INDEX

Numbers
.
3gp files, 203
3-to-1 rule, for microphone placement, 45
5.1 surround, creating, 126–128
16/44.1, 27, 98
16-bit depth, exporting recording to, 129
24/96, 27
24/192, for DVD-Audio, 121
24-bit depth, 325
32-bit float, 14, 28, 57, 123
64 Studio, 227, 260

A
AAC (Advanced Audio Coding) files, 145, 146, 152, 192, 203–204, 293
ABBA, “Dancing Queen,” 201
AC3 files, channel mapping for, 192
active processes, top command for viewing, 287–288
ADC/DAC (analog-to-digital/digital-to-analog converter), 26, 32, 68, 321, 323
Adobe Flash Player music player, 263
Advanced Audio Coding (AAC) files, 145, 146, 152, 192, 203–204, 293
Advanced Linux Sound Architecture (ALSA). See ALSA (Advanced Linux Sound Architec-
ture)
Advanced Systems Format (ASF) container, 204
AEA R84 ribbon mic, 41
AIFF (Audio Interchange File Format) files, 120, 192
alcohol, risk as cleaner for records, 55
Alerter, 297
aligning tracks, 175–180
all-pass filter, 230

ALSA (Advanced Linux Sound Architecture), 263, 264–268, 289
applications, 274–275
format for naming devices, 270
alsamixer (Linux), 4, 264
master vs. PCM, 267
multiple sound cards and, 267
recording and playback settings, 266–267
volume level adjustments, 268
alsa-utils, for hardware testing, 269–275
Amarok, 6, 117
metadata display in, 115
Amazon.com, 161
ambience, 324
ambient sounds, 252, 324
ambisonic microphone, 43
AMD, vs. Intel, 47
amplifiers, 70
tube vs. solid-state, 44, 344–245
Amplify effect, 22, 61, 89, 91, 94, 107, 112, 114, 138, 139, 190, 221, 235, 241
amplitude, 19, 323
adjusting, 190
fine-tuning levels, 21
maximum, 6
amps, 34
amradio curve, 248–249
analog hole, 117, 324
analog media, converting to digital, 55
analog Real time synthesizer (aRts), 263
analog superiority, myths about, 335
analog-to-digital/digital-to-analog conver-
ter (ADC/DAC), 26, 32, 68, 321, 323
Analyze menu, 252–255
angle handle, for point label, 173
antistatic brush, 54
antivirus software, 51
aplay command, 269–271, 274–275
Apogee DA16X, 321
appending to existing track, 5
Apple, 120, 152
archiving studio masters, 125
Arch Linux, 259
Ardour, 166
arecord command, 273–274
aRts (KDE), 289
ART USB Phono Plus V2, 69
ASF (Advanced Systems Format) container, 204
ASIO (Audio Streaming Input/Output) driver, 294
Asunder, 130
asynchronous mode, 39
attack, 62, 92, 95, 235, 244, 245–247
Audacity
  customizing, 303–316
    default options, 303
  high-quality recordings from, 122–130
    quick-start, 2–7
  support for multiple tracks, 38
  system requirements, 48
  window on Windows PC, 2
  audience noise, recording, 80
audio CDs, 102–103
audio components, 32–36
  configuration in Windows, 301–302
  example studio, 33–35
  special effects, 46
audio files
  adding, 12
  vs. data project, 99
  formats, 25–26
    lossy formats, 145–146
  resampling, 114
  secret of recording, 50–52
  storage requirements, 8
Audio Grabber, 117
Audio Interchange File Format (AIFF) files, 120, 192
audio sample, 27
Audio Streaming Input/Output (ASIO) driver, 294
audio tape, 72
Audio-Technica headphones, 46
Audio-Technica stereo condenser mic, 40, 41
Audio-Technica AT-PL120, 70–71
Audiograbber, 130
audiophiles, myth about, 336
AudioScience ASI564I sound card, 318
.au files, 7, 12–15
.aup files, 7, 12, 125
Auto Duck effect, 148–150, 222–223
Automatic Updates, 297, 300
autosave interval, 8
Average bitrate setting, for MP3, 143

