

Index

Symbols & Numbers

100Base-T, 815
 10Base-2, 447, 815
 10Base-5, 447
 10Base-T, 815
 16-bit data, 815
 24-bit data, 815
 2D graphics acceleration, 133, 144
 32-bit data, 815
 3D audio, 168–169, 176
 head-related transfer functions (HRTFs),
 168
 speaker support, 176
 3D graphics
 acceleration, 134–137, 144
 computer games, 134–135
 image creation, 135–136
 image quality, 137
 speed, 136
 3DNow, 53–54, 816
 x3D mouse, 236
 3D speakers, 176
 3DNow, 53–54, 816
 56K, 816
 56K modems, 181–184, 193
 64-bit, 816
 8-bit, 816
 80286, 816
 80386, 816
 80486, 817
 8086, 816
 8088, 816

A

accelerated graphics port (AGP), 126, 131–132
 accelerated graphics port (AGP) bus, 64,
 266–268, 818–819
 acceleration video card, 133–139
 accelerator, 133, 817

access time, 83, 87–89, 111, 133, 817
 CD-ROM drives, 111
 DVD-ROM drives, 111
 active matrix, 150–151, 817
 active matrix screen, 150–151
 ActiveX, 526–528, 529, 530, 531–532, 533–534,
 818
 actuator, 89
 adapter, 364, 456, 818
 ADC, 818
 Add Now Hardware Wizard, 376
 Add Scheduled Tasks Wizard, 614
 additional call option (ACO), 190
 address bus, 262
 ADSL, 192, 818
 advanced configuration and power interface
 (ACPI), 244, 817
 advanced power management (APM), 244,
 820
 AES/EBU, 665
 AGP. *See* accelerated graphics port (AGP).
 AGP bus. *See* accelerated graphics port (AGP)
 bus.
 AIFF, 819
 algorithm, 819
 all-in-one unit, 30
 alpha channel, 123, 819
 Always On/Dynamic ISDN, 188–189, 193, 820
 AMD processors, 45–46, 56
 analog modem, 181–187
 analog signal, 819
 anti-aliasing, 819
 anti-virus application, 528–529
 AO/DI. *See* Always On/Dynamic ISDN.
 API, 820
 applet, 526
 AppleTalk, 448
 application, 5, 302–305, 590–592, 820
 anti-virus, 528–529
 launching procedure, 302–303

continued

- application (*continued*)
 - launching process, 258
 - software layers, 281–282
 - upgrading, 323–326
 - virtual memory in, 302
 - Web-based, 525–536
 - application sharing, 568–570
 - architecture, 52–56
 - archives, audio, 661
 - areal density. *See* density.
 - ArcNet, 447
 - ARPAnet, 504
 - articles, newsgroup, 558
 - ASCII, 820
 - AT commands, 820
 - ATA, 95, 97–98, 820
 - ATA standard, 97–98
 - ATA-2 standard, 97–98
 - ATAPI, 97, 821
 - ATM, 447
 - attachment, 552–555, 803–804, 821
 - ATX, 431, 821
 - audio archives, 661
 - audio decoding, 169
 - audio extraction, 170, 662
 - audio interference, 149
 - audio mixer, 169–171
 - audio outputs
 - digital, 170–171
 - mixer function, 169–170
 - multiple, 170
 - using S/PDIF, 171
 - audio problems, 786–788
 - audio processing, 3D, 167–169
 - audio remixing, 669–670
 - audio, streaming, 660–661
 - autoexec.bat, 296–297, 760–761, 799–801, 821
 - automatic private IP addressing, 468–469
 - automatic skip driver agent (ASD), 741, 749
 - automatic upgrading, 324–325
 - avatars, 564
- B**
- backbones, 510
 - backside bus, 51
 - backup, tape, 115–116
 - backwards compatibility, 183, 821
 - bad sectors, 774
 - bandwidth, 263, 264, 660–661, 821
 - basic input/output system (BIOS), 57, 66, 84–85, 286–287, 756, 823
 - in booting process, 288–289
 - CMOS, 289
 - settings, 411
 - setup, 211, 288–289, 411, 434, 757–759, 788
 - upgrading, 420–423, 430
 - BAT file, 822
 - batteries, 243, 247
 - benchmark, 67, 822
 - BeOS, 350, 822
 - beta, 822
 - bicubic resizing, 638
 - bidirectional communications, 210–211, 212
 - binary file, 822
 - binary math, 822–823
 - binding, 463–464, 823
 - BIOS. *See* basic input/output system (BIOS).
 - BIOS Setup program, 211, 288–289, 411, 434, 788
 - bit, 7, 823
 - bit depth. *See* color depth.
 - bit width, 128–130
 - bitmapped graphics, 823
 - BMP, 823
 - BNC, 447, 824
 - bonding, 188
 - bookmark, 524–525, 824
 - Boolean logic, 540
 - boot, 824
 - boot disk, 725–730
 - boot drive, 415
 - boot files, 759–760
 - boot loader, 332, 756, 824
 - boot settings, adjusting, 729–730
 - boot viruses, 290
 - booting. *See also* startup problems.
 - BIOS setup, 288–289
 - DOS memory problems, 294–296
 - involving partitions, 290
 - master boot record, 289–290, 756
 - process, 288–289
 - startup files, 292–297
 - bootlog.txt, 761
 - bridge, 447, 473
 - bridge chips. *See* chipset.
 - brownout, 246

