

# Index

## A

- Address Resolution Protocol (ARP)
  - delete entry from cache, 228
  - disable name resolution, 228
  - entries, listing, 228
  - functions of, 228
  - static entries, adding to cache, 228
- Adept, as Kubuntu feature, 2
- Ad-Hoc mode, wireless connections, 222
- administrative commands, man pages, 13
- Advanced Linux Sound Architecture (ALSA), 111
- affs file system, 125
- AIFF files
  - converting to Ogg format, 113
  - encoded to WAV, 114
  - encoding to FLAC, 114
  - playing, 110
  - WAV files encoded to, 114
- alias(es)
  - define for bash session, 58
  - removing from bash session, 58
  - setting/listing, 57–58
  - Ubuntu specific, 58
- alias command
  - defining alias for shell, 58
  - listing aliases, 57
  - setting alias, 57
- alphanumeric order, sort based on, 101
- alsamixer command, audio levels, adjusting, 111
- Alternate Desktop CD option, 18
- anacron facility, 185
- append to file, shell, 55
- apropos command, man pages, searching, 9, 12
- APT (Advanced Package Tool), 3, 25–31
  - cache clean-up with, 30–31
  - command line reference for, 25
  - installing packages with, 28–29
  - new software, query for, 28
  - removing packages with, 30
  - repository/third-party signature key, adding, 27–29
  - software package installation, 21
  - updates, 29–30
  - See also apt command
- apt command
  - APT cache directory, cleanup, 31
  - APT package cache, updating, 28
  - APT security keys, checking, 27
  - APT utility information, printing, 26
  - broken packages, sanity check, 26
  - cached packages, removing, 26
  - gpg keys, listing, 26
  - JOE editor, installing, 91
  - minicom package, downloading, 32
  - minicom package, installing, 30
  - new software, query for, 28
  - package authenticity, verifying, 25
  - package database, updating, 25
  - package dependencies, printing, 26, 28
  - package downloading, 26
  - package information, displaying, 26, 28
  - package statistics, printing, 26
  - package upgrades, 26
  - packages, cached list, finding commands, 10
  - packages, cached list, keyword search, 25
  - packages, installing, 21
  - packages on system, listing, 26
  - partial packages, deleting, 26
  - as security tool, 287
  - signing key, importing into APT, 27
  - software packages, removing, 30
- aptitude command, 36–41
  - cache clean-up with, 39
  - curses interface, starting, 36
  - .deb files, outdated, removing, 37
  - .deb files, removing, 36
  - help, listing of, 36
  - installing packages, 37, 38–39, 41
  - installing series of packages, 38

## Index ■ A–B

- keyword search, 38
  - minicom package, installing, 38
  - package downloading, 36, 38
  - package indexes, updating, 36
  - package information, listing, 36
  - package information, querying, 38
  - package listing, keyword search, 36
  - package upgrades, 36, 37
  - prompt, disabling, 40–41
  - reference of options, listing, 41
  - removing packages, 39
  - simulation with, 40
  - verbosity, adding, 40–41
  - aptitude tool
    - Aptitude Survival Guide, 36
    - courses interface, 36
    - See also* aptitude command
  - archives
    - compress output, 153–156
    - concatenate files, 156
    - creating, 151–153
    - files, adding to, 156
    - files, deleting from, 157
    - listing contents, 156
    - match multiple files to add, 156
    - tar command, 151–153
    - See also* backups
  - arp command
    - ARP cache, delete entry, 228
    - ARP entries, viewing, 228
    - name resolution, disabling, 228
    - static entries, adding to cache, 228
  - arping command, IP query use of, 229
  - arrow keys, for scrolling, 11, 53, 98
  - ASCII text, readable, extracting, 102
  - aspell command, 94
  - aspell package, 91
  - at command, processes, scheduling
    - runs, 183
  - aterm terminal emulator, 51
  - Atheros, 220
  - atq command, processes, checking run
    - queue, 184
  - atrm command, processes, delete from run
    - queue, 184
  - attachments, e-mail, 252–253
  - audio, 109–118
    - ALSA, default sound system, 111
    - capture channel, assigning, 111
    - CDs, ripping music, 112–113
    - concatenating WAV files, 117
    - display settings, changing, 111
    - effects, viewing, 110
    - encoding music, 113–115
    - file formats, viewing, 110
    - file information, displaying, 117–118
    - mixing WAV files, 117
    - music, playing, 109–111
    - music players, types of, 109
    - mute/unmute, 111–112
    - OSS modules, viewing, 111
    - playlists, creating, 111
    - seconds of sound, deleting, 118
    - streaming music server, set-up, 115–117
    - volume, adjusting, 111–112
  - aumix command, audio display settings,
    - changing, 111–112
  - auto-negotiation, disabling/re-enabling, 215
  - awk command
    - columns of text, extracting, 106
    - delimiter, changing, 106
- ## B
- background, running processes in, 180–181
  - backticks, 56
  - backups, 151–166
    - to CDs/DVDs. *See* CD backups; DVD backups
    - compressed, making, 80
    - compression tools, 153–156
    - networks. *See* Network backups
    - partition tables, copying, 128
    - See also* archives
  - badblocks command
    - bad blocks, scanning for, 140
    - destructive read-write test, 140
    - multiple passes, 140
    - ongoing progress, viewing, 140
    - warning, 140
  - BASH, 299
  - bash (Bourne Again Shell), 49, 52
    - See also* shell
  - bash command, open shell, root user, 59
  - BASH\_COMMAND, 299
  - BASH\_VERSION, 299
  - batch command, processes, scheduling runs,
    - 183–184
  - befs file system, 125
  - bg command, running processes,
    - manipulating, 181
  - BIOS, boot process, 200
  - bit bucket file, direct output to, 55
  - BitchX, 249

- block(s)
    - bad, scan for, 140
    - bytes, number of, 79
  - block devices, 72
  - bookmarks, FTP server location, 241
  - boot
    - initial ramdisk, repairing, 202–203
    - installation options, 19–20
    - loader. *See* Grand Unified Boot Loader (GRUB)
    - process, steps in, 201–202
  - boot image
    - copying, 80
    - mounting, 138
  - bottlenecks
    - networks, 229–230
    - system, checking for, 194–195
  - bouncers, 249
  - Bourne Again Shell (bash), 49, 52
    - See also* shell
  - browser. *See* `elinks` browser
  - BSD/OS file system, 127
  - bytes
    - blocks, number in, 79
    - text files, printing number in, 100–101
  - `bzip2` command, compression with, 155
- C**
- `cal` command, calendar, displaying, 198
  - calendar, displaying, 198
  - Canonical Group, 2
    - contact information, 4
  - `card` command, help message, format output, 12
  - `case` command, case test, 67
  - case sensitivity
    - `find` command, 83
    - `locate` command, 82
    - search, ignore case, 100
  - `cat` command
    - ASCII text, extracting, 102
    - one file, verifying, 87
    - `proc` information, viewing, 193–194, 301–305
    - text, replacing, 102
    - text files content, displaying, 104
    - text file format, converting, 106–107
    - text files, listing, 97
  - CD(s)
    - backups. *See* CD backups
    - capacities, 165
    - GUI tools for, 161
    - images, mounting in loopback, 138
    - ISO image, copying, 80
    - music, ripping, 112–113
    - Ubuntu installation, 17–22
    - unmount/eject CDs, 139
    - volume ID, importance of, 164
  - CD backups, 162–166
    - burn multi-session CDs, 166
    - burning images, 165–166
    - drive support, checking, 165
    - ISO image, creating, 162–164, 166
  - `cd` command, change directory, 77
  - `cdparanoia` command
    - CDDA capability, verifying, 112
    - CDs, ripping music, 112–113
  - `cdrecord` command
    - burn multi-session CDs/DVDs, 166
    - CD/DVD burning capability, checking, 165
    - CDs, burning images to, 165–166
  - `cdrkit` project, 162
  - CD-ROM, Ubuntu Linux, source for, 17
  - CentOS, software management tools, 24
  - `chage` command, password expiration operations, 278–279
  - channels
    - audio, adjusting, 111–112
    - chat rooms, 250
  - character(s)
    - case, changing, 103
    - deleting, 103
    - range of, specifying, 103
    - replacing, 103
  - character devices, 72
  - chatting. *See* Internet Relay Chat (IRC)
  - `chattr` command, file attributes, changing, 81
  - checksum of files, producing, 86–87
  - `chgrp` command, directory ownership, changing, 76
  - `chkrootkit` tool, downloading, 287
  - `chmod` command
    - permissions, changing, 74–76
    - permissions, locking, 133
    - shell scripts, executable, 64, 214
    - swap area, creating within file, 133
  - `chown` command, directory ownership, changing, 76
  - `chsh` command, user account information, changing, 276
  - cifs file system, 125