B
Bach, Johann Sebastian, “Toccata and Fugue in D Minor,” 75
background music track
  adding, 148–150
  dynamic range compression, 240
  backups, 13, 47
  balanced cables, 44
  bandwidth, for self-hosting, 160
  Beats per Minute (BPM), 239
Behringer ADA8000, 321
Behringer dynamic mic, 37, 40
Behringer mixers, 33, 34–35, 37, 38, 85, 319
Behringer UCA222, 319
Bell, Alexander Graham, 326
B&H Photo Video, 317
bidirectional polar pattern, 42, 43
.bin files, 103, 110–111
bit depth, 14, 19, 26–27, 28–29, 84, 324–325
  default for recording, 28
  for DVD-Audio, 121
  and file size, 29
  for high-quality recording, 125–125
BitPim, 206
bitrate, 28–29, 143, 199
black-and-white broadcast frame rate, 186
blank label tracks, inserting, 176
blue noise, 213
Bluetooth, 205–206
Blumlein pair, 42
boom stands, 45
BPM (Beats per Minute), 239
Brasero, 103, 104, 108–110, 130
breaks, creating
  in songs, 96–97, 112–114
  in track, 179–180
brown noise, 211–212
bulk CD duplication, 158
business of recording artist, 155–156
  copyrights and legal issues, 162–163
  online music distribution, 158–159
  online presence development, 156–158
  self-hosting, 160–161
busses, for mixer, 82
cables
  for microphones, 44–45
  myths about, 335
Campcaster, 160
Cannon Electric, 36
canon plug, 36
Capel, Chris, 245
CAPS (C* Audio Plugin Suite), 180, 229
  C* Click Metronome plugin, 181
Captchas, 157
Cardbus, 32
cardioid polar pattern, 42
cassette recorders, 72
cassette tapes, 72
cathode ray tube (CRT) monitor, radiation and noise from, 51
C* Audio Plugin Suite (CAPS), 180, 229
  C* Click Metronome plugin, 181
CD Baby, 158–159
CDDA (Compact Disk Digital Audio)
  frame rate, 187
CDDA frames, 104, 107, 187
CD frames, timing for, 90
CD players, 76
  problems reading discs, 102
CD-quality audio, 27, 325
  vs. DVD-Audio, 120
  storage requirements, 47
CD-R, vs. CD-RW, 77, 99
CD-ready files, exporting single track to, 64
cdrecord, 77
CD ripper, 117, 130
CD-RW, vs. CD-R, 77, 99
CDRWin, 104, 108
CDs
  copying vinyl LPs to, 34, 53–77
    basic steps in process, 56–57
    fixing defects, 58–62
    recording, 58
    settings, 57
  custom-mix, 75
dynamic range for, 241
  mass duplication, 99, 158
  purchasing blank, 66
  ripping, 117–118
  technical advantages, 74
  vs. vinyl LPs or tape, 71–77
  writing songs, 99
CD settings, 90
CD text, 98
CD writers, 103–104
cell phones. See also ringtones
  transferring files to, 204–206
Change Pitch effect, 12, 224, 239
Change Speed effect, 12, 177, 240
Change Tempo effect, 12, 139, 177, 185, 217, 239
channel coupling, in Ogg Vorbis, 116
channels, 167, 325
  assigning tracks to, 188
  mapping, 25, 191–193
Chris’s dynamic compressor, 245–247
Cirago USB Bluetooth interface, 206
circle handle, 173
Cirinca, 129
classical music, compressing, 245
cleaning up recording for voicecast, 136–139
CleanSpeech mode, 309–310
Click Removal effect, 60
clicks, 44, 187
  removing, 9, 60–61, 236–237
  click track, 180
Click Track effect, 182, 215–216
clipboard, 10
ClipBook, 297
clipped segments, finding, 124
clipping, 5, 190–191, 325
  finding and repairing, 61
  fixing, 91–92
  viewing, 58
clips, 168, 178–179
CMS (content management system), 160
CMT (Computer Music Toolkit), 229
collapsing track, 19
combining tracks, and volume increase, 114
commercial CDs, longevity, 77
Commodore-Amiga, 120
Compact Disk Digital Audio (CDDA)
  frame rate, 187
Compact Flash card, 87
compilation CD, 101–118
  authoring in Audacity, 104–111
    one track per song project, 104–106
    single Audacity track and CD-mastering program, 108–110
    single Audacity track compilation project, 104, 106–108
    fixes and cleanups, 111–114
  compression. See dynamic range compression
  Compressor effect, 94, 243
  computer media players, 116–117
Computer Music Toolkit (CMT), 229
computers, 47
  connecting legacy devices to, 67–71
  connecting tape deck to, 71
  connecting turntable to, 69–71
  dedicated to recording, 51
  operating systems, 47–48
computer tape for audio, 72
condenser mics, 40–41
  cables for, 44–45
connecting legacy devices to computers, 67–71
connectors, 33, 36
  gold-plated, 335
  for legacy components, 67
constant bitrate, for MP3, 116, 143, 152
content management systems (CMS), 160
control nodes, 59
Control Panel (Windows), Sound module, 4
Control toolbar, 8
converting
  analog media to digital, 53
  MP3 files to Red Book standard, 103
Copy button (Edit toolbar), 8, 10
copying
  vintage 78s, 66–67
  vinyl LPs to CDs, 34, 53–77
  basic steps in process, 56–57
  fixing defects, 58–62
  preparation, 54–56
  recording, 58
  settings, 57
copy protection, 118, 324
copyrights, 162–163
Cowboy Junkies, Trinity Session, 43
CPU, 47
  for high-resolution recording, 122
  crash recovery mechanism, 8
Creative Commons license, 158, 163
credit card payments, processing
  online, 161
Credit Card Swiper Program, 158–159
crossed figure eight, 42
cross-fades, 113–114, 208, 325
CRT (cathode ray tube) monitor, radiation and noise from, 51
cue file, 103
cue sheets, 110–111
customer service, 161
custom-mix CDs, 75, 101–118
Cut button (Edit toolbar), 8, 10
Cut Preview, 305

