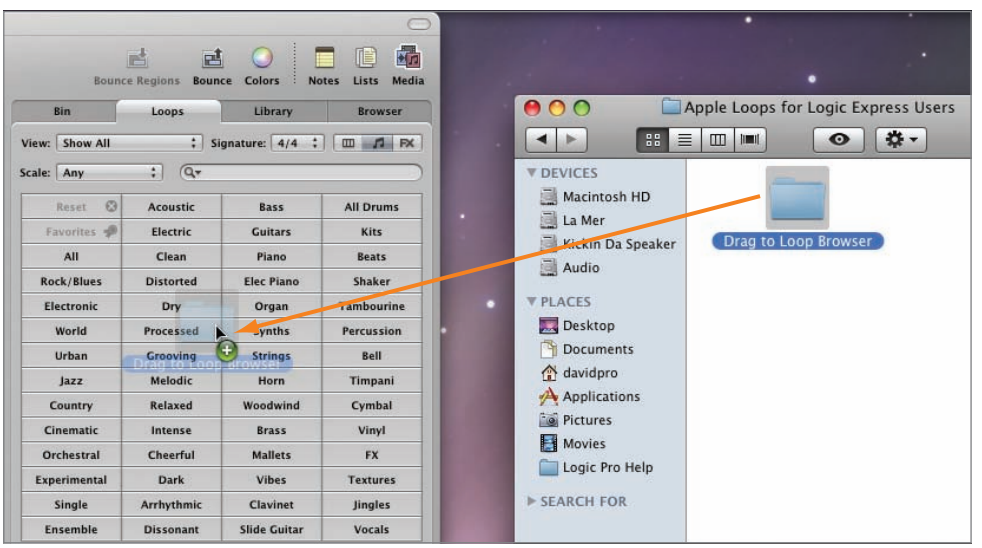
5 Close the main Arrange window underneath, and keep only the Loop Browser open so that you can see your desktop.

You may need to move the Loop Browser aside to see the Logic 9 Files folder on your desktop.

6 Double-click the Logic 9 Files folder on your desktop, and double-click Apple Loops for Logic Express Users.

You should see a folder named "Drag to Loop Browser."

7 Drag the folder "Drag to Loop Browser" onto the Loop Browser window.



A green + (plus) sign appears at the mouse pointer, indicating that you can release the mouse button to install the Apple Loops.

8 In the "Adding Loops to the Loop Browser" dialog, click "Move to Loops Folder" to install the Apple Loops.

System Requirements

Before using *Apple Pro Training Series: Logic Pro 8 and Logic Express 9,* you should have a working knowledge of your Macintosh and the Mac OS X operating system. Make sure that you know how to use the mouse and standard menus and commands, and also how to open, save, and close files. If you need to review these techniques, see the printed or online documentation included with your system.

- Mac computer with an Intel processor

  1 GB of RAM (2 GB or more highly recommended)

  Display with 1280 x 800 or higher resolution

  Mac OS X v10.5.7 or later

  QuickTime 7.6 or later

  DVD drive for installation
- USB musical keyboard (or suitable MIDI keyboard and interface) to play software instruments
- Low-latency multi-I/O audio interface highly recommended for audio recording

About the Apple Pro Training Series

Apple Pro Training Series: Logic Pro 9 and Logic Express 9 is both a self-paced learning tool and the official curriculum of the Apple Pro Training and Certification Program. Developed by experts in the field and certified by Apple, the series is used by Apple Authorized Training Centers worldwide and offers complete training in all Apple Pro products. The lessons are designed to let you learn at your own pace. Each lesson concludes with review questions and answers summarizing what you've learned, which can be used to help you prepare for the Apple Pro Certification Exam.

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For more information, please see the ad at the back of this book, or to find an Authorized Training Center near you, go to training.apple.com.

Resources

Apple Pro Training Series: Logic Pro 9 and Logic Express 9 is not intended as a comprehensive reference manual, nor does it replace the documentation that comes with the application. For comprehensive information about program features, refer to these resources:

- The *Logic Pro 9 User Manual* and the *Logic Express 9 User Manual.* Accessed through the Logic Help menu, the *User Manual* contains a complete description of all features. The other documents available in the Logic Help menu can be valuable resources as well.
- Apple's website: www.apple.com.
- Logic Pro Help's website, an online community of Logic users moderated by the author of this book, David Nahmani: www.logicprohelp.com.

4

Lesson Files

Logic 9 Files > Lessons > 04 Rock Song

Time

This lesson takes approximately 60 minutes to complete.

Goals

Record MIDI performances

Quantize MIDI recordings

Merge a MIDI recording with an existing MIDI region

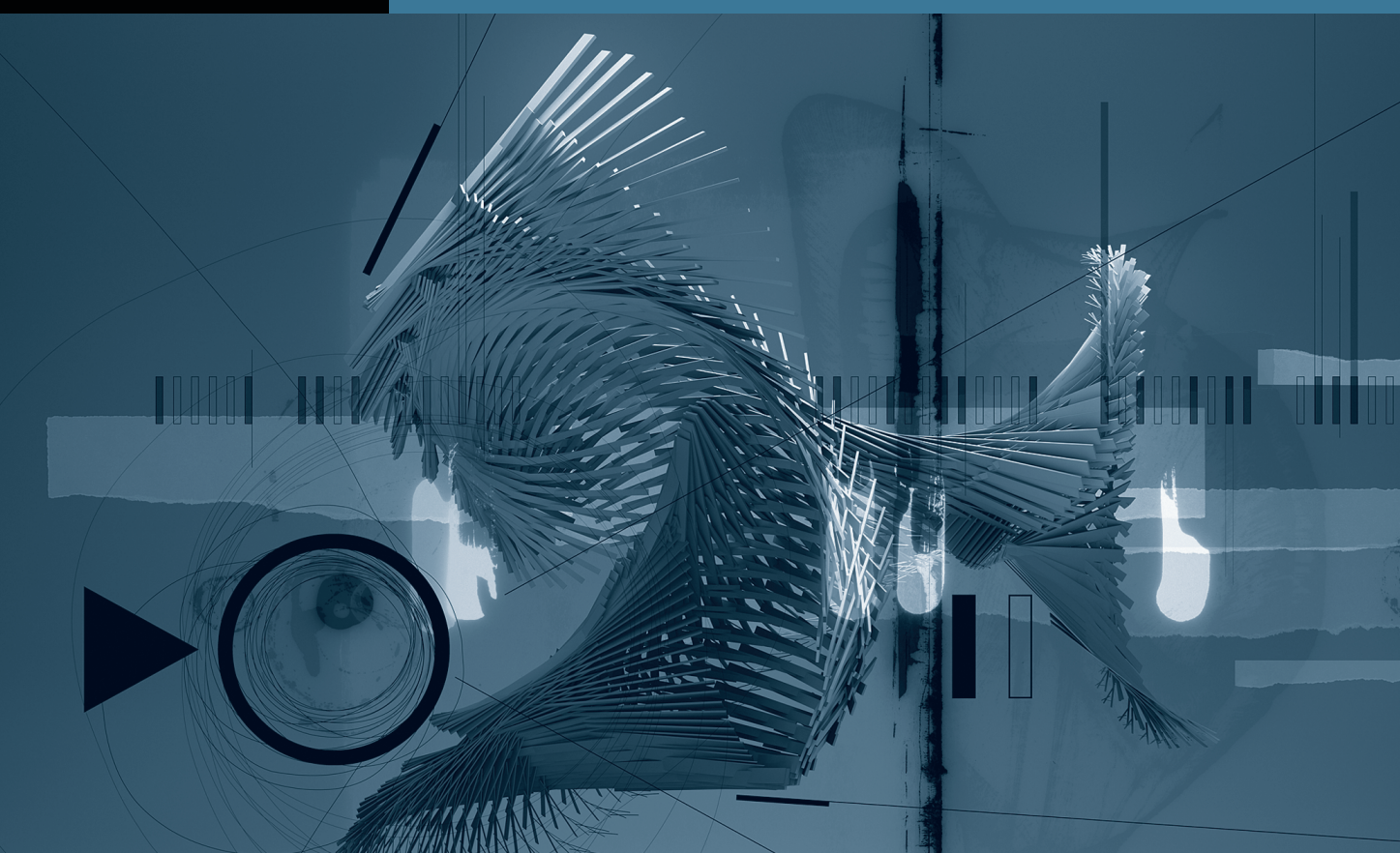
Record MIDI in take folders

Punch record a MIDI recording

Capture a performance as a recording

Record MIDI using Step Input mode

Filter incoming MIDI events



Lesson **4**

Recording MIDI

MIDI (the Musical Instrument Digital Interface) was created in 1983 to standardize the way electronic musical instruments communicate. Today, MIDI is extensively used in the music industry, from cell phone ringtones to major-label albums. Most TV and film orchestra composers use MIDI to sequence large software sound libraries, getting ever closer to productions that sound like a real orchestra.

MIDI sequences can be compared to piano rolls, the perforated paper rolls once used by mechanical player pianos. Like the punched holes in piano rolls, MIDI events do not contain audio. They contain note information such as pitch and velocity. To produce sound, MIDI events need to be routed to a software instrument or to an external MIDI instrument.

There are two basic types of MIDI events: MIDI note events that trigger musical notes, and MIDI continuous controller (MIDI CC) events that control parameters such as volume, pan, or pitch bend.

For example, when you hit C3 on a MIDI controller keyboard, the keyboard sends a Note On MIDI event. The Note On event contains the pitch of the note (C3) and the velocity of the note (which indicates how fast the key was struck, measuring how hard the musician played the note).

By connecting the MIDI controller keyboard to Logic, you can use Logic to route the MIDI events to a virtual software instrument or to an external MIDI instrument. The instrument reacts to the Note On event by producing a C3 note, and the velocity typically determines how loud the note sounds.

MORE INFO ► To learn more about the MIDI standard specification, visit the MIDI Manufacturers Association website at http://www.midi.org/.

Recording MIDI

In Logic, the techniques used to record MIDI are very similar to the techniques you used to record audio in Lesson 2. When a MIDI controller keyboard is connected to your computer, and its driver is properly installed (some devices are class-compliant and don't require a driver installation), you can use that keyboard to record MIDI in Logic. Logic automatically routes all incoming MIDI events to the record-enabled software instrument or external MIDI track.

TIP If you don't have a MIDI controller keyboard, press the Caps Lock key on your computer keyboard to turn your Mac keyboard into a polyphonic MIDI controller keyboard. A representation of your computer keyboard is displayed, showing the letter keys assigned to musical notes. The number keys allow you to choose the octave range, and the lower row of keys lets you choose the note velocities. Keep in mind that you may need to disable the Caps Lock keyboard to access some of Logic's key commands. Press the Caps Lock key again to disable the Caps Lock keyboard.

To record a MIDI performance triggering a software instrument, you need to create a software instrument track, insert an instrument plug-in or choose a channel strip setting from the Library, and click Record.

1 Go to Logic 9 Files > Lessons and open the **04 Rock Song** project.

That project has a single audio track with a drum loop, which will provide a timing reference to record your new instrument.

2 At the top of the track list, click the New Tracks button (+) (or press Command-Option-N).

The New Tracks dialog appears.