## Index ■ C–D

- clockdiff command, local/remote clocks, checking, 196
  - Code of Conduct, Ubuntu Linux, 5
  - color
    - CPU usage indicator, 192
    - elinks browser, 236
    - files, comparing, 105
    - images, colorizing, 120
    - search terms, 100
  - COLORS, 299
  - columns
    - delimiter between, changing, 106
    - printing, 106
    - range of fields, actions on, 106
    - running processes lists, 173–175
    - single list, conversion to two columns, 99
    - text, extracting, 105–106
  - COLUMNS, 299
  - COM1
    - connect to Cisco device, 225
    - settings, viewing, 224
  - command(s)
    - bash history operations, 53–54
    - as executable files, 70
    - finding. *See* command reference
    - help messages, displaying for, 11
    - info documents for, 14–15
    - scheduling runs, 183–184
    - search for, 177–179
    - standard input, directing to, 55
    - watching, 58
    - See also* individual commands
  - command files, types of, 69
  - command line
    - backticks, executing sections of, 56
    - completion with bash, 54
    - for downloading file from remote server, 237
    - situations for use, 7–8
    - web browser, 235
  - command not found, reasons for message, 8
  - command reference
    - help messages, 11–12
    - info documents, 10, 14–15
    - installed commands, finding, 8–12
    - man pages, 11–14
  - comments, shell scripts, 64
  - Common Internet File System (CIFS), 245
    - See also* Samba
  - Compact Disc Digital Audio (CDDA), 112
  - compression, 153–156
    - all files in directory, 155
    - benefits of, 153–154
    - bzip2 command, highest compression, 155
    - compress to myfile, 155–156
    - compressed backup, making, 80
    - gzip command, 154–155
    - gzipped files, uncompress, 155
    - lzop command, 154–156
    - tar command, 151–153
    - testing/listing/uncompressing file, 156
    - uncompress files, 154, 155, 156
    - with verbose output, 154
  - configuration files, for commands, finding, 85
  - convert command
    - batches of images, conversion to, 120–121
    - file formats, converting, 119
    - resizing images, 119
    - rotating images, 119
    - special effects, 120
    - text, adding to images, 119
    - thumbnails, creating, 119
  - copy and paste, Terminal window, 50
  - copy files, 78–79, 148
  - cp command, copy files, 78–79, 148
  - cPanel, 274
  - CPU
    - flags for supported features, 194
    - managing usage. *See* CPU management
    - usage, viewing. *See* running processes
  - CPU management, 191–194
    - CPU information, viewing, 192–193
    - processor information, viewing, 193–194
    - utilization summary, 191–192
  - Cream, 96
  - crontab command
    - command options, 185
    - personal crontab file, creating, 184
  - CUPS printing system
    - PPD file information, 5
    - tunneling for, 258–259
  - curl command, 238–239
    - FTP server, list /pub/directory, 239
    - single-shot file transfers, 239
    - username/password, adding, 239
  - curses interface, aptitude command, 36
  - cut command
    - columns, printing, 106
    - columns, range of fields, actions on, 106
  - Cywin, 268
- ## D
- Damn Small Linux, 2
  - Darwin UFS file system, 127
  - data, copying, 79

- data files, types of, 69
- database, local, updating, 82
- date, system. *See* `date` command; time/date
- Date and Time Settings window, 197
- `date` command
  - time/date, changing, 198
  - time/date, displaying, 197–198
- `dd` command
  - backup, compressed, 80
  - data, copying, 79
  - empty disk image file, creating, 131
  - IDE drive, clone partition of, 79–80
  - ISO image, copying, 80
  - swap area, creating within file, 133
  - warning, 80
- Debian
  - Linux, versions of, 2
  - software package installation, 21–22
- Debian Binary Package Building HOWTO, 48
- `debsums` command, 41–45
  - all files, checking, 42
  - changed files, listing, 42, 43
  - configuration files, checking, 42, 43
  - debsums, silencing, 44
  - errors, listing, 42
  - md5sums, checking, 41, 44
  - rsync package information, listing, 44, 48
  - single package, checking, 44
  - stdout/stderr streams, redirecting to file, 43
- deleting text, vi editor, 293
- Desktop option, downloading, 18
- device(s)
  - listing, location for, 72
  - types of, 72
- device drivers. *See* device files
- device files
  - creating, 72
  - functions of, 69, 72
- devpts file system, 135
- `df` command
  - disk space usage, checking, 148, 149
  - file system type, adding, 143
  - inode utilization, checking, 143
  - limit output to local file system, 143
  - and LVM volumes, mounting, 148, 149
  - mounting file systems, utilization
    - summary, 143
- `diff` command
  - files, comparing, 104
  - merge file output, 105
- `dig` command
  - host IP address, viewing, 226
  - hostname, search DNS servers for, 225–226
  - record type query, 226
  - reverse DNS lookup, 226
  - specific name server query, 226
  - trace recursive query, 226
- digital signature, Ubuntu, verifying at
  - installation, 18
- `dirproxy`, 249
- directories, 70–78
  - adding/removing, 78
  - compress all files in, 155
  - creating, 71, 74
  - execute bits, turning on, 71
  - files, copying to, 78–79
  - finding, 83–84
  - functions of, 70
  - name, identifying, 71
  - open, checking for, 195
  - order on stack, changing, 78
  - permissions, 73–76
  - searching, 9
  - sharing. *See* remote directory sharing
  - symbolically linked directories, viewing, 78
- `dirs` command, directories, changing
  - order, 78
- Disk Druid, 125
- disk labels, 129
  - See also* partition tables
- disk resizing/partitioning. *See* hard disk partitioning
- `disown` command
  - running processes, disconnect from
    - shell, 181
  - running processes, manipulating, 181
- DISPLAY, 299
- `dmesg` command, kernel ring buffer contents,
  - displaying, 205–206
- `dmidecode` command, hardware information,
  - listing, 208
- documentation, Web site/resources for, 4
- Domain ID, wireless network, 221
- Domain Name System (DNS) servers,
  - hostname queries, 225–226
- DOS, text files, converting to Unix, 107
- double-spacing, text files, 99
- downloading files, 237–241
  - interrupted, continuing, 238
  - mirror web site, 238
  - from remote server, 237
  - single web page, 237
  - Ubuntu Linux, 17–18
- `dpkg` command, 31–35
  - configuration files, viewing, 35
  - .deb file information, listing, 31, 47

## Index ■ D–E

- .deb files, extracting files from, 31, 32, 33, 34
  - .deb files, query information about, 33–35
  - .deb packages, building, 47
  - file name, list packages for, 31
  - initscripts package, listing of files, 10
  - installed files in use, viewing, 35
  - installed package information, listing, 34
  - installed package status, listing, 32
  - installed packages list, paging through, 34
  - installed packages, listing, 32, 34
  - installed packages, searching, 10
  - installing packages with, 32–33
  - non-control files, extracting, 35
  - package lists, paginating, 99
  - removing packages with, 32, 33
  - software package installation, 22–23
  - dstat command, CPU usage information, viewing, 192–193
  - du command
    - disk space usage, checking, 144
    - excluding files, 144
    - multiple directories, specifying, 144
    - totals, obtaining with root user account, 144
    - tree depth, specify summary, 144
    - virtual file system size, checking, 131
  - dump command, dump file system, 136
  - DVD(s)
    - backups. *See* DVD backups
    - capacities, 165
    - GUI tools for, 161
    - ISO image, copying, 80
  - DVD backups
    - burn multi-session DVDs, 166
    - burning images, 165–166
    - drive support, checking, 165
    - ISO image, creating, 162–164, 166
  - DVD Kreator, 161
- E**
- e211abel command
    - partition label, setting on partition, 129–130
    - partition label, viewing, 129
  - e2fsck command, LVM volume, decreasing, 148, 149
  - echo command
    - bash history, number of commands, 53
    - PATH, showing, 9
  - editors. *See* text editors
  - eject command, unmount/eject CDs, 139
  - elinks browser, 235–236
    - control key functions, 236
    - settings, adding to, 236
  - elinkskeys command, browser settings, viewing, 236
  - else command, file name test, 65
  - Emacs editor
    - emacs-style commands, bash history, 54
    - functions of, 91
  - e-mail, 250–251
    - attachments, 252–253
    - mail command, 251–252
    - MBOX format, 251, 252
    - mutt command, 252–253
    - system log messages, 286
  - encoding music, 113–115
  - Enlightenment project, 51
  - Ensim, 274
  - env command, environment variables, listing, 63
  - environment variables
    - concatenate string to, 63
    - defined, 62
    - displaying, 62
    - inheritance, 63
    - naming convention, 62
    - setting/resetting, 63
    - strings, concatenate to variable, 63
    - tests, operators for, 65–67
  - /etc/fstab files
    - fields in, 135–136
    - mounting file system from, 134–136
  - eterm terminal window, 51
  - Ethernet cards
    - address/status, 218–218
    - configuration files, 216–217
    - driver information, 213
    - interface information, displaying, 219
    - media access control (MAC) address, 218–219
    - settings, displaying, 212–213
    - statistics, displaying, 213
    - See also* network interface cards (NIC)
  - ethtool command
    - auto-negotiation, turning-off, 214
    - NIC driver information, displaying, 213
    - NIC settings, changing, 213–214
    - NIC settings, displaying, 212–213
    - NIC statistics, displaying, 213
    - syntax, viewing, 212
  - ethX, 221

EUID, 299  
 evince command, Postscript file, viewing, 12  
 Ex commands, vi editor, 295–296  
 exec command, with find command, 84  
 executable programs, man pages, 12  
 execute bits on, directory use, 71  
 export command, inheritance, 63  
 exportfs command, exported shared  
   directories, reloading, 244  
 ext2 file system, 124  
   attributes, viewing, 131  
   changing to ext3 system, 124, 133  
   settings, changing, 132  
 ext3 file system  
   attributes, viewing, 131  
   checking, 140–141  
   converted from ext2 system, 124, 133  
   creating on LVM partition, 147  
   features of, 124  
   settings, changing, 132  
 extracting files. *See* compression