D
damping, 180
  for reverberation, 219
DAO (disc-at-once) support, 103
data CDs, 102, 114
  vs. audio CDs, 99
DAW (digital audio workstation), 325
dBFS (decibels relative to full scale), 326
DC offset, 22, 63, 236
decay, 62, 92, 95, 230, 235, 244, 246
Decay value (Risset Drum effect), 217
decibels, 19, 326
decibel scale, in Track panel, 140
decibels relative to full scale (dBFS), 326
default bit depth, 28
default noise reduction level, 62
defects in recording, fixing, 58–62
delay, 230
DELETE key, 21, 58
deleting tracks, 19
depth, for phaser, 226
deselecting, all tracks with Ctrl-A, 16
device drivers, audio for Windows, 293–294
Devices dialog, 304–305
Device toolbar, 2, 12, 183
dial-up Internet users, 153
Digigram sound cards, 81, 318, 319
digital audio, quality of copies, 74
digital audio decibel scale, 6
digital audio myths, 335–336
digital audio workstation (DAW), 325
digital rights management (DRM), 119, 161, 326
digital-to-analog conversion, 26, 32, 68, 321, 323
directories dialog, 315
Direct Stream Digital (DSD), 131
disc-at-once (DAO) support, 103
discovery mode, for Bluetooth, 205
discrete playback channels, 326
discrete tracks, 165
Discwasher brushes, 54
discWelder for Windows, 120, 129
diskDVD Identifier, 77
disk ID, reading, 77
distortion, 5, 6
distributing recordings. See online music distribution
dithering, 129, 307
dll file extension, 230
domain name, registering, 156
Dotster, 156
downmixing, 326
multichannel recording, 89
multitrack recordings, 88–89
downsampling, 114, 326
Draw button (Tools toolbar), 8, 9, 237
DRM (digital rights management), 119, 161, 326
drop frame rate, 186
dropouts, from CPU overload, 124
drums, compression for, 93
drum synthesizer, Hydrogen, 278–280
drum track, 217
Drupal, 160
dry signal, 232
Dry signal level (Gverb plug-in), 219
DSD (Direct Stream Digital), 131
DTMF tones effect, 210
DTS files, channel mapping for, 192
dual-tone multifrequency (DTMF), 210
dust cover, for turntables, 76
DVD-Audio format, 120
authoring software, 129–130
channel mapping for, 192
overview, 121–122
DVD-AUDIO Solo Plus, 120, 129
DVD Audio Tools for Linux, 120, 129
DVD Media Inspector for Mac, 77
DVDFab, 118
DVDFab Platinum, 130
DVDInfo for Windows, 77
dvd::rip, 118, 130
dvd+rw-mediainfo for Linux, 77
DVDs
ripping, 118
super high-fidelity audio, 119–131
dynamic compression, 246
dynamic expansion, 246
dynamic mics, 41
cables for, 44–45
dynamic range, 27–28, 123
dynamic range compression, 54, 93–95, 240–247
Chris’s dynamic compressor, 245–247
customizing, 62–63
recommendations, 241–243
for ringtones, 200
settings, 243–244
dyne:bolic, 227, 260–261

E
EAC algorithm, 20
Early reflection level, for reverberation, 220
Echo effect, 213
Echo AudioFire 2, 320
Edirol FA-101, 166, 320
Edit menu
Cut, 174
Join, 175
Preferences. See Preferences dialog
Redo, 170
Silence, 92
Silence Audio, 21
Split, 175
Split Cut, 92, 178
Split Delete, 138, 178
Split New, 178
Trim, 21, 196
Undo, 139, 170
Edit toolbar, 8
Effect menu
Amplify, 22, 61, 89, 91, 94, 107, 112, 114, 138, 139, 190, 221, 235, 241
Auto Duck, 148–150, 222–223
Change Pitch, 12, 224, 239
Change Speed, 12, 177, 240
Change Tempo, 12, 139, 177, 185, 217, 239
Click Removal, 60
Compressor, 94, 243
Echo, 213
Equalization. See Equalization effect
Fade In/Out. See Fade In/Out effects
Leveller, 200, 201, 247
Noise Removal, 61, 62, 92, 234
Normalize, 6, 22, 63, 89, 97, 114, 141, 201, 235–236
Phaser, 224–225
Repair, 61, 139, 237
Repeat, 187
Repeat Last Effect, 218, 234
Reverberation, 218–221
Reverse, 226
Sliding Time Scale/Pitch Shift, 226
Truncate Silence, 238
WahWah, 227
effects. See Effect menu; Generate menu
Effects dialog, 316
electrical interference, and internal sound cards, 38
electric lines, interference from, 45
Electronic Arts, 120
EMU 1616M PCI, 37
eMusic, 159
Enhanced Windows Driver Model (EWDM) drivers, 294
Enlightened Sound Daemon (ESD), 263, 289
Envelope button (Tools toolbar), 8, 9, 21, 59, 92, 94, 96, 112–113, 140, 148
Equalization effect, 62, 70, 248–251
Draw curves view, 198
for ringtone, 196
Error Reporting Service, 298
ESD (Enlightened Sound Daemon), 263, 289
EWDM (Enhanced Windows Driver Model) drivers, 294
Exact Audio Copy, 117
expanding track, 19
Export dialog, 6–7, 14–15, 125, 142, 145, 152–155, 199, 203, 204
exporting recording
to 16-bit, 129
to CD-Ready files
  multiple tracks, 64–65
  single long track, 64
to MP3, quality settings, 142–144
to MP3 or Ogg, 141–146
to Ogg Vorbis, quality settings, 142
to playable audio file, 6
  podcasts, 146
to WAV file, 98
Export Multiple, 15, 64–65, 89, 98, 125, 168, 255
Export Labels, 172
Export Multiple, 15, 64–65, 89, 98, 125, 168, 255
Export Selection, 188
Import, 12, 15
  Audio, 105, 107, 148, 170–171, 196
Open, 12, 87
Open Metadata Editor, 24, 64, 97, 106
Save, 12
Save As, 12
Save Project, 83
Save Project As, 4, 13, 58, 87
files
  bit depth and size, 29
  sharing across projects, 13
file transfer, to mobile phones, 204–206
firewalls, and performance, 295
FireWire
  future of, 39
  vs. USB devices, 39–40
FireWire audio interface, 32, 38
FireWire recording interfaces, 170, 320
correcting with JACK, 280–282
Fit in Window for view, 21
Fit Project button (Edit toolbar), 8, 11
Fit Selection button (Edit toolbar), 8, 11
FLAC (Free Lossless Audio Codec), 26, 102, 115–116, 120, 154
  for archiving studio masters, 125
  channel mapping for, 192
importing, 170
flanger, 224
flexible cables, 45
floating decimal point, 28, 123
floppy tape drives, 77
Fluxbox, 287
Focusrite Saffire Pro 26, 45, 170, 320
ffado-mixer for, 281
Focusrite Saffire Pro 40, 38
formatting SD card, 205
frame rate for CD audio, 57, 104
frames, 185–187
Frampton, Peter, "Do You Feel Like We Do," 227
Fraunhofer-Gesellschaft, 203
Free Lossless Audio Codec (FLAC). See FLAC (Free Lossless Audio Codec)
Free Software Foundation, 261
Freesound Project, 93
Freeverb, 221
frequency, 327
Frequency smoothing, 62, 235
full-speed, 39
fundamental frequency, 231, 327
Gain slider, 19, 24, 188, 190
gapless burning, 103
Generate menu, 209–218
  Chirp, 211
  Click Track, 182, 215–216
  DTMF tones, 210
  Noise, 211–213
  Tone, 124, 209, 213–215
genre, choosing distributors by, 159
Get Noise Profile button, 62
gigahertz (GHz), 327
GNOME, 287
Gnome CD Master, 103, 104, 108
GoDaddy, 156
golden ear, myth of, 333–334
gold-plated connectors, 335
Google Checkout, 161
gooseneck stand, 45
graphical environment for Linux, 287
Graphic EQ view, 197, 250
graphics processing unit, 287
Grip, 117, 130
Grooveshark, 115
ground wires, for turntables, 69
Guinness World Records, for lowest note by human voice, 327
Gverb plug-in, 218–221
Half-omnidirectional polar pattern, 43
HandBrake, 118, 130
handles
  for dragging toolbars, 8
  for labels, 96
hard drives, CD-quality audio requirements, 47
hardware, 317–321
  basics, 1
    FireWire recording interfaces, 320
    sound cards, 318–319
    USB recording interfaces, 319–320
    harmonic frequencies, 74, 125, 231, 327
    headphones, 46–47
      for monitoring live recording, 87
      hearing ranges, 51
    hemispherical polar pattern, 43
    Hempton, Gordon, 51
    Hendrix, Jimi, Electric Ladyland, 75
    hertz, 327
    hh:mm:ss + CDDA frames, 104, 107
high-fidelity audio DVDs, 119–131
high frequencies, 125
high-pass filter, 62, 231
high-quality recordings
  from Audacity, 122–130
  bit depth for, 123–125
  sampling rate, 125
high-resolution recording, CPU for, 122
High-Z, 328
hosts, for plug-ins, 207
hotplug, 167, 328
human hearing, range for, 241
human psychoacoustics, 143, 330
Hydrogen drum synthesizer, 278–280
hyper-cardioid polar pattern, 42
IBM, 120
ICANN (Internet Corporation for Assigned Names and Numbers), 157
Icecast, 160
IceWM, 287
IFF (Interchange File Format), 120
impedance, 328
Import/Export dialog, 312–313
importing, recording into Audacity, 87
Independent Online Distribution Alliance (IODA), 159
Indexing Service, 298, 300
Infrared Monitor, 298
inkjet printable DVD blanks, 130
Inner fade, for Auto Duck, 150
Input bandwidth setting, for reverberation, 219
input channels, 167
Input Level Meter, 4, 5, 86
inserting silence, 59
integers, 28
Intel, vs. AMD, 47
intellectual property, 118, 328
Interchange File Format (IFF), 120
Interface dialog, 308–309
Internet Corporation for Assigned Names and Numbers (ICANN), 157
Internet distribution strategy, 156
Internet Information Services, 300
Internet radio, 75
interpolation, for seamless join, 139
IODA (Independent Online Distribution Alliance), 159
isynchronous mode, 39
iTunes, 159
  AAC format for, 203
  and DRM, 162
J