3 Make sure that Number is set to 1, Type is set to Software Instrument, and Open Library is selected. Then, click Create.

A software instrument track is created, and it is automatically record-enabled. The Library opens, displaying software instrument channel strip settings.

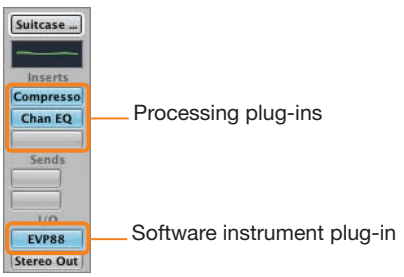
By default, audio tracks have a blue icon and audio regions are blue. Software instruments have a green icon and MIDI regions are green.

4 Choose a channel strip setting from the Library.

For this exercise, choose 05 Keyboards > 01 Electric Piano > Suitcase V2.

LOGIC EXPRESS ► For this exercise, choose 05 Keyboards > 01 Electric Pianos > Tines Electric Piano, and in the following exercises, substitute Tines Electric Piano when you see Suitcase V2.

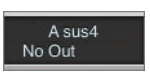
In the Inspector, the software instrument channel strip loads the necessary plug-ins. In the Arrange area, the name *Suitcase V2* is displayed on the Inst 1 track header.



While audio channel strip settings contain only processing plug-ins, software instrument channel strip settings also contain the software instrument plug-in. On the channel strip, the software instrument plug-in is loaded in the Instrument slot of the I/O section.

5 Play some notes on your MIDI controller keyboard.

You should hear the electric piano. In the Transport bar's MIDI In display, the incoming MIDI note events are displayed as notes are played. If you play a chord, the display shows the chord name.



You are now ready to record, but first open the Piano Roll Editor so that you can see the MIDI notes appear as you record them.

6 At the bottom of the Arrange area, click the Piano Roll button (or press P).

The Piano Roll Editor opens in the editing area.

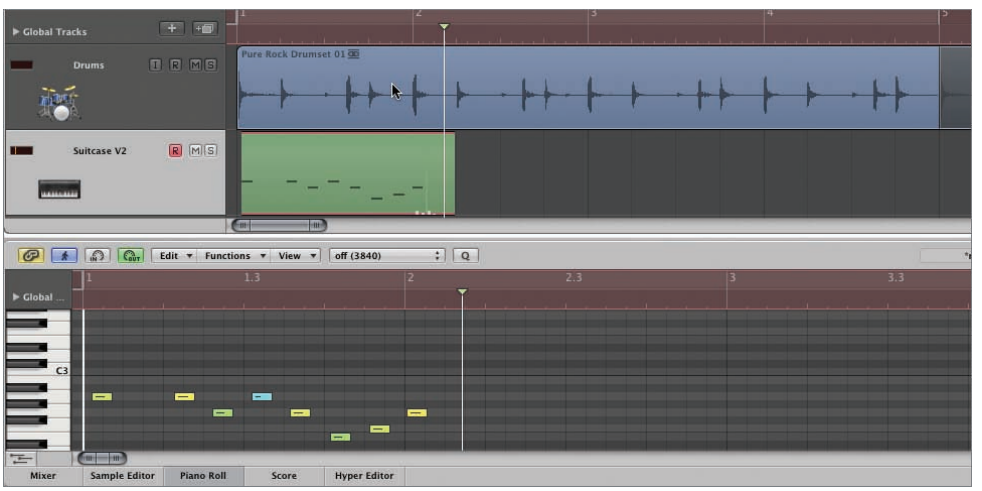
7 Go to the beginning of the project.

8 In the Transport bar, click the Record button (or press R).

The playhead jumps back one bar, giving you a four-beat count-in with an audible metronome click before recording starts. The Bar ruler turns red to indicate that Logic is recording.

9 When you can see the playhead, play some notes.

Play a simple bass line in an eighth-note pattern. You will record more notes in that region later in this lesson.



When you play the first MIDI note, a new MIDI region with a red halo is created on the record-enabled Suitcase V2 track. The region's length constantly updates to include the most recent MIDI event played.

The MIDI notes appear in the Piano Roll Editor as you record them.

10 Stop recording.

MIDI notes

In the MIDI region, the notes are displayed as small beams.

11 Go back to the beginning and listen to your MIDI recording.

If you are not happy with your performance, you can undo it (Command-Z) and try again.

TIP If you record-enable several software instrument tracks, incoming MIDI events will be routed to all record-enabled tracks, allowing you to layer the sounds of several instruments.

Quantizing MIDI Recordings

If you are not happy with the timing of your MIDI performance, you can correct the timing of the notes. The time-correction process is called *quantization*. To quantize a MIDI region, you choose a grid resolution from the Quantize menu in the Region Parameter box. Each note inside the region will snap to the nearest position on the chosen grid.

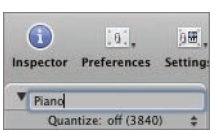
Quantizing MIDI Regions

In the following exercise, you will quantize the recording you made in the previous exercise to correct its timing, so that the piano notes are in sync with the drums.

1 Make sure the new #default MIDI region is selected.

First, you'll rename the region so that you can easily identify it later.

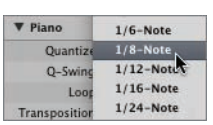
2 In the Inspector's Region Parameter box, double-click the name of the region and enter *Piano*.



The region is renamed *Piano*.

Now choose the Quantize value, which determines the resolution of the grid used to quantize the notes.

3 Set the Quantize parameter to 1/8-Note while looking at the notes in the Piano Roll Editor.



All the MIDI notes snap to the nearest eighth note.

4 Go to the beginning and start playback.

You can hear your performance, perfectly in time with the drums. Unless of course the performance timing was really poor, in which case some of the notes may not snap to the desired 1/8 note.

In Logic, quantizing is a nondestructive operation. You can always go back to the way the performance was originally recorded.

5 With the Piano region selected, open the Quantize parameter menu and choose "off (3840)."

The MIDI notes return to their original recording positions.

MORE INFO ► The (3840) indicator identifies the shortest resolution of Logic's MIDI sequencer, the tick. When the time signature is 4/4, there are 3840 ticks in a bar (or 240 ticks in a sixteenth note). When Quantize is set to "off (3840)," the notes snap to the closest tick.

6 From the Quantize parameter menu, choose 1/8-Note again.

The notes snap back to the grid.

MORE INFO ► The Quantize menu also offers Swing settings. The Swing settings delay the position of every other note in the grid to obtain a swing, or shuffle groove, common in many music genres such as blues, jazz, hip-hop, and house music. The amount of delay goes from no delay (A = no swing) to a lot of delay (F = hard swing). For example, 8B Swing will subtly delay the second eighth note of each beat.

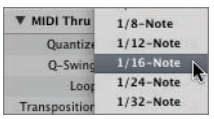
Setting a Default Quantization Grid

You can set a default quantization value so that any new recording will automatically be quantized to that grid resolution. This is very useful if you are not confident of your timing chops. Since the Quantize setting is nondestructive, you can always adjust it or turn it off for that region after the recording is done.

1 Click in the background of the Arrange area.

All regions are deselected, and the Region Parameter box now displays the MIDI Thru settings. The MIDI Thru parameter settings are automatically applied to any new MIDI region that you record.

2 Set the Quantize parameter to 1/16-Note.



3 Select the Piano region.

The Region Parameter box displays the region's name and settings. You can see the Quantize setting you applied to that region in the previous exercise: 1/8-Note.

4 Press Delete.

The region is deleted.

5 Go to the beginning of the track and click the Record button (or press R).

Record a new simple bass line as you did previously.

6 Stop recording.

In the Piano Roll Editor, the notes immediately snap to the nearest 1/16 note. The new MIDI region is selected, and the Region Parameter box now displays its parameters: Quantize is automatically set to 1/16-Note, the MIDI Thru Quantize setting you set in step 2.

7 Set the Quantize parameter to "off (3840)."

The notes return to their original recorded positions.

8 Set the Quantize parameter back to 1/16-Note.

Merging Recordings into a MIDI Region

Sometimes you may want to record a MIDI performance in several passes. For example, when recording piano, you can record only the left hand and then record the right hand in a second pass. Or, when recording drums, you can record the kick drum in the first pass, the snare in a second pass, and the hi-hat in a third pass.

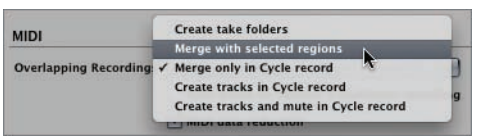
In Logic, when recording MIDI events on top of an existing MIDI region, you can choose to merge the new events with the existing ones.

Recording into a Selected MIDI Region

In the previous exercise, you recorded a simple bass line onto a piano track. Now you will play chords as you listen to the bass line and record the new chords inside the same MIDI region. First, you will choose the correct recording setting to merge your new recording with the selected region.

1 In the Toolbar, click the Settings button and choose Recording.

2 Under MIDI, set Overlapping Recordings to "Merge with selected regions."

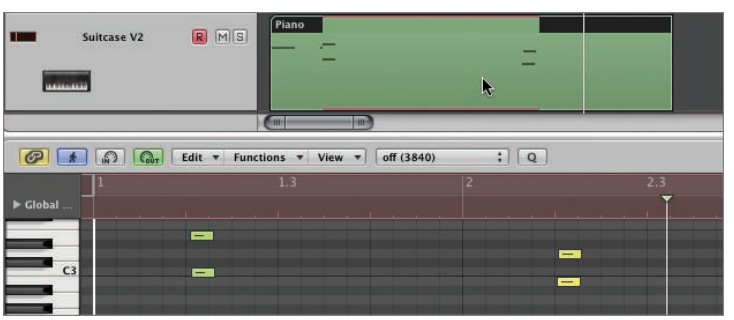


Now you only have to select the existing MIDI region before recording, and the new notes will be recorded inside the selected region.

3 Make sure the Piano region is still selected.

4 Go to the beginning and start recording.

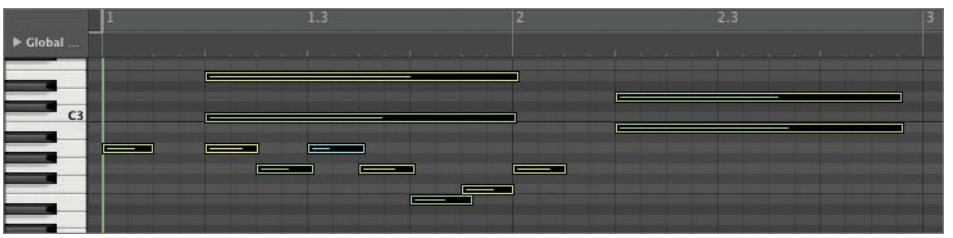
Try to play some chords that complement the bass line you recorded previously.



NOTE ► While you are recording, you are temporarily recording a new region on top of the existing one. The new region will be merged with the existing one as soon as you stop recording. The Piano Roll Editor displays the contents of the new region you are recording, and although the contents of the existing region are not displayed while you are recording, you can still hear the existing notes played back.

5 Stop recording.

The new recording is merged with the existing region and you can see all the notes in the Piano Roll Editor. (You might have to scroll or resize the Piano Roll Editor window to see all the notes.) Note that the notes you just recorded snap to the nearest 1/16 note, the default quantize resolution you chose in the previous exercise.