## F

FAT (VFAT) file system, 125  
 fc command, bash history, editing, 53  
 FCEDIT, 299  
 fdisk command  
   command options, 127  
   partition as swap, 127  
   partitions, creating, 127, 145–146  
   partitions, list information, 126  
   specific disk, choosing/working with,  
   126–127  
 Fedora, software management tools, 24  
 fg command, running processes,  
   manipulating, 181  
 file(s), 69–87  
   attributes, changing, 80–81  
   attributes, listing, 80–81  
   blank, creating, 70  
   copying, 78–80  
   copying to new directory, 78–79  
   device files, 69, 72  
   directories, 70–71, 77–78  
   downloading. *See* downloading files  
   file name test, 65  
   links, 71–72  
   listing of, 85–86  
   named pipes and sockets, 73  
   naming, 71

  navigation among, 77  
   open, checking for, 195  
   output, sending to, 54–55, 99  
   ownership, changing, 76–77  
   permissions, 73–76  
   regular files, 69–70  
   search, commands for, 81–85  
   size, watching, 58  
   swap area, creating within file, 133  
   tests, operators for, 65–67  
   transferring. *See* file transfer  
   types, determining, 69–70  
   verifying, 86–87  
   viewing types of, 69–70  
 file command  
   contents of file, determining, 70  
   file types, identifying, 69–70, 71  
 file conversion  
   image files, 119–120  
   text files, 106–107  
 file extensions  
   audio files, 110  
   software packages (.deb), 21  
 file formats, man pages, 13  
 file systems, 123–150  
   attributes, changing, 132–133  
   attributes, viewing, 131–132  
   creating on hard disk partition, 130  
   dumping, 136  
   functions of, 123  
   hard disks, partitioning, 125–129  
   journaling, 124–125  
   Linux, required partitions, 123  
   Logical Volume Manager (LVM), 145–150  
   mounting, 134–139  
   navigation in, 77  
   network shared systems, 125  
   /proc, 135, 301–305  
   pseudo systems, 135  
   RAID disks, 141–143  
   remote, types of, 136  
   scanning for errors, 140–141  
   supported, listing of, 124–125  
   swap partitions, 133–134  
   unmounting, 139  
   utilization summary of, 143–144  
   virtual file system, creating, 130–131  
 file transfer, 241–243  
   from command line, 237–238  
   FTP commands, 239–241  
   Secure Shell (SSH) service utilities for,  
   241–242

## Index ■ F–G

single-shot transfers, 238–239  
 Windows tools, 242–243

FileZilla, 243

`find` command, 82–85  
 act on files with (`exec` option), 84  
 case sensitivity, 83  
 directories, finding, 84  
 inaccessible directories, filtering, 83  
 regular expressions with, 83  
 search criterion, negating, 84  
 size-based search, 84  
 timestamp based search, 83–84  
 /usr file system, searching, 9

`findfs` command, find partition, 130

`findsmb` command, SMB host, scan for, 245

`finger` command, user information, checking, 281

firewalls, 282–286  
 configuring, 284–285  
 information, listing, 284  
 IP forwarding, enabling, 284  
 iptable rules, stopping, 284  
 nat table, viewing, 283–284  
 port forwarding, 285  
 requests for service, forwarding, 284–285  
 rules, changing, 284  
 rules, saving, 285  
 rules set, listing, 282–283  
 Source Network Address Translation (SNAT), 284

firmware, wireless connections, 220

`flac` command  
 AIFF to FLAC encoding, 114  
 compression level, raising, 114  
 WAV to FLAC encoding, 114

FLAC files  
 encoding to, 114  
 See also `flac` command

flags, CPU, for supported features, 194

`for` command, variables for, 68

forums on Ubuntu, 4

`free` command, memory use, viewing, 188

Free Lossless Audio Code (FLAC), 109  
 See also `flac` command; FLAC files

FreeBSD file system, 127

freenode server, connecting to, 249–250

`fsck` command  
 command options, 141  
 ext3 system, checking, 140–141  
 file system, checking, 136, 141  
 repair problems, 141

FTP server  
 downloading files from, 239–241  
 login/passwords, 237  
 security issues, 240, 241  
 See also `lftp` command

full screen mode, Terminal window, 50

`fuser` command  
 kill processes, 179  
 running processes with open files, viewing, 178–179

`fusermount` command, remote directory, unmounting, 249

## G

games, Web site/resources for, 6

`gcombust`, 161

`gedit`, GNOME text editor, 96

`genisoimage`, `mkisofs` command as pointer to, 162

`getty` command, virtual terminal processes, 51

GIMP, 120

`gimp` command, running processes in foreground/background, 180

GNOME  
 Terminal window, opening, 49–50  
 Terminal window options, 50  
 text editor, 96  
 VNC viewers, sharing desktop with, 270–271

GNU General Public License, 3

Google software  
 Google digital signature, importing, 27  
 Google signing key, downloading, 27  
 installing, 29

`gparted` partitioning tool, 126

`gpaswd` command, group passwords, changing, 77

GPT partition tables, 125

Grand Unified Boot Loader (GRUB)  
 boot options, 202  
 reinstalling, 202  
 settings, viewing, 201

graphical text editors, 96

graphical tools  
 for CD/DVD mastering/burning, 161  
 for hard disk partitioning, 126  
 for time/date settings, 197

graphical user interface (GUI)  
 remote access, 7  
 software installation, 21

- troubleshooting, 7
  - unsupported features, 7
  - graveman, 161
  - grep command
    - colorize search term, 100
    - display file name, disabling, 100
    - display unmatched strings, 100
    - exact line, finding, 100
    - ignore case, 100
    - recursive search, 99–100
    - text strings search, 99–100
  - grip, CD files, ripping/encoding, 112
  - groupadd command, groups, adding, 279
  - groupdel command, group, deleting, 280
  - groupmod command, group name/ID, changing, 279–280
  - GROUPS, 299
  - groups
    - adding, 279
    - deleting, 280
    - name/ID, changing, 279–280
  - groups command, user groups, listing, 275
  - growisofs command
    - compact option, 166
    - DVDs, making/burning images, 166
    - multi-burn session, 166
  - grub command, boot loader, reloading, 202
  - GUI Vim, 96
  - GUID Partition Tables, 125
  - gunzip command
    - return files to file system, 153
    - unzips/untars archive, 153
  - gvim command, GUI Vim, launching, 96
  - gzip command
    - compression with, 154–155
    - mount command, unzip documentation, 11
    - and tar command, 153
- H**
- halt command
    - benefits of, 205
    - warning, 205
  - hang-up signal, avoiding, 183
  - hard disk
    - boot from, 19
    - CD, ripping to, 112–113
    - fields, types/functions of, 302
    - partitioning. *See* hard disk partitioning
    - view/change information, 208
  - hard disk partitioning, 125–130
    - backup, first partition, 80
    - clone partition of IDE drive, 79–80
    - command options, 127
    - disk read/write information, viewing, 195
    - file system, creating on partition, 130
    - functions of, 125
    - GPT partition tables, 125
    - graphical tools for, 126
    - information about partitions,
      - accessing, 126
    - installer option, 125
    - label, operations with, 129–130
    - partition tables, copy settings to, 127
    - partition tables, copying, 128
    - partitions, changing, 128–129
    - partitions, listing, 128
    - resizing partitions, 129
    - specific disk, choosing, 126–127
    - warnings, 80, 128, 129
    - Windows partition, 127
  - hard links
    - benefits of, 160
    - creating, 71–72
    - functions of, 69, 71
    - inodes, viewing, 72
    - network backups, 159–160
  - hardware
    - changing information, 208
    - information, viewing, 207–208
  - hardware abstraction layer (HAL), 135
  - hardware clock
    - setting, 196, 199
    - See also* time/date
  - hdparm command
    - hard disk information, viewing, 208
    - warning, 208
  - head command, top of file, viewing, 97
  - help messages
    - displaying for commands, 11
    - printing/saving/PDF conversion of, 12
  - Hierarchical File System (HFS), 162
  - HISTCMD, 299
  - HISTFILE, 299
  - HISTFILESIZE, 299
  - history, bash
    - backwards search, 54
    - command history, editing, 53
    - commands, listing, 53
    - editing commands, 53
    - emacs-style commands, 54
    - navigation, 53
    - strings, search for, 54
  - HOME, 299

## Index ■ H–I

- host(s)
    - connectivity to, checking, 227–228
    - IP address, viewing, 226
    - netmask, calculate from CIDR IP address, 220
    - traceroute to host, 229–230
  - host command, reverse DNS lookup, 226
  - hosting, SourceForge, 6
  - HOSTNAME, 299
  - hostname(s)
    - bash shell, 49–50
    - DNS server queries, 225–226
    - information, getting for local machine, 226
    - IP addresses, viewing instead of, 230
    - setting, 226
  - hostname command
    - hostname information, viewing, 226
    - hostname setting at start-up, 226
    - temporary hostname, setting, 226
  - HOSTTYPE, 299
  - HOWTO document, software packages, 25
  - HTML, single Web page, downloading, 237
  - HTTP files, downloading with `wget`, 237–238
  - hwclock command
    - hardware clock, setting, 196
    - system clock, resetting, 199
    - time, viewing, 199
- I**
- icecast server, streaming music, set-up, 115–117
  - ices audio source client, streaming music, set-up, 115
  - id command, user information, checking, 281
  - IDE drives, device names, 126
  - identify command, images, information, accessing, 118–119
  - ifconfig command
    - Ethernet interface address/status, displaying, 218–219
    - NICs, active/inactive, information on, 219
  - ifdown/ifup, network interface, bringing offline/online, 218
  - if/then command, file name test, 65
  - ImageMagick, 118
  - images, 118–122
    - batches, working with, 120–122
    - colorizing, 120
    - converting format of, 119–120
    - information about, accessing, 118–119
    - resizing, 119
    - rotating, 119
    - sepia tone, 120
    - swirling, 120
    - text, adding to, 119
    - thumbnails, creating, 119
  - indenting, text files, 99
  - info command, info database, entering, 14
  - info documents
    - database, directory for, 14
    - displaying, 14–15
    - functions of, 10, 14
    - info screen navigation, 14–15
  - inheritance, environment variables, 63
  - init command
    - changed processes, start/stop, 203
    - run level, changing, 203
    - run level, starting, 201
    - Ubuntu `startup` command, 52
  - initrd, initial ramdisk, repairing, 202–203
  - initscripts, case usage, 67
  - inodes
    - hard/symbolic links, viewing, 72
    - listing, 160
    - utilization summary, 143
  - installation of Ubuntu, 17–21
    - Alternate Desktop CD option, 18
    - boot options, 19–20
    - CD-ROM, source for, 17
    - Desktop versus Server options, 18
    - hard disk partitioning, repairing, 202–203
      - partitioning
    - hardware requirements, 18
    - installation screens, 20–21
    - ISO images, downloading, 17–18
    - MD5SUM file, 18
    - passwords, assigning, 273–274
    - software packages. *See* software packages
    - troubleshooting, 19, 21
  - Internet Relay Chat (IRC), 249–250
    - freenode server, connecting to, 249–250
    - IRC channel, joining, 250
    - irssi, installing/launching, 249
    - Ubuntu resource page on, 5
    - xchat option, 249
  - iostat command
    - bottlenecks, checking for, 194–195
    - CPU utilization reports, 191–192
    - installing, 188
  - IP addresses
    - connectivity to gateway, checking, 227
    - DNS information, reverse lookup, 226
    - forwarding, enabling, 284