JACK, 263, 264
  connecting FireWire recording interface, 280–282
  creating persistent configurations, 282–283
  Hydrogen configuration to use, 279–280
  settings, 283–285
  using with Audacity, 276–285
jacks, 33, 67
joint stereo, 143, 144
Jones, Rickie Lee, “The Magazine,” 242

K

K3b (Linux), 103, 104, 117, 118, 130
K9copy, 118, 130
KAudioCreator, 117, 130
KDE, 287
Keyboard dialog, 316
kilohertz (kHz), 327
Kodak, CDs, 102

L

labels
  for CDs, 65, 99
  for DVDs, 130
  for editing multiple tracks, 174
  moving, 96
  for song break, 95–96
  for song tracks, 63
  for tracks, 172–174
LADSPA (Linux Audio Developer’s Simple Plugin API), 207, 227–230
ladspa-sdk package, 229
LAME MP3 encoder, 142, 145, 292
laptops
  microphone input, 135
  for portable recording, 48, 81
large diaphragm (LDM) condenser mics, 41
latency, 39, 306, 328
  fixing errors, 251–252
  and Linux, 262–263
  measuring and fixing, 183–185
legacy devices, connecting to computer, 67–71
legacy media, transferring, 130
legal issues, 162–163
Leveller effect, 200, 201, 247
LFE (low-frequency effects) channel, 122, 192
libdvdcss, 130
Libraries dialog, 314
licenses, Creative Commons, 158
LightScribe disk type, 65, 99
LightScribe DVD burner, 130
limiter, 201
linear phase, 213
linear pulse-code modulation (LPCM), 121
linear scale, 19
Line In port, on sound card, 68
line level, 46
line matching transformer, 328
Link Tracks button (Edit toolbar), 8, 10, 88, 96, 176–177
Linn Records, 120
Linux, 48, 257–290
  audio, 263–264
  history, 289–290
  CD writers, 103
  and latency, 262–263
  media players, 6, 116
  plug-ins, 227–230
  real-time kernels
    building, 261–262
    distributions with, 258–261
  sound device, 3
  specialized multimedia distributions, 260–261
  system tweaks, 287–288
  for USB 2.0 audio devices, 40
  for web hosting, 160
Linux Audio Developer’s Simple Plugin API (LADSPA), 207, 227–230
live tracks for CD, 79–100
  Audacity settings for recording, 83–87
  editing recordings, 87–97
  making good recordings, 80–83
  monitoring recording, 87
  multitrack recording of live performance, 82–83
logarithmic decibel scale, 20
loudness, 326
Love, Courtney, 155, 163
low-frequency effects (LFE) channel, 122, 192
low-frequency oscillation, 224–225
low noise floor, 28, 86
low-pass filter, 62, 231–232
Low-Z, 328
LPCM (linear pulse-code modulation), 121
LXDE, 287
M