TIP You can also use this technique to add MIDI Controller events such as pitch bend or modulation to a region after you have recorded the MIDI notes.

Merging Recordings in Cycle Mode

Recording in Cycle mode allows you to continuously repeat the same section and only record new events when you are ready. This can be very useful when recording a drum pattern, for example. When repeating a one-bar or two-bar section, you can add new elements to the pattern during each pass of the cycle, while listening to everything that you have recorded.

When you are recording in Cycle mode, notes recorded in all consecutive passes of the cycle are merged into a single MIDI region. In this exercise, you will use Cycle mode to record drums—first recording the kick, then the snare, then the hi-hat.

1 In the Arrange area, mute both existing tracks.

Remember that you can click the Mute button on the first track header and drag down the mouse to mute both tracks.

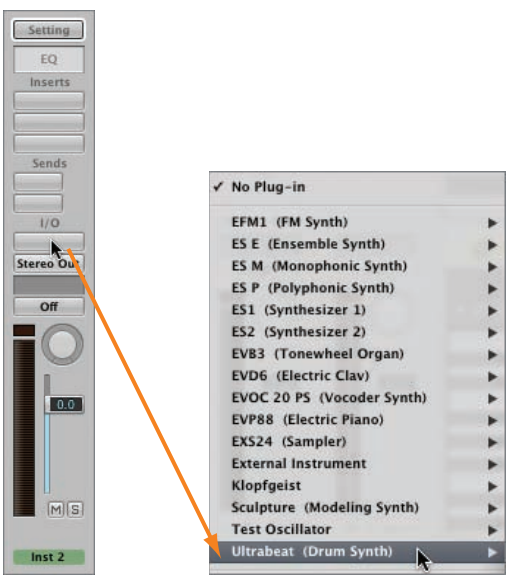
2 At the top of the track list, click the New Tracks button (+) (or press Command-Option-N).

The New Tracks dialog appears.

3 Make sure that Number is set to 1, Type is set to Software Instrument, and Open Library is selected. Then, click Create.

This time, you will insert the software instrument in the Inspector, on the Arrange channel strip.

4 In the I/O section of the channel strip, click the Instrument slot.



A menu appears, allowing you to choose one of Logic's software instruments.

5 Choose Ultrabeat (Drum Synth).

NOTE ► When you place your pointer over Ultrabeat (Drum Synth), a menu opens on the right that allows you to choose between Stereo and Multi-Outputs. For now, do not use the lower-level menu, and simply choose Ultrabeat (Drum Synth). By default, a stereo Ultrabeat will be inserted.

The Ultrabeat plug-in is inserted in the Instrument slot of the channel strip, and the Ultrabeat plug-in window opens.

6 Close the Ultrabeat window.

MORE INFO ▶ For now, you will use Ultrabeat to produce drum sounds as you record MIDI in Cycle mode. In Lesson 6, "Programming Drums," you will use the Ultrabeat interface to program a drum pattern.

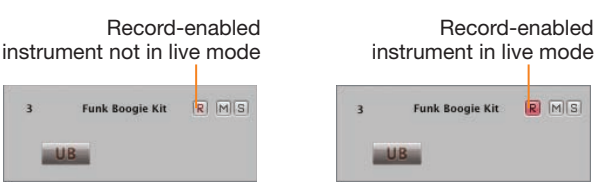
Notice the white frame around the Ultrabeat plug-in on the channel strip. A white frame indicates the selected section of the channel strip, whose settings are automatically displayed in the Library. The Library now displays Ultrabeat settings.

7 In the Library, choose 01 Drum Kits > Funk Boogie Kit.

Wait a few seconds while Ultrabeat loads the kit. When the kit is fully loaded, the drum kit name is displayed on the track 3 track header in the Arrange area.

Selecting a software instrument track automatically record-enables it, but the instrument is not always in live mode. (An instrument in live mode requires more CPU resources) When an instrument is not in live mode, the first note you play will take about 100 ms (milliseconds) to trigger the instrument, which is then placed in live mode.

You can put an instrument in live mode by sending any MIDI event to it (playing a dummy note, moving the modulation wheel, and so on) or by clicking the Record Enable button in its track header.



First, locate the notes on your controller keyboard that trigger the kick, the snare, and the hi-hat. In Ultrabeat, you will use the following:

- C1: kick
- E1: snare
- F♯1: hi-hat

8 Play the lowest C note on your MIDI controller while watching the MIDI Activity display in the Transport bar.

If the MIDI In display doesn't show a C1, press your MIDI controller keyboard Octave Up and Down buttons until the lowest C plays a C1.

NOTE ► If your MIDI keyboard has a C lower than C1, locate the C1 on a higher octave.

MORE INFO ► If you are using the Caps Lock keyboard, press 4 to set the right octave, and press A to trigger a C1 MIDI note.

When you can trigger a kick with C1, locate E1 (two white notes to the right) to play the snare and F♯1 (the next black note to the right) to play the hi-hat.

9 In the Bar ruler, click the cycle area.

Cycle mode turns on, and the cycle area is shown as green.

10 Resize the cycle area so that it spans one bar starting at the beginning of the song.

You will now record the drums, one at a time.

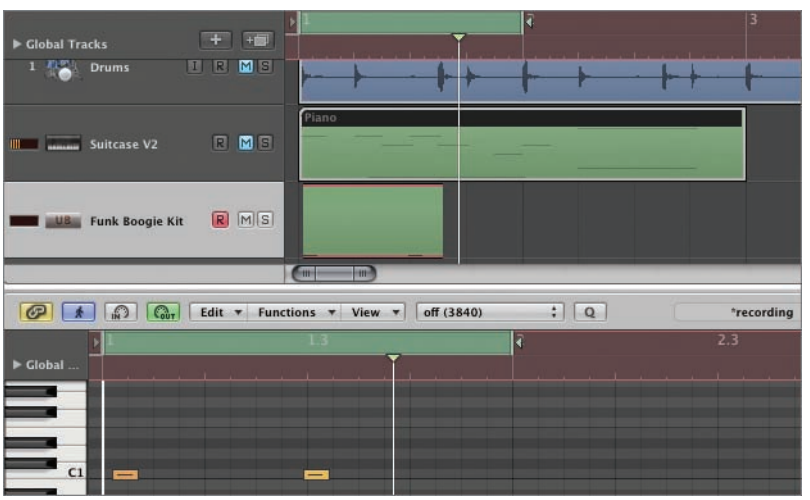
11 Click in the background of the Arrange area.

The Region Parameter box displays the MIDI Thru parameters.

12 Set the Quantize parameter to 1/8-Note.

13 Start recording.

You hear a four-beat count-in before the playhead reaches the beginning of the cycle area. Play two C1 notes: one on the first beat, one on the third beat. In the Piano Roll Editor's Bar ruler, the first beat is on 1, the third beat on 1.3 (bar 1, beat 3).



When a new cycle begins, you can hear the kick drum notes you just recorded. Notice that the notes snap to the nearest 1/8 note because you chose that grid resolution for your default MIDI Thru parameters.

You have all the time in the world before you continue to record. As long as you don't play anything, there are no MIDI events, and Logic keeps cycling over the existing region, playing back your kick drums. If you feel the need to practice the snare before recording, you can return to play mode while cycling continues.

14 Click the Play button (or press Shift-Return).

Logic is no longer in record mode (and the metronome stops clicking), but playback continues as Logic repeats the cycle area without interruption. Notice that the two C1 notes are now quantized to the grid.

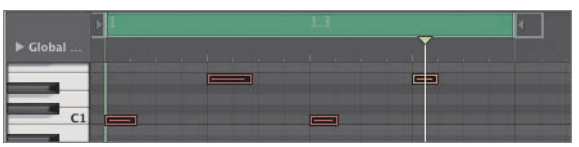
On your MIDI keyboard, locate the snare (E1) and practice a snare pattern. Try to hit the snare on beats 2 and 4.

15 Click the Record button.

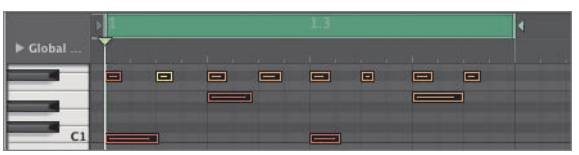
Playback continues without interruption, but Logic reenters record mode.

16 Click your drum region on track 3 to select it. When you feel ready, record the snare.

When the playhead jumps to the beginning of the cycle, you can see the two kick notes and the two snare notes in the Piano Roll Editor.



Use the same techniques to record your hi-hat (F♯1) on every eighth note in the same MIDI region.



17 Stop recording.

The merge MIDI-recording techniques you used in the two previous exercises provide a lot of flexibility and allow you to take your time, recording a single part of a performance. These techniques will work in many situations. For example, consider recording a violin or cello on a software instrument track; then, on a second pass, record the movements of the pitch bend wheel to add vibrato to some of the notes.

Recording MIDI Takes

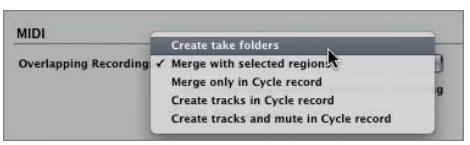
When you want to nail a performance or experiment with various musical ideas, you can record different takes and later choose the best one. The techniques to record MIDI takes are similar to the techniques you used to record audio takes in Lesson 2. You can record over an existing MIDI region, or you can use cycle recording to record one take for each pass of the cycle.

Cycle mode should still be turned on from the previous exercise. Let's record takes in Cycle mode and experiment using different melodies for a bass line.

1 In the Transport bar, hold down the Record button and choose Recording Settings from the pop-up menu.

The Recording Project Settings window opens.

2 In the MIDI area, from the Overlapping Recordings pop-up menu, choose "Create take folders."



3 Close the Project Settings window.

4 In the Arrange area, unmute track 1 (Drums/Audio 1) and mute track 3 (Funk Boogie Kit/Inst 2).

5 Create a new software instrument track and open the Library.

6 In the Library, choose 03 Bass > 02 Electric Bass > Aggressive Fretless.

LOGIC EXPRESS ► Choose 03 Bass > 02 Electric Bass > Rock Fretless, and in the following steps, use Rock Fretless instead of Attitude Bass.

7 Start recording and play a different melody for each pass of the cycle until you have three or four takes.

A MIDI take is recorded for each pass of the cycle where you play MIDI notes. If you don't play anything for a whole cycle, no take is recorded. The takes are packed into a take folder.

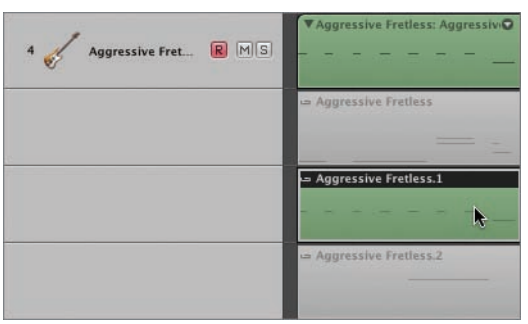
When a new cycle begins, the take you just recorded is automatically muted. You can listen to it by switching to play mode.

