Logic Pro X 10.1
Professional Music Production

David Nahmani

Lesson and media files available for download

Apple Certified Professional – Logic Pro X
Acknowledgments  First and foremost, my biggest thanks go to Bill Burgess, for believing in me from the very beginning, and without whom this book wouldn’t exist.

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Contents at a Glance

Getting Started ......................................................... xi

Exploring the Interface and Working with Real Instruments

Lesson 1 Make Music with Logic Now! ............................... 3
Lesson 2 Recording Audio ............................................. 63
Lesson 3 Editing Audio .................................................. 111

Working with Virtual Instruments

Lesson 4 Produce a Virtual Drum Track ............................ 155
Lesson 5 Recording MIDI and Using Controllers ................. 205
Lesson 6 Creating and Editing MIDI ............................... 273

Building a Song

Lesson 7 Editing Pitch and Time ..................................... 319
Lesson 8 Editing an Arrangement .................................... 369

Mixing and Automating a Song

Lesson 9 Mixing .......................................................... 413
Lesson 10 Automating the Mix ........................................ 467

Appendices

Appendix A Using External MIDI Devices .......................... 501
Appendix B Keyboard Shortcuts (Default for U.S. Keyboard) .... 515

Glossary ................................................................. 520
Index ........................................................................ 531

See last page of this eBook for instructions on downloading your lesson files.
Table of Contents

Getting Started .............................................. xi

**Exploring the Interface and Working with Real Instruments**

**Lesson 1**
Make Music with Logic Now! .......................... 3
Creating a Logic Pro X Project ......................... 4
Exploring the Interface ................................ 8
Navigating the Project ................................. 16
Build Up the Arrangement ............................ 35
Mixing the Song ....................................... 43
Mixing Down to a Stereo File ......................... 54
Lesson Review ......................................... 58

**Lesson 2**
Recording Audio ....................................... 63
Setting Up Digital Audio Recording .................. 64
Recording a Single Track ............................. 68
Recording Additional Takes .......................... 79
Punching In and Out ................................ 86
Changing Recording Settings ........................ 96
Deleting Unused Audio Files ......................... 105
Lesson Review ....................................... 108

**Lesson 3**
Editing Audio ......................................... 111
Assigning Mouse Tools ............................... 112
Editing Regions in the Workspace .................. 116
Comping Takes ...................................... 120
Adding Fades and Crossfades ..................... 127
Editing Regions in the Audio Track Editor ................ 135
Editing Files in the Audio File Editor ..................... 140
Aligning Audio ........................................ 144
Lesson Review ........................................ 150

Working with Virtual Instruments

Lesson 4 Produce a Virtual Drum Track .................. 155
Creating a Drummer Track .............................. 156
Arranging the Drum Track ............................... 169
Customizing the Drum Kit ............................... 181
Working with an Electronic Drummer .................... 189
Lesson Review ........................................ 202

Lesson 5 Recording MIDI and Using Controllers .... 205
Using a Patch from the Library ......................... 207
Recording MIDI ......................................... 212
Correcting the Timing of a MIDI Recording ............ 215
Joining Recordings into a MIDI Region ................. 218
Recording MIDI Takes .................................. 223
Repeating and Erasing Notes on the Fly ............... 226
Creating a Layered Sound Patch ....................... 231
Creating a Split Keyboard Patch ....................... 236
Mapping Smart Controls to Patch Parameters ......... 239
Using Step Input Recording ............................. 247
Processing MIDI Notes with MIDI Plug-Ins .......... 252
Controlling Logic with an iPad Using Logic Remote ... 258
Lesson Review ........................................ 270

Lesson 6 Creating and Editing MIDI .................... 273
Creating MIDI Notes in the Piano Roll Editor .......... 274
Importing a MIDI File .................................. 292
Editing MIDI Data in the Event List .................... 294
Creating and Editing MIDI Continuous Controllers ... 302
Lesson Review ........................................ 315
Building a Song

Lesson 7  Editing Pitch and Time........................................... 319
Setting a Project Tempo by Detecting the Tempo of a Recording ........................................... 320
Using and Creating Apple Loops........................................ 323
Creating Tempo Changes and Tempo Curves ............. 332
Adding a Turntable or Tape Slow-Down Effect ............ 337
Making One Track Follow the Groove of Another Track . 340
Change the Playback Pitch and Speed with Varispeed . . . 342
Editing the Timing of an Audio Region ...................... 346
Tuning Vocal Recordings........................................... 356
Lesson Review ........................................ 366

Lesson 8  Editing an Arrangement........................................ 369
Previewing the Song ........................................ 370
Copying Material to Fill In Parts ............................. 373
Rendering Multiple Regions ...................................... 384
Adding and Deleting Sections .................................. 387
Cutting Regions to Remove Silence or Noise .............. 397
Lesson Review ........................................ 408

Mixing and Automating a Song

Lesson 9  Mixing................................................................. 413
Organizing Windows and Tracks .................................. 414
Using the Amp Designer ........................................... 422
Adjusting Levels and Pan ........................................ 430
Submixing Tracks and Processing the Submix .............. 432
Using an EQ Plug-in ........................................... 438
Using Delay and Reverberation .................................. 446
Using Dynamic Processing Plug-ins .......................... 454
Using a Few Tips and Tricks .................................... 463
Lesson Review ........................................ 464
Lesson 10  Automating the Mix ......................... 467
    Creating and Editing Offline Automation ............... 468
    Recording Live Automation ............................. 480
    Using MIDI Controllers ................................. 491
    Bouncing the Mix ....................................... 495
    Lesson Review .......................................... 498

Appendices

Appendix A  Using External MIDI Devices ............... 501
    Configuring MIDI Hardware ............................. 502
    Using the External Instrument Plug-in ................. 506
    Routing External MIDI Tracks ......................... 508

Appendix B  Keyboard Shortcuts (Default for U.S. Keyboard) 515
    Panes and Windows ...................................... 515
    Navigation and Playback ............................... 516
    Zooming .................................................. 517
    Channel Strip, Track, and Region Operations .......... 517
    Project Audio Browser ................................ 519
    Piano Roll Editor ..................................... 519
    Finder ..................................................... 519

    Glossary .................................................. 520
    Index ...................................................... 531

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Welcome to the official Apple Pro Training Series course for Logic Pro X 10.1. This book is a comprehensive introduction to professional music production with Logic Pro X. It uses real-world music and hands-on exercises to teach you how to record, edit, 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 work through the project files and media you download from www.peachpit.com. It’s divided into lessons that 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 designed to support the concepts learned in the preceding lesson, and first-time readers should go through the book from start to finish. However, each lesson is self-contained, so when you need to review a topic, you can quickly jump to any lesson.

The book is designed to guide you through the music production process as it teaches Logic. The lessons are organized into four sections.
Lessons 1–3: Exploring the Interface and Working with Real Instruments

In this section, you’ll explore the fundamentals of Logic Pro X and learn to record and edit audio.

Lesson 1 starts you out with an overview of the entire process. You’ll become familiar with the interface and the various ways to navigate a project; use Apple Loops to build a song from scratch; and then arrange, mix, and export the song to an MP3 file.

Lessons 2 and 3 dive deeper into typical situations you may encounter when recording from microphones or other audio sources. You’ll edit recordings to select the best portions of multiple takes, remove clicks, align recordings, and even reverse a recording to create a special effect.

Lessons 4–6: Working with Virtual Instruments

Lesson 4 describes how to produce virtual acoustic and electronic drummer performances using Drummer, Drum Kit Designer, and Drum Machine Designer. You will choose the right drummer for the project, swap a drum kit with the kit of another drummer, edit the patterns, change which kit elements the drummer plays, shape an interpretation, and precisely control where fills are placed.

Lessons 5 and 6 immerse you in using software instruments. After choosing virtual instruments and recording MIDI performances, you’ll map Smart Controls to various plug-ins and assign them to your MIDI controller. Using the free Logic Remote app, you’ll control Logic from your iPad, and then create virtual performances in MIDI editors using your mouse or your MIDI keyboard. The Logic Remote icon will appear in the margin when related content appears.

Lessons 7–8: Building a Song

In Lessons 7 and 8, you’ll apply Flex editing to precisely adjust the timing and pitch of notes in an audio recording. Varispeed will allow you to work with your project at different tempos. You’ll add tempo changes and tempo curves to a project, match the tempos of multiple tracks, and make a track follow the groove of another track. Also covered are tuning a vocal recording, editing a project’s regions in the workspace to complete an arrangement, and adding and removing sections of a project.

Lessons 9–10: Mixing and Automating a Song

Lessons 9 and 10 instruct you in mixing audio and MIDI files into a final project: adding audio effects, adjusting levels, panning, EQing, adding delay and reverb, automating the
mix by creating automation curves on your screen, and altering parameter values in real
time with the mouse or a MIDI controller.
Appendix A describes how to use external MIDI devices, and Appendix B lists a wealth of
useful keyboard shortcuts.

**System Requirements**

Before using *Apple Pro Training Series: Logic Pro X 10.1*, you should have a working
knowledge of your Mac 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 documen-
tation included with your system.

Logic Pro X and the lessons in this book require the following system resources:

- Mac computer with an Intel processor, including:
  - 4 GB of RAM
  - Display with 1280 x 768 or higher resolution
  - Mac OS X v10.9.5 or later
  - Minimum 41 GB of disk space to install Logic Pro X and its media content
  - High-speed Internet connection for installation
- A USB-connected MIDI keyboard (or compatible MIDI keyboard and interface) to
  play software instruments
- A low-latency multi-I/O audio interface (highly recommended for audio recording)
- An iPad (optional) for controlling Logic using the Logic Remote iPad app

**Preparing Your Logic Workstation**

The exercises in this book require that you install Logic Pro X along with its default media
content. If you have not yet installed Logic, you may purchase it from the App Store.
When your purchase is completed, Logic Pro X will automatically be installed on your
hard drive.

All the instructions and descriptions in this book assume that you installed Logic Pro X
on a Mac without any legacy Logic media, and that you downloaded all the additional
media except for the Legacy and Compatibility content.
When you first open Logic Pro X, the app will automatically download and install about 2 GB of essential content. An alert then offers to download additional media content.

Click Download Additional Content to make sure that you install all the Logic Pro X media content. After you click Download Additional Content, the Additional Content window opens. Click the Select All Uninstalled button at the bottom left, and click the “Legacy and Compatibility” checkbox twice to deselect it. Depending on the speed of your Internet connection, the download process may take several hours.

**NOTE** If you have already installed Logic Pro X but did not install the additional content, choose Logic Pro X > Download Additional Content, click Select All Uninstalled (make sure the Legacy and Compatibility content is not selected), and click Install.

After you’ve installed all additional media content, your Additional Content window should look like the following figure:
NOTE ➤ If you have previously installed the Legacy and Compatibility content, or if you have earlier versions of Logic installed on your Mac, you may not always see the same results as those shown in the book, especially when viewing the Library, the Loop Browser, or the plug-in settings menus.

**Downloading and Using the Logic Lesson Files**

The downloadable content for *Apple Pro Training Series: Logic Pro X 10.1* includes the project files you will use for each lesson, as well as media files that contain the audio and MIDI content you will need for each exercise. After you save the files to your hard disk, each lesson will instruct you in their use.

To download these files, you must have your guide’s access code—provided on a card in the back of the printed editions of this book or on the “Where Are the Lesson Files?” page in electronic editions of this book. When you have the code:

1. Go to www.peachpit.com/redeem, and enter your access code.

2. Click Redeem Code, and sign in or create a Peachpit.com account.

3. Locate the downloadable files on your Account page under the Lesson & Update Files tab.

4. Click the lesson file link and download the file to your Mac desktop.

NOTE ➤ If you purchase or redeem a code for the electronic version of this guide directly from Peachpit, the lesson file link will automatically appear on the Lesson & Update Files tab without the need to redeem an additional code.

5. After downloading the file to your Mac desktop, you’ll need to unzip the file to access a folder titled Logic Pro X Files, which you will save to your Mac desktop.

Logic Pro X Files contains two subfolders, Lessons and Media, that contain the working files for this course. Make sure you keep these two folders together in the Logic Pro X Files folder on your hard disk. If you do so, your Mac should be able to maintain the original links between the lessons and media files. Each lesson explains which files to open for that lesson’s exercises.
**Using Default Preferences and Selecting the Advanced Tools**

All the instructions and descriptions in this book assume that you are using the default preferences (unless instructed to change them). At the beginning of Lesson 1, you will be instructed how to show advanced tools and select all additional options.

If you have changed some of your Logic Pro X preferences, you may not realize the same results as described in the exercises. To make sure that you can follow along with this book, it’s best to revert to the initial set of Logic preferences before you start the lessons. Keep in mind, however, that when you initialize preferences, you lose your custom settings, and later you may want to reset your favorite preferences manually.

1. Choose Logic Pro X > Preferences > Advanced Tools.

2. Under Additional Options, select Audio, Surround, MIDI, Control Surfaces, Score, and Advanced Editing, and then close the preferences window.

3. Choose Logic Pro X > Preferences > Initialize All Except Key Commands.
   
   A confirmation message appears.

4. Click Initialize.

   Your preferences are initialized to their default states.

   If you’re jumping ahead to a lesson other than Lesson 1, make sure that you select all additional options as detailed in step 2.

**Using the U.S. Key Command Preset**

This book assumes that you are using the default initialized key command preset for a U.S. keyboard. So you may find that some of the key commands in your Logic installation do not function as they are described in this book.

If at any point you find that the key commands don’t respond as described in this book, make sure the U.S. key command preset is selected on your Mac by choosing Logic Pro X > Key Commands > Presets > U.S.
Screen Resolution

Depending on your display 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 fit the window to the screen.

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

About the Apple Pro Training Series

*Apple Pro Training Series: Logic Pro X 10.1* 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 Certified Professional—Logic Pro X Certification Exam.

For a complete list of Apple Pro Training Series books, see the ad at the back of this book or visit www.peachpit.com/ apts.

Apple Pro Certification Program

The Apple Pro Training and Certification Program is designed to keep you at the forefront of Apple digital media technology while giving you a competitive edge in today’s ever-changing job market. Whether you’re an editor, graphic designer, sound designer, special-effects artist, or teacher, these training tools are meant to help you expand your skills.

Upon completing the course material in this book, you can become a certified Apple Pro by taking the certification exam at an Apple Authorized Training Center. Successful certification as an Apple Pro gives you official recognition of your knowledge of Apple professional applications while allowing you to market yourself to employers and clients as a skilled, pro-level user of Apple products.
For those who prefer to learn in an instructor-led setting, Apple offers training courses at Apple Authorized Training Centers worldwide. These courses, which use the Apple Pro Training Series books as their curriculum, are taught by Apple Certified Trainers and balance concepts and lectures with hands-on labs and exercises. Apple Authorized Training Centers have been carefully selected and have met Apple’s highest standards in all areas, including facilities, instructors, course delivery, and infrastructure. The goal of the program is to offer Apple customers, from beginners to the most seasoned professionals, the highest-quality training experience.

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 X 10.1* 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:

- Logic Pro Help, accessed through the Logic Pro X Help menu, contains a description of most features. Other documents available in the Help menu can also be valuable resources.


- The Logic Pro Help website, an online community of Logic users moderated by the author of this book, David Nahmani: www.logicprohelp.com/forum.
4

Time

This lesson takes approximately 75 minutes to complete.

Goals

Create a new project with a Drummer track
Choose a drummer and drum kit
Edit the drummer performance
Arrange the song structure
Edit performances in the new sections
Customize the drum kit
Tune and dampen individual kit pieces
Work with electronic drummers
Customize drum machines
Convert Drummer regions to MIDI regions
In most popular modern music genres, drums are the backbone of the instrumentation. They provide the foundation for the tempo and the groove of the piece. For recording sessions in which the instruments are not tracked at the same time, drums are usually recorded or programmed first so that the other musicians can record while listening to their rhythmic reference.