.m4a files, 152, 203, 293. See also AAC (Advanced Audio Coding) files
.m4b files, 203. See also AAC (Advanced Audio Coding) files
.m4p files, 152, 203, 293. See also AAC (Advanced Audio Coding) files
.m4r files, 203. See also AAC (Advanced Audio Coding) files
.m4y files, 203. See also AAC (Advanced Audio Coding) files

Mac support, for USB 2.0 audio devices, 40
Magnatune, 115, 120, 158
mailing lists, 157–158
make oldconfig command, 262
Make Stereo Track command, 19, 59
MAM-A, 99
Mambo, 160
mapping tracks to surround channels, multichannel mixer for, 126–127
Marantz PMD digital recorders, 49
mass CD duplication, 99
masters, saving, 125
M-Audio Delta sound cards, 38, 166, 318
M-Audio Fast Track Ultra 8R, 40, 319
M-Audio Micro Track II, 50
M-Audio MobilePre USB, 34, 35–36, 45, 68, 81, 85, 170, 319
and JACK, 277
M-Audio NRV10, 38, 166
maximum amplitude, 6
Maximum Pause, for Auto Duck, 150
Max spike width value, 60
megahertz (MHz), 327
Menees, Roger, 327
Meridian Lossless Packing (MLP) lossless compression, 122, 129
Messenger, 298
metadata, 64, 97–98, 106, 115, 328
Metadata Editor, 24
Meter toolbar, 11, 86
metronome track, 180–182
MHz (megahertz), 327
microSD card reader, 206
microSD cards, 206
for phones, 204–205
Microsoft, 120
Microsoft.NET Framework, 300
Microsoft Visual Studio, 294
MIDI note table, for click track, 216
mini-jacks, 68
miniSD cards, for phones, 204–205
Minnetonka Audio Software discWelder, 120, 129
mirroring, with RAID 10, 47
Mitsui, CDs, 102
mixdown, to stereo, 188–191
Mixer Board, 23–24, 88, 188
for adjustments to relative volumes of stereo channel, 147
customizing, 189–190
Mixer toolbar, 4, 11, 136
mixing console, 82–83
MLP (Meridian Lossless Packing) lossless compression, 122, 129
MME (Multi-Media Extensions), 2, 293
mobile phones. See cell phones
monitoring live recording, 87
mono tracks, 166, 171
mono TRS plugs, 36
Mouse dialog, 316
moving
labels, 96
tracks, 19, 175–180
MP3 files, 6, 26, 102, 115, 116
converting to Red Book CD, 103
enabling Windows support, 292
exporting to, 141–146
patent conflicts, 153
variable bitrate, 152
.m4y files, 203. See also AAC (Advanced Audio Coding) files
Mplayer, 6, 116
multichannel mixer
digital, 83
interface, 126–127
multichannel recording, 37–38, 89, 167
multichannel surround sound, 141, 191–193
multicore CPUs, 47, 122–123
Multi-Media Extensions (MME), 2, 293
Multi-Tool button (Tools toolbar), 8, 9
multitrack recordings, 165–193. See also recordings
editing and downmixing, 88–89
of live performance, 82–83
making, 168–171
saving, 125
music CD, creating, 65
music track, adding as background to podcast, 148–150
Musix, 261
Mute button (Mixer Board), 19, 148, 171
MySpace, 157

N
National Television System Committee (NTSC) frames, 186–187
ncurses interface, 264
Nero, 103, 117
netbook, for portable recording, 48
Network DDE, 297
Neumann KU-81i Dummy Head, 51
node control points, 96–97, 112
noise, 44
  blocking unwanted, 50
  CDs vs vinyl LPs, 74
  clicking, 104
  deliberately adding, 129
  and internal sound cards, 38
  recording audience, 80
  recording before and after music, 58
noise floor, 324
  setting for compression, 94, 243
noise profile, 61–62, 92
Noise Removal effect, 61, 62, 92
Ogg Vorbis files, 6, 26, 102, 115, 116, 141–146, 153–154
Olympus LS10, 49
omnidirectional polar pattern, 42, 43
online credit card payments, processing, 161
online music distribution, 158–159
  file formats and audio quality, 151–155
Open Sound System (OSS), 263, 289
open source streaming servers, 160
operating systems, 47–48
Orange Book standard, 102, 115
  configuring Audacity for, 114–116
OSS (Open Sound System), 263, 289
OSSwin project, 142
Outer Fade, for Auto Duck, 150
output channels, 168
overdubbing, 168, 182–185, 329
  latency and, 183, 251