host computer, viewing, 226  
 host netmask, computing from, 220  
 hostname resolution, 225–226  
   Samba, determining with, 247  
   in use, query for, 229  
   viewing instead of hostnames, 230  
 ip command  
   add/delete routes, 231  
   all interfaces information, displaying, 219  
   default gateway, checking, 227  
   Ethernet interface information,  
     displaying, 219  
   routing information, displaying, 230  
   static ARP entries, adding to cache, 228  
 ipcalc command, host netmask, computing  
   from CIDR IP address, 220  
 iptables command  
   filter table, displaying, 283  
   firewall information, listing, 284  
   nat table, viewing, 283  
   requests for service, forwarding, 284–285  
   rules, changing, 284  
   rules, stopping, 284  
   rules set, listing, 282  
 irssi  
   information resource on, 250  
   installing/launching, 249  
 ISO image  
   boot image, copying, 80  
   creating on CD/DVD, 162–164, 166  
   files on, accessing, 164  
   header information, viewing, 164  
   mounting/unmounting, 164  
 isoinfo command, header information,  
   viewing, 164  
 ISO9660 standard, 162  
 iwconfig command  
   wireless card/settings, search for, 221  
   wireless settings, modifying, 221

## J

JED text editor, 91  
 Jffs2 file system, 124  
 jfs file system, 124  
 jobs command, background jobs,  
   managing, 181  
 JOE editor, 91–94  
   adding text, 91  
   control key functions, 92–94  
   installing, 91  
   opening text file, 91  
 Joliet, 162, 163

journaling  
   file systems, 124–125  
   functions of, 124, 125  
 Journaling Flash File System 2, 124

## K

Kabuntu Linux, 2  
 Kanotix Linux, 2  
 KDE  
   K3b tool, 161  
   as Kubuntu feature, 2  
   text editor, 96  
 kedit, 96  
 kernel, 205–207  
   add/remove module, 207  
   initial ramdisk, repairing, 202–203  
   kernel space, defined, 192  
   klogd (kernel log daemon), 286  
   loaded modules, sorting, 101  
   loaded modules, viewing, 206–207  
   loading of, 201  
   memory cache. *See* kernel slab  
   messages file, paging through, 206  
   module information, displaying, 206–207  
   name of, displaying, 205  
   parameters, control of, 207  
   ring buffer, displaying contents, 205–206  
   routines, man pages, 13  
 kernel slab, memory cache statistics,  
   viewing, 191  
 key-based communication. *See* ssh command  
 keyboard, layout, choosing, 20  
 kill running processes  
   kill command, 182–183  
   killall command, 182, 225  
   sigkill command, 183  
   signal to running process, sending, 182–183  
   stopping by command name, 182  
   and top command, 176  
 klogd (kernel log daemon), 286  
 konsole terminal emulator, 51  
 Koppix Linux, 2

## L

label(s)  
   disk label, 129  
   *See also* partition label  
 lame command  
   MP3 format, file conversion to, 114  
   tag information, adding to MP3 files, 114  
 last command, logins, checking, 280

## Index ■ L

---

- lazy unmount, 139
- leafpad, 96
- legacy communication tools, 256
- less command
  - paging with, 11
  - scrolling with, 98
  - security issues, 61
- LESSOPEN, 299
- lftp command
  - bookmark location, 241
  - close session, 241
  - current directory, checking, 240
  - current directory, listing, 240
  - directory, creating on server, 240
  - download, sending to background, 240
  - FTP server, connecting to, 239
  - local directory, change to, 240
  - matched files, uploading, 241
  - new directory, change to, 240
  - path completion, 242
  - remote directory perms, changing, 241
  - server directory, change to, 240
  - upload files to server, 241
  - warning, 240
- lftpget command, non-interactive
  - download, 241
- library calls, man pages, 12
- line(s), exact line, finding
  - count, text files, 82
  - exact line, finding, 100
- LINES, 299
- links
  - hard links, 69, 71–72
  - soft links, 69
  - symbolic links, 71–72
- links browser, 235
- Linmodems, 222
- Linux
  - versions of, 2
  - web site/information resources on, 5–7
- Linux Documentation Project, 5
- Linux User's Group (LUG), 6
- ln command, hard/symbolic links, creating,
  - 72, 197
- locate command
  - case sensitivity, 82
  - directories, searching, 9
  - files, finding, 81–82
- locate mount command, 9
- log(s)
  - central syslog server, 287
  - log parser, 286
  - logwatch messages, 286
  - rotation, automatic, 286
  - security, 286
  - syslogd facility, sending messages
    - to, 286
  - system logs, 286
  - user logs, 273–274
- logger command, messages, sending to
  - syslogd, 286
- Logical Volume Manager (LVM), 145–150
  - Alternate Desktop CD option, 18
  - ext3 file system, creating on partition, 147
  - functions of, 145
  - lvm2package requirement, 145
  - mounting volume, 135, 148
  - removing volume from volume group, 150
  - space, adding to, 148–149
  - space, removing from, 149
  - volumes, creating, 145–147
  - warning, 145
- login name
  - disabling by default, 274
  - installation screen, 21
- LOGNAME, 300
- logrotate command, log rotation,
  - automatic, 286
- loopback mount
  - creating, 138–139
  - device status, viewing, 138
  - loopback device, choosing, 138
- loops, bash shell constructs, 68
- losetup command
  - mounted loopback devices, listing, 138
  - mounted loopback devices,
    - unmounting, 139
- LS\_COLORS, 300
- lscommand
  - command output, passing as parameter,
    - 56–57
  - device files, listing, 72
  - directory, identifying, 71
  - file inodes, listing, 160
  - file lists, long, display of, 85
  - file types, appearance in list, 86
  - named pipe, creating, 73
  - output, redirecting, 54–55
  - software packages, removing, 39
  - for statement variables, 68
- lsattr command, file attributes, listing,
  - 80–81
- lsmod command, loaded module names,
  - viewing, 206

lsdf command, open files/directories, checking, 195–195

lspci command  
 PCI hardware information, listing, 207  
 wireless card, search for, 220–221

lvcreate command, LVM partition, creating, 147

lvremove command, LVM volume group, removing, 150

lvresize command  
 LVM volume, decreasing, 149  
 LVM volume, increasing, 149

lzop command, compression with, 154–156

## M

MACHTYPE, 300

MadWifi, 220

MAIL, 300

mail command  
 e-mail operations, 251–252  
 interactive use, 251  
 logwatch messages, 252

MAILCHECK, 300

mailing lists, for Ubuntu, 5

main, software repository, 22

man pages  
 displaying, 12–14  
 functions of, 10  
 keyword, search for, 9, 12, 14  
 sections of, 12–13  
 Web site/resources for, 11

man command  
 man page, displaying, 12  
 man page section 8, viewing, 9, 14

Managed/Infrastructure mode, wireless connections, 222

Mandriva, software management tools, 24

Master Boot Record (MBR)  
 and boot process, 200  
 copying, 80  
 and hard disk partitioning, 125

MBOX format, e-mail, 251, 252

MD5SUM file. *See also* md5sum command  
 source for, 18, 86

mdadm command  
 softraid devices, checking, 142  
 softraid devices, managing, 142–143

mdadm package, and RAID disk installation, 143

md5sum command  
 checksums of files, producing, 86

file validity, verifying, 86–87  
 md5sum data, checking, 45, 148

media access control (MAC) address  
 viewing, 218–219  
 wireless network, 222

memory, 188–191  
 managing usage. *See* memory management  
 memory needs, determining, 189  
 troubleshooting at installation, 19  
 usage, sort based on, 101  
 usage, viewing. *See* running processes

memory management  
 kernel slab memory cache statistics, viewing, 191  
 memory test, memtest86, 19  
 memory use, viewing, 188–191  
 screen-oriented views, 189  
 view over time period, 189–190

Mepis Linux, 2

merging, text file output, 105

Microsoft New Technology File System (NTFS), 124

mii-tool, 212, 215

minicom command  
 help information, 225  
 minicom package version, checking, 30  
 modem settings, 224–225  
 talk to modem, 224  
 warning, 225

minicom package  
 downloading, 32  
 installing, 30, 38  
 version, checking, 30

minix file system, 125, 127

mirrors  
 directory, network backups, 159  
 ISO images, downloading, 17–18  
 web site, recursive, downloading, 238

mkdir command  
 directory, creating, 71, 74  
 mount point, creating, 131, 148

mkfifo command, named pipe, creating, 73

mkfs command  
 ext3 file system, creating on LVM partition, 147  
 file system, creating, 130, 131  
 label, adding to partition, 130

mkinitrd command, initial ramdisk, repairing, 202–203

mkisofs command  
 ISO images, creating, 162–163, 166  
 multiple sources, adding to image, 163  
 as pointer to genisoimage, 162