8 Click the Play button (or press Shift-Return).

You are now in play mode, and you can hear the last take you recorded.

9 Open the take folder menu and choose the take you want to hear.

You can also double-click the take folder to open it and click the take you want to hear. Double-click the take folder to close it.



MORE INFO ► Unlike audio take folders, you cannot comp the takes in a MIDI take folder.

10 Stop playback and turn off Cycle mode.

Using Punch Recording

You can use the punch-on-the-fly and autopunch techniques you learned for audio recording to punch on MIDI recordings. The only difference is that you'll have to turn on the Replace mode.

In the next exercise, you will record a piano performance, and then use both the Replace and Autopunch modes to rerecord a section of the performance.

1. Mute the Aggressive Fretless track.
2. Select and unmute the Suitcase V2 track.

   The track is record-enabled, and the MIDI region on the track is selected. If you have several MIDI regions on that track, all the regions are selected.

   NOTE ▶ Make sure that Cycle mode is turned off. If Cycle mode is turned on, selecting a track selects only those regions within the cycle area (and the regions that overlap the cycle area).

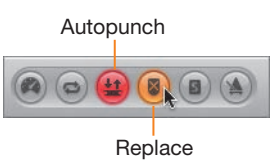
3. Press Delete.

   All the selected MIDI regions are deleted.

4. Press Record, play your keyboard for four or five bars, and stop the recording.

   You will now correct a bar of your performance.

5. Click both the Autopunch and Replace buttons.



In order to merge the new events you are going to record over the Autopunch area with the existing region on the track, you need to change your recording settings back to the default settings.

6 In the Transport bar, hold down the Record button and choose Recording Settings from the pop-up menu.

The Recording Project Settings window opens.

7 In the MIDI area, from the Overlapping Recordings pop-up menu, choose “Merge only in Cycle record.”

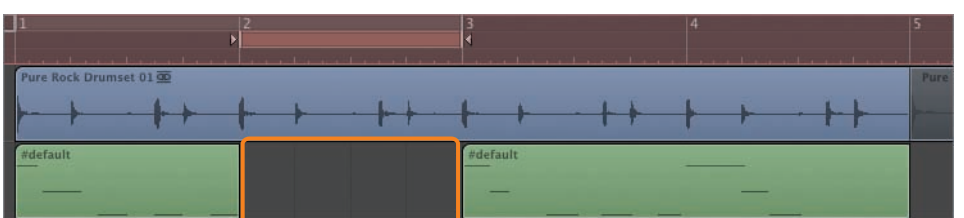
8 In the Bar ruler, adjust the Autopunch area around a section of the Piano that you want to record over.

Make sure the Autopunch area is placed over a section of the piano performance you captured in the previous exercise.

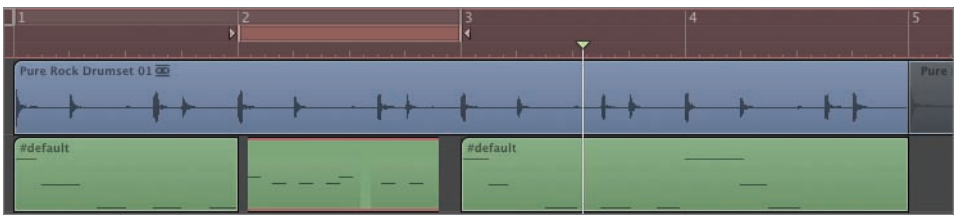
9 Go to the beginning of the project and make sure the Suitcase V2 track is still record-enabled.

10 Click the Record button and start playing right away.

On the Piano track, the section below the Autopunch area is deleted.



You can hear the notes you are playing over the previous recording, but only the notes played within the Autopunch area are recorded inside the MIDI region.



11 Turn off the Autopunch and Replace modes.

Using Step Input Recording

Instead of recording a real-time performance, you can record notes one at a time. In Step Input mode, you position the playhead and play a note or chord on your MIDI keyboard. The note(s) are recorded, and the playhead moves one step ahead, waiting for the next note(s).

This mode is very useful for recording complex musical phrases that you can't perform in real time, such as complicated chord patterns or really fast arpeggios (a great technique for dance music).

1 Select the Suitcase V2 track and press Delete.

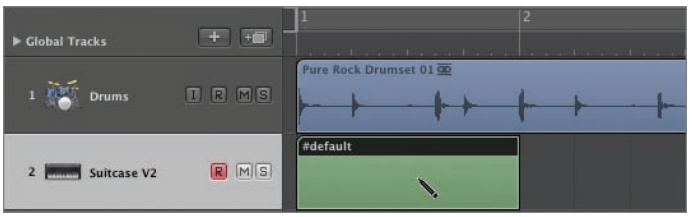
All the regions on the track are deleted.

TIP If you don't want to select the regions on a track when selecting the track, hold down Option as you select the track.

You start by creating an empty MIDI region using the Pencil tool (as the Command-click tool). You will step-record notes inside that new region.

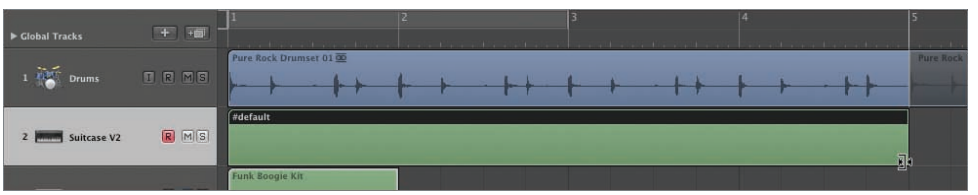
2 Press Esc and Command-click the Pencil tool.

3 Command-click the Suitcase V2 track between bars 1 and 2.



The Pencil tool creates an empty one-bar MIDI region.

4 Resize the region so that it is four bars long.



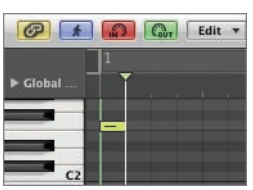
5 At the upper left of the Piano Roll Editor, click the MIDI In button.

The button turns red and MIDI Step Input Recording is turned on.

MORE INFO ► You can also enable Step Input Recording in the Score Editor or the Event List.

6 Go to the beginning of the project.

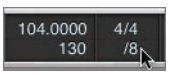
7 Play a single note on your MIDI keyboard.



A 1/16 note is recorded at the playhead position, and the playhead moves forward one 1/16 note. The recorded note has the pitch and velocity of the note you played.

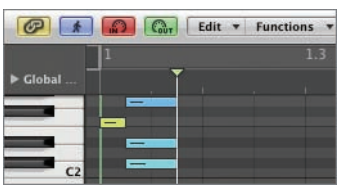
The length of a step is identified by the division setting in the Transport bar, below the time signature.

8 In the Transport bar, click the division setting and drag down until it reads /8.



In the Piano Roll Editor, the grid resolution is the same as the division setting. The vertical grid lines are now placed at eighth-note intervals.

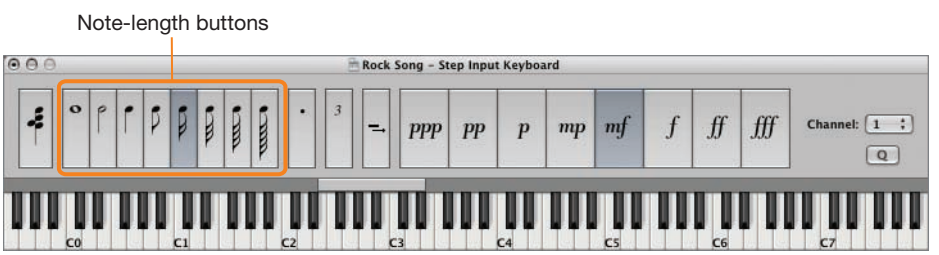
9 Play a chord.



An eighth-note chord is recorded at the playhead position, and the playhead moves forward one eighth note.

You can also use the Step Input Keyboard to exercise more control over your step input recordings.

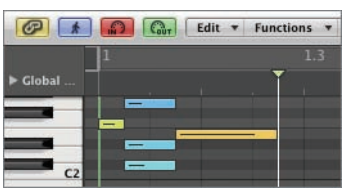
10 From the main menu bar, choose Options > Step Input Keyboard.



The floating Step Input Keyboard appears. The selected note-length button overrides the division setting in the Transport bar.

11 On the Step Input Keyboard, click the quarter-note button.

12 Play a note.

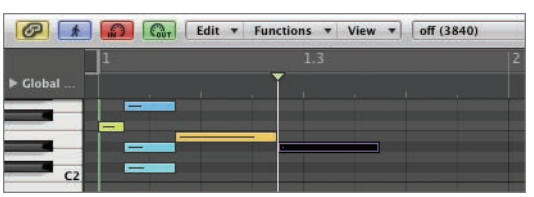


A quarter note is recorded at the playhead position, and the playhead moves forward one quarter note.

If you were recording a quarter-note pattern and wanted to record a single half note, you could click the half-note button, record your half note, and click the quarter-note button again to record the next quarter note.

An easier way is to use the Sustain Insert Note button.

13 Play a note and hold down the key on your MIDI keyboard.

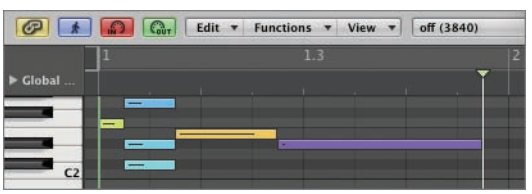


A quarter note is recorded. You need to hold down the MIDI key for the next step, so that the note you are recording remains selected in the Piano Roll Editor.

TIP You can also release the key on your MIDI keyboard and click the inserted note to select it.

14 On the Step Input Keyboard, click the Sustain Inserted Notes button.

The selected note is lengthened by a quarter note, so it is now a half note. You can click the Sustain Inserted Notes button several times to lengthen the selected notes by the current step length. You can now release the key on your MIDI keyboard.

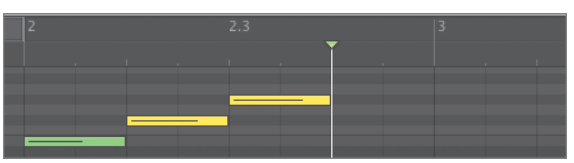


Now let's record quarter notes starting on bar 2.

15 With the pointer positioned over the lower half of the Piano Roll Bar ruler on bar 2, hold down the mouse button.

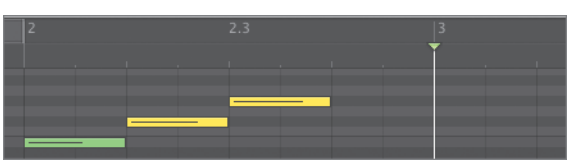
The playhead snaps to bar 2.

16 Play three notes, one at a time.



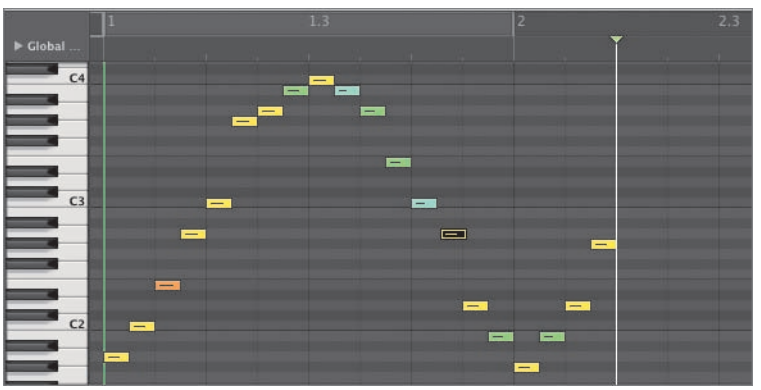
Now you want to insert a quarter-note rest.