P
padding track with silence, 179–180
paging file
  for Windows Vista/7, 299
  for Windows XP, 296
pain, threshold of, 331
PAL (Phase Alternating Line), 187
Pan slider, 19, 24, 188, 190
Paste button (Edit toolbar), 8, 10
Patchbay, 282–283
patents, on file formats, 26, 141, 293
Pause button (Control toolbar), 5, 8, 58
pausing recording, 87
PayPal account, 161
PCI-E sound card, 32, 318
PCI Express, 38
PCI sound card, 32, 37, 38, 318
PCMCIA sound card, 81, 319
peak level, 6, 329
peak ratings, 20
peaks, reducing too-tall, 139–140
perception of sound, 330
performance in Windows, 294–301
phantom power, 40, 49, 82, 167
phase, 213, 329
Phase Alternating Line (PAL), 187
Phaser effect, 224–225
phase shifting, 214, 329
Phillips, CDs, 102
phonograph records. See vinyl LPs
Phonon, 263
  and JACK, 276
  turning off, 285–286
phono plugs, 68
Pink Floyd, “Time,” 75
pink noise, 211, 212
Pioneer stereo amplifiers, 34, 46
piracy, 155
pitch, 12, 327, 329–330
  and MIDI Note Number values, 181
Pitch (EAC) view, 19–20
Planet CCRMA packages, 227, 228, 258
Plantronics USB headset, 46, 135
playback
  selecting one track for, 19
  speed of, 12
  starting, 171
  starting point, 9
  tips and tricks, 171–172
  volume, 4. See also volume level
Playback dialog, 305
Play button (Control toolbar), 5, 8
play region, 171
Plone, 160
Pluck plug-in, 216
plugins, 207–292. See also Generate menu
plugs, 33, 67
pocket digital recorders, 49
podcasts, 133–150
  background music track for, 148–150
  dynamic range compression, 240
  exporting, 146
  steps for creating, 134
  twoperson, 146–148
  voicecasts, 134–141
  Audacity settings, 135–136
  cleaning up recording, 136–139
  replacing segment, 137
point labels, 173
polar patterns, for microphones, 42–43
pops, fixing, 60–61
portable digital recorder, 80–81
portable recording, 48–50
preamp, 70
preemptive multitasking, and latency, 258
prefab storefront, 161
Preferences dialog, 8, 83, 303
Devices, 2, 3, 67, 83–84, 105, 107, 114,
  126, 135, 167, 304–305
Directories, 315
Effects, 316
Import/Export, 24, 25, 64, 67, 89, 98,
  106, 126, 188, 191, 196, 312–313
Interface, 140, 308–309
Keyboard, 316
Libraries, 293, 314
Mouse, 316
Playback, 61, 171, 198, 305
Projects, 13, 315–314
Quality, 14, 57, 121, 129, 135, 307
Recording, 85, 105, 107, 114, 136, 183,
  184, 251, 262, 306
Spectrograms, 315
Tracks, 311–312
Warnings, 316
Preset bitrate setting, for MP3, 143
PreSonus AudioBox 2x2, 320
PreSonus StudioLive 16-Channel FireWire
  Digital Mixer, 83
preview, default length, 61
Preview button, changing duration, 198
printing CD labels, 99
Pristine Classical, 115
processes, top command for viewing active,
  287–288
profile of noise, 61–62, 92, 93
project management, 12–15
Pro-Ject Phono Box II USB Phono
  Preamp, 320
projects
  .aup files for, 7
  sharing files across, 13
Projects dialog, 313–314
proprietary file formats, for ringtone,
  203–204
proximity effect, 43
psychoacoustics, 143, 330
PulseAudio, 263, 289–290
vs. JACK, 264
turning off, 285–286
pumping and breathing, compression
  and, 244
pure:dyne, 261
purple noise, 213
Q
QIC (quarter-inch cartridge) tapes, 72
Qjackctl, 277, 283–285
Quality dialog, 307
quality of recordings, factors affecting, 122
quality settings
  consistency for recording and editing, 86
  default export for WAVs, 14
  and file formats, 115–116
quarter-inch cartridge (QIC) tapes, 72
querying sound cards, 275–276
R
Rademacher function, 214
RAID, 47
RAM, 47
Ratio setting, for compression, 94–95, 243
RCA audio connectors, 68
Real-time Conversion settings, 307
real-time preemption, 258
receivers, 70
Record button (Control toolbar), 5, 8, 58
recording, 5. See also multitrack recordings
default quality setting, 14
new track, during playback, 183
portable, 48–50
secrets for quality, 50–52
session display, 5
starting, stopping and pausing, 87
testing, 273–274
volume level, 4, 86
recording artist, business, 155–156
Recording dialog, 306
recording engineers, 336
Recording Industry Association of America (RIAA), 102
recording interfaces
FireWire, 320
USB, 319–320
recording media, longevity of, 76–77
record production, history, 55
rectangular dither, 129, 307
Red Book CD Audio standard, 57, 65, 98, 99, 102
converting MP3 files to, 103
red noise, 212
Redo button (Edit toolbar), 8, 10
redo operation, 170
reed tapes, 72
reflectivity, 102
region labels, 96, 173, 174
Register.com, 156
registering domain name, 156
renting snail mailbox, 157
Repair effect, 61, 139, 237
Repeat Last Effect command, 218, 234
replacing segment, in podcast, 137
resampling, 114, 326
reverberation, 232
Reverberation effect, 218–221
Reverse effect, 226
Rhapsody, 162
Rhythmbox, 6, 116
RIAA (Recording Industry Association of America), 102
RIAA equalization curve, 69, 70
ribbon mics, 41–42
Ridata, 99
Ring Tone Text Transfer Language (RTTTL), 201–202
ringtones, 195–206
customizing, 196–200
dynamic range compression, 200
file formats, 199, 201–202
proprietary, 203–204
transferring to phones, 204–206
ripping, 130
CDs, 117–118
DVDs, 118
Risset, Jean Claude, 217, 330
Risset Drum effect, 216–218
RME Fireface 800, 320
RME Hammerfall sound card, 166, 318, 319
RMS (root-mean-square), 20, 330
Roomsize setting, for reverberation, 219
root-mean-square (RMS), 20, 330
Routing and Remote Access, 297
Roxio, 103, 104, 108
rt patch, 261–262
RTTTL (Ring Tone Text Transfer Language), 201–202
runlevel command, 286
S
SACD (Super Audio CD), 131
sample format, 14, 19, 84, 325
sampling rate, 26–27, 86, 325, 330
default, 307
for high-quality recordings, 125
SAO (session-at-once), 103
satellite radio, 75
saving
masters, 125
projects, 4, 13–15
tracks as separate WAV files, 15
sawtooth waveform, 215, 231
SCMS (Serial Copy Management System), 66, 102
scratches
fixing, 58
removing, 236–237
screensavers, 51
SD card, 204–205
SDL (Simple DirectMedia Layer), 289
SDM (small diaphragm) condenser mics, 41
seamless join, interpolation for, 139
Seek Time, 305
segments of tracks, selecting, 15–19
selecting
all tracks with CTRL-A, 16
to end of track, 17
multiple clips, 178–179
nonadjacent tracks, 16
track segments across multiple tracks, 174
Selection button (Tools toolbar), 8, 9, 15
Selection toolbar, 12, 17, 90, 104, 197
Select threshold setting, 60
self-hosting, 160–161
selling online, 161
Serial Copy Management System (SCMS), 66, 102
services, disabling
  in Windows Vista/7, 300
  in Windows XP, 297
session-at-once (SAO), 103
shaped dither, 129, 307
sharing files, across projects, 13
short-play records, 66
shotgun polar pattern, 42, 43
Shoutcast, 160
Shure M78S Phono Cartridge, 66, 71
Shure X2U XLR-to-USB Signal Adapter, 320
signal processing, 208
signal-to-noise ratio, 6
signed WAV settings, 155
silence
  creating, 96
  inserting, 59, 112
  truncating, 238
Silence button (Edit toolbar), 8, 10, 21, 58
Silence Finder, 255
Simple DirectMedia Layer (SDL), 289
sine wave, 209, 213, 214, 225, 231
  creating, 124
  for testing effects, 218
skips, fixing, 60–61
Skip to End button (Control toolbar), 8, 18
Skip to Start button (Control toolbar), 8, 18
Sliding Time Scale/Pitch Shift effect, 226
Slinky, 225, 226
small diaphragm (SDM) condenser mics, 41
Smart Card, 298
smoking, 52
snail mailbox, renting, 157
Snap Guide, 138, 175, 178
sockets, 33
software
  DVD-Audio authoring, 129–130
  media players, 116–117
  solid-state amplifier, vs. tube, 44, 334–335
Solo button (Mixer Board), 19, 148
Songbird, 116
songs
  creating graceful breaks, 96–97, 112–114
  writing to CDs, 99
sonic cannons, 324
Sony BMG, copy protection, 118
Sony PCMD50, 49
Sony’s Creative Software CD Architect, 103, 104, 108
sound, perception of, 330
Sound Activated Recording, 23, 306
Sound Blaster 16, 289
sound cards, 170, 318–319
  as ADC/DAC, 68
  problem with internal, 38
  querying, 275–276
sound chips, and stereo microphone inputs, 168
Sound control panel (Windows 7), 292
sound engineers, interacting with, 83
SoundJuicer, 130
Sound module, 4
sound quality
  characterizations, 41
  subjectivity in, 44
  vinyl LPs vs. CDs, 71
source code, browsing, 208
spam, 157
speakers, 46–47, 271–272
speaker-test command, 271–272
Specify Uncompressed Options dialog, 14
Spectrograms dialog, 315
Spectrum view, 20
speed of playback, 12
Split Stereo to Mono, 19
Split Stereo Track command, 19, 58, 112, 167, 171, 233
splitters, 82
splitting
  stereo track for repairs, 90–91, 111–112
  tracks, 178
  split tracks, rejoining, 175
  square waveform, 214, 231
  stands, for microphones, 45
starting
  playback, 171
  recording, 87
Steely Dan, “Haitian Divorce,” 227
Steinberg, 294
Wavelab, 120, 130
Virtual Studio Technology (VST), 230
stereo channel, Mixer Board for adjusting relative volumes, 147
stereo mic, 167
stereo recordings, 80
mixdown to, 188–191
stereo track, 19, 166
  creating, 19
  DVD-Audio support for, 121–122
  splitting for repairs, 90–91, 111–112
stereo TRS plugs, 36
Steve Harris’s plug-ins, 229
stiff cables, 45
stiffness, 232
Stop button (Control toolbar), 5, 8, 58
stopping point, for playback, 172
stopping recording, 87
storage requirements, for bit depth/sampling rate combinations, 124
storefront, prefab, 161
striping, 47
studio, sound reduction for, 50
studio recording, microphones for, 167
stylus, care of, 55
sub-cardioid polar pattern, 42
subwoofer channel, 192
Super Audio CD (SACD), 131
super-cardioid polar pattern, 42
surround channel, DVD-Audio support for, 121–122
synchronizing tracks, 9, 88
System Properties dialog
Windows Vista/7, 299–301
Windows XP, 296–298
System Restore, and performance, 300