To meet today’s high production standards, producing drum tracks usually involves using several techniques, including live recording, programming, sampling, audio quantizing, and sound replacement. In Logic Pro X, you can speed up the process by taking advantage of the new Drummer feature along with its companion software instruments, Drum Kit Designer and Drum Machine Designer.

In this lesson, you will produce virtual indie-rock, hip-hop, and electro-house drum tracks. After selecting a genre and choosing the best drummer for your project, you will adjust the drummer’s performance, making her play busier patterns or simpler ones, louder or softer, and changing the feel, almost like a producer would communicate with a real drummer in a recording session.
Creating a Drummer Track

Drummer is a new Logic Pro X feature that allows you to produce drum tracks using a virtual drummer with its own playing style. Its performance is placed in Drummer regions on a Drummer track. You edit the performance data in the regions using the Drummer Editor. The virtual drummer also has its own drum kit loaded in a software instrument plug-in called Drum Kit Designer.

First, let's open a new project, add a Drummer track, and examine the display of the drum performance in the Drummer region.


   A new project opens along with the New Tracks dialog.

2. In the New Tracks dialog, select Drummer, make sure the Genre pop-up menu is set to Rock, and click Create.

   A Drummer track is created along with two eight-bar Drummer regions. At the bottom of the main window, the Drummer Editor opens, allowing you to choose a drummer and drum kit, and to edit the performance in the Drummer regions that are selected in the workspace. The track is named SoCal, which is the name of the drum kit used by the default virtual drummer in the Rock category, Kyle.
Press the Spacebar to listen to the two Drummer regions.

In the first region, the drummer starts with a crash cymbal and plays a straightforward rock pattern. At the end of the first Drummer region, a drum fill leads into the next section.

In the second region, the drummer switches from the hi-hat to the ride cymbal and plays a more complex pattern: The kick is busier, and the snare adds ghost notes (very quiet hits) between beats. As in the first region, the drummer plays a fill at the end of the first four measures, followed by a crash. He plays another fill at the end of the region.

Let’s take a closer look at a Drummer region.

Control-Option-drag over the first bar of the first Drummer region. If necessary, continue zooming vertically by dragging the vertical zoom slider (or pressing Command-Down Arrow) until you can see two lanes in the Drummer region.
The Drummer region displays drum hits as triangles on lanes, roughly emulating the look of drum hits on an audio waveform. Kicks and snares are shown on the bottom lane; cymbals, toms, and hand percussions are on the top lane.

5 In the upper half of the ruler, drag a one-measure cycle area at bar 1.
6 Listen to the first bar a few times while looking at the drum hits in the Drummer region. Although you cannot edit individual drum hits in the Drummer region, the region display gives you a quick glance at the drummer’s performance.

**MORE INFO** At the end of this lesson you will convert Drummer regions to MIDI regions. In Lesson 6, you will learn how to edit MIDI regions.

7 Turn off Cycle mode.

8 In the workspace, click the background and press Z to zoom out and see both drummer regions. Now you can read the Drummer regions. In the next exercise, you will listen to multiple drummers and several performance presets. Later, you will zoom in again to see the Drummer regions update as you adjust their settings in the Drummer Editor.

**Choosing a Drummer and a Style**

Each drummer has his own playing style and drum kit, and those combine to create a unique drum sound. Before you start fine-tuning the drummer’s performance, you need to choose the right drummer for the song.

In the Drummer Editor, drummers are categorized by music genres. By default, choosing a new drummer means loading a new virtual drum kit and updating Drummer region settings; but sometimes you may want to keep the same drum kit while changing the drummer, which you will do in this exercise.
1. In the character card, click the drummer.
   All the drummers from the Rock category are displayed.

2. Place the mouse pointer over Anders (the first drummer in the second row).
   A help tag describes that drummer’s playing style and the sound of his drum kit. Let’s get to know the other drummers.

3. Continue by placing the pointer over other rock drummers to read their descriptions. When you’re through, click the drummer named Jesse.
   In the workspace, the two Drummer regions update to display Jesse’s performance.

4. In the workspace, click the first Drummer region (at bar 1) to select it.
   The Drummer Editor shows the settings for the selected Drummer region. A yellow ruler allows you to position the playhead anywhere within the region, and you can click the Play button to the left of the ruler to preview the Drummer region. As in the Tracks area, you can also double-click the ruler to start and stop playback.

5. In the Drummer Editor, click the Play button.
The selected region plays in Cycle mode, and the cycle area automatically matches the region position and length. The selected region is soloed—indicated by a thin yellow frame—and the other region is dimmed. Soloing the region helps you focus on the drums when you have other tracks in the project.

Although you will later fine-tune the drummer’s performance, Jesse’s busy, syncopated drum patterns are not a good fit for this indie-rock song. You are looking for a drummer with a simple, straightforward style that more appropriately serves the song.

6 Stop playback.

In the Tracks area, Cycle mode is automatically turned off, the dimmed cycle area returns to its original position and length, and the selected region is no longer soloed.

7 In the Drummer Editor, click the Genre menu at the top of the character card, and choose Alternative.

Drummers from the Alternative category are shown.

8 Click the first drummer, Aidan.
9 In the Drummer Editor, click the Play button.

While the region is playing back in Cycle mode, you can try selecting other region settings presets to explore Aidan’s full range of playing style.

10 In the Presets column, click a few different presets while the region plays back.

When you click a preset, the region settings update and you can hear another performance from the same drummer.

11 Without stopping playback, from the Genre menu, choose Rock.

12 Click the fourth drummer, Max.

A dialog explains how to retain region settings when changing the drummer.

13 In the dialog, select “Do not show this message again,” and click Change Drummer.

Listen to a few of Max’s presets. Although Max’s hyperactive performance is not what you’re looking for, the drum kit sounds punchy. Let’s assign the first drummer, Kyle, to play on Max’s drum set, East Bay Kit.
14 In the character card, click the drummer to display the drummers.

You can Option-click a new drummer to select that drummer while keeping the current drum kit.

15 Option-click Kyle.

Kyle is now playing Max’s East Bay Kit. Let’s make him play a bit faster.

16 In the control bar, set the tempo to 142 bpm.

17 Stop playback.

You have found a drummer that plays the straightforward style you’re seeking for this project, paired a punchy-sounding drum kit, and set a tempo that will drive your indie-rock song. You are now ready to customize the performance.

**Editing the Drum Performance**

In a recording session with a live drummer, the artist, the producer, or the musical director must communicate their vision of the completed song. They may ask the drummer to play behind or ahead of the beat to change the feel of the groove, or to switch from the hi-hat to the ride cymbal during the chorus, or to play a drum fill in a specific location.
In Logic Pro X, editing a drummer performance is almost like giving instructions to a real drummer. In this exercise, you will play a drum region in Cycle mode as you adjust the drummer settings.

1. In the workspace, make sure the first Drummer region is still selected, and in the Drummer Editor, click the Play button.

   Next to the presets, an XY pad with a yellow puck lets you adjust both the loudness and the complexity of the drum pattern.

2. As the region plays, drag the puck, or click different locations inside the pad, to reposition it.

   To undo your most recent Drummer Editor adjustment, press Command-Z.

   After positioning the puck, you must wait for the region to update (update time varies depending on your computer). If you drag the puck constantly, the region will not update.

   As you position the puck farther to the right, the drum pattern becomes more complex; and as you move the puck toward the top of the pad, the drummer plays louder. Try placing the puck in the pad’s corners for extreme settings, such as soft and simple, or loud and complex.

   As the drummer plays softer, he closes the hi-hat and switches from hitting the snare drum on the skin to playing rim clicks (hitting only the rim of the drum). As he plays louder, he opens the hi-hat and start playing rim shots (hitting the skin and the rim simultaneously for accent).

   Let’s make the drummer play a solid, straightforward beat in this first Drummer region, which will be used for the first verse of the song.
3 Settle for a puck position where the drummer plays a rather simple and fairly loud pattern.

You can still hear a lot of syncopation on the kick drums. To the right of the XY pad, you can choose from several Kick & Snare pattern variations.

4 Drag the Kick & Snare slider to position 2 (or click the second increment on the slider).

**Tip** In multitrack projects, when you select the Follow checkbox, a pop-up menu appears instead of the Kick & Snare slider. The menu lets you choose a track to influence what the drummer plays on the kick and snare.

The drummer now simply alternates kick and snare on every beat. If you don’t hear the drummer play the snare on beats 2 and 4, slightly readjust the horizontal position of the puck in the XY pad so it’s in the same position as in the figure following step 3.

Listen to the hi-hat: It is currently playing eighth notes.

5 Click the first increment on the Hi-Hat slider.

The hi-hat now plays only on the beat (quarter notes), which works well for up-tempo songs.
The drummer is playing a fill in the middle of the region (before bar 5) and another at the end (before bar 9). Let’s get rid of the first fill and keep only one at the end.

6 Look at the region in the workspace while trying different positions for the Fills knob, and drag the Fills knob down until you see the fill before bar 5 disappear. You should still see a fill at the end of the region.

**NOTE** Clicking the small lock icon next to the Fills and Swing knobs locks the knob into position as you preview presets or drummers.

**TIP** Each time you adjust a setting in the Drummer Editor, the selected region is refreshed and the drummer plays a new subtle variation. Dragging the Fills knob by a tiny amount is a quick way to refresh a region. You can also click the Action pop-up menu next to the Presets menu and choose Refresh Region; or Control-click the region in the workspace, and from the shortcut menu, choose Edit > Refresh Region.

You now have a very straightforward beat. Because the drummer plays less now, he can make the hi-hat ring a bit more.
7 In the Drummer Editor, click the Details button to display three knobs.

8 Below the Hi-Hat knob, deselect the Automatic option.

9 Drag the Hi-Hat knob up to open it a little bit.

This verse's drum pattern now sounds great, so let's move on to the second Drummer region, which you'll use for the chorus.

10 In the Drummer Editor, click the Details button to hide the three buttons.

11 Stop playback.

12 In the workspace, select the second Drummer region.
The Drummer Editor updates to show the second region’s settings. On the drum kit, the hi-hat is now dimmed, while the cymbals are highlighted in yellow. The drummer no longer plays the hi-hat, but instead plays a ride or crash cymbal in that region.

13 In the Drummer Editor, click the Play button.

You can hear the second region in Cycle mode. The drummer is playing the ride cymbal on every eighth note. For a more powerful chorus, you instead want it to play crash cymbals on every beat.

14 Click the first increment of the Cymbals slider.

You now hear crash cymbals on every beat. Even for a chorus, the beat is a little too busy.

15 On the XY pad, drag the puck toward the left to create a simpler beat.
Let’s listen to the verse going into the chorus.

16 Stop playback.

17 Go to the beginning of the song and listen to both Drummer regions.

You now have a simple, straightforward beat for the verse, and then the drummer switches to the crash cymbal for the busier chorus pattern.

You have carefully crafted two eight-measure drum grooves: one for the verse and one for the chorus. They are the two most important building blocks of the song you will now start arranging.

**Arranging the Drum Track**

In this exercise, you will lay out the song structure and populate the Drummer track with Drummer regions for the whole song.

**Using Markers in the Arrangement Track**

Using the Arrangement track, you will now create arrangement markers for all the sections of your song. You’ll adjust their lengths, positions, and order, and fill all the new sections with Drummer regions.

1 At the top of the track headers, click the Global Tracks button (or press G).

The global tracks open, with the Arrangement track at the top. You won’t need the other global tracks, so you can hide them.
2. Control-click a global track header, and choose Configure Global Tracks (or press Option-G).

A shortcut menu opens in which you select the global tracks you want to display.

3. Deselect the Marker, Signature, and Tempo tracks, and click outside the shortcut menu to close it.

The Arrangement track is now closer to the regions in the workspace, making it easier to see their relationships.

4. In the Arrangement track header, click the Add Marker button (+).

An eight-measure arrangement marker named Intro is created at the beginning of the song. By default, arrangement markers are eight bars long and are placed one after the other, starting from the beginning of the song. Let's rename the marker.

5. Click the name of the marker, and from the menu, choose Verse.
6 Click the Add Marker button (+) to create a new marker, and make sure it’s named Chorus. You will now create a marker for a new intro section and insert it before the Verse and Chorus markers.

7 In the Arrangement track header, click the Add Marker (+) button. An eight-bar marker is created.

8 Click the name of the new marker, and from the pop-up menu, choose Intro. A four-measure intro will be long enough, so you can resize the Intro marker before moving it.

9 Drag the right edge of the Intro marker toward the left to shorten it to four bars.

10 Click the marker away from its name (to avoid opening the Name pop-up menu), and drag the Intro marker to bar 1.
The Intro marker is inserted at bar 1, and the Verse and Chorus markers move to the right of the new Intro section. In the workspace, the Drummer regions move along with their respective arrangement markers.

As with regions in the workspace, you can Option-drag a marker to copy it.

11 Press Command-Left Arrow to zoom out horizontally and make space to the right of the existing song sections. Option-drag the Verse marker to bar 21, right after the chorus.

The Verse marker and the Drummer region are copied together.

12 Option-drag the Chorus marker to bar 29, after the second verse.

The Chorus and the Drummer region are copied together.

The song is taking shape. You will now finish arranging the song structure with a bridge, a chorus, and an outro section. As you place the last three markers, continue zooming out horizontally as necessary.

13 In the Arrangement track header, click the Add Marker (+) button.

A Bridge marker is created after the last chorus.

14 In the Arrangement track header, click the Add Marker (+) button two more times to create markers for the Chorus and Outro sections.

15 Make sure the two last markers have the correct names, Chorus and Outro.

Let’s shorten the outro section a bit.
16 Resize the Outro marker to make it four bars long.

The song structure is now complete, and you can add Drummer regions to fill out the empty sections.

17 On the Drummer track, Control-click the background and choose Populate with Drummer Regions.

New Drummer regions are created for all the empty arrangement markers.

18 Listen to the drum track, focusing on the new sections.

New patterns were automatically created for each new Drummer region.

**TIP** To delete all the regions below an Arrangement marker, select the marker, and press Delete. To remove the Arrangement marker, press Delete again.

Amazing as the playing is, Kyle (the drummer) might not have guessed what you had in mind for each section. You will now edit some of the new regions to adjust the drummer’s performance.

**Editing the Intro Drum Performance**

In this exercise, you will make the drummer play the hi-hat instead of the toms. Later, you’ll cut the Intro region in two so that you can use different settings for the second part of the intro and make the drummer play a progressively louder and more complex pattern.
1 In the workspace, click the background to deselect all regions, and click the Intro region to select it.

The Drummer Editor shows its settings.

Throughout this exercise you can click the Play button in the Drummer Editor to start and stop playback, or you can navigate the workspace by pressing the Spacebar (Play or Stop) and the Return key (Go to Beginning).

2 Listen to the Intro.

Let's make the drummer play the hi-hat instead of the toms.

3 In the Drummer Editor, click the hi-hat.

When you click the hi-hat, the toms are muted automatically. Aside from the kick and snare, the drummer can focus on the toms, the hi-hat, or the cymbals (ride and crash).

The drums are still a little too loud and busy for this intro.
4 In the XY pad, drag the puck toward the bottom left.

![XY pad screenshot](image)

The drums are softer, but the transition into the first verse at bar 5 is a little abrupt. Making the drums play crescendo (increasingly louder) during the intro will help build up some tension leading into that verse. To make the loudness evolve throughout the intro, you will cut the Intro region in two.

5 Stop playback.

6 Hold down Command to use the Marquee tool, and double-click the Intro region at bar 3.

![Screenshot of song editor](image)

The region is divided into two two-measure regions. When a region is divided, the drummer automatically adapts his performance, and plays a fill at the end of each new region.
7 Select the first Intro region.

8 In the Drummer Editor, drag the Fills knob all the way down.

Notice how the crash disappears from the first beat of the following region. Even though it is in another region, the crash is actually a part of the fill. Now let’s create the crescendo.