## Index ■ M–N

---

- mknod command, device files, creating, 72
  - mkpartfs command, warning, 129
  - mkswap command
    - bad blocks, checking for, 133
    - swap partition, creating, 133
    - swapspace, setup in file, 133
  - modems, 222–225
    - configuration file, creating, 223
    - dial-up entry, use of, 223
    - direct talk to, 224
    - parameters, changing, 225
    - passwords/usernames, 223
    - phone numbers, set-up, 223
    - Point-to-Point Protocol connection, 223
    - scan for, 222
    - serial ports, 223–224
    - settings, viewing, 224
    - software types, 222
    - troubleshooting, 223–224
  - modinfo command, loaded module
    - information, 206–207
  - modprobe command
    - modules, adding/removing, 207
    - modules, listing, 207
  - more command
    - limitations of, 98
    - paging with, 11, 98
  - mount command
    - documentation, unzipping, 11
    - execution of binaries, preventing, 137
    - file system type, specifying for listing, 136
    - file systems, listing, 136
    - hung request, interrupting, 244
    - label/name of partition, displaying, 137
    - loopback mount, 138–139
    - mount options, 135, 137–138
    - mount point, creating, 131, 148
    - mount system to location in tree, 138
    - mount with device name only, 137
    - mount with mount point only, 137
    - mounted systems, listing, 136
    - move file system, 138
    - NFS remote shares, 244–245
    - partition label, viewing, 136
    - preventing mount at boot time, 135
    - read/write or read-only, specifying, 135, 137
    - remounting file systems, 138
    - Samba shares, mount on local system, 247
    - system to mount, specifying, 137
    - type of system to mount, 137
  - mounting file systems, 134–139
    - automatic mount, 135
    - boot image, mounting, 138
    - from /etc/fstab files, 134–136
    - and hardware abstraction layer, 135
    - Logical Volume Manager (LVM), 135
    - mount point, creating, 131
    - purpose of, 134
    - remounting, 138
    - unmounting, 131, 139
    - utilization summary, 143
    - virtual file system, 131
    - See also* mount command
  - mouse, nano editor, use of, 94
  - MP3 format
    - converting files to, 114
    - tag information, adding to, 114
    - tag information, viewing, 115
  - mpg321 player
    - MP3 files, playing, 110
    - playlists, 110–111
    - source for, 109
    - tag information, viewing, 115
  - msdos file system, 124
  - multiverse, software repository, 23, 24
  - music. *See* audio
  - mute, audio, 111
  - mutt command, e-mail operations, 252–253
  - mv command, backups, rotating, 159
- ## N
- named pipes
    - creating, 73
    - functions of, 69
  - named sockets, functions of, 69, 73
  - nano editor, 94–96
    - adding text, 94
    - control key functions, 95–96
    - launching, 61, 94
    - opening text file, 94
  - navigation
    - elinks browser, 236
    - file system, 77
    - Info screen, 14–15
    - text, paging through, 98
    - vi editor, 291–292
  - ncpfs file system, 125
  - Ndiswrapper, 220
  - nedit, 96
  - NetBSD file system, 127

- netmask, calculate from CIDR IP address, 220
- netstat command
  - daemon listening, viewing, 232
  - icecast server, verifying, 115
  - NIC statistics, displaying, 215
  - packet-level information, viewing, 231
  - statistics, refreshing, 216
  - TCP connections, viewing, 231
  - UDP connections, viewing, 231
- NetWare, 125
- network(s)
  - packet-level information, viewing, 232
  - port scanning, 232–233
  - scan entire network, 232
  - shared file systems, 125
- Network Address Translation (NAT)
  - functions of, 283
  - nat table, viewing, 283
  - Source Network Address Translation (SNAT), 284
- network backups, 157–166
  - hard links, use of, 159–160
  - incremental backups, 157, 159
  - local to remote system, copying files
    - from, 158
  - media for, 157
  - mirror directory, 159
  - from multiple client machines, 158
  - OpenSSH tools, 157, 158
  - sync files, 160
  - tgz files, writing files to, 158
- Network Configuration window
  - modem connections, 222
  - network connections, 212
  - wireless connections, 220
- network connections, 211–233
  - host computer netmask, 220
  - hostname information, 225–226
  - modems, 222–225
  - Network Configuration window, functions
    - of, 212
  - troubleshooting. *See* network connections troubleshooting
  - wireless. *See* wireless connections
  - See also* Ethernet cards; network interface cards (NIC)
- network connections troubleshooting, 227–232
  - Address Resolution Protocol (ARP), checking, 228–229
  - connectivity to host, checking, 227–228
  - default gateway, checking, 227
  - hardware, checking, 212
  - IP connectivity, checking, 227
  - network interface cards (NIC), 212
  - TCP connections, checking, 231–232
  - traceroute to host, 229–231
- Network File System (NFS), 243–245
  - add/modify directories, 243–244
  - local system directories, availability
    - of, 244
  - remote directory sharing, 243–245
  - remote shares, mounting, 244–245
  - shared directories, displaying, 243
  - Ubuntu-specific issues, 245
- network interface cards (NIC)
  - active/inactive, information on, 219
  - auto-negotiation, 213–215
  - configuration files, 216–217
  - driver information, 213
  - media access control (MAC) address, 218–219
  - mii-tool, use of, 212, 215
  - multiple interfaces, bring up/down, 218
  - network service, shutdown/bringup, 217–218
  - network-scripts files, 214–215
  - output, screen-oriented, 216
  - settings, changing, 213–214
  - settings, displaying, 212–213
  - settings, sticking at reboot, 214–215
  - statistics, displaying, 213, 215–216
  - status check, 218
  - take offline/bring online, 217
  - troubleshooting, 212
- Network Names, wireless network, 221
- network resources, 235–254
  - downloading files, 237–241
  - eLinks browser, 235–236
  - e-mail, 250–251
  - file transfer, 241–243
  - Internet Relay Chat (IRC), 249–250
  - remote directory sharing, 243–249
- Network Time Protocol (NTP)
  - stopping service, 204
  - time/date, setting with, 199–200
  - turning on service, 197, 200, 204
- newgrp command, group assignments, changing, 77
- newline characters, adding to stream of text, 103
- NeXTSTEP file system, 127
- nfs file system, 125
  - mounting at boot time, 136

## Index ■ N–P

nice command  
 nice value, changing, 180  
 nice value, viewing, 179  
 running processes, adjusting priority,  
 179–180  
 warning, 179

nixCraft, 215

nmap command  
 host scan, 232  
 network scan, 232  
 port scan, 232–233  
 verbosity from, 232

nmblookup command, IP address,  
 identifying, 247

nohup command, hang-up signal,  
 avoiding, 183

NTFS file system  
 features of, 124  
 partition, resizing, 129

ntpdate command  
 NTP time, setting, 200  
 ntpd command as replacement  
 for, 200

null characters, generating, 79

numbers, testing for, 65

**O**

Octal Dump, 79

od command  
 null characters, viewing, 79  
 special characters, viewing, 106

oem user account, installation of  
 Ubuntu, 20

Ogg Vorbis  
 CD files, encoding, 113–114  
 ogg123, playing files, 110, 117  
 skip to next song, 110

oggenc command, CD files, encoding, 113

ogginfo command, header information,  
 viewing, 113

OLDPWD, 300

Open Source Sound System (OSS), 111

OpenBSD file system, 127

OpenSSH  
 network backups, 157, 158  
 Web site/resources for, 158  
*See also* Secure Shell (SSH) service

OSTYPE, 300

ownership, files, changing, 76–77

**P**

pae flag, 194

paginating, text files, 98–99

paging  
 more/less commands, 11, 98  
 text files, 98

parameters. *See* variables

parted command  
 disk partitions, listing, 128  
 interactive use, 128–129  
 partitions, changing, 128  
 resizing partitions, 129  
 warning, 128

partition label  
 adding to partition, 130  
 as search criteria, 130  
 setting on partition, 129  
 viewing, 129, 136

partition tables  
 copy settings to, 127  
 copying, 128  
 GTP partition tables, 125  
 GUID Partition Tables, 125  
 PC-BIOS partition tables, 125

partitioning hard disk. *See* hard disk  
 partitioning

passwd command  
 lock/unlock user accounts, 278  
 password expiration, managing, 278–279  
 password setting, for user accounts,  
 274–275  
 regular user, changing password, 277–278  
 root user, changing password, 277–278  
 root user password, setting, 59

passwords, 277–279  
 changing, 277–278  
 expiration, 278–279  
 FTP server, 237  
 group assignments, changing, 76–77  
 icecast, 115  
 installation screen, 21  
 at Linux installation, 273–274  
 modems, 223  
 root users, 59, 273  
 Virtual Network Computing (VNC), 269