T

Tablet PC, 300
tail level, for reverberation, 220
taiyo yuden, 77, 99, 102
TAO (track-at-once), 103
TAP (Tom’s Audio Processing) plug-ins, 229
tape, vs. vinyl LPs or CDs, 71–77
tape deck, connecting to computer, 71
Task Manager (Windows), Audacity priority in, 295
TDK CDs, 77, 102
telnet, 298, 301
tempo, 330
touch-tone telephones, dual-tone multifrequency (DTMF) tones from, 210
Track menu, 188
Make Stereo Track, 112, 171, 233
Move Track Up/Down, 171
Split Stereo to Mono, 168, 171, 196
Split Stereo Track, 58, 112, 147, 167, 171, 233
track names, 14–15
mixer board icons to match, 189–190
Track panel, 19–20
decibel scale, 140
Solo button, 171
tracks, 58, 134, 166–168, 331
aligning and moving, 175–180
appending to existing, 5
combining, and volume increase, 114
cutting single into song tracks, 63, 95–96
deleting, 19
from DVDs, 118
for each song title, 56–57
editing two-track as two mono tracks, 147–148
editing two-track recording as a single track, 146–147
labels for, 172–174
linking, 176–177
mapping to channels, 25, 126–127
metadata for, 64, 97–98
metronome, 180–182
recording, during playback, 183

The Book of Audacity
© 2011 by Carla Schroder
tracks (continued)

- removing parts, 21
- saving each as separate WAV file, 15
- selecting all with CTRL-A, 16
- selecting nonadjacent, 16
- selecting whole, 6, 15–19
- splitting, 178
- synchronizing, 9
- time shift inside, 179–180
- volume level, 188