9 Select the second Intro region, and in the XY pad, drag the puck up to make the drummer play louder.

10 Listen to the whole intro going into the first verse.

The drummer automatically starts playing louder before the end of the first intro region, which transitions into the louder second region and creates a nice tension at
the start of the song. At bar 5, a crash punctuates the fill at the end of the intro. The straightforward groove continues in the Verse section, with the hi-hat a little less open to leave space to later add a singer.

**Editing the Bridge Drum Performance**

In a song, the bridge serves to break the sequence of alternating verses and choruses. Often, the main idea of the song is exposed in the choruses, and verses help support or develop that statement. The bridge can present an alternate idea, a different point of view. Departing from the main idea of the song increases the listener's appreciation for returning to the chorus at the end of the song—almost like taking a vacation can increase your appreciation for going back home.

For this fast, high-energy indie-rock song, a quieter bridge in which the instruments play softer will offer a refreshing dynamic contrast. Playing softer does not mean the instruments have to play less, however. In fact, you will make the drums play a busier pattern during this bridge.

1. Listen to the Bridge region.

**TIP** When pressing the Spacebar to play a section, you can use Cycle mode to ensure that playback always starts at the beginning of the section. Drag a section's arrangement marker into the ruler to turn on Cycle mode and create a cycle area that matches the section.

The drummer plays at the same level as in the previous sections, but he plays more here. You need to bring down the energy level.
2 Select the Bridge Drummer region.

3 In the XY pad, position the puck farther down and all the way to the right.

The drummer is still playing a lot, but he's much quieter. To take this bridge into a different tonal direction, you want Kyle to play toms.

4 On the drum kit, mute the snare and unmute the toms.

The hi-hat is muted automatically when you unmute the toms.

Let's choose a busier pattern for the toms.

5 On the Toms slider, click increment 3.

Kyle is now playing sixteenth notes on the toms, which creates a mysterious vibe similar to tribal percussion.

Kyle plays slightly ahead of the beat during the bridge. However, the timing nuance is subtle, and it's difficult to hear without other instruments to compare with Kyle's timing. Let's turn on the metronome and experiment with the feel of the performance.

6 In the control bar, click the Metronome button (or press K).

7 In the Drummer Editor, click the Details button to display the three setting knobs.
8 Try setting different positions of the Feel knob, and then listen to the results.

![Feel knob diagram]

Listen to the way the drums play compared to the metronome. Don’t be afraid to drag the Feel knob all the way up or down to hear the effect of extreme Feel settings.

- Dragging the Feel knob toward Push makes the drummer play ahead of the beat. He sounds as if he’s rushing, thereby creating a sense of urgency.

- Dragging the Feel knob toward Pull makes it play behind the beat. He sounds as if he’s lazy or late, and the groove is more relaxed.

Settle on a Feel knob position more toward Pull to realize a reasonably relaxed groove.

9 Click the Details button to hide the three setting knobs.

10 Turn off Cycle mode.

11 In the control bar, click the Metronome button (or press K) to turn it off.

You have radically changed the drummer’s performance in that region. Kyle now plays the bridge with a busy tribal pattern on the toms. He uses restraint, hitting softly and behind the beat, with a slight crescendo toward the end. The quiet and laid-back yet complex drum groove brings a welcome pause to an otherwise high-energy drum performance, and builds up tension leading into the last two sections.

**Editing the Chorus and Outro Sections**

You will now finish editing the drummer’s performance by adjusting the settings of the last two Chorus and Outro Drummer regions in your workspace.

1 Select the Chorus region after the bridge and listen to it.

That Chorus region was created when you populated the track with Drummer regions earlier in this lesson. It doesn’t have the same settings as the previous two choruses and sounds busier, except for Kyle playing the ride cymbal instead of the crash.
2 On the Cymbals slider, click the first increment.
The drummer now plays the crash, and this last chorus is more consistent with the previous two choruses.

3 Select the Outro region at the end of the track and listen to it.
The drummer plays a loud beat, heavy on the crash, which could work for an outro. You will, however, make it play double-time (twice as fast) to end the song in a big way.

4 On the Kick & Snare slider, click the last increment (8).

```
[Image of Kick & Snare slider with 1/2 quantization]
```

Now it sounds like you’ve unleashed Kyle! Playing double-time at that fast tempo makes the sixteenth notes on the kick drum sound ridiculously fast.

5 On the XY pad, drag the puck toward the left until the drummer stops playing sixteenth notes on the kick drum.

```
[Image of XY pad with puck movement]
```

The performance now sounds more realistic while retaining the driving effect of its double-time groove.

6 Listen to the last chorus and the outro.
The outro has the required power to drive the last four measures; however, it seems like the drummer stops abruptly before finishing the fill. Usually drummers end a song by playing the last note on the first beat of a new bar, but here a crash cymbal is missing on the downbeat at bar 57. You will resize the last Outro region in the workspace to accommodate that last drum hit.
7  Resize the last Outro region to lengthen it by one beat (until the help tag reads Length: 4 1 0 0 +0 1 0 0).

A moment after you release the mouse button, the Drummer region updates, and you can see a kick and a crash on the downbeat at bar 57.

8  Listen to the outro. The drummer finishes the fill, punctuating it with the last hit at bar 57.

NOTE  The final crash cymbal continues ringing until its natural sustain fades out, well after the playhead has passed the end of the last Outro region.

You’ve laid out the entire song structure by creating section markers in the arrangement track, populated each section with Drummer regions, and edited each region’s settings to customize its drum pattern. You are now done editing the drum performance and can focus on the sound of the drums.

**Customizing the Drum Kit**

When recording a live drummer in a studio, the engineer often positions microphones on each drum. This allows control over the recorded sound of each drum, so he can individually equalize or compress the sound of each kit piece. The producer may also want the drummer to try different kicks or snares, or to experiment with hitting the cymbals softer before he begins recording.
In Logic, when using Drummer, the sounds of each drum are already recorded. However, you can still use several tools to customize the drum kit and adjust the sound of each drum.

**Adjusting the Drum Levels Using Smart Controls**

Smart Controls are a set of knobs and switches that are premapped to the most important parameters of the plug-ins on the channel strip of the selected track. You will study Smart Controls in more detail in Lesson 5.

In this exercise, you will use Smart Controls to quickly adjust the levels and tones of different drums. Then you’ll open Drum Kit Designer to swap one snare for another and fine-tune the crash cymbal sound.

1. In the control bar, click the Smart Controls button (or press B).

   ![Smart Controls pane](image)

   The Smart Controls pane opens at the bottom of the main window, replacing the Drummer Editor. It is divided into three sections: Mix, Compression, and Effects.

   In the Mix section, six knobs allow you to balance the levels of the drums. To the right of each knob, a button lets you mute the corresponding drum or group of drums.

2. Position the playhead before the first chorus and start playback.
3 Turn the cymbals down a bit by dragging the Cymbals knob.

Even with the Amount knob turned all the way down in the Compression section, the compressor is still slightly processing the drum sound. Let’s turn it off.

4 In the Compression section, click the On button.

On the left channel strip in the inspector, the Compressor plug-in is dimmed, indicating that it is turned off.

5 In the Effects section, drag the Tone knob up.

As you drag up the knob, the drums' sound changes timbre and becomes brighter. On the left channel strip in the inspector, the EQ curve on the channel strip’s EQ display reflects the changes made to the Channel EQ plug-in.

MORE INFO ► You will further examine the Channel EQ plug-in in Lesson 9.

6 Drag up the Room knob.

As you drag up the knob, you will start hearing the subtle reverberation of a drum booth. In the inspector, you can see the Bus 1 Send knob move along with the Tone knob.
You will learn how to use bus sends to route an audio signal to a reverb and to change the character of the reverb in Lesson 9.

7 In the control bar, click the Editors button (or press E) to open the Drummer Editor.

You can also double-click a Drummer region to open the Drummer Editor.

You have adjusted the levels and timbres of the drums, and you’re now ready to fine-tune the sound of the individual drum kit pieces.

Customizing the Kit with Drum Kit Designer

Drum Kit Designer is the software instrument plug-in that plays drum samples triggered by Drummer. It allows you to customize the drum kit by choosing from a collection of drums and cymbals and tuning and dampening them.

1 At the bottom of the character card, click East Bay Kit to open Drum Kit Designer.

To have the Drummer regions play a different instrument, you can choose another patch from the Library or insert another software instrument plug-in on the channel strip. You can also drag Drummer regions to another software instrument track, and they are automatically converted to MIDI regions. (You will learn more about MIDI in Lesson 5.)
2 In Drum Kit Designer, click the snare.

You can hear the snare sample. The snare stays lit, and the rest of the drum kit is in shadow. To the left, a Snares panel contains your choice of three snare drums, and to the right, an Edit panel includes three setting knobs.

The left panel shows only a limited selection of snares. To gain access to the entire collection of drum samples included with Logic Pro X, you need to choose a Producer Kit in the Library.

**TIP** To trigger Drum Kit Designer from your iPad in Logic Remote, tap the View menu and then tap Kits (you will learn how to use the Logic Remote in Lesson 5).

3 In the control bar, click the Library button (or press Y).

To the left of the inspector, the Library opens, listing patches for the selected track. The current patch, East Bay, is selected.
4 In the Library, select Producer Kits, and then select East Bay+.

The Drum Kit Designer window is reset.

**MORE INFO** ▶ If the plug-in window now displays an EQ plug-in, close the plug-in window, and click the button at the bottom of the character card to open the East Bay+ Drum Kit Designer window.

The East Bay+ kit sounds the same as East Bay but allows a wide array of options to customize the drum kit and its mix.

**MORE INFO** ▶ In the track header, you may have noticed that the drum icon is now framed in a darker rectangle with a disclosure triangle: The track is now a Track Stack that contains one track for each microphone used to record the drum kit. Clicking the disclosure triangle displays the individual tracks and their channel strips. You will use Track Stacks in Lesson 5.

5 Click the Library button (or press Y) to close the Library window.

6 In Drum Kit Designer, click the snare.

This time the left pane displays a choice of 15 snare drums (use your mouse to scroll down the list). The current snare, Black Brass, is selected.
7 Click another snare, and then click the Info button next to it.

A description of the selected snare opens.

Continue previewing different snares, and try listening to a verse or a chorus to hear your customized drum kit in action.

8 At the top of the left pane, click the Bell Brass snare.

9 In Drum Kit Designer, click the kick drum.
Produce a Virtual Drum Track

The info pop-up window updates to show you information on the selected kick drum. Listen to the kick drum. This kick is the right choice for your song, but it has a long resonance. Typically, the faster the tempo of the song, the less resonance you want on the kick; otherwise, low frequencies build up and could become a problem during the mix. You may have seen drummers stuff an old blanket in their kick drum to dampen them. In Drum Kit Designer, you only have to raise the dampening level.

10 In the right pane, drag the Dampen knob up to about 75%, and click the kick to listen to it.

![Dampen knob](image)

The kick’s resonance is shortened.

You will now tune the toms, which are mainly used in the bridge section.

11 In the workspace, select the Bridge region.

12 In the Drummer Editor, click the Play button and mute the kick.

You can hear only the low and mid toms.

13 In Drum Kit Designer, click one of the toms.

The Edit panel opens with four tabs: All (for adjusting settings of all three toms in the kit together); and Low, Mid, and High (for adjusting settings of each individual tom).

14 Click the Mid tab and raise the Tune knob to around +155 cent.

![Tune knob](image)

You can hear the mid tom being pitched up as Kyle continues repeating the first half of the bridge.
If you want, feel free to continue exploring Drum Kit Designer and adjusting the sound of the hi-hat, ride, and crash cymbals.

15 Stop playback and close the Drum Kit Designer window.

You have exchanged the snare for another one that sounds a little clearer, dampened the kick drum to tame its resonance, and tuned the mid tom to pitch it a bit higher. You have now fully customized both the drum performance and the drum kit.

**Working with an Electronic Drummer**

When drum machines first made their appearance in recording studios, drummers feared for their careers. The eighties produced a number of hit songs in which live drummers were replaced by electronic drums programmed by music producers.

However, many producers quickly realized that to program exciting electronic drum beats, they needed to develop the chops of a real drummer, while others simply chose to hire drummers for this task. In Logic, you can use Drummer to create virtual drum machine performances, turning beat creation into a fast and fun exercise.

**Creating Hip Hop Beats**

In this exercise, you will work with one of the Hip Hop drummers, adjusting its feel to control the human quality in the timing, and later you’ll convert the Drummer region to a MIDI region to exercise complete control over each individual drum hit.

1 In the Drummer Editor, from the Genre pop-up menu, choose Hip Hop.

2 Select the last drummer, Maurice.
In the inspector, the Drum Kit Designer plug-in is replaced by Drum Machine Designer. The Drummer Editor updates to display drum machine samples. On the track, all the Drummer regions are refreshed to reflect Maurice’s playing style.

3 Listen to a few sections.

Maurice plays a very loose, swung hip-hop groove. Your project tempo is still set to 142 bpm, but the drummer plays half time, so it sounds like 71 bpm. Let’s work with the verse.

4 Drag the first Verse Arrangement marker to the ruler.

Cycle mode is on, and the cycle area corresponds to the Verse marker.

5 Select the Drummer region below the cycle area, and press Z to zoom in.

6 In the Drummer Editor, click the Details button.

When the “Auto half-time” checkbox is selected, the drummer automatically switches to half time when the project tempo is 110 bpm or faster; those fast tempos are rarely used in hip-hop.

7 Deselect “Auto half-time.”

The drummer now plays at 142 bpm, which is much too fast for hip-hop.
8 In the LCD display, set the tempo to 87 bpm. Maurice plays a very loose, almost sloppy beat. Let’s tighten the performance.

9 Turn the Humanize knob all the way down.

The groove is now machine tight.

10 Turn the Swing knob up to 66%.

The drummer swings a little more, making the beat bouncier. Except for the fills at the end of the fourth and eighth bars in the region, it keeps repeating a fairly similar pattern. Let’s make it vary the pattern a little more.

11 Turn the Phrase Variation knob all the way up.

Now the beat is slightly different in every bar.

Let’s get rid of the crash cymbal on the first downbeat. Since the Drummer Editor doesn’t give you complete control over every single drum hit, you need to convert the Drummer region to a MIDI region.
In the workspace, Control-click the selected Drummer region and choose Convert to MIDI Region.

The yellow Drummer region is replaced by a green MIDI region that plays the same performance. The Drummer Editor is replaced by the Piano Roll Editor.

In the Piano Roll, the notes are represented by beams on a grid. The beams are positioned across a vertical piano keyboard that shows the MIDI note pitches. However, when working with drums, MIDI note pitches do not help identify the sound of the drums represented by each beam.
13 In the Piano Roll, choose View > Drum Names.

The vertical piano keyboard disappears, and the names of the drums are displayed in front of the grid.

14 On the downbeat of bar 5, click the note representing the Crash cymbal.

15 Press Delete to delete the selected note.

The crash cymbal is no longer triggered at the beginning of the verse.

You have replaced the acoustic drummer with an electronic drummer, adjusted the number of variations he plays, and made his playing sound tighter. Finally, you converted a Drummer region to a MIDI region to delete a single crash cymbal. In the next exercise, you'll explore the remaining parameters of the electronic Drummer Editor.
Creating an Electro-House Track

When working with Drum Machine Designer, the Drummer Editor allows you to restrict the complexity range of individual samples, making it possible to have, for example, a simple kick and snare beat while another sample follows a more complex pattern.

You will now switch drummers to create an electro-house drum track, and you’ll create a ubiquitous four-on-the-floor kick and snare beat with a complex shaker pattern.

1. On the Drummer track, Control-click the MIDI region and choose Convert to Drummer Region.

   In the Drummer region, the crash at the beginning of the region reappears: When you convert a MIDI region to a Drummer region, the region reverts to the Drummer performance you had before converting the region to MIDI.