17 On the Step Input Keyboard, click the Sustain Inserted Notes button.



The playhead jumps forward one quarter note. When no notes are selected, the Sustain Inserted Notes button makes the playhead move one step ahead, and you can resume step input recording.

Try using step input recording techniques to record fast 1/16-note arpeggios or even crazy chord patterns. With a little experimentation, you will quickly end up with cool musical phrases that couldn't possibly be performed live.



18 Click the MIDI In button to turn off Step Input recording, and close the Step Input keyboard window.

Filtering Incoming MIDI Events

Sometimes your MIDI controller keyboard sends MIDI events that you may not want to record in Logic. Maybe you are using a faulty MIDI keyboard that generates random pitch bend events, or your keyboard is sending aftertouch MIDI events when you apply pressure to the keys, but the instrument you are recording does not react to aftertouch.

Logic allows you to filter out undesired incoming MIDI events so that they are not recorded. Since input filter settings are project settings, you can adjust them to filter various types of events in different projects.

1 In the Toolbar, click the Settings button and choose MIDI from the pop-up menu.

2 Click the Input Filter tab.

In this tab, you can select the MIDI events you want to filter.

3 In the Arrange area, click the Suitcase V2 track header.

The track is selected and record-enabled.

4 Play some notes on your MIDI controller keyboard and move the pitch bend wheel.

You can hear the note pitches change as you move the pitch bend wheel.

5 In the MIDI Project Settings window's Input Filter tab, select Pitch Bend.

6 Play some notes on your MIDI controller keyboard and move the pitch bend wheel.

This time the pitch bend MIDI events are filtered at their input into Logic, and your pitch bend wheel movements have no effect on the pitch of the notes you play.

Separating the MIDI data from the audio signal produced by the instrument allows for very flexible recording. Throughout this lesson you quantized your notes to a grid and chose to merge new recordings into an existing MIDI region or to record separate takes in a MIDI take folder. You also used step input recording to enter notes one step at a time, without the pressure of recording a real-time performance.

After a MIDI performance is recorded, you can still change the sound of the instrument independently of the MIDI events, or edit the MIDI events independently of the instrument's sound. Those vast sound- and performance-editing possibilities take you to a new realm of experimentation. Enjoy it!

MORE INFO ► To learn how to use external MIDI instruments with Logic, read the Appendix, "Using External MIDI Devices."

Lesson Review

1. How does Logic route incoming MIDI events?
2. How can you time-correct a MIDI region?
3. How do you choose the default quantize settings for new MIDI recordings?
4. How do you record MIDI takes?
5. What do you need to do before you can punch in on a MIDI track to replace a portion of a MIDI region?
6. How do you turn on Step Input mode?
7. When recording in Step Input mode, identify two ways you can adjust the step length.

Answers

1. All incoming MIDI events are routed to the record-enabled track(s).
2. In the Inspector's Region Parameter box, choose a grid resolution value from the Quantize menu. The MIDI notes in the region will snap to the nearest position on the chosen grid.
3. Deselect all regions to choose the MIDI Thru parameters in the Region Parameter box.
4. Open the Recording project settings and choose Overlapping Recordings > Create take folders, and then record on top of an existing record, or record in Cycle mode.
5. You need to turn on the Replace mode.
6. Click the MIDI In button in the Piano Roll Editor, Score Editor, or Event List.
7. In the Transport bar, adjust the division setting; or open the Step Input Keyboard and use the note-length buttons.

Index

A

accents, 226–229
AD (analog-to-digital) converter, 60
Adaptive Limiter plug-in, 372–375
Add Device button, 449
Add Every Downbeat command, 224
Add Every Upbeat command, 224
aftertouch, 206–207
AIFF format, 95
All Drums button, Loop Browser, 19, 267
Alternative tempo maps, 262–266
Amp Designer
  choosing amp model, 331–333
  customizing amp model, 334–339
  overview of, 330
analog signal, to digital data stream, 60
analog-to-digital (A/D) converter, 60
Analyzer button, Channel EQ plug-in, 357
Apple Loops
  browsing and previewing loops, 18–22
  creating, 266–269
  defined, 257–258
  overview of, 18
  setting key signature using, 261–262
  troubleshooting audio output, 422–424
  using Loop Browser, 258–261
Arrange area, Arrange window
  continuously repeating section, 26–29
  cutting and copying audio regions, 117–121
  cutting section, 310–312
  defined, 17
  deselecting all regions in, 25
  dragging loop onto, 21
  looping and positioning regions in, 29–32
  zooming whole arrangement, 39–40
Arrange channel strip, 370–371
Arrange window, 15–18
arrangements, building
  adjusting loop repetitions, 36–37
  arranging middle section, 37–39
  copying and resizing regions, 32–36
  ending song, 39–44
  looping and positioning regions, 29–32
  saving work and undoing actions, 29
arranging and mixing
  adding introduction, 308–310
  cutting section, 310–312
  experimenting with order of regions, 294–296
  filling in Bass track, 290–294
  humanizing percussion part, 304–308
  muting elements, 313–315
  packing regions into folders, 297–300
  previewing song, 286–289
  reducing noise using Soundtrack Pro, 322–326
  reducing wah noise from Guitar track, 319–321
  removing snare leakage from Kick track, 315–319
  review Q & A, 326–327
  slicing and doubling percussion, 300–304
Assignment section, Ultrabeat, 215–216, 219–222
Attitude Bass track, 170, 176, 189, 190, 196
Audio Bin
  adding introduction, 310
  deleting unused audio files from, 121–123
  using, 72–73
  viewing takes recorded in Cycle mode, 79
audio drivers, disabling at startup, 444
audio files
  creating digital, 60–61
  deleting unused, 121–123, 138–139
  detecting tempo of, 254–255
  matching project tempo to, 278–279
  previewing for quantizing drum recording, 124–127
  saving selection as new, 131–133
Audio Files folder, 412–413
Audio MIDI Setup, 448–452
Audio Preferences. *see* Preferences, Audio
audio routing problems, solving
  bypassing audio interface, 424–426
  checking audio input, 427–430
  restoring audio output, 422–424
audio, recording. *see* recording audio
Auto Set Locators, 348
Auto Zoom (Control-Z), 382
automatic backups, 410–414
automating mix
  adjusting volume of section, 380–387
  creating decrescendo, 387–390
  creating pan automation, 390–392
  exporting mix, 405–407
  recording live automation. *see* recording live automation
  review Q & A, 407
  using control surfaces, 401–405
  using offline automation. *see* offline automation
Automation button, 381–382
Automation Parameter menu, 381, 383, 390, 398, 404–405
Automation Preferences, 403
automation tracks, Arrange area, 381–387, 397–399
automation, keyboard shortcuts for, 464–465
Autopunch mode, 88–92, 158–160
aux sends, adding reverb using, 363–367

B

B key (Media button), 122, 178, 248, 310
background noises. *see* noisy recordings, cleaning up
backups
  importance of, 410
  preferences files, 442–443
  project files, 414–417
  project folders to external devices, 420–421
  rebuilding project files using, 417–420
  saving project and automatic, 410–414
Balance control. *see* Pan/Balance control
Band On/Off button, Channel EQ plug-in, 357
Bar ruler
  adding introduction using, 308–310
  automating volume using Hyper Draw, 199
  ending song using, 39
  exporting mix using, 53
  filling in Bass track using, 290
  Piano Roll Editor's, 164, 170
  previewing song using markers, 286
  previewing takes for comping, 103
  red, indicating that Logic is recording, 71
  toggling Autopunch mode in, 85, 90, 92
  toggling Cycle mode in, 79, 84, 114, 153, 310
  yellow, indicating Solo mode, 288
Bass button, 27
Bass track, 290–296. *see also* Attitude Bass track
bit depth
  Audio Bin, 73
  digital recording and, 61–62
  setting, 62–64
blue loops, Loop Browser
  continuously repeating section, 27, 29
  creating, 266–269
  defined, 21
bouncing
  exporting automated mix, 405–406
  exporting mix, 53–55
  region in place, 246–247
Broadcast Wave File (BWF, or WAVE), 95
Browser tab, 124–127
buffer size, setting I/O, 93–94
Built-in Audio (or Output), 424

bus
adding reverb using aux sends, 364–367
using compressor and limiter on master channel strip, 370–375
BWF (Broadcast Wave File), 95
Bypass button, 69

C

Cabinet label, Pedalboard, 342
CAF (Core Audio Format), 95
Caps Lock key, Mac, 142
Catch mode, 306–307
Channel EQ plug-in, 355–361
channel pressure (C-Press) events, 206–207
channel strips
adjusting levels, 47–49, 345–351
adjusting recording level, 69
checking audio input on, 427–430
choosing pan positions, 352–355
choosing Ultrabeat, 214–215
creating MIDI recording, 143
external MIDI, 454
keyboard shortcuts for, 461–462
preparing song for mixing, 45–46
previewing loops, 21–22
using compressor and limiter on master, 370–375
using processing plug-ins, 49–51
white frame indicating selected section of, 152
Claps track
humanizing percussion part, 304–308
slicing and doubling percussion part, 300–304
Click & Ports layer, Environment window, 434–435
clip detector, 68–70
Clipboard, copying automation to, 199
color
customizing in Piano Roll Editor, 172
regions or takes, 92
Column view, Loop Browser, 258
Command-8 (open Environment window), 434
Command-A (select all), 30, 418
Command-B (bounce), 53
Command-click (mute/unmute all tracks Track Mute button), 110–113, 118
Command-D (Desktop), 15, 54, 302, 411
Command-Down Arrow (opening selected application), 12
Command-H (hide application with key focus), 411
Command-Option-Control-A (Automation Quick Access), 402–405
Command-Option-N (create new tracks), 65, 143, 151
Command-R (repeat regions/events), 35, 38–39, 303
Command-S (save), 14–15, 29, 34–35, 413
Command-Shift-F (pack folder), 297–299, 304–305
Command-Shift-S (save as), 315–316
Command-Shift-U (unpack regions from folder), 448
Command-Shift-Z (redo), 235–236
Command-Tab (switch between applications), 411
Command-Z (Undo), 29, 123, 235–236
comp tracks, 75
comping takes
overview of, 105–110
previewing, 102–105
compressor
using, 368–370
using with limiter on master channel strip, 370–375
Compressor Threshold slider, 369
control surfaces
for MIDI keyboards, 402
supported by Logic, 401
troubleshooting, 402
using Automation Quick Access, 402–405
Control-click (open shortcut menu), 224
Controller button, 207
Control-Z (Auto Zoom), 382
Convert Regions to New Sampler Track, 249–250
converters, 60–61
copying
audio regions in Arrange area, 117–121
notes with Pencil tool, 174–178
plug-ins, 52–53
regions, 32–33
Core Audio engine
disabling audio drivers at startup, 444
reinitialized after choosing new I/O device, 64, 94
troubleshooting audio output, 423
Core Audio Format (CAF), 95
count-in, setting audio recording, 95–96
CPU, 94, 437–438
crescendo, creating, 244–245, 393–397
Crop button, 291
crossfades, 115–117, 120–121
curves
creating decrescendo with volume automation, 389
inserting tempo, 265–266
using Hyper Draw, 195, 198
cutting
audio regions in Arrange area, 117–121
section from song, 310–312
Cycle mode
adding introduction, 308–310
continuously repeating section, 26–29
dragging Ultrabeat pattern to Arrange area, 231–232
merging MIDI recordings in, 150–155
preparing song for mixing, 44, 46–47
previewing takes for comping in, 104
recording MIDI takes, 156–157
recording takes, 77–79
turned off for punching on MIDI recordings, 158
turned off when bouncing entire song, 53