Tracks dialog, 311–312

- track segments, creating, 175

Tracks menu, 19

- Add Label At Selection, 173
- Add New Audio Track, 209
- Label Track, 172, 176
- Align Tracks, 175–176, 251
- Edit Labels, 173, 174
- Link Audio and Label Tracks, 176
- Mix and Render, 88, 113, 150, 188, 191
- Resample, 98, 199

Transcription toolbar, 12

- transferring legacy media, 130
- transient response, 40, 331
- transitions, smoothing, 92

Transport menu

- Overdub, 183, 184
- Sound Activation Level, 23
- Timer Record, 252
- triangle waveform, 231
- triangular dither, 129, 307
- Trim button (Edit toolbar), 8, 10, 21
- trimming, 58, 90
- TRS (tip-ring-sleeve), 36
  - adapter, 69
  - plugs, 41, 68
- Truncate Silence effect, 238
- tube amplifier, vs. solid-state, 44, 334–335
- Tucows, 156
- TuneCore, 159
- turntables, connecting to computer, 69–71
- TweakHound, 297, 300
- two-person podcasts, 146–148
- two-track recording
  - editing as single track, 146–147
  - editing as two mono tracks, 147–148

V

- variable bitrate, 116, 142, 143, 152
- Variable bitrate setting, for MP3, 116, 143
- Verbatim CDs, 77, 99, 102
- video card, for Linux system, 287
- video time, measurement, 186

View menu, 21

- Clipping, 89
- Fit in Window, 90, 91
- Fit Vertically, 90
- Mixer Board, 88
- Show Clipping, 58, 61, 91, 114, 124, 136, 190, 251
- Toolbars, 8
- Zoom to Selection, 90

vintage 78s, 66–67, 71

vinyl LPs, 66

- copying to CD, 34, 53–77
  - basic steps in process, 56–57
  - dividing long track into individual songs, 63
  - dynamic range compression customization, 62–63
  - exporting single long track to CD-ready files, 64
  - exporting to CD-ready files, multiple tracks, 64–65
  - fixing defects, 58–62
  - normalization, 63
  - recording, 58
  - settings, 57
  - writing songs, 65

- damage from use, 73
- dynamic range for, 241
- preparing for copying, 54–56
  - vs. tape or CDs, 71–77
- Virtual Studio Technology (VST), 207
- virus checkers, and performance, 295
- vision-impaired, web design for, 157

U

Ubuntu Linux PC, 2–3, 258–259

Ubuntu Studio, 227, 260

unbalanced cables, 44

Undo button (Edit toolbar), 8, 10

undo operation, 7, 90, 139, 170

Unix, for USB 2.0 audio devices, 40

unlocked phone, 205

upsampling, 85, 114, 331

USB devices, 4
  - and Audacity, 1, 12
  - audio interface, 32
  - cable for file transfer to phone, 206
  - CD/DVD burners, 103
  - vs. FireWire, 39–40
  - mixers, 38
  - phono preamps, 69
  - recording interfaces, 135, 319–320
  - turntable with phono preamp, 70
VLC Media Player, 6, 116, 117, 118, 130
voicecasts, 134–141
Audacity settings, 135–136
two-person, 146–148
volume level
control setting before powering on, 167
increasing, 22
normalization to raise, 6, 97
for recording or playback, 4
setting songs for consistency, 107, 112
vertical scale for, 19
volume unit (VU) meter, 331
VST (Virtual Studio Technology), 207
VU (volume unit) meter, 331

W
WahWah effect, 227
Wal-Mart, DRM servers, 161–162
Warnings dialog, 316
warp, fixing, 59–60
wattage, and amplifier rating, 46
WAV (Waveform Audio Format) files, 6,
25, 98, 115, 120, 155
32-bit float, 14
aplay to play, 269
channel mapping for, 191–192
exporting tracks to, 64–65, 98
importing, 170
for Red Book CDs, 102
for ringtone, 199
saving track as separate file, 15
studio masters as, 13, 14, 125
waveform, 20, 231
Waveform Audio Format (WAV) files. See
WAV (Waveform Audio Format) files
Waveform (dB) view, 19–20
WDM/KS (Windows Driver Model Kernel Streaming), 294
WebClient, 298
web designer, 157
web hosting services, 156–157
WebHostingTalk, 157, 160
web streaming, frame rates, 187
wet/dry balance, 232
white noise, 211, 212
wide-groove records, 66
Winamp, 116, 130
Windows
audio devices configuration, 301–302
configuring for best audio quality,
291–302
MP3 support, 292
WMA, M4A/M4P support, 293
low-latency recording and audio drivers, 293–294
plug-ins, 230
tuning for best performance, 294–301
Windows 7, 48, 292
tuning for best performance, 299–301
Windows DirectSound, 3, 83
Windows Driver Model Kernel Streaming (WDM/KS), 294
Windows Media Audio (WMA) files. See
WMA (Windows Media Audio) files
Windows Media Player, 6, 116, 117
Windows Meeting Space, 301
Windows Vista, 47, 291–292
default recording and playback devices, 4
tuning for best performance, 299–301
Windows XP, 47–48, 291
performance tuning, 296–298
wind sock, 40
wireless mics, 43
WMA (Windows Media Audio) files, 145,
146, 204
Audacity support, 293
channel mapping for, 192
encoding ringtone in, 205
Work Made for Hire and Copyright Corrections Act of 2000, 163

X
Xfcd, 287
XLR connectors, 37, 41
XLR plugs, 36
Xmms, 116

Y
Y-adapter, 69
Yahoo!, 162
Yamaha Pockettrak 2G, 49

Z
zero crossing point, 225
Zero Decibels Full Scale, 20
Zoom button (Tools toolbar), 8, 9, 11
Zoom H2 portable digital recorder, 35,
49, 80
Zoom In/Out buttons (Edit toolbar), 8, 61
Zoom to Selection for view, 21
zZounds, 317