2. In the Drummer Editor, from the Genre pop-up menu, choose Electronic.

3. Select the first drummer, Magnus.

4. In the control bar, change the tempo to 132.

5. Listen to the verse.
You hear a rather straightforward dance groove. You will first work on the kick and snare beat.

6 In the Drummer Editor, click the Details button to go back to the basic view; and mute the shaker, hi-hat, and handclaps.

Only the kick and snare are playing. On the upper line in the Drummer region, a secondary kick plays every bar. Let’s get rid of it.

7 In the XY pad, drag the puck to the left until the secondary kick disappears.

Now the snare may no longer play on beats 2 and 4 of every bar. You can fix that by adjusting its complexity range.
8. In the Drummer Editor, click the Details button.
   You can drag the Complexity Range sliders for each individual drum piece to offset the complexity set by the puck in the XY pad.

9. Drag the snare's left Complexity Range slider toward the right until you hear the snare play on beats 2 and 4 of every bar.

Let's add a shaker to the party.

10. Click the shaker to unmute it.
    The shaker plays a sixteenth note pattern, and it drops for a whole beat on beat 3 of bars 5, 7, 9, and 11. You are looking for a more consistent shaker groove.

11. Drag the shaker's left Complexity Range slider all the way to the right.

    The shaker now plays the same sixteenth note pattern throughout the region.

After exploring the Complexity Range sliders, you now have a solid understanding of all the parameters in the Drummer Editor used by electronic drummers. It's now time to move on to the drum machine itself so you can customize the drum sounds.

**Customizing the Drum Machine Sounds**

Now that you're happy with the drummer performance, you can open Drum Machine Designer to adjust the mix, change the snare sample, tune it, and add some reverb.

1. At the bottom of the character card, click the Plug-in button.
The Drum Machine Designer interface opens.
The Drum Machine Designer interface consists of two parts:
Drums cells (at the top) to select and trigger individual drum samples.
Smart Controls (at the bottom) to adjust various parameters.

To trigger Drum Machine Designer from your iPad, in Logic Remote, tap the View menu and then tap Drum Pads. (You will learn how to use the Logic Remote in Lesson 5.)

2. In the Mix section, turn up the Perc & Shakers knob.

The shaker sounds a little louder.

3. In the Effects section, try turning up the Pulse and turning down the High Cut Filter.

The Pulse knob controls a pulsating filter that affects the shaker pattern, whereas the High Cut Filter knob muffles the entire kit.

To determine which plug-in a knob controls, Control-click the knob and choose Open Plug-in Window.
4 Click the buttons next to the Pulse and High Cut Filter knobs.

Both effects are turned off, and you can hear the full frequency range of the drum sounds.

NOTE ▶ You will learn how to record knob movements in Lesson 10.

5 At the upper right of the Smart Controls, click the Sends button.

The Smart Controls display knobs that control the amount of delay and reverb for different drum kit elements.

6 In the Group Reverb section, turn Snare & Claps all the way up.

You can hear a short reverb added to the snare; however, that’s not the type of reverb sound you’re after. You will later find a more suitable reverb for this snare, so let’s turn that one down.
7 Turn Snare & Claps all the way down.
You will now swap the kit piece patch for the Snare.

8 Click the Snare 1 cell.

The Snare 1 cell is selected, and the Smart Controls update to display knobs affecting that cell.

**TIP** At the top of Drum Machine Designer, click the drum machine icon to return to the main Smart Controls.

9 In the Snare 1 cell, click the S button.

The snare is soloed.

10 Open the Library.

11 Choose Snare 2 – Analog Circuits.

In Drum Machine Designer, the cell displays the new patch name.
12 In the Smart Controls, turn the Pitch knob down to A2.

13 Turn the Length knob down to shorten the snare sound.

In the inspector, the right channel strip controls the sound of the selected cell in Drum Machine Designer. Let’s add the desired reverb to the snare.

14 On the right channel strip in the inspector, click the first empty Audio FX insert in the Snare 2 cell, and choose Reverb > PlatinumVerb.

15 In the PlatinumVerb window, from the Settings menu, choose Live Club.
16 In PlatinumVerb, drag the Wet slider up to increase the amount of reverb.

17 In Drum Machine Designer, click the S button in the Snare 2 cell to turn solo off. You have adjusted the kit mix, played with some main effects, swapped one of the drum samples, adjusted its sound, and added a plug-in to its channel strip to get the sound you wanted.

You have produced drums for a whole song, and you’ve learned many ways to edit the drummer’s performance and change the feel. You also customized drum kits to get your desired sound. With Drummer, Drum Kit Designer, and Drum Machine Designer, Logic Pro X allows you to quickly lay down a rhythmic foundation for a wide range of modern music genres.

**Lesson Review**

1. How do you choose a drummer?
2. How do you choose a new drummer while keeping the current drum kit?
3. Where do you edit Drummer regions?
4. How do you mute or unmute drum parts?
5. How do you make the drummer play softer or louder, simpler or more complex?
6. How do you access the Feel knob to make the drummer play behind or ahead of the beat?
7. How do you open Smart Controls?
8. How do you open Drum Kit Designer or Drum Machine Designer?
9. When customizing an acoustic drum kit, how can you access all the available drum kit pieces?
10. How do you dampen or tune an individual drum?
11. How do you convert Drummer regions to MIDI regions?
12. How do you swap samples in Drum Machine Designer?
13. How can you use audio effect plug-ins for an individual cell in Drum Machine Designer?

**Answers**
1. Click the drummer in the character card, or from the Genre pop-up menu, choose a genre and then click the desired drummer.
2. Option-click the desired drummer.
3. In the Drummer Editor at the bottom of the main window
4. Click the drum parts in the drum kit that is displayed in the Drummer Editor.
5. Move the puck on the XY pad.
6. Click the Details button at the bottom right of the Drummer Editor.
7. Click the Smart Controls button in the control bar, or press B.
8. Click the Plug-in button at the bottom of the character card.
9. Select the appropriate Producer Kit in the Library.
10. In Drum Kit Designer, click a drum and adjust the settings in the Edit panel.
11. Select the regions, Control-click one of them, and choose Convert > Convert to MIDI Region.
12. Click a cell and choose a new sample in the Library.
13. Click a cell and insert your plug-in on the right channel strip in the inspector.

**Keyboard Shortcuts**

<table>
<thead>
<tr>
<th>Main Window</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Opens the Smart Controls</td>
</tr>
<tr>
<td>G</td>
<td>Opens the global tracks</td>
</tr>
<tr>
<td>Command-Shift-N</td>
<td>Opens a new file without opening the Templates dialog</td>
</tr>
<tr>
<td>Y</td>
<td>Opens the Library</td>
</tr>
</tbody>
</table>
Lesson Files

Logic Pro X Files > Lessons > 05 Dub Beat

Time

This lesson takes approximately 120 minutes to complete.

Goals

Record MIDI performances
Quantize MIDI recordings
Merge a MIDI recording with an existing MIDI region
Record MIDI in take folders
Create drum rolls and erase notes on the fly
Create Track Stacks
Save layered synthesizer patches
Map and assign Smart Controls
Record MIDI in step input mode
Use MIDI effects
Control Logic from an iPad using Logic Remote
### Numbers
- 16-Bit Recording, Audio preferences, 67
- 24-Bit Recording, Audio preferences, 67
- 32-samples I/O buffer size, 102
- 44.1 kHz, music sample rate, 66
- 48 kHz, video sample rate, 66
- 128-samples, I/O buffer size, 101

### A
- AAC files, 520
- Acoustic guitar
  - adjusting levels and pan, 432
  - submixing with summing stacks, 433
- Acoustic keyword, browsing/previewing loops, 12–13
- Action pop-up menu, 166
- A/D (analog-to-digital) converter, 64
- Adaptive Limiter feature, of Compressor plug-in, 461–463
- Add Device button, 503
- Add Marker button, 170–172
- Add Tracks button, 82
- Adjust Tempo using Beat Detection dialog
  - keyboard shortcut for, 367
  - setting project tempo, 320–322
- Advanced Tools, preferences, 6
- Aftertouch events, 523
- AIFF (Audio Interchange File Format)
  - Apple Loops as, 323
  - choosing audio file type, 104
  - defined, 520
  - sound quality and, 496
- Alerts
  - confirming new audio file, 134
  - CPU overwork causing, 103
  - Delete alert, 78–79, 96
  - indicating prior use of keyboard shortcuts, 88
  - tempo embedded into loops and, 15
- Aliases
  - defined, 520
  - MIDI regions, 380
- Alignment Guides
  - keyboard shortcuts, 151
  - Snap pop-up menu, 144, 406
- All Files Browser
  - creating audio track, 320
  - importing audio files, 135–136
  - importing MIDI files, 293
- Alternative arrangements, editing/saving, 387–389
- Alternative option, drum genres, 161
- Amp Designer plug-in
  - Bass Amp Designer, 51–52
  - customizing amp models, 425–430
  - emulating guitar amp, 71–72
  - inserting at specific points in signal flow, 423–425
  - mixing with, 422
  - turning on/off, 127, 129–130, 134
- Amplifier envelope (AMP ENV), 257
- Amplitude peak, aligning audio regions, 144
- Amps
  - customizing amp models, 425–430
  - designing bass amp, 51–52
- Amps & Pedals, Amp Designer plug-in, 424
- ANALOG, synthesizer engines, 253
- Analog-to-digital (A/D) converter, 64
- Analyzer button, turning on frequency analyzer, 440–442
- Anchors, for aligning audio regions, 144–147
- Apple Loops
  - adding, 12
  - adding piano loop to arrangement, 38–39
  - adding with Loop Browser, 323–326
  - browsing/previewing loops, 12–16
  - choosing audio file type and, 104
  - converting loops to regions, 374–376
  - creating, 320–322, 327–331
  - defined, 520
  - folders for control loop length, 376–379
  - keyboard shortcut for, 409
  - naming channel strips, 43–44
  - opening, 11–12
  - pitch and tempo independent of project sample rate, 66
  - previewing, 39–40
- Arming tracks, for recording, 520
- Arpeggiator option
  - iPad keyboard options, 262
- Synth channel, 253–257
- Arpeggio, adding loops, 36–38
- Arrangement tracks
  - defined, 520
  - marker use in, 169–173
Arrangements
adding lead synths, 35–38
building rhythm section, 23–28
building up by adding melody, 35
creating breaks in, 38–43
editing. see Editing arrangements
marker use in arrangement track, 169–173
saving alternative, 387–389
of virtual drum track, 169
Arrow keys, for selections, 281–282, 316
Attenuation, compressors and, 454–455
Audio
creating new project, 5–6
deleting unused audio files, 105–107, 109
editing. see Editing audio
keyboard shortcuts, 109
recording. see Recording audio
sample rate, 66
Audio Click (Klopfgeist), metronome settings, 99
Audio File Editor
defined, 521
destructive editing in, 140–141
keyboard shortcut for, 151
opening/closing, 145–146
playing audio regions backwards, 142–143
Audio files
confirming new, 134
defined, 520
deleting unused, 97, 105–107, 109
destructive editing, 140–141
editing in Audio File Editor, 140
file type selection, 104–105
formats. see File formats
importing with All Files Browser, 135–136
info column for, 106
mixing down to single stereo file, 54–57
nondestructive editing, 116
playing audio regions backwards, 142–143
rendering multiple regions in single file, 384–387
reversing, 151
saving, 142
sound quality and file formats, 496
Audio FX
accessing from iPad, 263
Amp Designer option, 71–72
Channel EQ option, 439, 489–490
customizing drum sounds, 201
dynamic processing plug-ins, 455, 459
Space Designer option, 450–451
Audio Interchange File Format. see AIFF (Audio Interchange File Format)
Audio interfaces
choosing inputs, 82–83, 508
defined, 521
microphone preamp included in, 65
roundtrip latency and, 101
Audio MIDI Setup
creating external track for synthesizer, 508–510
in Mac OS X, 502, 504–506
Audio preferences
bit depth, 66–67
choosing audio file type, 104–105
I/O buffer size, 101, 103
Audio regions
aligning, 144–147
cloning, 379–382
defined, 521
editing, 135, 137–140
editing in workspace, 116–119
editing timing, 346
nondestructive editing, 111
playing backwards, 140–143
previewing, 112–114
removing silence from, 403
renaming, 114–116, 134
rendering multiple regions in single file, 384–387
Audio settings, Project Setting window, 65
Audio Track Editor
adding fades and crossfades, 111
editing note pitch, 362–366
editing regions, 135, 137–140
opening Audio File Editor, 142
playing audio regions backwards, 142–143
Audio tracks
adding fades and crossfades, 111
creating, 68–71, 320
creating external track for synthesizer, 508–510
multiple track recordings, 83–86
Automation
Automation Quick Access feature, 492–494
bouncing mix, 495–498
defined, 521
keyboard shortcuts for, 499
lesson review, 498–499
live automation, 480
live automation of plug-in bypass, 489–491
live automation of recording in Latch mode, 485–489
live automation of recording in Touch mode, 480–485
MIDI controllers in, 491–492
offline automation, 468
offline automation of muting a channel strip, 477–478
offline automation of pan region, 472–476
offline automation of vocal track volume, 468–472
overview of, 467–468
Automation button, 469
Automation curves
creating sudden breaks, 488
muting Snare track, 474–476
panning effect, 474–476
ramp time of, 484
recording new frequency values, 482–485
volume adjustment, 469–472
Automation Mode pop-up menu, 469
Automation Parameter pop-up menu
   Bypass option, 491
   Mute option, 477
   overview of, 469
   Pan option, 474, 486
Automation preferences, 478–479, 493
Automation Quick Access, 492–494, 521
Automation Snap Offset, 478
Autopunch mode, 91–95, 109
Aux (auxiliary channel strip)
   adding reverb with aux sends, 448–454
defined, 521
Balance, checking during single track recordings, 75
Banjo
   adding sections, 390–391
   soloing, 371–372
Bar
   of music, 521
   Snap menu options, 117, 478
Bass
   adding bass tracks, 19–20
   adjusting note length, 279–281
   building up rhythm section, 23–28
color code for, 370
creating break in arrangement by removing, 38–39
creating split keyboard patch, 236–237
cutting sections and, 396–397
editing pitch using key commands, 281–283
processing instrument quality using plug-ins, 50
Skyline Bass option, 21–22
sorting search results by tempo, 21
Stinger Bass option, 223
   274–275
time-stretching a single notes, 354–356
Bass Amp Designer, 51–52
Beats. see also Tempo
   Adjust Tempo using Beat Detection dialog, 367
   creating break in, 28–29
   creating hip hop beats, 189–193
default operation of metronome, 77
Intergalactic Beat option, 324–325
keyword button, 323
setting drum tempo from control bar, 163
Ultrabeat instrument plug-in, 254
Beats per minute. see Bpm (beats per minute)
Bit depth
digital recording and, 65
Info column for audio files, 106
setting, 66–67
Bounce
   of automated mix, 495–498
   keyboard shortcuts for, 60, 499
opening Bounce dialog, 54–56
rendering multiple regions in single file, 385
Bpm (beats per minute). see also Tempo
   creating tempo changes and curves, 334–337
   setting drum tempo from control bar, 163
   varispeed options, 345–346
Broadcast Wave File (BWF), 104–105
Browser pane, 109, 293, 316
Browsers
   audio projects. see Project Audio Browser files. see All Files Browser loops. see Loop Browser
   Browsers button, control bar, 105, 135–136, 320
Brush patterns
defined, 521
defining, 291
Brush tool
creating custom note patterns, 290–292
Define Brush Pattern, 291
defined, 521
drawing note patterns, 287–290
Bus
   adjusting reverb, 210–211
defined, 521
   new aux with input set to bus 1, 220
   routing vocal track to aux, 449–453
   Send knob and, 183–184
   subtrack output set to bus2, 435
BWF (Broadcast Wave File), 104–105
Bypass
   automating plug-in bypass, 489–491
defined, 521
effects, 385
Bypass parameter, Automation Parameter pop-up menu, 491