D

decrescendo, creating, 190–192, 387–390
delay, during mixing, 361–367
Delete Unused (tracks), 300, 305
deleting
additional takes on multiple tracks, 83–84
audio, 72
notes with Pencil tool, 174–178
unused audio files, 123
Denoiser plug-in, 319–321
destructive audio editing. *see* Sample Editor
digital recording, 60–61
Direction Mixer plug-in, 354
distortion, avoiding, 344
Dock, 12–13
doubling, percussion part, 300–304
Down Arrow key, 20
downbeat, inserting notes on, 224
dragging, 32–33
drivers
bypassing audio interface, 426
configuring MIDI hardware, 449
getting MIDI out, 432
restoring audio output, 423–424
using MIDI controller keyboard, 142
drum kit, 214–218, 351–355
drum recording, quantizing, 124–128
Drum Synth. *see* Ultrabeat (Drum Synth)
drum tracks, adjusting levels, 345–351
drums, programming
adding snare roll. *see* snare roll, in Hyper Editor
changing groove in MIDI editors, 229–237
converting audio region into sampler instrument track, 248–250
converting MIDI sequence into audio region, 246–247
review Q & A, 251
in Ultrabeat. *see* Ultrabeat (Drum Synth)
Dry slider, Tape Delay window, 363
dynamic processing plug-ins. *see* processing plug-ins, dynamic

E

Editing area, Arrange window, 16
editing audio
assigning mouse tools, 110–113
comping takes, 105–110
deleting unused files, 121–123
destructively in Sample Editor, 131–137
manipulating waveforms with Flex tool, 128–131
MIDI. *see* MIDI, editing
MIDI CC events. *see* MIDI CC (continuous controller) events, editing
overview of, 101–102
previewing takes for comping, 102–105
quantizing audio drum recording, 124–128
regions in Arrange area, adding fades, 114–117
regions in Arrange area, cutting and copying regions, 117–121
review Q & A, 138–139

Effects section, Amp Designer, 337–338
Empty Project template, 13–14, 417–420
ending, arranging song, 39–44
EQ settings
  choosing, 355–361
  customizing amp model, 334–337
  processing plug-ins, 49–51
Esc (Escape) key, 111
event definitions, 201–202, 239–241
Event List
  cleaning up MIDI region, 205–207
  dragging Ultrabeat pattern to Arrange area, 232
  enabling Step Input mode in, 161
  hiding type of event in, 206–207
  quantizing note lengths, 208–210
events, Arrange window listing, 17–18
events, MIDI
  editing in Event List, 205–210
  filtering incoming, 165–167
  putting record-enabled instrument into live mode, 152
  types of, 141–142
exporting mixes
  automated, 405–407
  overview of, 53–55
external devices, backing up project folders to, 420–421
external MIDI devices
  choosing program remotely, 454–457
  configuring MIDI hardware, 448–452
  routing external MIDI tracks, 452–454

F

fades
  adding to edit point between two regions, 120–121
  adding to region, 114–117
  speed, 280–282
Fast Forward button, 24, 287
Fast Rewind button, 24, 287
feedback, avoiding when recording, 64
File Browser, 124–127, 418–419
File size, Audio Bin, 73
files. *see also* project files
  deleting unused audio, 121–123
  recording formats for, 95
Filter button, Event List Editor, 206
filtering incoming MIDI events, 165–167
Finder
  copying project folder to new location, 420
  keyboard shortcuts, 465
  opening, 12
  previewing audio files in, 124
  saving project, 411–414
  switching to, 55
Finger tool, 67, 79
Flatten, 109–110
Flex Mode parameter, 128, 264, 273–274, 278–279
Flex tool, 128–131, 272–277
folders
  backing up to external devices, 420–421
  closing, 307–308
  opening, 297
  packing regions into, 297–300, 304–305
  saving project, 412
Format button, 365–366
format, recording file, 95–96
Forward button, 24–25, 70–71, 287
freeze process, 439–441, 444
frequency analyzer, Channel EQ plug-in, 357–360

G

G key. *see* Global Tracks (G key)
Gain knob, Adaptive Limiter, 373–374
Gain knob, Amp Designer, 333
Gain Reduction meter, Compressor, 369–370
gate time, adjusting note, 225–226
General MIDI (GM) device
  choosing program remotely, 454–457
  creating custom hyper set for snare roll, 238–239
  routing external MIDI, 453
General tab, Audio Preferences, 95
Global Tracks (G key)
  global Marker track, 286–289
  global Signature track, 261–262
  global Tempo track, 262–266
  rebuilding project file, 418
  toggling, 286
GM device. *see* General MIDI (GM) device
Go to Beginning command (return key), 24–25, 77, 81
GoldVerb plug-in, 366
green loops, Loop Browser, 21, 267, 269
grid, setting default quantization, 147–148
grooves
  applying laid-back feel to snare, 232–234
  changing in MIDI editors. *see* MIDI, changing groove in editors
  quantized vs. laid-back patterns for, 234–237
grouping tracks, adjusting levels by, 349–351
Guitar track, reducing wah noise, 319–321

H

H key (Hide View), 89–90, 92
handclaps
  humanizing percussion part, 304–308
  slicing and doubling percussion part, 300–304
hard disks
  backing up project folders to external, 420–421
  deleting unused audio files from, 121–123
  optimizing hardware performance, 437–438
hardware
  configuring MIDI, 448–452
  performance optimization, 436–441
HD meter, monitoring usage, 94
Hierarchy button, 205–206, 307
Home button, 124, 178, 254, 417
horizontal zoom in (Option-Control-Right Arrow), 43, 77
horizontal zoom out (Option-Control-Left Arrow), 39–40, 43
horn line, creating, 184–187
humanizing project
  applying laid-back feel to snare, 232–234
  changing groove in MIDI editors, 229–237
  editing velocities and accents, 225–229
  percussion part, 304–308
  using hi-hat notes, 236
  using quantized vs. laid-back patterns, 234–237
Hyper Draw
  editing note velocity, 190–193
  Hyper Editor vs., 200
  pitch bend automation, 193–196
  track automation vs. automation of, 380
  volume automation, 196–200
Hyper Editor
  creating custom hyper set for snare roll, 237–241
  drawing snare roll, 241–246
  pan automation, 200–204
hyper sets, 201, 237–241

I

I/O buffer size, 93–94, 444
I/O Labels window, 428–429
IAC (Inter-Application Communication) buses, 449
Import button, 418
Import Project Settings, 419
Include Assets, 411–412, 420
initializing preferences, 441–442
input
  checking audio, 427–430
  creating new track for recording, 65
  filtering incoming MIDI events, 165–167
  reassigning track, 81
  recording multiple tracks, 80–81
Input Device, setting bit depth, 63–64
Input Scale, Adaptive Limiter, 373
Insert Silence Between Locators, 308
Inspector, Arrange window
  channel strip settings, 21
  defined, 17
  Region Parameter box. *see* Region Parameter box
  Track Parameter box, 127, 263
instruments, live mode, 152
Inter-Application Communication (IAC) buses, 449
interface
  bypassing audio, 424–426
  checking audio input, 427–430
  Logic, 15–18
  Ultrabeat, 215
introduction, creating, 308–310

J

Junction pointer, 119–120

K

key signature, setting project's, 261–262
keyboard shortcuts (U.S. Preset)
  automation, 464–465
  channel strip operations, 461–462
  Finder, 465
  Mac OS X, 55
  navigation, 23–26
  region operations, 461–462
  tools, 460–461
  track operations, 461–462
  transport controls, 459–460
  views, 463–464
  zooming, 460
Kick track
  adjusting levels by grouping tracks, 349–351
  adjusting levels of drum tracks, 345–346
  previewing song, 287–289
  removing snare leakage from, 315–319

L

L (Loop checkbox), 30, 33, 38
labels, checking audio input, 428–429
laid-back patterns
  applying to snare, 232–234
  quantized patterns vs., 234–237
Latch mode, live automation in, 397–399
latency, 68, 93–94
Left-Click tool, assigning, 110–113, 118
level fader, 47–49, 394–397
levels, choosing during mixing, 344–351
Library, routing external MIDI events using, 452–454
limiter, 370–375
Line tool
  crescendo for snare roll, 244
  editing note velocities in Hyper Draw, 191–192
  pan automation in Hyper Editor, 203–204
Link modes, Score Editor, 182–184
lists of events, Arrange window, 17–18
live automation. *see* recording live automation
live mode, putting instrument into, 152
Logic, introduction to
  building arrangement. *see* arrangements, building
  exporting mix, 53–55
  interface, 15–18
  mixing song. *see* mixing
  navigation of project, 23–29
  opening, 12–15
  review Q & A, 56
  starting project with Apple Loops, 18–22
Loop Browser. *see also* Apple Loops
  blue vs. green loops in, 21
  browsing and previewing loops, 18–22
  continuously repeating section, 26–29
  creating Apple Loops, 267–269
  troubleshooting audio output, 422–424
  using, 258–261
Loop checkbox (L), 30, 33, 38
Loop tool
  filling in Bass track, 294
  packing regions into folders, 298, 300
  using on multiple regions, 40–42
  working with, 36
loops
  benefits of, 18
  browsing and previewing, 18–22
  cutting, 256–257
  looping and positioning regions, 29–32