pasting text, vi editor, 293

patch command, patched file, output to, 105

PATH, 300  
 current, displaying, 9  
 scripts, placing in, 64

- PC-BIOS partition tables, 125
  - PDF files, creating, 12
  - permissions, 73–76
    - changing, 74–76
    - locking on file, 133
    - ownership, changing, 76–77
    - settings, characters of, 73–74
    - unmask, setting, 76
  - `pgrep` command
    - command name, search for, 177
    - process IDs, finding, 177–178
    - user related processes, finding, 177
  - PhoEnIX, 249
  - Picasa, installing, 28–29
  - pico editor, clone of. *See* nano editor
  - Pine e-mail client, 94
  - `ping` command, IP connectivity, checking, 227
  - pipe(s)
    - functions of, 55–56, 73
    - named pipes, 69, 73
    - processes, redirect output to, 55
  - `play` command
    - audio formats/effects, viewing, 110
    - music files, playing, 109–110
  - playlists
    - creating, 111
    - files, copying, 116
    - ices server, 116
  - Plesk, 274
  - Point-to-Point Protocol connection, 223
  - `popd` command
    - add/remove directories, 78
    - directories, changing order, 78
  - port forwarding, 285
  - Postscript file, viewing, 12
  - `poweroff` command, benefits of, 205
  - PPID, 300
  - `pr` command, text files, formatting for printing, 98–99
  - PRINTER, 300
  - printing
    - columns, 106
    - CUPS system PPD files, 5
    - printer, sending output to, 99
    - text files, 98–99
  - private key, use from USB drive, 262–263
  - `proc`, 301–305
    - directory information, viewing, 301–305
    - processor information, viewing, 193–194
    - as pseudo file system, 135
    - values, changing, 305
  - processor. *See* CPU; CPU management
  - procps package, 188
  - profiles
    - network backups, 161
    - Terminal window, 50
  - PROMPT\_COMMAND, 300
  - `ps` command
    - bash shell, starting, 51
    - column output, 173–175
    - every running process, viewing, 171
    - getty processes, viewing, 51
    - hierarchy of processes, viewing, 171–172
    - running processes, custom views, 175
    - running processes, viewing for current user, 170–171
    - text files, paging, 98
  - PS1, 300
  - `ps2pdf` command, PDF files, creating, 12
  - PSCP 243
  - pseudo file systems, 135
  - PSFTP, 243
  - `pstree` command, running processes, tree views, 172
  - Public key authentication, Secure Shell (SSH) service, 260–262
  - `pushd` command
    - add/remove directories, 78
    - directories, changing order, 78
  - `pvcreate` command, LVM volume, make `sdbl` on, 146
  - `pvs` command, LVM volume information, viewing, 146
  - PWD, 300
  - `pwd` command
    - print working directory, 77
    - symbolically linked directories, viewing, 78
- ## Q
- qtpartitioned partitioning tool, 126
- ## R
- RAID disks, 141–143
    - configuration of, 143
    - functions of, 141
    - softraid devices, checking, 142
    - softraid devices, managing, 142–143
    - 3ware Disk Manager, use of, 143
  - RAM
    - memory needs, determining, 189

## Index ■ R

- memory test, `memtest86`, 19
- resident size, 189
- usage, viewing, 188–190
- RANDOM, 300
- `rdesktop` command, Windows Remote Desktop, connecting to, 267
- read-only file system, mounting file system as, 135
- read/write file system
  - bottlenecks, checking for, 194
  - mounting of, 137
- read-write test, destructive, 140
- reboot
  - failure, troubleshooting, 202
  - stopping system, commands for, 205
- reboot command
  - benefits of, 205
  - warning, 205
- Red Hat Enterprise Linux (RHEL), Ubuntu compared to, 3–4
- Redundant Array of Independent Drives. *See* RAID disks
- regex, 89–90
  - See also* regular expressions
- regular expressions
  - listing of, 90
  - search based on, 83
  - text files, matching with, 89–90
- regular files
  - creating, 70
  - identifying, 69–70
  - types of, 69
- reiserfs file system, 124, 125
- Remote Desktop Preferences window, 270–271
- remote directory sharing, 243–249
  - Network File System (NFS), 243–245
  - with Samba, 245–248
  - Secure Shell Service file system (SSHFS), 248–249
- remote system administration, 255–271
  - GUI applications, running, 181
  - legacy communication tools, 256
  - port scanning, 232–233
  - screen terminal multiplexer, 263–265
  - Secure Shell (SSH) service, 255–263
  - Virtual Network Computing (VNC), 268–271
  - Windows Remote Desktop, 265–267
  - X Window System (X), 267–268
- remounting file systems, 138
- `renice` command
  - nice value, changing, 180
  - running processes, adjusting priority, 179
- replace
  - characters, 103
  - text, 102–103
- resident size, RAM, 189
- `resize` command, hard disk partition, resizing, 129
- `resize2fs` command
  - LVM volume, decreasing, 149
  - LVM volume, increasing, 148–149
- resizing images
  - batches of images, 121–122
  - single image, 119
- restricted, software repository, 22
- Rhythmbox, 115, 117
- `rm` command, backups, rotating, 159
- Rock Ridge extensions, 124
- Rock Ridge Interchange Protocol, 162, 163
- root file system, files, finding, 83
- root user
  - locking account, Ubuntu feature, 4
  - log in, warning, 59
  - password, changing, 277–278
  - password for, 59, 273
  - root login and user capabilities, 4
  - shell, enabling for, 59
- rootkits, detecting, 286
- rotating images, 119
- `route` command
  - default gateway, adding, 230
  - delete route, 230
  - local routing table, displaying, 230
  - new route, adding, 230
- routing table
  - default gateway, checking, 227
  - disabling, 230
  - local, displaying, 230
- `rsnapshot` command
  - installing, 157
  - snapshots of file, 157
- `rsync` command
  - hard links, use of, 159–160
  - incremental backups, 159
  - mirror directory, 159
  - network backups, 157, 159–160
- run levels
  - changing, 203
  - viewing, 203
- `runlevel` command, run level, viewing, 203

- running processes, 169–185
  - active, watching ongoing basis, 175–176
  - column output, 173–175
  - custom views, 175
  - hang-up signal, avoiding, 183
  - hierarchy of processes, viewing, 171–172
  - killing, 176, 179, 181–183
  - priority, adjusting, 179–180
  - run priority, adjusting, 176
  - running in foreground/background, 180–181
  - scheduling runs, 183–185
  - searching for, 177–179
  - signaling, 181–183
  - viewing, 170–175, 193
- S**
- safe mode, installation of Ubuntu, 19
- Samba, 245–248
  - configuration files, checking, 248
  - file locks, 247
  - FTP-style file sharing, 246
  - hosts, lookup, 245, 247
  - installing, 245
  - Linux user, adding, 246
  - mounting at boot time, 136
  - mounting shares, 247
  - network neighborhood, text representation of, 245–246
  - remote directory sharing, 245–248
  - services, listing, 246
- sar command, installing, 188
- saving files, vi editor, 290
- Scanner Access Now Easy (SANE), 5
- scheduling, running processes, 183–185
- scp command
  - file transfer, 241–242
  - recursive copies, 242
  - timestamp/permission, preserving, 242
  - warning, 241
- screen(s), splitting, vi editor, 290–291
- screen command
  - active screens, listing, 263–264
  - reconnect to session, 264–265
  - running, 263
  - sessions, naming, 265
  - sharing screens, 265
- screen terminal multiplexer, 263–265
  - control key functions, 264
  - functions of, 263
  - installing, 263
  - naming sessions, 265
  - reconnect to session, 264–265
  - sharing sessions, 265
- Scribes text editor, 96
- scripts
  - See also shell scripts
- scrollback lines, Terminal window support, 50
- scrolling
  - arrow keys for, 11, 53, 98
  - less command, 98
  - text files, 11
- SCSI drives, device names, 126
- sdiff command, files output, merging, 105
- search
  - bash history, 54
  - colorize search term, 100
  - criterion, negating, 84
  - files, commands for, 81–85
  - regular expressions, use of, 83
  - for running processes, 177–179
  - text strings, 99–100
- SECONDS, 300
- Secure Shell (SSH) service, 255–263
  - different port, accessing on, 258
  - functions of, 255–256
  - installing, 257
  - public key authentication, 260–262
  - remote log-in, 257–258
  - as SOCKS proxy, 259
  - tunneling, 258, 270
  - Virtual Network Computing (VNC), use with, 270
  - See also ssh command
- Secure Shell Service file system (SSHFS)
  - remote directory sharing, 248–249
  - unmounting directory, 249
- SecureApt, web site for, 18
- security, 273–287
  - chkrootkit, 287
  - firewalls, 282–286
  - FTP download issues, 240, 241
  - less command issues, 61
  - passwords, 277–279
  - SecureApt, 18, 287
  - Security Enhanced Linux (SELinux), 286–287
  - software download safety, 6
  - sticky bit, use of, 76
  - and SUID, 75
  - system binary replacement, 81
  - system logs, 286
  - tripwire, 287

## Index ■ S

- user logs, 273–274
- Virtual Network Computing (VNC) issue, 270
- Security Enhanced Linux (SELinux), 286–287
- sed command
  - change number, send to text file, 104
  - delimiter, changing, 102–103
  - multiple substitutions, 103
  - newline characters, adding with, 103
  - text, replacing, 102
- sepia tone, images, 120
- serial ports
  - COM1 settings, viewing, 224
  - information, viewing, 224
  - listing of, 223
  - modem set-up, 223–224
  - remapping, 224
- Server Message Block (SMB), 245
- Server option, downloading, 18
- set command
  - environment variables, displaying, 62
  - vi editor settings, 295–296
- setserial command
  - serial port information, viewing, 224
  - serial port remapping, 224
  - serial ports, listing of, 223
- sfdisk command
  - command options, 127
  - LVM volumes, viewing, 146
  - partition tables, copying, 127
- sftp command, file transfer, 242
- shasum command
  - checksums of files, producing, 86
  - file validity, verifying, 86
- SHA1SUM file, source for, 86
- shell, 49–68
  - aliases, 57–58
  - bash (Bourne Again Shell) history, 52–54
  - completion of commands, 54
  - delegating power, sudo command, 60–62
  - environment variables, 62–63
  - functions of, 49
  - initialization files, 52
  - output streams redirection, 54–57
  - output streams, types of, 54
  - scripts, creating. *See* shell scripts
  - settings, location of, 52
  - special characters, 297–298
  - startup files, 52
  - stderr error output, 54
  - stdin/stdout output, redirecting, 54–57
  - super user power, su command, 59–60
  - Terminal window, accessing from, 49–51
  - text-based login, 49, 51
  - Ubuntu sh shell, 49
  - variables, listing, 298–300
  - virtual terminals, 51–52
  - watching commands, 58
  - watching files, 58
- shell scripts, 63–68
  - comments, syntax for, 64
  - content, adding to, 64–68
  - editing, 63–64
  - first line, contents of, 64
  - functions of, 63
  - loop constructs, 68
  - PATH, placing in, 64
  - reference guide for, 68
  - running, 63–64
  - test expressions, operators for, 65–67
- SHELL, 300
- SHELLOPTS, 300
- shutdown command
  - benefits of, 205
  - warning, 205
- sighup command, terminal, hang-up, 182–183
- sigkill command, running processes, stopping, 182–183
- signals, to running processes, 182–183
- simulation, aptitude command, 40
- single-shot file transfers, 238–239
- slabtop command, kernel slab memory
  - cache statistics, screen-oriented view, 191
- slocate command, files, finding, 81–82
- smbclient command
  - FTP-style file sharing, 246
  - services, listing, 246
- smbfs file system, 125
- smbpasswd command, Linux user, adding to Samba, 246
- smbstatus command, current
  - connections/file locks, viewing, 247
- smbtree command, network neighborhood, text representation of, 245
- sockets, named sockets, 69, 73
- SOCKS proxy, SSH as, 259
- soft links. *See* symbolic links
  - functions of, 69
- softraid devices. *See* RAID disks
- software packages
  - APT (Advanced Package Tool), 21, 25–31