B
Balance, checking during single track recordings, 75
Banjo
   adding sections, 390–391
   soloing, 371–372
Bar
   of music, 521
   Snap menu options, 117, 478
Bass
   adding bass tracks, 19–20
   adjusting note length, 279–281
   building up rhythm section, 23–28
color code for, 370
creating break in arrangement by removing, 38–39
creating split keyboard patch, 236–237
cutting sections and, 396–397
editing pitch using key commands, 281–283
processing instrument quality using plug-ins, 50
Skyline Bass option, 21–22
sorting search results by tempo, 21
Stinger Bass option, 223
   274–275
time-stretching a single notes, 354–356
Bass Amp Designer, 51–52
Beats. see also Tempo
   Adjust Tempo using Beat Detection dialog, 367
   creating break in, 28–29
   creating hip hop beats, 189–193
default operation of metronome, 77
Intergalactic Beat option, 324–325
keyword button, 323
setting drum tempo from control bar, 163
Ultrabeat instrument plug-in, 254
Beats per minute. see Bpm (beats per minute)
Bit depth
digital recording and, 65
Info column for audio files, 106
setting, 66–67
Bounce
   of automated mix, 495–498
   keyboard shortcuts for, 60, 499
opening Bounce dialog, 54–56
rendering multiple regions in single file, 385
Bpm (beats per minute). see also Tempo
   creating tempo changes and curves, 334–337
   setting drum tempo from control bar, 163
   varispeed options, 345–346
Broadcast Wave File (BWF), 104–105
Browser pane, 109, 293, 316
Browsers
   audio projects. see Project Audio Browser files. see All Files Browser loops. see Loop Browser
   Browsers button, control bar, 105, 135–136, 320
Brush patterns
defined, 521
defining, 291
Brush tool
creating custom note patterns, 290–292
Define Brush Pattern, 291
defined, 521
drawing note patterns, 287–290
Bus
   adjusting reverb, 210–211
defined, 521
   new aux with input set to bus 1, 220
   routing vocal track to aux, 449–453
   Send knob and, 183–184
   subtrack output set to bus2, 435
BWF (Broadcast Wave File), 104–105
Bypass
   automating plug-in bypass, 489–491
defined, 521
effects, 385
Bypass parameter, Automation Parameter pop-up menu, 491

C
Cables, for external MIDI devices, 503
CAF. see Core Audio Format (CAF)
Capture as Recording, from playback mode, 226
Cataloging, saving Apple Loops for reuse, 327
Catch mode
defined, 522
playhead position and, 376
CD audio, 522
Channel EQ plug-in. see also EQ plug-in
   adjusting bands of, 439–444
   adjusting drums using Smart Controls, 183
   adjusting levels and pan, 431–432
automating bands of, 481–485
in Brooklyn drum kit patch, 220
creating software instrument track, 210
inserting plug-ins at specific points in signal flow, 424
Phone Filter Wide Band, 489–490
Channel strip setting, 207, 522
Channel strips
adjusting audio recording levels, 72–74
adjusting volume levels and stereo positions, 46–50
automation muting, 477–480
aux, 521
creating software instrument track, 210
defined, 522
faders corresponding to, 263
faders on external MIDI channel strip, 510
keyboard shortcuts for, 517–518
naming, 43–44
recording automation curves for Output channel strip, 492–494
settings, 207, 522
tuning instruments, 75
Channels
assigning new track to, 69
defined, 522
Chords, Flex Time modes and, 348
Choruses. see also Vocals
automating bypass, 489–491
bridging choruses and verses, 177
copying and combining regions, 172
creating arrangement marker for, 171–172
creating track volume automation, 468–472
editing, 179–181
Citrus Fuzz. see Fuzz options, synthesizers
Clave
creating/drawing note patterns, 287–290
defining/creating custom note patterns, 290–292
Clean keyword, 36–37
Clipping
Adaptive Limiter preventing, 463
adjusting audio recording levels and, 72
defined, 522
peak levels and, 460
Cloning audio regions, 379–382
Collapse mode, Piano Roll, 291, 522
Color
assigning colors to takes, 121–122
region color codes, 370
Command-click tool
accessing Text tool, 114
assigning Marquee tool to mouse buttons, 118
assigning mouse tools, 112
Comp (composite) takes
creating automatically, 90
folder containing, 86
recording additional takes, 79
Comping takes
overview of, 123
previewing takes for, 120–123
process of, 123–127
Complexity Range slider, 196
Compression section, of Smart Controls, 182–183
Compressor plug-in
Adaptive Limiter, 461–463
in Brooklyn drum kit patch, 220
compressing and limiting the mix, 459–463
creating software instrument track, 210
as dynamic processing plug-ins, 454
gain reduction with, 455
inserting plug-ins at specific points in signal flow, 424
parameters, 456
Platinum Analog Tape, 459
turning on/off, 128–130, 134
Vintage Opto mode, 457
Consoles, automated, 467
Continuous control number (cc#), 522
Control bar
Autopunch option, 91
Browsers button, 105, 135–136, 320
Count-in button, 97
in default configuration of main window, 9
defined, 522
Editors button, 140, 184
Go to Beginning (Return), 22, 83, 472
Info button, 266
Library button, 209
Metronome button, 97
Mixer button, 209
navigating project with, 27
Play from Selection, 372
Record button, 76
setting tempo from, 163
Smart Controls button, 240
starting/stopping playback, 17–18
Tuner button, 74–75
Control surfaces (controllers). see also MIDI controllers
assigning functions to control knobs, 491–492
Automation Quick Access for assigning single controller knobs, 492–494
Control-change events, 523
Control-shift, cleaning up edits, 126
Copying material, to fill in parts, 373
Core Audio
defined, 522
I/O buffer size and, 102–103
Core Audio Format (CAF)
choosing audio file type, 104
sound quality and, 496
Core MIDI, 522
Count-in
changing recording settings, 96–97
metronome setting, 77
recording takes in Cycle mode, 81
Count-In/Clave
creating/drawing note patterns, 287–290
defining/creating custom note patterns, 290–292
CPU
I/O buffer size impacting performance of, 102–104
Live mode impacting performance of, 224
Creating/editing MIDI
creating crescendo using note velocity, 299–302
creating/drawing note patterns, 287–290
creating/resizing notes, 274–278
defining length of existing notes, 278–281
defining/creating custom note patterns, 290–292
editing MIDI data in Event List, 294–296
editing note pitch using key commands, 281–283
editing note velocity, 284–287
importing MIDI files, 292–294
keyboard shortcuts, 316
lesson review, 315
overview of, 273
quantizing note pitch, scale, and timing, 296–299
Creating/editing MIDI continuous controllers
automating modulation data in MIDI Draw inspector, 311–314
automating pitch bend data in MIDI Draw inspector, 302–307
copying MIDI control data in MIDI Draw inspector, 307–311
overview of, 302
Crescendo, creating using note velocity, 299–302
Crossfade, see also Fade-ins/outs
adding, 127
adding at junction between two regions, 132–133
defined, 522
editing regions, 139–140
EqP (Equal Power Crossfade), 133
keyboard shortcuts, 151
making smooth transitions, 111
Customization
of control bar and display, 91
of drum kit, 181–182
of drum kit with Drum Kit Designer, 184–189
of drum sounds using Drum Machine Designer, 196–202
LCD display, 102
of main window, 9–11
Cycle area, replacing with skip cycle area, 394
Cycle mode
adding bass track, 19–20
adjusting drummer settings, 164
adjusting instrument sounds, 48
defined, 523
ensuring playback starts at beginning of section, 177
joining recordings into MIDI region, 220–223
keyboard shortcut for, 59–61
making locators match selected takes, 122
playing drummer, 161
playing MIDI regions, 215
recording MIDI takes, 223–226
recording takes in, 81–82
repeating and erasing notes on the fly, 226
turning off, 22, 127
Cymbals
adjusting drummer settings, 168–169
adjusting using Smart Controls, 183
creating hip hop beats, 193
customizing drum kit, 189
editing drummer sections, 180
playing drum regions, 174
playing drummer region, 157–159
swapping instruments in drum kit, 182
D
Dampen knob, customizing kicks, 188
Data
automating MIDI modulation data, 311–314
controlling instrument performance data, 273
copying MIDI control data, 307–311
editing MIDI data in Event List, 294–296
DAW (Digital audio workstation), 523
Decibels full scale (dBFS)
adjusting audio recording levels, 72
adjusting recording and monitoring levels, 74
defined, 523
Define Brush Pattern, Brush tool, 291
Delay
adding to vocals, 445–448
customizing drum sounds, 199
Delay knob, Smart Controls, 314
Delete alert, 78–79, 96
Desktop
keyboard shortcuts for accessing on Macs, 61
saving project to, 7–8
Destructive editing, in Audio File Editor, 140–141
Details button, Drummer Editor
adjusting timing, 178–179
creating electro-house track, 195–196
creating hip hop beats, 190
Digital audio workstation (DAW), 523
Digital recording. see Recording audio
Distorted keyword, browsing/previewing loops, 12–13
Distortion
adjusting recording levels to avoid, 64
iPad keyboard options, 265
Dithering, sound quality and, 496
Drivers
adding external devices, 503
audio interface, 101
defined, 523
MID controller, 206
Drum keyword, browsing/previewing loops, 12–13
Drum kit
adjusting settings, 168
Brooklyn patch, 220
choosing, 159–163
customizing, 181–182, 184–189
Drum Kit Designer
in Brooklyn drum kit patch, 220
customizing drum kit, 184–189
playing samples, 288
swapping instruments in drum kit, 182
Drum Machine Designer
creating electro-house track, 194–196
creating hip hop beats, 190–193
customizing drum sounds, 198–202
interface options, 197–198
repeating and erasing notes on the fly, 226–231
Drum pads. see XY pads
Drum tracks
adding Apple Loops to drum track, 323–326
adding bass track using cycle mode, 19–20
creating, 156–159
populating tracks with regions, 173
track stacks for streamlining workspace, 414–417
virtual. see Virtual drum track
Drummer Editor
adjusting drummer settings, 164–166
choosing drum kit and style, 159–163
choosing drummer and drum kit, 156
creating electro-house track, 195–196
creating hip hop beats, 189–193
Details button, 178–179
Fills knob, 176
opening from control bar, 184
viewing drum region settings, 174
working with Drum Machine Designer, 194
Drummer regions
converting MIDI region to, 194
converting to MIDI region, 184, 191–192, 287
copying and combining, 172
dividing Intro region, 175–176
navigating, 157
playing, 157–159, 174
populating tracks with regions, 173
Drums
adding Apple Loops to drum track, 323–326
adding bass track using cycle mode, 19–20
adjusting levels using Smart Controls, 182–184
as backbone of instrumentation, 155
building up rhythm section, 23–28
choosing drum kit and style, 159–163
color code for, 370
creating break in arrangement by removing, 38–39
creating tempo changes and curves, 334–337
creating tracks, 156–159
creating virtual track. see Virtual drum track
creating/drawing note patterns, 287–290
creating/naming tempo sets, 332–334
defining/creating custom note patterns, 290–292
drums. see Kicks
editing performance, 163–169
Dry signal, fine-tuning effects and, 71–72
Dynamic processing plug-ins
compressing and limiting the mix, 459–463
Compressor plug-in, 454–458
overview of, 454
E
Editing arrangements
adding batch fades, 381–383
adding sections, 389–394
adding/deleting sections, 387
cloning audio regions, 379–382
copying material to fill in parts, 373
creating audio regions by removing silence, 401–404
dividing regions by removing silence, 401–404
dividing regions, 394–397
folder use for control loop length, 376–379
keyboard shortcuts, 409
lesson review, 408
looping regions using Loop tool, 373–376
muting/deleting marquee selections, 397–400
overview of, 369–370
previewing songs, 370–373
rendering multiple regions, 384–387
saving alternative arrangements, 387–389
Editing audio
adding fade-outs, 127–130
adding fades to remove clicks, 130–134
aligning audio material to grid, 144
assigning mouse tools, 112
comping takes, 123–127
correcting timing issues, 147–149
editing files, 140
editing regions in Audio Track Editor, 137–140
editing regions in workspace, 116–119
grids for audio alignment, 144–147
importing audio files, 135–136
keyboard shortcuts, 151
lesson review, 111
playing regions backwards, 140–143
previewing takes, 120–123
previewing/naming regions, 112–116
Editing MIDI. see Creating/editing MIDI
Editing pitch and time
adding Apple Loops, 323–326
adding slow-down effects, 337–339
changing playback pitch and speed, 342–346
creating Apple Loops, 320–322, 327–331
creating tempo changes and curves, 334–337
creating/naming tempo sets, 332–334
editing note pitch in Audio Track Editor, 362–366
editing note pitch in workspace, 356–361
editing timing of audio regions, 346
keyboard shortcuts, 367
lesson review, 366–367
making tracks play in same groove, 340–342
moving waveform sections without time-stretching, 351–353
overview of, 319
setting project key signature, 326–327
setting project tempo, 320–322
time-stretching a single note, 354–356
time-stretching waveform between transient markers, 346–351
tuning vocal recordings, 356
Editing virtual drum track bridge section, 177–179
chorus and outro sections, 179–181
drummer performance, 163–169
intro section, 173–177
Editors
defined, 523
MIDI. see MIDI editors
Editors area, MIDI, 316
Editors button, control bar, 140, 184
Effects
audio plug-ins, 422
bypassing, 385
creating software instrument track, 210
customizing drum sounds, 198
guitar amplifier modeling plug-in, 71–72
MIDI, 252
plug-ins causing latency, 104
processing instrument quality using plug-ins, 50–54
slow-down effects, 337–339
white noise sound effect, 136
Effects section, of Smart Controls, 182–183
Electric guitar. see also Guitars
adjusting levels and pan, 432
recording single tracks. see Single track recordings
Electric piano, creating split keyboard patch, 237
Electro-house track, 194–196
Electronic option, Genre pop-up menu, 194
EQ display, Smart Controls, 183
EQ parameters, track automation and, 371
EQ plug-in. see also Channel EQ plug-in
adjusting guitar sound, 429
adjusting levels and pan, 430–432
attenuating or boosting frequencies with EQ plug-in, 439–445
bypass automation, 489–491
customizing drum kit, 186
mixing/adjusting vocals, 438–445
track automation, 391–392
EqP (Equal Power Crossfade), 133
Eraser tool, 289
ES2 plug-in
adjusting pitch bend range, 304–306
assigning MIDI controller knobs to screen controls, 246
mapping plug-ins, 239–240
remapping control for synthesizer filter, 242
Event List
defined, 523
editing MIDI data in, 294–296
Events, MIDI. see also Creating/editing MIDI; Notes; Pitch bend
assigning MIDI CC events to channel strips, 492
defined, 523
Index

editing, 331
editing MIDI CC events, 468
joining recordings into MIDI region, 218–219
processing in real time, 257
recording and, 212–215
routing to external instrument, 206, 501, 507–510
routing to record-enabled track, 207, 504
routing to virtual instrument, 206
turning into sound, 205
External Instrument plug-in, 506–508
External MIDI devices. see MIDI devices, external

F
Factory layouts, 241–242
Fade tool
defined, 523
keyboard shortcuts, 151
Tool menu options, 128–129
Fade-ins/outs
adding batch fades, 381–383
adding fades and crossfades, 127–130
crossfades for smooth transitions, 111
editing regions, 139–140
keyboard shortcuts, 151
removing clicks, 130–134
slow-down effects, 338–339
Faders
adjusting guitar levels and pan, 431–432
corresponding to channel strips, 263
defined, 523
on external MIDI channel strip, 510
tremolo effect and, 437
Volume fader, 49, 207, 471
Feedback, avoiding in recordings, 69
Feel knob, options of Details button of Drummer Editor, 179