M

M key. *see* Mute tool (M)
Mac OS X
  accessing sound preferences, 425–426
  adjusting recording level, 68
  exporting mix with key commands, 55
  internal microphones, 61
  turning keyboard into MIDI controller keyboard, 142
markers, 286–289
Marquee tool
  adjusting levels of drum tracks, 347–348
  adjusting volume of section, 386
  cutting loop, 256–257
  filling in Bass track, 290–292
  indicating playback position, 352
  muting sections of instrument, 313–315
  removing snare leakage from Kick track, 316
  selecting portion of audio region, 117–119
master channel strips, 370–375
Master volume, Amp Designer, 333
Media button (B), 122, 178, 248, 310
Media, Lists, or Notes area of Arrange window, 18
menus, Loop Browser, 258
merging recordings, 149–155
metronome
  detecting tempo of audio file, 255–256
  MIDI, 98
  quantized patterns vs. laid-back patterns, 236
  setting, 96–98
  turned on when recording audio, 71
microphone preamps, 60–61, 68–70
microphones
  adjusting levels of drum tracks, 347
  creating digital audio files, 60–61
  customizing amp model, 336, 339
middle section, arranging, 37–39
MIDI (Musical Instrument Digital Interface)
  displaying notes on regions, 42
  programming in Piano Roll Editor, 170–178
  setting metronome, 98
  solving routing problems, 430–436
  troubleshooting MIDI In display, 432–436
  troubleshooting MIDI Out routing, 430–432
MIDI CC (continuous controller) events
  adding to MIDI region, 150
  MIDI Controls, 201
  overview of, 141–142
MIDI CC (continuous controller) events, editing
  automating pan in Hyper Editor, 200–204
  automating pitch bend using Hyper Draw, 193–196
  automating volume using Hyper Draw, 196–200
  overview of, 193
MIDI controller keyboards
  control surfaces for, 402
  editing notes, 187–189
  filtering incoming MIDI events, 165–167
  previewing drum kit, 216–218
  recording MIDI, 142–146
  recording MIDI in Cycle mode, 150–155
  Step Input mode, 161–165
  using Ultrabeat Pattern mode, 221
MIDI Monitor, 432
MIDI Through parameters, Region Parameter box, 147–148, 154
MIDI, changing groove in editors
  applying laid-back feel to snare, 232–234
  comparing quantized and laid-back patterns, 234–235
  dragging pattern to Arrange area, 229–232
MIDI, editing
  in Event List, 205–210
  MIDI CC events. *see* MIDI CC (continuous controller) events, editing
  note velocity using Hyper Draw, 190–193
  notes with MIDI keyboard, 187–189
  recorded MIDI sequence, 178–181
  review Q & A, 210–211
  using Score Editor, 181–187
MIDI, recording, 140–167
  merging into MIDI region, 148–155
  overview of, 141–142
  quantizing, 146–148
  review Q & A, 167
  standard specification, 142
  takes, 156–157
  techniques for, 142–146
  using punch recording, 158–160
  using Step Input mode, 160–165
Mix switch, Pedalboard, 343
mix, exporting, 53–55

Mixer
adjusting levels, 47–49
adjusting levels of drum tracks, 345–349
choosing pan positions, 352–355
closing to increase workspace, 20–21
panning instruments and copying plug-ins, 51–53
preparing for mixing, 44–47
using processing plug-ins, 49–51
Mixer button (X key), 44
Mixer pedal, Pedalboard, 342–343
mixing. *see also* arranging and mixing
adding delay, 361–363
adding reverberation, 363–367
adjusting levels, 47–49, 345–351
automated. *see* automating mix
choosing EQ settings, 355–361
choosing pan positions, 351–355
overview of, 328–330
panning instruments and copying plug-ins, 51–53
preparing for, 44–47
previewing final mix, 330
review Q & A, 376–377
tips and tricks for, 375–376
using Amp Designer, 330–339
using Pedalboard, 339–344
using processing plug-ins, 49–51. *see also* processing plug-ins, dynamic
modifier keys, dragging using, 33
modulation effect, PedalBoard, 340
mono channel strips, 354, 365
Moog keyboard track, 313–315
mouse tools, assigning, 110–113
multiple tracks
recording, 79–82
recording additional takes, 82–85
multi-timbral instrument, 453
Music view, Loop Browser, 258–259
Musical Instrument Digital Interface. *see* MIDI (Musical Instrument Digital Interface)
Mute button, 47, 430
Mute tool (M)
editing recorded MIDI sequence, 180
getting MIDI out, 431–432
muting sections of instrument, 313–315

N

naming track, before recording it, 67
navigation
continuously repeating section, 26–29
Transport buttons and key commands, 23–26
network MIDI ports, configuring, 449
New Tracks dialog
creating software instrument track, 14
merging recordings in Cycle mode, 151
preparing track for recording, 65
recording MIDI, 143
recording multiple tracks, 80
routing external MIDI tracks, 452
No Overlap Drag mode, 117
nodes
creating in Hyper Draw, 195, 197–199
Tempo track displaying changes as, 264–265
Noise Print, 323–324
noisy recordings, cleaning up
reducing wah sound from Guitar track, 319–321
removing snare leakage from Kick track, 315–319
using Soundtrack Pro, 322–326
nondestructive editing, 113–115
note events, MIDI, 141–142
Note-length buttons, Step Input keyboard, 162–165
note-on MIDI event, 176, 190–193
notes
applying laid-back feel to snare, 232–234
correctly placing or stretching with Flex tool, 272–277
deselecting single, 234
displaying Project or Track, 17–18
editing velocities and accents, 225–229
hiding note events in Event List, 206–207
inserting on every downbeat or upbeat, 224
randomizing positions of, 236
notes, MIDI
copying and deleting with Pencil tool, 174–178
creating with Pencil tool, 170–174
editing velocity using Hyper Draw, 190–193
editing velocity using Velocity tool, 176–178
editing with MIDI keyboard, 187–189
editing with Score Editor, 181–187
quantizing lengths of, 208–210

O

offline automation
adjusting volume of section, 380–387
creating decrescendo, 387–390
creating pan automation, 390–392
defined, 380
1/8 Note, 147
one-shot sounds, quantizing note lengths, 208–210
Open Library command, 14
opening
File Browser, 124
folders, 297
Logic, 12–15
Loop Browser, 18
Mixer, 44
selected application, 12
take folder, 102
Templates dialog, 13
Tool menu, 111
Option-click (delete crossfade), 115
Option-Control-click (zoom out), 43, 107–108
Option-Control-Down Arrow (vertical zoom in), 39, 43, 202
Option-Control-drag (zoom in), 43, 107–108
Option-Control-Left Arrow (horizontal zoom out), 39–40, 43
Option-Control-Right Arrow (horizontal zoom in), 43, 77
Option-Control-Up Arrow (vertical zoom out), 43
Option-drag, 32–33
Output Device, setting bit depth, 63–64
Output sliders, Tape Delay window, 363
Output volume slider, Sound preferences, 426
output, restoring audio, 422–424
Overhead fader, 347
Overlapping Recordings, MIDI takes, 167

P

P (Piano Roll button), 144
pan automation
creating, 390–392
recording live automation in Latch mode, 397–399
using Automation Quick Access, 404
using Hyper Draw, 200–204
Pan control, choosing pan positions, 352–355
Pan/Balance control
adjusting levels, 47
panning instruments, 51–52
slicing and doubling percussion part, 302
panning instruments
automating in Hyper Editor, 200–204
choosing positions, 351–355
mixing songs, 51
parameters
automation. *see* Automation Parameter menu
Flex Mode. *see* Flex Mode parameter
Region Parameter box. *see* Region Parameter box
Track Parameter box, 127, 263
patterns, Ultrabeat, 221–225, 229–232
Peak button, 369
peak detector, channel strips, 47–48
Pedalboard, 339–344
Pencil tool
copying/deleting notes, 174–176
creating empty-one bar MIDI region, 160–161
creating markers, 286
creating notes, 170–174
drawing freehand automation, 198
drawing pan automation, 202
drawing snare roll, 241–246
percussion part
humanizing, 304–308
slicing and doubling, 300–304

performance, optimizing hardware, 436–441
Piano Roll button (P key), 144
Piano Roll Editor
  changing groove in. *see* MIDI, changing groove in editors
  copying/deleting notes with Pencil tool, 174–178
  creating notes with Pencil tool, 170–174
  defined, 170
  editing MIDI CC events in. *see* MIDI CC (continuous controller) events, editing
  editing notes with MIDI keyboard, 188–189
  importing MIDI file, 179
  merging recordings in Cycle mode, 154–155
  opening, 144
  quantizing MIDI regions, 146–147
  quantizing note lengths, 208–209
  recording into selected MIDI region, 149–150
  recording MIDI, 144–146
  Score Editor display vs., 169, 182, 188
  setting default quantization grid, 147–148
  using step input recording, 161–165
  working with Hyper Draw. *see* Hyper Draw
  working with Hyper Editor. *see* Hyper Editor
pitch
  changing with Varispeed, 269–272
  dropping notes in Score Editor at desired, 185
  editing notes with MIDI keyboard, 187–189
  MIDI keyboards measuring, 176
  programming in Piano Roll Editor, 171–172, 175
pitch bend automation, 193–196
playback position, indicating, 352
plug-in bypass automation, 400–401
plug-ins. *see* processing plug-ins
Pointer tool
  applying fade, 116, 120–121
  assigning mouse tools, 113
  copying and deleting notes, 174–176
  cutting and copying regions, 118–120
  removing snare leakage from Kick track, 316
  resizing audio tracks, 79
  resizing new audio track, 67
polyphonic pressure (P-Press) events, 232
ports, configuring network MIDI, 449
Power Cycle, 433
Pre/Post EQ button, Channel EQ plug-in, 357
preferences
  initializing, 441–442
  restoring, 442–443
Preferences, Audio
  bit depth, 62–64
  bypassing audio interface, 424
  checking audio input, 427
  defined, 62
  I/O buffer size, 93–94
  recording file type, 95
  turn off Software Monitoring, 67
Preferences, Automation, 403
Preferences, General
  assigning third tool to right mouse button, 113
  Limit Dragging to One Direction, 175
  project files in backup folder, 414
Presence knob, Amp Designer, 334–335
Preview Bypass Effect, Reduce Noise window, 324
previewing
  audio files for quantizing drum recording, 124–127
  drum sounds in Ultrabeat, 214–218
  final mix, 330
  loops, 18–22, 26–29
  song before arranging, 286–289
  takes for comping, 102–105
processing plug-ins
  automating bypass, 400–401
  copying, 52–53
  creating MIDI recording, 143–144
  mixing songs using, 49–51
processing plug-ins, dynamic
  overview of, 367–368
  using compressor, 368–370
  using compressor and limiter on master channel strip, 370–375
program, remotely choosing, 454–457
programming
  drums. *see* drums, programming
  in Piano Roll Editor, 170–178
progress window, 71
Project End, exporting mix, 53
Project File Backups folder, 414
project files
  backing up, 414–417
  rebuilding, 417–420
  saving, 410–414
  troubleshooting corrupted, 443–444
  troubleshooting MIDI In, 433–436
project folders, backing up to external devices, 420–421
project settings
  count-in, 95–96
  defined, 62
  metronome, 96–98
  preference settings vs., 97
  punching on MIDI recordings, 159
  recording MIDI takes, 156
punching
  automatic, 88–92
  on the fly, 86–88
  on MIDI recordings, 158–160
  overview of, 85

Q

Quantize parameter, 146–148, 154, 234–237
quantizing
  audio regions, 124–128
  individual notes, 181
  laid-back patterns vs., 234–237
  MIDI regions, 146–147
  note lengths, 208–210
  recording MIDI in Cycle mode using, 154
  setting default quantization grid, 147–148
Quick Swipe Comping, 105–110
QuickTime, 330