- aptitude command, 22, 36–41
- CD-ROM, installing from, 22, 23
- .deb files, building, 45–48
- debsums command, installed packages,
  - verifying, 41–45
- dpkg command, 22–23, 31–35
- file extension (.deb), 21
- GUI installation tools, 21
- HOWTO document, 25
- info documents for, 14
- installation of, 23–25
- installation tool, 21
- local error messages, 23
- management of. *See* APT (Advanced Package Tool); aptitude command; dpkg command
- non-Ubuntu, warning about, 6, 25
- package building, information source, 48
- repositories, 22–23
- repositories, adding, 24–25
- repositories, disabling, 24
- safety tools, 6
- tools, information source on, 22
- Ubuntu-specific operation, 3
- Web site/resources for, 6–7, 21–23
- Solaris file system, 124
- sort command
  - descending memory usage as basis, 101
  - by kernel module size order, 101
  - text file output, 101
- sorting
  - running processes lists, 176
  - See also* sort command
- sound-juicer, CD files, ripping/
  - encoding, 112
- Source Network Address Translation (SNAT), 284
- sox command
  - audio formats/effects, viewing, 110
  - file information, displaying, 117–118
  - seconds of sound, deleting, 118
  - WAV files, concatenating, 117
  - WAV files, mixing, 117
  - WAV to AIFF encoding, 114
- sox package, installing, 110
- special files, man pages, 12
- Speex files, 109
- spell command, nano spell checking, 94
- split command, vi editor screen, splitting, 290–291
- Splunk, 286
- squashfs file system, 124
- ssh command, 257–263
  - archives, backing up, 158
  - default key, adding, 262
  - forcible exit, 258
  - key pair, generating, 261
  - private key, storing, 262
  - public key authentication, 260–262
  - remote commands, preventing, 259
  - remote host, log-in, 257–258
  - remove stored keys, 263
  - as SOCKS proxy, 259–260
  - SSH, accessing on different port, 258
  - ssh directory, creating, 261
  - tgz files, writing files to, 158
  - tunneling, 258–259
  - unlocked keys, storing, 262
  - VNC server, using, 270
- sshfs command, remote directory,
  - unmounting, 249
- startup, management of, 203–205
- stderr
  - output, redirecting, 55
  - shell error output, 54
  - streams, redirecting, 43
- stdout
  - output, redirecting, 55
  - shell output stream, 54
  - streams, redirecting, 43
- sticky bit, security function of, 76
- storage device management, 194–196
  - bottlenecks, checking for, 194–195
  - disk read/write information, viewing, 195
  - open files/directories, checking, 195–196
- streaming music, set-up, 115–117
- strings
  - bash history, search for, 54
  - concatenate to environment variables, 63
  - replace text, 102–103
  - search, with grep command, 99–100
  - search, with less command, 98
  - search, with regular expressions, 89–90
  - tests, operators for, 65–67
- strings command, ASCII text,
  - extracting, 102
- stty command, COM1 settings, viewing, 224
- su command, shell, super user functions, 59–60
- sudo command
  - cached list of packages refresh, 10
  - commands, installing from Internet, 8

## Index ■ S–T

functions of, 4  
 Google software, installing, 28  
 shell, delegating power with, 60–62  
 Ubuntu-specific operation, 4  
 warning, 61  
 SUID, as security risk, 75  
 SunOS file system, 124  
 super user, shell, enabling for, 59  
 support, Web site/resources for, 4–5  
`svm` flag, 194  
 swap file system, 124  
 swap partitions, 133–134  
   bad blocks, checking for, 133  
   creating, 131, 133  
   `fdisk` command, 127  
   list of swap files, viewing, 134  
   swap area, creating within file, 133  
   swap area priority, specifying, 134  
   swap area, turning off, 134  
   swap area use, indicating, 134  
   swap files, listing, 134  
   usage, turn on/turn off, 134  
`swapfs` command, swap partition,  
   creating, 131  
`swapoff` command, swap area, turning  
   off, 134  
`swapon` command  
   swap area priority, specifying, 134  
   swap area, use of, 134  
   swap files/partitions, viewing, 134  
 swirling, images, 120  
 symbolic links  
   creating, 71–72, 197  
   creating to specific directory, 77–78  
   functions of, 71, 77  
   inodes, viewing, 72  
   for new script, 214–215  
 Synaptic Package Manager, 21  
 sync files, network backups, 160  
`sysctl` command  
   kernel parameters, listing, 207  
   kernel parameters, modifying, 207  
   `proc` information, changing, 305  
`sysfs` file system, 135  
`syslogd` (system log daemon), 286  
`sysstat` package, installing, 188  
 system administration, remote. *See* remote  
   system administration  
 system binaries, security issues, 81  
 system calls, man pages, 12  
 system clock. *See* time/date

system logs, 286–287  
   central logging, 287  
 system management, 187–209  
   boot loader, 200–203  
   CPU usage, 191–194  
   hardware information, viewing, 207–208  
   kernel, checking, 205–207  
   memory, 188–191  
   run levels, 203–205  
   services, 204  
   startup, 203–205  
   storage devices, 194–196  
   time/date, 196–200  
 System Use Sharing Protocol (SUSP), 162

## T

tab(s), Terminal window, 50  
 Tab key, command line completion, 54  
`tail` command  
   end of file, viewing, 97  
   end of file, watching, 97  
   file size, watching, 58  
 tape archiver. *See* `tar` command  
`tar` command, 151–153  
   adding files to archive, 156  
   archive contents, listing, 156  
   archive/compress output, 152–153  
   behavior, differences between systems, 152  
   with `bzip2` compression, 154  
   concatenate files, 156  
   dashes/no dashes in, 152  
   delete files from archive, 152, 157  
   functions of, 152  
   local to remote system, copy files from, 158  
   multiple client machines, backups from, 158  
   multiple files to add to archive,  
     matching, 156  
   return files to file system, 153  
   `tgz` files, writing files to, 158  
   `unzips/untars` archive, 153  
 TCP. *See* Transport-layer protocols (TCP)  
`tcpdump` command, packets, finding, 232  
`telnet` command, Internet protocols,  
   troubleshooting, 256  
 terminal(s), virtual, 51–52  
 Terminal Services Client. *See* Windows  
   Remote Desktop  
 Terminal window, 49–51  
   closing, 50  
   `elinks` browser in, 235

- full screen mode, 50
  - non-gnome types of, 51
  - opening, 49–50
  - shell, accessing, 49–51
  - shell-management controls, 50
  - title bar, new title, 50
- test expressions, scripts, operators for, 65–67
- testparm command
  - configuration files, testing, 248
  - default entries, viewing, 248
  - Samba configuration, checking, 248
- text, adding to images, 119
- text editors
  - Emacs editor, 91
  - GNOME, 96
  - graphical text editors, 96
  - JOE editor, 91–94
  - KDE text editor, 96
  - nano editor, 94–96
  - pico editor, 94
  - starting, 91
  - vi editor, 289–296
  - XEmacs editor, 91
- text files, 89–107
  - ASCII text, extracting, 102
  - binaries, finding text in, 102
  - bytes, finding number in, 100–101
  - character translations, 103
  - columns, manipulating, 105–106
  - comparing two files, 104–105
  - editors. *See* text editors
  - format, converting, 106–107
  - formatting for printing, 98–99
  - indenting, 99
  - line count, 82
  - listing of, 97
  - matching with regular expressions, 89–90
  - merge output of, 105
  - paging through, 98
  - patched file, output to, 105
  - replace text, 102–103
  - single column, conversion to two, 99
  - sorting output, 101
  - string searches, 99–101
  - vi editor, 90–91
  - word count, 100–101
- text mode, installation in, 20
- 3ware Disk Manager, 143
- thumbnails, images, creating, 119–120
- tightvnc, VNC server, using, 270
- time/date, 196–200
  - changing, graphical tools for, 197
  - display styles, 197
  - hardware clock, viewing/setting, 199
  - installation screen, 20
  - local/remote clocks, checking, 196
  - months, display of, 198
  - Network Time Protocol, 197, 199–200
  - system clock, reset from hardware clock, 199
  - time zone, setting, 197
  - uptime, checking, 196
- timestamp, search based on, 83
- title/title bar, Terminal window, 50
- top command
  - adjusting while running, 176
  - CPU usage information, viewing, 176, 193
  - help information about, 177
  - log of processes, creating, 176
  - memory use, screen-oriented view, 189
  - running processes, ongoing viewing of, 175–176
  - sorting options, 176
- topdump command, packets, finding, 232
- Totem, 115
- tr command
  - character translations, 103
  - delete characters, 103
  - newline characters, adding with, 103
  - range of characters, using, 103
- tracepath command, UDP, trace with, 230
- tracer command, command line completion, 54
- tracerout command
  - bottlenecks, checking for, 229–230
  - ICMP packets, use of, 230
  - set different port, 230
- transport-layer protocols (TCP)
  - connections, viewing, 231
  - TCP port, forwarding with SSH, 258
  - usage conflicts solution, 232
- tree view, running processes, 172
- tripwire, 287
- troubleshooting
  - command line tools, 7–8
  - graphical user interface (GUI), 7
  - installation, 19, 21
  - modems, 223–224
  - network connections. *See* network connections troubleshooting
  - reboot, 202
  - software package installation, 23