File formats
Apple Loops options, 323
choosing audio file type, 104
Info column for audio files, 106
sound quality and, 496
File size, Info column for audio files, 106
File Type Interleaved, sound quality and, 496
File type, selecting for audio recording, 104–105
Files
audio. see Audio files
creating new, 208
importing MIDI files, 292–294
opening, 156
saving as template, 514
Fills knob, Drummer Editor
adjusting drummer settings, 166
overview of, 176
Finder
configuring external MIDI devices, 502
keyboard shortcuts for, 519
FireWire, configuring external MIDI devices, 502
Flanger plug-in
assigning MIDI controller knobs to screen controls, 246
mapping plug-ins, 240
remapping control for, 244
Flatten option, Take Folder pop-up menu, 126
Flex editing
correcting timing issues, 147–149
defined, 523
editing note pitch in Audio Track Editor, 362–366
editing note pitch in workspace, 356–361
keyboard shortcuts, 367
moving waveform sections without time-stretching, 351–353
setting Flex Mode to Flex Time-Slicing, 334
time-stretching a single note, 354–356
time-stretching waveform between transient markers, 346–351
FM (Frequency modulation), synthesizer engines, 253
Folder stack, summing stack compared with, 415–417
Folders
of comp (composite) takes, 86
defined, 376, 524
use for control loop length, 376–379
Format. see File formats
Frequencies
adjusting, 442–444
attenuating or boosting with EQ plug-in, 438–439
automation curve recording new frequency values, 482–485
turning on frequency analyzer, 440–442
Frequency modulation (FM), synthesizer engines, 253
Fuzz options, synthesizers
Citrus Fuzz, 294, 304–305
Moving Fuzz, 259, 262–264
Gain
Adaptive Limiter, 462–463
adjusting, 72, 442–444
controlling preamp remotely, 73
increasing on amp, 426
Gain Reduction meter, 455–456
Gate parameter, Note Repeat feature and, 230
General MIDI (GM), 524
Genre
choosing drummer by, 159, 161
mixing and, 413
searching in Loop Browser by, 21
Genre pop-up menu
Electronic option, 194
Hip Hop option, 189
Rock option, 156
Glissandro, iPad keyboard options, 261

Global tracks
   closing, 336
   configuring, 170
   creating/naming tempo sets, 332–334
   keyboard shortcuts, 203, 367
   opening, 169

Go to Beginning (Return) button
   control bar, 472
   punching on the fly, 89–91
   recording multiple tracks, 83
   returning to beginning of project, 22

Grids
   for audio alignment, 144–147
   defined, 524
   keyboard shortcuts, 151
   Snap to Grid, 145, 393, 395

Groove tracks
   defined, 524
   editing drummer sections and, 180
   making tracks play in same groove, 340–342

Guitars
   adjusting levels and pan, 430–432
   assigning single controller knobs, 494
   color code for, 370
   customizing amp models, 425–430
   inserting plug-ins at specific points in signal flow, 423–425
   moving waveform sections without time-stretching, 351–353
   processing with tremolo plug-in, 435–438
   single track recordings, 76–79
   submixing with summing stacks, 432–435
   time-stretching between transient markers, 346–351
   tuning, 74–75

H

Hardware, 502–506. see also MIDI devices, external
   HD meter, LCD display, 102
Headphones, monitoring recording with, 70

Headroom
   adjusting recording levels, 72, 74
   defined, 524
Help
   getting element descriptions from Quick Help, 10
   Logic Remote Help, 269
   Smart Help, 268
Help tag
   defined, 524
   region selections and, 26–27

Hide
   inspectors, 9
   keyboard shortcuts, 61, 499
   Logic Pro X, 56
   Show/Hide Automation button, 469, 494

High Cut Filter, customizing drum sounds, 198

Hi-hat
   adjusting drummer settings, 164–168, 177
   bridging choruses and verses, 178
   changing to/from toms, 173
   customizing drum kit, 189
   MIDI controller option for, 221
   playing drummer region, 157–158
   recording at beginning of a region, 228

Hip Hop
   adding Apple Loops with Loop Browser, 323–326
   creating hip hop beats, 189–193
   searching in Loop Browser by genre, 21

Home folder, accessing, 293

Icons
   choosing for tracks and channel strips, 43–45
   selecting for drum track, 45–46
   selecting for guitar track, 70

Importing
   audio files, 135–136
   guitar recording, 147
   MIDI files, 292–294

Indie rock example, 177–179

Info
   accessing remotely, 266
   column for audio files, 106
   display in main window, 276

Input Device, Audio preferences, 66

Input menu
   choosing audio interface inputs, 508
   choosing new input, 82–83
   selecting audio interface input number, 69

Insert slot
   Audio FX slot on channel strip, 51–52
   for Channel EQ plug-in, 439
   for Compressor plug-in, 456
   defined, 524
   for Tuner plug-in, 75

Inspectors
   controlling preamp gain remotely, 73
   in default configuration of main window, 9
   defined, 524
   hiding, 9
   keyboard shortcut for, 59
   MIDI Draw inspector. see MIDI Draw inspector
   Piano Roll inspector. see Piano Roll inspector
   Region Inspector. see Region inspector
   Smart Controls inspector, 241, 245–247
   Track inspector. see Track inspector
   Volume fader in, 471–472

IAC driver, external MIDI devices, 503
Instruments. *see also* by individual types
color coding, 370
connecting sound source to Mac before recording audio, 64
controlling performance data, 273
dragging regions to instrument tracks, 147
External Instrument plug-in, 506–508
Live mode and, 224
monophonic and polyphonic, 348
processing quality using plug-ins, 50–54
recording single tracks. *see* Single track recordings
tuning, 74–75
virtual. *see* Virtual drum track
Interfaces
audio. *see* Audio interfaces
Drum Machine Designer, 197–198
exploring, 8–12
MIDI, 504–505
Intergalactic Beat option, 324–325, 327
Intro
creating arrangement marker for, 170–172
playing drum regions, 174
I/O buffer size
changing recording settings, 100–104
defined, 524
iPad, Logic Remote app, 258–269
Join
recordings into MIDI regions, 216–223
rendering multiple regions in single file, 384–387
Key
setting project key signature, 326–327
Key commands
assigning, 87–89
defined, 524
editing note pitch, 281–283
keyboard shortcuts, 109
navigating projects, 16–18
Record Toggle command, 87
remote control from iPad, 267
Key focus
determining if Loop Browser has, 16–17
giving to Piano Roll, 281
giving to Tracks area, 17, 267
keyboard shortcuts for, 17, 60
Key signatures, 326–327. *see also* Signatures
Keyboard shortcuts
for channel strip, track, and region operations, 517–518
for Finder, 519
for navigation and playback, 516
for panes and windows, 515–516
for Piano Roll Editor, 519
for Project Audio Browser, 519
for zooming, 517
Keyboards
color code for, 370
piano. *see* Piano
Keyboards, MIDI
continuous controllers. *see* MIDI continuous controllers (MIDI CC) as control surface, 492
creating split keyboard patch, 236–238
displaying on iPad, 260–263
editing note pitch using key commands, 281–283
editing note velocity, 284–287
playing bass notes, 276
processing MIDI notes using plug-ins, 252–257
recording, 212–215
Steinway Grand Piano patch, 294
Step Input keyboard, 249–251
using Mac keyboard as MIDI controller, 206
Kick & Snare patterns, 180
Kicks. *see also* Drums
cloning audio regions, 379–382
creating electro-house track, 195
customizing drum kit, 187–189
folder use for control loop length, 376–379
Kick & Snare patterns, 165
looping regions using Loop tool, 373–376
MIDI controller option for, 221
playing drummer region, 157–158
previewing in song arrangement, 370
rendering multiple regions in single file, 384–387
repeating and erasing notes on the fly, 226
track stacks for streamlining workspace, 415–417
Klopfgeist (Audio Click), metronome settings, 99
Latch mode, for automating recordings, 485–489
Latency. *see* Roundtrip latency
Launchpad, opening Logic Pro X, 4
Layouts, Factory layouts, 241–242
LCD display
changing loop tempo, 14–15
Custom option, 102
Customize Control Bar and Display, 91
recording guitar part, 76
recording MIDI, 214
remote access from iPad, 265
showing playhead position, 27
Solo mode in, 371
Varispeed option, 343–344
viewing drum loop, 331
viewing MIDI activity, 212–213, 221
viewing project tempo in, 322
Lead Synth. *see also* Synthesizers
adding, 35–38
copying MIDI control data in MIDI Draw inspector, 307–311
displaying MIDI events in Lead Synth region, 295–296
quantizing pitch, scale, and timing of, 296–299
Lead vocals, adding sections, 392–393
Learn by Key Label, 88–89
Learn mode assigning MIDI controller knobs to screen controls, 245–247
red halo indicating, 243
Left-click tool accessing Solo tool, 112–114
accessing Velocity tool, 284–285
assigning mouse tools, 112
assigning Pointer tool to mouse buttons, 118, 130
changing to Pointer tool, 286, 289
keyboard shortcuts, 151
Levels adjusting drum levels, 182–184
adjusting recording levels, 72–74, 430–432
Library accessing from control bar, 209
choosing bass option from, 274–275
defined, 525
joining recordings into MIDI region, 220
keyboard shortcuts, 203
listing patches for selected track, 185–186
Limiters, volume, 460–461
Live automation overview of, 480
of plug-in bypass, 489–491
of recording in Latch mode, 485–489
of recording in Touch mode, 480–485
Live mode, instruments and, 224
Locators adjusting cycle area, 23
defined, 525
keyboard shortcuts, 409
making match selected takes, 122
setting rounded locators, 20
Locked screensets behavior of, 419–420
customizing, 420–422
Logic Remote app defined, 525
remote control of Mac, 258–269
using iPad as wireless MIDI controller, 206
Logic Remote Help, 269
Loop Browser adding Apple Loops, 323–326
adding lead synths, 35–38
browsing/previewing loops, 12–16
cataloging Apple Loops, 327
determining if key focus present, 16–17
dragging region to, 329
keyboard shortcut for, 59
MIDI regions for creating Apple Loops, 331
opening, 12
resetting, 20, 39
saving drum section as Apple Loop, 327–331
searching by genre, 21
Loop tool, 373–376
Loops. see also Apple Loops defined, 525
use in modern music, 319
Loudness. see Volume
Main window customizing, 9–11
default configuration of, 9
defined, 525
info display in, 276
keyboard shortcut for, 203
switching between Mixer and, 419–420
tool menus and, 115
Make Up knob, Compressor plug-in, 458
Mapping assigning functions to control knobs, 491–492
opening mapping plug-ins, 239–240
Markers cutting sections and, 395
defined, 525
in drum arrangement track, 169–173
for identifying project sections, 370
moving waveform sections without time-stretching, 351–353
mute automation of Snare track, 477
time-stretching a single note, 354–356
time-stretching waveform between transient markers, 346–351
Marquee tool aligning notes in guitar track, 352–353
assigning to Command-click button, 118
defined, 525
dividing drum Intro region, 175–176
making selections with, 328, 338
muting/deleting selections, 397–400
previewing loops, 39–40
selecting section of automation curve, 471–472
speeding up Autopunch recording process, 95 from Tool menu, 116
Melody, building up arrangement by adding to drums and bass, 35–38
Menu bar, main
  Bounce dialog, 54 defined, 525
  Screenset menu, 417
Menu bar, Piano Roll
  Collapse Mode button, 291, 296
  Time Handles, 288
Menu bar, Project Audio Browser
  Catch button, 376
  Display Level button, 378
  Drag mode, 119, 397
  Flex button, 347, 362, 366	on opening Tool menu, 115
  Pack Folder function, 377
  Show/Hide Automation button, 469, 494
  Snap pop-up menu, 117, 144, 390, 393, 406, 478
  Vertical Auto Zoom button, 276
  Zoom Focused Track, 475, 480
Metronome
  adjusting timing, 178–179
  changing recording settings, 97–100
default operation of, 77
defined, 525
quantizing MIDI regions, 216
recording MIDI, 213
setting project tempo, 320, 322
Microphone preamp
  adjusting audio levels using gain knob, 72
  controlling gain remotely, 73
digital recording and, 64
  included in most audio interfaces, 65
Microphones
  analog recording via, 64
  connecting sound source to Mac before recording audio, 64
placement relative to speaker cabinet, 428
positioning for drums, 181
MIDI (Musical Instrument Digital Interface)
  creating and editing. see Creating/editing MIDI
defined, 525
recording. see Recording MIDI
MIDI channels
  defined, 525
  routing external MIDI tracks, 509–510
  routing MIDI events to, 507
  viewing channel number of MIDI event, 213, 294
MIDI Click, metronome setting, 99
MIDI continuous controllers (MIDI CC)
  assigning controller knobs to screen controls, 245
  automating modulation data, 311–314
  automating pitch bend data, 302–307
  automation and, 468
copying control data, 307–311
as MIDI event type, 205–206
overview of, 302
MIDI controllers
  Automation Quick Access for assigning single controller knobs, 494
  automation with, 491–492
MIDI Destination pop-up menu, 507–508
MIDI devices, external
  choosing a program remotely, 510–514
  creating external track for synthesizer, 508–510
  External Instrument plug-in, 506–508
  hardware configuration, 502–506
  overview of, 501
MIDI Draw
  automating pitch bend data, 302–307
  automation and, 468
defined, 525
  MIDI Draw area of Piano Roll, 299–300
MIDI Draw inspector
  automating modulation data, 311–314
  automating pitch bend data, 302–307
copying MIDI control data, 307–311
MIDI editors
  Event List, 294–296
  Piano Roll Editor, 274–278
types of, 273
MIDI note events
  checking pitch and velocity of, 277
correcting with Piano Roll Editor, 215
creating crescendo using note velocity, 299–302
creating/drawing note patterns, 287–290
creating/resizing, 276–278
defining length of existing, 278–281
defining/creating custom note patterns, 290–292
editing pitch using key commands, 281–283
editing velocity, 284–287
enabling Note events button, 296
as MIDI event type, 205–206
order of play, 255–256
quantizing pitch, scale, and timing, 296–299
recording one at a time, 247
viewing on LCD display, 213
MIDI Out, 283–284
MIDI plug-ins, 525. see also Plug-ins
MIDI regions
  aliases, 380
  converting drummer region to, 184, 191–192, 287
Index 543

converting to drummer region, 194
creating, 247, 275
defined, 526
dragging to Loop Browser to create Apple Loop, 331
joining recordings into, 216–218
quantizing, 216–218
recording into selected, 218–219
selecting notes, 286
MIDI Thru Region inspector, 217–218, 226
Mix section, of Smart Controls, 182
Mixers adjusting gain of microphone, 73
adjusting volume levels and stereo positions, 46–50
controlling from Logic Remote app, 258, 262–263, 265, 267, 269
defined, 526
examining channels strips, 208–211
keyboard shortcut for, 59
navigating with Tab key, 45
opening/closing, 43–44
processing guitars with tremolo plug-in, 435–438
processing instrument quality using plug-ins, 52–54
screensets for switching between Tracks area and Mixer, 417–420
submixing with summing stacks, 432–435
Toolbar button, 10–11
Wide Channel Strips button, 421–422
Mixing adjusting volume levels and stereo positions, 46–50, 430–432
with Amp Designer, 422
automating. see Automation choosing names and icons, 43–46
compressing and limiting the mix, 459–463
Compressor plug-in, 454–458
controlling preamp gain remotely, 73
customizing amp models, 425–430
customizing locked screenset, 420–422
defined, 526
delay added to vocals, 445–448
dynamic processing plug-ins, 454
EQ plug-in for, 438–445
inserting plug-ins at specific points in signal flow, 423–425
keyboard shortcuts, 465
lesson review, 464
mixing down to single stereo file, 54–57
opening Mixer remotely, 262–263, 265
organizing windows and tracks, 414
overview of, 43, 413–414
processing guitars with tremolo plug-in, 435–438
processing instrument quality using plug-ins, 50–54
reverb added using aux sends, 448–454
screensets for switching between Tracks area and Mixer, 417–420
streamlining workspace with Track Stacks, 414–417
submixing with summing stacks, 432–435
tips and tricks, 463
Mixing boards, automated, 467
Modulation automating modulation data, 311–314
processing guitars with tremolo plug-in, 435–438
rate parameter and, 230
Monitoring effects, during single track recordings, 71–72
Monophonic, Flex Time mode, 348
More option, Region inspector, 133
Mouse tool assigning, 112
converting into Resize pointer, 31–32
MP3 files bouncing to desktop, 54–56
defined, 526
Multiple track recordings, 83–86
Multipressor plug-in, in Brooklyn drum kit patch, 220
Multi-timbral controlling timbres on different channels, 213
defined, 526
Musical Typing window defined, 526
keyboard shortcuts, 271
using Mac keyboard as MIDI controller, 206
Mute defined, 526
editing and arranging regions, 405
offline automation of channel strip, 477–480
selections, 397–400, 409
N Naming regions, 112–116
tracks and channel strips, 43–46
Navigation continuously repeating sections, 19–23
creating markers for, 370
drummer region, 157
keyboard shortcuts, 18, 59, 409, 516
overview of, 16
remotely from iPad, 265
transport buttons and key commands, 16–18
New Tracks dialog creating drummer track, 156
creating external track for synthesizer, 508–510
creating software instrument track, 208, 220
creating split keyboard patch, 236–238
keyboard shortcuts, 109
preparing track for recording, 68–69
recording multiple tracks, 82