R

R key (record), 24, 70–71, 75–77
RAM, 410, 437–438
randomizing
  grooves, 236
  percussion part, 305–308
  regions, 294–296
  velocities, 225–229
Read automation mode, 392, 397, 399
record command (R), 24, 70–71, 75–77
Record Enable button, 152, 429
recording audio
  additional takes on multiple tracks, 82–85
  creating additional takes, 75–79
  editing recorded MIDI sequence, 178–181
  MIDI. *see* MIDI, recording
  multiple tracks, 79–82
  overview of, 59
  punching in and out, 85–92
  review Q & A, 98–99
  setting count-in, 95–96
  setting file type, 95
  setting I/O buffer size, 93–94
  setting metronome, 96–98
  setting up, 60–64
  single tracks. *see* tracks, recording single
  takes. *see* takes, recording
recording live automation
  in Latch mode, 397–399
  plug-in bypass automation, 400–401
  in Touch mode, 392–397
Reduce Noise window, 324
Region Parameter box
  copying and resizing regions, 33
  looping and positioning regions, 30
  quantized patterns vs. laid-back patterns, 234–235
  quantizing audio regions, 127–128
  quantizing MIDI regions, 146–148
  recording MIDI in Cycle mode, 154
region-based automation, 193, 196

regions, audio
adding fade-in or fade-out to, 115–117
applying speed fades to, 279–282
arranging middle section of, 37–39
changing color of, 92
converting into sampler instrument track, 248–250
converting MIDI sequence into, 246–247
copying and resizing, 32–36
creating blue Apple Loops with, 266–269
crossfading between two, 120–121
editing in Arrange area, 113–121
ending song, 39–44
experimenting with order of, 294–296
keyboard shortcuts for, 461–462
looping and positioning, 29–32
matching project tempo to tempo of, 254–257
moving individual note with Flex tool, 128–131
packing into folders, 297–300
previewing multiple, in Solo mode, 287–289
quantizing, 124–128
selecting, 38
selecting portion of, 117–119
swapping positions of, 294–296
using Resize tool adjust start or end of, 34
viewing result of comp as, 109–110
regions, MIDI
cleaning up, 205–207
converting sequence to audio region, 246–247
creating green Apple Loops with, 267, 269
dragging pattern to Arrange area, 230–232
emptying with Pencil tool, 160
how notes are displayed on, 42
merging recordings in Cycle mode, 150–155
quantizing, 146–148
recording into selected, 149–150
remotely choosing program, 454–457
repetitions
adjusting loop, 36–37
preparing song for mixing in Cycle mode, 44
previewing loops in section with continuous, 26–29
Replace mode, punching on MIDI recordings, 158–160
Resize tool, 34, 172
resizing
Editing Area of Arrange window, 16–17
regions, 33–36
resolution, 64
Reverb Level, Amp Designer, 336–337
reverberation, 361–367
Revert to Saved command, 88–89
Rewind button, 24–26, 70–71, 287
Right-click tool menu, 113
Room fader, 347
routing external MIDI tracks, 452–454

S

Sample Editor
defined, 131
positioning audio region in Arrange area, 135–137
reversing sample, 133–135
saving selection as new audio file, 131–133
sample rate, 61–62, 73
sampler instrument, converting audio region into, 248–250
saving project
backups, 414–417
every couple of steps, 29
for first time, 14–15
Logic's behavior when, 410–414
Scale menu, Loop Browser, 258
Scissors tool, 295, 300–301
Score Editor
creating horn line in, 184–187
editing MIDI, 181
editing MIDI CC automation, 200
editing notes with MIDI keyboard, 187–188
enabling Step Input mode, 161
Link modes, 182–184
Search Results list, Loop Browser, 19
Set Locators button, 26, 231, 348
Setting button, 49–51
Shift key, key commands with, 175–176
Shift-click, 79, 234
Shift-Command-A (Applications folder), 12
Shift-Control (disabling snapping), 115
Shift-Control-click (applying fades with Pointer tool), 116
Shift-Control-drag (applying fades), 121
Shift-Enter (Play from Selection), 24–25
Shift-R (Record Toggle), 86–88
Shift-Return (Play button), 24
Shift-Tab (Arrange window areas), 16
Shift-W (open in Soundtrack Pro), 322
shortcut menus, accessing, 224
shuffle mode, 294–296, 305–308
Signature menu, Loop Browser, 258
Signature track, setting project's key, 261–262
single tracks, recording
adjusting level, 68–70
preparing track, 64–67
recording audio, 70–72
using Audio Bin, 72–74
16-bit resolution, bit depth, 64
skip cycle area, 310–312
slicing Flex mode, 127–128, 264
slicing regions, Scissors tool, 295, 300–301
SMPTE timecode, 31
snapping, temporarily disabling, 115
snare
adjusting levels of drum tracks, 346–347
applying EQ plug-in to, 361
applying laid-back feel to notes, 232–234
quantized vs. laid-back patterns, 234–237
removing leakage from Kick track, 315–319
snare roll, in Hyper Editor
creating custom hyper set, 237–241
drawing with Pencil tool, 241–246
software instrument tracks
converting audio regions into sampler, 248–250
creating, 14–15
creating MIDI recording, 143–146
inserting Ultrabeat on, 214
merging MIDI recordings in Cycle mode, 151–253
recording MIDI takes, 156–157
using green loops as MIDI regions on, 21–22
Software Monitoring, 67, 427
Solo button
adjusting levels, 47–49
adjusting levels of drum tracks, 346
Autopunch recording process, 92
previewing drum sounds, 216
previewing song, 287, 289
solo only one channel strip from group, 356
taking all tracks out of Solo mode, 430
unsolo all channel strips in project, 355
Solo tool, 112–113
Sound Effects view, Loop Browser, 258–259
Soundtrack Pro, reducing noise using, 322–326
Space Designer plug-in, 366–367
Spacebar (Stop button), 24–25
Speaker button, Audio Bin, 122
speaker cabinet, 334–335, 339, 342
speed
applying speed fade-ins and fade-outs, 280–282
changing with Varispeed, 269–272
customizing amp model, Amp Designer, 338
Spinbox effect, PedalBoard, 340–341
Status icon, Audio Bin, 73
Step Input keyboard, 162–165
Step Input recording, 160–165, 166
step sequencer, Ultrabeat
defined, 215
dragging pattern to Arrange area, 229–230
programming or editing patterns, 218–222
turning off to stop flange sound, 234
stereo channel strips, 354
Stereo Out channel strip, 371–372, 424, 429
Stop button (Spacebar), 24–25
Strip Silence, 317–319
Sustain Inserted Notes button, Step Input mode, 163–165
Swing settings, Quantize menu, 147
Synthesizer section, Ultrabeat, 215
System Preferences, 425

T

Tab key, 16
Take Folder Editing Mode button, 109
take folders
  autopunching using, 91–92
  comping takes using, 105–110
  editing takes inside, 109
  opening, 102
  previewing takes for comping takes using, 102–105
  recording additional takes using, 75–77
  recording MIDI takes using, 157
  recording takes in Cycle mode using, 78
takes, changing color of, 92
takes, comping. *see* comping takes
takes, recording
  additional, 75–77
  in Cycle mode, 77–79
  defined, 75
  MIDI, 156–157
  on multiple tracks, 82–85
Tape Delay plug-in, 362–367
tape slowdown effect, 279–282
tempo, 252–282
  adjusting loop settings, 20
  with Apple Loops, 257–262
  audio file matching project, 278–279
  browsing and previewing loops, 20
  changing with Varispeed, 269–272
  creating Apple Loops, 266–269
  creating turntable of tape slowdown effect, 279–282
  inserting curves and changes, 262–266
  matching project tempo to audio region's, 254–257
  review Q & A, 282–282
  time stretching with Flex tool, 272–277
  Ultrabeat's step sequencer programmed to, 219
tempo maps, 262–266
Tempo track, global, 261, 262–266
Text tool, 110–111, 298
(3840) indicator, 147
time stretching
  creating turntable of tape slowdown effect, 279–282
  with Flex tool, 272–277
  matching project and audio file tempo, 278–279
  quantizing audio region, 124–128
  quantizing MIDI recordings, 146–148
  review Q & A, 282–282
Toggle Zoom to fit Selection or All Content command (Z), 33–34, 127, 405
toms, adjusting volume of, 347–349
Tonality slider, 97
Tool menus, Arrange area, 110–113
Toolbar, Arrange window, 17, 61–62
tools, keyboard shortcuts for, 460–461
Touch mode, recording live automation in, 392–397
Track Parameter box, 127, 263
track-based automation
  adjusting volume of section, 380–387
  creating decrescendo, 387–390
  creating pan automation, 390–392
  defined, 380
  editing, 383–387
tracks
  adjusting levels of grouped, 349–351
  keyboard shortcuts, 461–462
  recording additional takes on multiple, 82–85
  recording multiple, 79–82
  resetting all to same height, 79
  routing external MIDI, 452–454
tracks, recording single
  adjusting level, 68–70
  preparing track, 64–67
  recording audio, 70–72
  using Audio Bin, 72–74
transitions, 114–117
Transport bar, Arrange window
  adjusting settings in display fields, 19–20
  adjusting step length in Step Input mode, 162–163
  browsing and previewing loops, 19–20
  comparing quantized with laid-back patterns, 236
  defined, 17
  detecting tempo of audio file, 255–256
  Transport buttons and key commands on, 23–26
  using Solo mode in, 287–289
  using Varispeed, 270–272
Transport buttons, 23–26, 33
transport controls, keyboard shortcuts, 459–460
Trash, 123
troubleshooting and optimization
  addressing unexpected behaviors, 441–444
  backing up project files, 414–417
  backing up project folders to external devices, 420–421
  optimizing hardware performance, 436–441
  overview of, 409
  rebuilding project file, 417–420
  restoring audio output, 422–424
  review Q & A, 445
  saving project and making automatic backups, 410–414
Tuner plug-in, 69–70
turntable effect, applying, 279–282
24-Bit Recording, bit depth, 64

U

U.S. Preset. *see* keyboard shortcuts (U.S. Preset)
Ultrabeat (Drum Synth)
  choosing drum kit/previewing drum sounds, 214–218
  editing velocities/accents, 225–229
  programming pattern, 222–225
  quantized vs. laid-back patterns, 235–237
  recording MIDI in Cycle mode, 151–155
  regions of interface, 215
  using step sequencer, 218–222
  viewing pattern as MIDI region, 230–232
Up Arrow key, 20
upbeat, inserting notes on, 224
USB, troubleshooting MIDI In, 433

V

Varispeed, 269–272
velocity
  adjusting notes with MIDI keyboard, 187–189
  editing note, 225–229
  snare roll, 242–246
  using Hyper Draw to edit note, 190–193
  using Velocity tool to edit note, 176–178
Velocity tool, 171, 176–178, 193
vertical zoom in (Option-Control-Down Arrow), 39, 43, 202
vertical zoom out (Option-Control-Up Arrow), 43
View menu, Loop Browser, 258
views, 258, 463–464
vocals, with delay and reverb, 362–367
volume
  adding accents to notes, 225–229
  adjusting levels of drum tracks, 345–349
  setting metronome, 97
volume automation
  adjusting section, 380–387
  creating decrescendo, 387–390
  in Hyper Draw, 196–200

W

wah noise, reducing Guitar track, 319–321
WAVE file, 95
waveforms, manipulating with Flex tool, 128–131
Write automation mode, 399

X

X key (Mixer button), 44

Z

Z key (Toggle Zoom to fit Selection or All Content), 33–34, 127, 405
zooming
  Auto Zoom (Control-Z), 382
  basic commands, 39–40, 43
  keyboard shortcuts for, 460