## Index ■ T–U

Ubuntu Web site/resources for, 4–6  
 wireless connections, 222

`tsclient` command, Windows Remote  
 Desktop, connecting to, 266–267

`tune2fs` command  
 ext2 system converted to ext3, 133  
 file system attributes, viewing, 131  
 file system settings, changing, 132  
 interval-based system checks, 133  
 time-dependent checking, 133

tunneling  
 for CUPS printing service, 258–259  
 to Internet service, 259  
 VNC to SSH, 270  
 X11 Tunneling, 258

## U

Ubiquity installer. *See* installation of Ubuntu

Ubuntu Linux  
 audio, 109–118  
 backups, 151–166  
 Code of Conduct, 5  
 command reference information sources,  
 8–12  
 compared to other Linuxes, 2, 3–4  
 documentation, resources for, 4  
 downloading, 17–18  
 file systems, 123–150  
 files, 69–87  
 images, 118–122  
 installing. *See* installation of Ubuntu  
 media, sources for, 17  
 network connections, 211–233  
 network resources, 235–254  
 remote system administration, 255–271  
 running processes, 169–185  
 security, 273–287  
 shell, 49–68  
 software packages for. *See* software  
 packages  
 system management, 187–209  
 text files, 89–107  
 unique features, 4  
 Web site/ information resources on, 4–6

UDP connections, viewing, 231

ufs file system, 124

`unalias` command, aliases, removing from  
 bash session, 58

`uname` command, kernel name,  
 displaying, 205

uncompress files. *See* compression

unified format, 104

`unison` command, 160–161  
 automatic operation, 161  
 command line mode, 160–161  
 network backups, 157  
 profile, creating, 161  
 sync files, 160

universally unique identifier (UUID), 135

universe, software repository, 23, 24

Unix  
 Emacs editor, 54, 91  
 text editors. *See* vi editor  
 text files, converting to DOS, 106–107

`unmask` command, permissions, setting, 76

unmount  
 file systems, 131, 139  
 loopback devices, unmounting, 139  
 remote directory, 249  
 unmount/eject CDs, 139  
*See also* unmount command

`umount` command  
 file systems, unmounting, 139  
 lazy unmount, 139  
 LVM volume, unmounting, 148, 149  
 virtual file system, 131

unmute, audio, 111

`until` command, 68

`update` command, NTP services, turning  
 on, 204

`updatedb` command, update local  
 database, 82

upgrades  
 APT (Advanced Package Tool), 26, 29–30  
`aptitude` command, 37  
 software packages, 26, 37

upstart, virtual terminal configuration files, 52

`uptime` command, system uptime,  
 checking, 196

USB flash drive, private key, use from,  
 262–263

user(s)  
 account set-up. *See* user accounts  
 group, creating, 274  
 logged on, viewing information on, 280–281  
 logs, 273–274  
 passwords, adding for, 274–275

user accounts, 274–277  
 adding, 274–275  
 defaults, changing, 275–276  
 deleting, 277

- root privileges, acquiring, 61
    - values, modifying, 276–277
  - User Manager window, 274
  - useradd command
    - defaults, changing, 275–276
    - defaults, overriding, 275
    - new users, adding, 274–275
  - usermod command, user accounts,
    - modifying, 276–277
  - username(s)
    - installation screen, 21
    - at Linux installation, 273–274
    - modems, 223
  - users command, logins, checking, 281
  - utilization summaries
    - CPU usage, 191–192
    - of file systems, 143–144
    - mounted file systems, 143
- V**
- variables
    - shell, listing of, 298–301
    - specifying with \$, 298
    - tests, operators for, 65–67
    - See also* environment variables
  - verbosity
    - aptitude command, 40–41
    - aptitude operations, 40
    - and compression, 154
    - hard disk scan, 140
    - mii-too output, 215
    - nmap command, 232
  - vfat file system, 125
  - vgcreate command, volume group,
    - creating, 147
  - vgremove command, LVM volume group,
    - removing, 150
  - vgs command, volume groups, viewing, 147
  - vi command
    - files, opening, 289
    - vi editor, starting, 289–290
    - VNC server set-up, 269
  - vi editor, 90–91, 289–296
    - delete/paste text, 293
    - Ex commands, 295–296
    - files, opening, 289
    - keystroke commands, listing of, 291–292
    - navigation in, 291–292
    - numbers, modifying with commands, 294
    - quitting, 290
    - saving files, 290
    - settings, changing, 295–296
    - several files, editing, 290
    - split screen, 290–291
    - starting, 289–290
    - text, changing, 292–293
    - tutorial, 289
    - vim-enhanced package, benefits of, 91, 290
    - in visual mode, 296
  - Vim (Vi IMproved), 91
    - vim-gnome, 96, 105
    - vim-X11 package, 96
    - X GUI version, 96
    - See also* vi editor
  - vimdiff command, files, comparing, 105
  - vimtutor command, 289
  - Vino, Virtual Network Computing (VNC)
    - desktop, use with, 270–271
  - virtual file system
    - creating, 131
    - functions of, 130–131
    - mounting/unmounting, 131
  - Virtual Network Computing (VNC), 268–271
    - functions of, 255, 268
    - installing, 268–269
    - passwords, 269
    - security issues, 270
    - server, set-up, 269
    - SSH, tunneling to, 270
    - start-up, 269–270
    - Vino, use with, 270–271
  - virtual terminals
    - configuring, 51–52
    - getty processes, 51
    - switching, 51
  - visual mode, vi editor, 296
  - visudo command, nano editor,
    - launching, 61
  - vmstat command
    - command options, 190
    - disk read/write information, viewing, 195
    - kernel slab memory cache statistics,
      - viewing, 191
    - memory use, viewing over time span,
      - 189–190
  - vmx flag, 194
  - VNC. *See* Virtual Network Computing (VNC)
  - vncpasswd command, VNC passwords,
    - setting, 269
  - vncserver command, VNC server,
    - starting, 269

## Index ■ V–X

vncviewer command, VNC client, starting, 269–270  
 volname command, ISO image, checking, 164  
 volume, audio, adjusting, 111–112  
 volume ID, and CDs, 164

## W

watch command  
   NIC statistics, screen-oriented output, 216  
   to watch commands, 58  
   to watch file size, 58  
 WAV files  
   concatenate to single file, 117  
   converting to Ogg format, 113  
   encoding to AIFF, 114  
   encoding to FLAC, 114  
   encoding to MP3, 114  
   mixing, 117  
   playing, 110  
   second of sound, deleting, 118  
 wc command, file lines/words/bytes, printing, 100–101  
 w dialconf command  
   modem, scan for, 222  
   modem configuration file, creating, 222  
 web page, downloading single page, 237–238  
 web space, SourceForge, 6  
 Webmin, 274  
 wget command  
   download single web page, 237  
   FTP server, 237  
   html, append to downloaded files, 238  
   interrupted download, continuing, 238  
   remote server, download from, 237  
   rename to local name, 238  
   web site, local usable copy, 238  
   web site, recursive mirror, 238  
 whatis command, keyword search, man pages, 14  
 whereis command  
   files, finding, 85  
   installed commands, finding, 9  
 which command  
   files, finding, 85  
   installed commands, finding, 9  
 which mount, to find commands, 9

who command  
   logins, checking, 280  
   user information, checking, 281  
 whoami command, root user, confirming, 60  
 Window Manager, default, 3  
 Windows  
   file transfer tools, 242–243  
   hard disk partitioning, 127  
   text files, converting, 106  
 Windows Remote Desktop, 265–267  
   connecting to with rdesktop, 267  
   connecting to with tsclient, 266–267  
   enabling, 265–266  
 Winmodems, 222  
 WinSCP, 242  
 wireless connections, 220–222  
   Ad-Hoc mode, 222  
   drivers/tools, resources for, 220  
   firmware for, 220  
   Managed/Infrastructure mode, 222  
   names of, 221  
   Network Configuration window, use of, 220  
   Network Name/Domain ID, 221  
   settings, modifying, 221–222  
   troubleshooting, 222  
   wireless card, search for, 220–221  
 wlanX, 221  
 word count, text files, 100–101  
 wvdial command, dial-up entry, use of, 223  
 wvdialconf command, modem configuration file, creating, 222–223

## X

X Window System (X), 267–268  
   capabilities, 267  
   connecting to, 267–268  
   in virtual terminal, 51  
   X server/X client, 267  
 X11 Tunneling  
   with Secure Shell Service (SSH), 258–259  
 xargs command  
   compared to exec command, 84  
   output, redirecting, 56–57  
 X-CD Roast, 161

xchat, 249  
XEmacs editor, 91  
xfs file system, 125  
xhost command, remote apps, allowing,  
    267–268  
XMMS, 117  
xterm terminal emulator, 51  
Xubuntu Linux, 2

## Z

zipped files  
    archive/compress output, 152–153  
    uncompressing, 154, 155, 156  
    untarring/unzipping, 153  
    *See also* compression  
zoom, Terminal window, 50