Noise. see also Volume
raising noise threshold when stripping silence, 403
removing from arrangement, 397–400

Nondestructive editing
of audio regions, 111
Audio Track Editor, 137–140
defined, 526
editing regions in workspace, 116–119
fades and, 127
punching as, 86
working with regions in workspace, 106

Normalize, peak levels and, 495–496

Note Repeat feature
defined, 526
drum machines, 226–230

Notes
checking pitch and velocity of, 277
correcting with Piano Roll Editor, 215
creating crescendo using velocity, 299–302
creating/drawing note patterns, 287–290
creating/resizing, 276–278
defining length of existing, 278–281
defining/creating custom note patterns, 290–292
editing pitch in Audio Track Editor, 362–366
editing pitch in workspace, 356–361
editing pitch using key commands, 281–283
editing velocity, 284–287

Outro
creating arrangement marker for, 172–173
editing drummer sections, 179–181

Overdrive plug-in, accessing from iPad, 264

Pan
adjusting, 430–432
automation of recording in Latch mode, 485–489
Automation Parameter pop-up menu, 474, 486
MIDI effects, 207
offline automation of pan region, 472–476

Panes
keyboard shortcuts, 316, 367, 515–516
of main window, 8
navigating, 17
showing only needed, 12

Parameter Mapping, 242–245

Patches
accessing from Library, 206–211
Brooklyn drum kit patch, 220
creating layered sound patch, 231–236
creating split keyboard patch, 236–238
defined, 526
listed in Library, 185–186
mapping Smart Controls to patch parameters, 239
saving, 234
Steinway Grand Piano patch, 294

PCM (pulse-code modulated audio) files
bouncing automated mix as, 495–496
defined, 526

Peak levels
adjusting audio recording levels, 72
adjusting recording and monitoring levels, 74
Compressor plug-in, 460
Normalize and and, 495–496
Pencil tool
creating notes, 276–278
defined, 526
defining length of existing notes, 278–281
drawing automation curves with, 471
resizing, moving, copying, deleting MIDI notes, 274
Percussion
soloing, 371
track stacks for streamlining workspace, 414–417
Perfect Pitch
ing mining note pitch in Audio Track Editor, 363–364
tuning vocals on Verse track, 358–359
Phone Filter Wide Band, Channel EQ, 489–490
Piano. see also Keyboards, MIDI
adding piano loop to arrangement, 38–39
creating software instrument track, 209–211
joining recordings into MIDI region in Cycle mode, 220–223
quantizing MIDI regions, 216
recording MIDI, 213–215
soloing, 372
Steinway Grand Piano patch, 294
Piano Roll
Collapse Mode, 291
copying MIDI control data, 307–311
correcting MIDI notes, 215
deselecting all notes, 280
enabling MIDI Out, 284
joining recordings into MIDI region, 218, 222–223
key focus given to, 281
keyboard shortcuts, 271, 316
MIDI Draw area of, 299–300
MIDI regions and, 192–193
quantizing MIDI regions, 216, 218
recording MIDI, 213–215
repeating and erasing notes on the fly, 226
resizing, 275–276
step input mode example, 248–251
Time Handles option, 288–289
Piano Roll Editor
creating/resizing MIDI notes, 274–278
defined, 527
displaying Lead Synth region in, 296–297
Drummer Editor replaced by, 192
Event List compared with, 294
keyboard shortcuts for, 519
types of MIDI editors, 273
Piano Roll inspector
Scale Quantize pop-up menu, 297
selecting clave notes, 290–291
Time Quantize pop-up menu, 298
Velocity slider, 301
Piano rolls, MIDI sequences compared to, 205
Pitch
adjusting on MIDI keyboard, 221
bending or modulating, 215
changing playback pitch and speed, 342–346
checking note pitch, 277
controlling with Pitch Mod knob, 242
correcting in vocal recordings, 356–361
editing. see Editing pitch and time
editing note pitch in Audio Track Editor, 362–366
editing note pitch in workspace, 356–361
editing note pitch using key commands, 281–283
Flex Time modes and, 348
quantizing note pitch, 296–299
sample rate impacting, 65–66
viewing MIDI events on LCD display, 213
Pitch bend
automating pitch bend data, 302–307, 309–311
overview of, 215
quantizing MIDI regions, 215
Pitch Drift settings, 364
Platinum Analog Tape, Compressor plug-in, 459
Play from Selection, control bar, 372
Playback
changing pitch and speed, 342–346
continuously repeating project sections, 19–23
drum loop, 331
ensuring starts at beginning of section, 177
keyboard shortcuts, 409, 516
of MIDI takes, 223–226
starting with spacebar, 20, 23
starting/stopping, 17–18
in Touch mode, 480
Playhead
defined, 527
jumping to selected region, 78
playing MIDI takes, 224–225
positioning, 18, 76
recording MIDI, 214
remote control from iPad, 265
starting/stopping playback and, 17–18, 20, 23
in step input mode, 247
Plug-ins
adding delay to vocals, 445–448
Amp Designer. see Amp Designer plug-in
amplifier modeling plug-in, 71–72
assigning MIDI controller knobs to screen controls, 246
automating bypass, 489–491
in Brooklyn drum kit patch, 220
bypassing, 385
Channel EQ. see Channel EQ plug-in
compressing and limiting the mix, 459–463
Compressor. see Compressor plug-in
creating software instrument track, 210
defined, 527
Drum Kit Designer and, 184–185
dynamic processing, 454
EQ. see EQ plug-in
ES2. see ES2 plug-in
External Instrument plug-in, 506–508
inserting at specific points in signal flow, 423–425
latency and, 104
mapping screen controls to plug-in parameters, 240–245
mapping with, 239–240
MIDI effects and, 252
mixing with, 422
Overdrive plug-in, 264
processing guitars with tremolo plug-in, 435–438
processing instrument quality, 50–54
processing MIDI notes, 252–257
reverb plug-in, 448
settings saved in Library, 207–208
showing/hiding, 271
toggling on/off, 240
Tuner plug-in, 74–75
Ultrabeat instrument plug-in, 254
Pointer tool
adding fades to, 131
assigning Pointer tool to mouse buttons, 130
assigning to Left-click button, 118
changing Left-click tool to, 286, 289
defined, 527
keyboard shortcuts, 151
selecting from Tool menu, 116
Polyphonic, Flex Time mode, 348
Ports, external MIDI devices, 503
Preferences
advanced Tools, 6
Audio preferences, 66
Automation preferences, 478–479, 493
closing Preferences window, 67
defined, 527
Prelisten button, previewing regions, 106
Previewing regions, 106, 112–116
songs, 370–373
takes, 120–123
Producer Kit, creating in Library, 185–186
Programming MIDI sequences, 273. see also Creating/editing MIDI
Programs
choosing remotely, 510–514
defined, 527
Project Audio Browser bounce file added to, 496
defined, 527
deleting unused audio files, 97, 105–107
dragging region to instrument track, 147
keyboard shortcuts, 109, 519
Project Chooser, 4–5
Project Setting window, Audio settings, 65
Projects
setting project key signature, 326–327
setting project tempo, 320–322
Projects, new
adding Apple Loops, 12
adding lead synths, 35–38
adjusting volume levels and stereo positions, 46–50
browsing/previewing loops, 12–16
building arrangement, 35
building up rhythm section of, 23–28
choosing and names and icons, 43–46
continuously repeating sections of, 19–23
creating breaks in arrangement, 38–43
creating Logic Pro X, 4–8
creating MIDI project, 220
exploring interface, 8–12
keyboard shortcuts, 59–61
keyboard shortcuts for MIDI project, 271
lesson review, 58–59
mixing, 43
mixing down to single stereo file, 54–57
navigating generally, 16
navigating using transport buttons and key commands, 16–18
processing instrument quality using plug-ins, 50–54
zooming in for editing sections of, 28–35
Puck (yellow), on XY pad
adjusting drum levels, 175–176
adjusting drum presets, 164–165, 168
bridging chorus and verses, 178
creating electro-house track, 195–196
editing drummer sections, 180
Pull knob, options of Details button of Drummer Editor, 179
Pulse, customizing drum sounds, 198–199
Pulse-code modulated audio (PCM) files
bouncing automated mix as, 495–496
defined, 526
Punching in/out
assigning key commands, 87–89
automatically, 91–95
defined, 527
on the fly, 89–91
keyboard shortcuts, 109
overview of, 86
Push knob, options of Details button of Drummer Editor, 179

Q
Quantization
choosing default settings, 217–218
correcting timing of MIDI recording, 215
defined, 527
of MIDI regions, 216, 221
note pitch, scale, and timing, 296–299
repeating and erasing notes on the fly, 226–227
Time Quantize note value, 289–290
Quantize menu, Region inspector, 215–216
Quick Help, getting element descriptions, 10
Quick Look window, playing file in, 57
Quick Punch-In, 89
Quick Swipe Comping
assembling takes, 123–127
creating comp takes, 111
overview of, 121

R
Ramp time, automation curves, 484
Rate parameter, modulation and, 230
Ratio knob, Compressor plug-in, 458
Read mode
automation modes, 494
Touch mode compared with, 480
Realtime automation. see Live automation
Record button
on control bar, 76
punching on the fly, 89–91
recording additional Takes, 79–81
recording takes in Cycle mode, 81–82
re-recording vocal recording, 94
Record Enable option
enabling tracks for recording, 69, 71
recording multiple tracks, 82, 86
Record Toggle command
assigning keyboard commands, 89
for punching on the fly, 87
punching on the fly, 87, 89–91
Recording audio
adjusting levels, 72–74
assigning key commands, 87–89
automation in Latch mode, 485–489
automation in Touch mode, 480–485
bit depth, 66–67
changing settings, 96
checking balance during, 75
count-in setting, 96–97
creating track for, 68–71
deleting unused files, 105–107
file type selection, 104–105
guitar part example, 76–79
I/O buffer size, 100–104
keyboard shortcuts, 109
lesson review, 108
mapping screen controls to plug-in parameters, 240–245
mapping Smart Controls to patch parameters, 239
opening mapping plug-ins, 239–240
overview of, 205–206
process of, 212–215
processing MIDI notes, 252–257
quantizing MIDI regions, 216
recording into selected MIDI region, 218–219
recording MIDI takes, 223–226
remote control using Logic Remote app, 258–269
repeating and erasing notes on the fly, 226–231
step input recording mode, 247–251
using patches from Library, 206–211
Redo, keyboard shortcut for, 60
Refresh Regions option, Action pop-up menu, 166
Region inspector
adding batch fades, 381–383
defined, 527
setting up digital recording, 64–65
single track recordings, 68, 79–82
tuning instruments, 74–75
Recording MIDI
assigning MIDI controller knobs to screen controls, 245–247
choosing default quantization settings, 217–218
correcting timing, 215
creating layered sound patch, 231–236
creating split keyboard patch, 236–238
joining recordings into MIDI region, 220–223
keyboard shortcuts, 271
lesson review, 270
mapping screen controls to plug-in parameters, 240–245
mapping Smart Controls to patch parameters, 239
opening mapping plug-ins, 239–240
overview of, 205–206
process of, 212–215
processing MIDI notes, 252–257
quantizing MIDI regions, 216
recording into selected MIDI region, 218–219
recording MIDI takes, 223–226
remote control using Logic Remote app, 258–269
repeating and erasing notes on the fly, 226–231
step input recording mode, 247–251
using patches from Library, 206–211
Redo, keyboard shortcut for, 60
Refresh Regions option, Action pop-up menu, 166
Region inspector
adding batch fades, 381–383
defined, 527
setting up digital recording, 64–65
single track recordings, 68, 79–82
tuning instruments, 74–75
Recording MIDI
assigning MIDI controller knobs to screen controls, 245–247
choosing default quantization settings, 217–218
correcting timing, 215
creating layered sound patch, 231–236
creating split keyboard patch, 236–238
joining recordings into MIDI region, 220–223
keyboard shortcuts, 271
lesson review, 270
mapping screen controls to plug-in parameters, 240–245
mapping Smart Controls to patch parameters, 239
opening mapping plug-ins, 239–240
overview of, 205–206
process of, 212–215
processing MIDI notes, 252–257
quantizing MIDI regions, 216
recording into selected MIDI region, 218–219
recording MIDI takes, 223–226
remote control using Logic Remote app, 258–269
repeating and erasing notes on the fly, 226–231
step input recording mode, 247–251
using patches from Library, 206–211
Redo, keyboard shortcut for, 60
Refresh Regions option, Action pop-up menu, 166
Region inspector
adding batch fades, 381–383
defined, 527


<table>
<thead>
<tr>
<th>Region</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>Regions related to audio files.</td>
</tr>
<tr>
<td>MIDI</td>
<td>Regions related to MIDI signals.</td>
</tr>
<tr>
<td>Drummer</td>
<td>Regions related to drum tracks.</td>
</tr>
</tbody>
</table>

**offline automation of pan region, 472–476**

**previewing/naming, 112–116**

**Refresh Regions option, 166**

**rendering multiple, 384–387**

**Select All (A), 54**

**selecting, 23–26, 37**

**zooming workspace out to show all, 33**

**Remote control, using Logic Remote app, 258–269**

**Repeat command**

- **adjusting note length and, 279–281**
- **cloning audio regions, 379–382**
- **Replace mode, 527**
- **Reset Pitch Curve, 365**
- **Resize pointer**
  - **adjusting Mixer size, 46–47**
  - **converting mouse pointer to, 31–32**
- **Resize tool**
  - **resizing notes, 277**
  - **snapping with, 117**

**Resolution (bit depth), 496**

**Resonance (width), adjusting, 442**

**Retro Synth option, 252–253, 257**

**Return key**

- **navigating project, 27**
- **returning to beginning of project, 22, 59**

**Reverb**

- **adding using aux sends, 448–454**
- **customizing amp models, 426–427**
- **customizing drum sounds, 199, 201–202**
- **from MIDI piano instrument, 211**
- **mute automation of Snare track, 477–480**

**Reverb plug-in**

- **inserting on aux, 450**
- **overview of, 448**

**Rhythm. see also Tempo**

- **building up rhythm section of a project, 23–28**
- **making tracks play in same groove, 340–342**

**sample in building rhythm parts, 373**

**Right-click tool, assigning mouse tools, 116**

**Rim clicks, adjusting drummer settings, 164**

**Ringshifter plug-in**

- **opening mapping plug-ins, 240**
- **remapping control for, 244**

**Rising Synth, 324–325**

**Rock option, drum genres, 156, 160**

**Roundtrip latency**

- **defined, 524**
- **effects plug-ins causing, 104**
- **I/O buffer size and, 101**
- **reducing, 71**

**Ruler timeline**

- **defined, 528**
- **grid subdivision in, 27**
- **positioning playhead, 18**
- **Tracks area and, 9, 15**
- **turning Cycle mode on/off, 19, 22**
- **zooming out to show more bars, 34**

**S**

**Sample accurate, 528**

**Sample rate**

- **defined, 528**
- **digital recording and, 65**
- **Info column for audio files, 106**
- **setting, 65–66**
- **sound quality and, 496**

**Samples**

- **in building rhythm parts, 373**
- **use in modern music, 319**

**Save**

- **alternative arrangements, 387–389**
- **keyboard shortcuts for, 60**
- **project for first time, 7–8**

**Scale**

- **key values and, 326–327**
- **quantizing note scales, 296–299**

**Scale Quantize pop-up menu, 297**

**Score Editor**

- **defined, 528**
Event List compared with, 294

Screen controls
assigning MIDI controller knobs to, 245–247
mapping to plug-in parameters, 240–245

Screensets
defined, 528
screenset, 420–422
for switching between Tracks area and Mixer, 417–420

Scrubbing
defined, 528
regions using Solo tool, 113–114

Sections
adding, 389–394
cutting, 394–397
editing, 405–407
keyboard shortcuts, 409
markers for identifying, 370
saving alternative arrangements, 387–389

Select All, 54, 316

Selections. see also Marquee tool
adjusting note length and, 280
Event List, 295
key commands, 281–282
keyboard shortcuts, 60, 316
of notes in MIDI region, 286
regions, 37, 151
of section of automation curve, 471–472
Select All (A), 54, 316
zooming in to make, 120–121

Send levels
adjusting reverb, 211
defined, 528

Shakers
creating electro-house track, 196
customizing drum sounds, 198
making tracks play in same groove, 341–342

Show Step Input Keyboard, 249

Show/Hide Automation button, Tracks area, 469, 494

Signatures
deselecting signature tracks, 170, 332
time and key signatures in Signature List, 326–327
transposing Apple Loops and, 325

Silence
dividing regions by removing, 401–404
inserting at locators, 389
removing from arrangement, 397–400

Single track recordings
adjusting recording levels, 72–74
checking balance during, 75
creating audio track for, 68–71
guitar part example, 76–79
monitoring effects during, 71–72
overview of, 68
recording additional takes, 79–81
recording takes in Cycle mode, 81–82
tuning instruments, 74–75

Skip cycle area, 394

Slicing, Flex Time mode, 348
Slow-down effects, tempo, 337–339

Snap Automation, Snap menu options, 478

Snap menu
Alignment Guides, 144, 406
Bar option, 117
options, 478–479
Quick Swipe Comping, 124
Smart option, 119
Snap Regions to Absolute Value, 117
Snap to Grid, 145, 393, 395

Snap to Grid, 145, 393, 395

Snap
aligning audio regions, 144
keyboard shortcuts, 151, 409

Snares. see also Drums
adjusting drummer settings, 164
bridging choruses and verses, 178
creating electro-house track, 195–196
customizing drum kit, 185–187, 189
customizing drum sounds, 200–202
Kick & Snare patterns, 164, 180
MIDI controller option for, 221
mute automation, 477–480
playing drummer region, 157–158
repeating and erasing notes on the fly, 226
swapping instruments in drum kit, 182

Society of Motion Picture and Television Engineers (SMPTE), 528

Software instrument track
creating, 208–209, 220, 274
creating split keyboard patch, 236–238
keyboard shortcuts, 271
selecting, 223
sound layering and, 232
treated external device as software instrument, 506–508
Software instruments, 528
Software Monitoring, 71
Solo
adjusting levels and pan, 430–432
cloning audio regions, 379
defined, 528–529
dividing regions by removing silence, 401
eading and arranging regions, 405–406
keyboard shortcuts, 409
moving/deleting marquee selection, 398
opening solo tracks, 409
previewing instruments, 370–373
previewing regions, 112–114
previewing songs, 370–371
Solo Kill/Recall button, 528
soloed region indicated by yellow frame, 161
unsoloing a track, 127
Songs
editing arrangements. see Editing arrangements
mixing. see Mixing
previewing, 370–373
Sound effects
panning effect, 474–476
white noise, 136
Sound layering, creating layered sound patch, 231–236
Sound source, connecting to Mac before recording audio, 64
Space Designer plug-in, Audio FX, 53, 450–451
Spacebar
navigating projects, 27
playing drummer region, 157
playing/stopping projects, 59
starting/stopping playback, 20, 23, 75
Speed. see Velocity
Speed fades, turntable and tape effects, 338–339
Spot Erase feature
defined, 529
drum machines, 226, 228–229
Standard MIDI file (SMF) format
defined, 529
importing MIDI files, 292–294
Steinway Grand Piano patch, 294
Step-input
defined, 529
mixing down to single stereo file, 54–57
Step Input keyboard, 271
Step input recording mode, 247–251
Stereo
adjusting stereo field, 37–38
adjusting volume levels and stereo positions, 46–50
spacing instruments in stereo field, 437
Stinger Bass option
adjusting note length and, 280–281
choosing from Library, 274–275
Strip Silence
dividing regions by removing silence, 401–404
keyboard shortcuts for moving/cutting Strip Silence window, 409
Style, virtual drum track, 159–163
Submixing, with summing stacks, 432–435
Summing stacks
creating, 233
folder stack compared with, 415–416
submixing with, 432–435
Sustain Inserted Notes button, Step Input keyboard, 250
Swing knob, adjusting drummer settings, 166
Synchronized oscillators (SYNC), 253
Synthesizers. see also Keyboards, MIDI
adding external devices, 504–506
adding Lead Synths, 35–38
adding synth loop, 324–325
adjusting instrument sounds, 48–50
Arpeggiator option, 253–257
automating modulation data in MIDI Draw inspector, 311–314
automating pitch bend data, 304–306
copying MIDI control data in MIDI Draw inspector, 307–311
creating crescendo using note velocity, 299–302
creating external track for, 508–510
creating layered sound patch, 231–236
defined, 529
Dirty Filth option, 239
displaying MIDI events in Lead Synth region, 295–296
External Instrument plug-in and, 506–508
Fuzz options, 294
importing MIDI files, 292–294
quantizing pitch, scale, and timing, 296–299
Retro Synth option, 252–253
synthesizer engines, 253
turntable effect, 337–339
TABLE (Wavetable synthesis), 253
Take Folder pop-up menu
Flatten option, 126
multiple comps in, 124
previewing takes, 121
Takes
comping, 123–127
MIDI, 223–226
previewing, 120–123
recording additional, 79–81
recording in Cycle mode, 81–82
Tape Delay plug-in, adding delay to vocals, 445–448
Tape recorders
  slow-down effects, 337–339
  varispeed techniques, 342–346
Templates, saving file as, 514
Tempo. see also Editing pitch and time
  adding Apple Loops to drum track, 323–326
  adding slow-down effects, 337–339
  Adjust Tempo using Beat Detection dialog, 367
  changing, 14–15
  creating electro-house track, 194
  creating hip hop beats, 190–191
  creating tempo changes and curves, 334–337
  creating/naming tempo sets, 332–334
  defined, 529
  drums providing foundation of, 155
  making tracks play in same groove, 340–342
  sample rate impacting, 65–66
  setting drum tempo from control bar, 163
  setting project tempo, 320–322
  sorting search results by, 21
  varispeed options, 342–346
Tempo pop-up menu, 333
Tempo Sets, 333–334
Tempo tracks
  creating tempo changes and curves, 334–337
  defined, 529
Text tool
  defined, 529
  renaming audio regions, 114–116, 134
Thresholds
  Compressor plug-in, 456–457
  raising noise threshold when stripping silence, 403
Timbre
  pitch correction and, 365
  velocity and, 284
Time handles
  creating original note patterns, 292
  defined, 529
  time-stretching notes, 287–290
Time Handles option, Piano Roll, 288–289
Time Quantize pop-up menu, Piano Roll, 298
Time signatures. see also Signatures
  4/4 time, 22, 27
  control bar and, 9
  defined, 529
  in Signature List, 326–327
Time-stretching
  defined, 529
  moving waveform sections without, 351–353
  setting Flex Mode to Flex Time-Slicing and, 334
  single note, 354–356
  waveform between transient markers, 346–351
Timing. see also Tempo
  of audio regions, 346
  correcting audio timing issues, 147–149
  correcting MIDI timing, 215
  editing. see Editing pitch and time
  metronome for experimenting with, 178
  quantizing note timing, 296–299
Toggles Note Repeat, 271
Toggles Spot Erase, 271
Toms
  adding sections, 391
  bridging choruses and verses, 178
  changing to/from hi-hat, 173
  customizing drum kit, 188
Tonality slider, metronome, 99–100
Tool menus
  defined, 529
  Fade tool, 128
  keyboard shortcut, 115, 151
  selecting tools from, 116
  tracks area, 38
Toolbars
  defined, 529
  keyboard shortcut for, 59
  opening/closing, 9–10
Touch mode, automating recording, 480–485
Track automation
  defined, 530
  EQ parameters and, 371, 391–392
  muting Snare track, 474–480
  offline automation of vocal track volume, 468–472
  Show/Hide Automation button, 494
Track header
  defined, 530
  volume slider in, 471
Track inspector
  choosing a program remotely, 511
  defined, 530
  opening, 237–238
  setting Flex Mode to Flex Time-Slicing, 334
Track Stacks
  creating, 231, 233–234
  defined, 530
  keyboard shortcuts, 271
  renaming, 235–236
  for streamlining workspace, 414–417
  submixing with summing stacks, 432–435
Tracks
  adding Apple Loops to drum track, 323–326
  automation keyboard shortcuts, 499
  creating audio track, 68–71, 320
  creating electro-house track, 194–196
  creating external track for synthesizer, 508–510
  creating new project, 5
  creating tempo changes and curves, 334–337
  creating virtual drum track. see Virtual drum track
  defined, 529
  keyboard shortcut for, 59
  opening/closing, 9–10
global. see Global tracks keyboard shortcuts, 109, 409, 517–518
making tracks play in same groove, 340–342
marker use in arrangement track, 169–173
maximizing height and visibility, 276
muting/unmuting, 234
naming, 78
naming before recording, 70
offline automation of vocal track volume, 468–472
organizing, 414
recording multiple tracks, 83–86
recording single tracks. see Single track recordings
tuning vocals on Verse track, 356–361
virtual instrument. see Virtual drum track
Tracks area
adjusting note length and, 280
automation shortcuts, 499
creating new track, 68–69
in default configuration of main window, 9
defined, 530
dragging region to, 141
Flex button, 347
giving key focus to, 17, 267
keyboard shortcuts, 271
maximizing track heights and visibility, 276
naming channel strips, 44–45
Output Track, 492
screensets for switching between Tracks area and Mixer, 417–420
Show/Hide Automation button, 469, 494
tool menus, 38–39
tuning vocals on Verse track, 356–361
Zoom Focused Track, 475
Transient markers
moving waveform sections without time-stretching, 351–353
time-stretching a single note, 354–356
time-stretching between, 346–351
tuning vocals on Verse track, 357
Transport buttons, navigating projects, 16–18
Transpose to different key, 255
notes, 281–283
Tremolo plug-in, for processing guitars, 435–438
Tuner button, control bar, 74–75
Tuning instruments, 74–75
vocal recordings, 356–361
Turntables, slow-down effects, 337–339
U
Ultrabeat instrument plug-in, 254
Undo
comp, 124
deletion, 79
drummer edits, 164
keyboard shortcut for, 60
recording, 91, 97
USB, configuring external MIDI devices, 502
User Patches, saving to Library, 234
Utilities, Audio MIDI Setup, 502
V
Varispeed techniques, 342–346
Velocity
changing playback pitch and speed, 342–346
checking note velocity, 277
creating crescendo effect, 299–302
defined, 284, 530
editing note velocity, 284–287
Note Repeat feature and, 230
viewing MIDI events on LCD display, 213
Velocity slider, Piano Roll inspector, 301
Velocity tool, accessing from Left-click menu, 284–285
Verses
bridging choruses and verses, 177
copying and combining regions, 172
creating arrangement marker for, 171–172
creating hip hop beats, 190
editing note pitch in Audio Track Editor, 362–366
tuning vocals on Verse track, 356–361
Vibrato
automating modulation data in MIDI Draw inspector, 309, 314
editing note pitch and, 356–359, 362–364
Video sample rates, 66
View pop-up menu, resizing plugins, 240
Vintage Opto mode, Compressor plug-in, 457
Virtual drum track
adjusting levels using Smart Controls, 182–184
arranging, 169
choosing drummer and style, 159–163
creating drummer track, 156–159
creating electro-house track, 194–196
creating hip hop beats, 189–193
customizing drum kit, 181–182
Drum Kit Designer for customization of drum kit, 184–189
Drum Machine Designer for customization of drum sounds, 196–202
editing bridge section, 177–179
editing chorus and outro sections, 179–181
editing drummer performance, 163–169
editing intro section, 173–177
keyboard shortcuts, 203
lesson review, 202–203
marker use in arrangement track, 169–173
overview of, 155
Virtual instruments, 530. see also Virtual drum track
Vocals
adding delay, 445–448
adding sections, 389, 392–393
adjusting guitar levels and pan, 431–432
attenuating or boosting frequencies with EQ plug-in, 439–445
automation in Latch mode, 485–489
automation in Touch mode, 481–485
autopunch example of vocal recording, 93–95
color code for, 370
compressor used with, 454–458
creating track volume automation, 468–472
cutting sections, 394–397
dividing regions by removing silence, 401–404
editing and arranging regions, 405–407
live automation of plug-in bypass, 489–491
muting/deleting marquee selections, 397–400
reverber added using aux sends, 448–454
tuning vocal recordings, 356–361
Volume
adjusting levels and stereo positions, 46–50
fade effects, 338–339
faders on external MIDI channel strip, 510
lowering, 28
offline automation of vocal track volume, 468–472
velocity and, 284
Volume fader
in inspector, 49, 471–472
MIDI effects, 207
Volume slider
metronome settings and, 99
in track header, 471
tuning instruments, 75
W
Waveform Zoom button, 138
Waveforms
audio editing and, 111
of comp takes, 124–126
defined, 530
displaying in Audio Track Editor, 137–138
Flex tool for correcting timing issues, 148–149
making tracks play in same groove, 340–342
moving waveform sections without time-stretching, 351–353
muting/deleting marquee selections, 398–400
re-recording vocal recording, 93–95
selecting audio waveform icon, 70
time-stretching between transient markers, 346–351
Wavetable synthesis (TABLE), 253
WAVE/WAV file format
choosing audio file type, 104–105
defined, 530
sound quality and, 496
Wide Channel Strips button, Mixer, 421–422
WindowSize menu, 419
Windows
keyboard shortcuts, 316, 367, 515–516
opening, 419
organizing, 414
Workspace
aligning audio regions, 144–147
defined, 530
dragging region to, 141
editing drummer sections, 179–181
editing note pitch, 356–361
editing regions in Audio Track Editor, 116–119
importing loop into, 15
keyboard shortcuts, 33–34, 60, 517
making selections, 120–121
playhead position and, 347
zooming out to show all regions, 33
Workstations, automated, 467
Write automation mode, 489
X
XY pads
adjusting drum levels, 175–176
bridging choruses and verses, 178
creating electro-house track, 195–196
defining drummer sections, 180
spot erase and, 229
using yellow puck on XY pad for adjusting drum presets, 164–165, 168
Z
Zoom Focused Track, Tracks area, 475
Zooming
automation shortcuts, 499
editing project sections, 28–35
keyboard shortcuts, 33–34, 60, 517
making selections, 120–121
playhead position and, 347
zoom out to view two regions, 159
Zoom tool, 530