- browser. *See* Web browser.
- buffer, 89
- bugs, 723–724, 824
- bus master, 825
- bus mastering, 94–95
- bus network, 445
- bus-powered hubs, 376
- bus speed, 263, 264–265, 274
- buses, 62–64, 824
 - AGP, 267–268
 - bandwidth, 263, 264
 - chipset, 261–262
 - connection system, 262
 - I/O, 269–271
 - ISA, 266
 - as logical construct, 263
 - PCI, 262, 267
 - peripheral, 266–274
 - speed, 263, 264–265, 274
 - system, 261–262
 - Universal Serial Bus (USB), 269–270
 - X bus, 271, 272
- business card scanner, 221
- byte, 7, 825

- C**
- cable modem, 190–191, 825
 - DOCSIS standard, 190
 - Ethernet card, 190
 - potential problems, 191
- cables, 409–410, 457–459
- cache, 48–52, 89–90, 536–539, 825
 - buffer, 89–90
 - hard drive, 89–90
 - L1, 49–51
 - L2, 49–52
 - location, 50–51
 - memory, 47
 - Web browser, 536–539
- cache hit, 49
- cache miss, 49
- CAD. *See* computer aided design.
- Cakewalk Home Studio, 672
- calculations, floating point, 842
- cardBus, 825
- cascading style sheets (CSS), 574
- case, 400–404
 - installing, 401–404
 - opening, 400–401
- Cat5, 825
- cathode ray tubes (CRTs), 144, 830
- CCD, 217, 826
- CD-R. *See* recordable CD drive.
- CD-ROM, 107–108, 826
- CD-ROM drive, 20, 418–420
 - access time, 111
 - adding or upgrading, 418–420
 - physical connections, 111–112
 - rotation speed, 108–110
 - variable speed, 109–110
- CD-ROM driver, 725–730
- CD-RW. *See* recordable CD drive.
- Celeron, 51–52, 826
- Celeron A, 51–52
- Centaur processors, 45–46
- central processing unit (CPU). *See* microprocessor.
- certificates, 826–827
- channels
 - alpha, 123, 819
 - direct memory access, 276–277
 - display data, 147–148, 153, 181
- charged-couple device (CCD), 223–224
- chat. *See* live chat.
- chip, 47, 827
- chipset, 64–65, 261–262
- CISC microprocessor, 55–56, 827
- client, 450, 460–461, 827
- client-server networks, 450, 827
- clipping, 666
- cluster, 86, 827
- CMOS (complementary metal oxide semiconductor), 66, 289, 714, 827. *See also* basic input/output system (BIOS).
- CMOS battery, 422–423
- CMYK, 204, 206, 828
- codec, 650, 828
- color depth, 124–126, 218
- color management, 205–206, 828
- color printing, 204–207
 - halftone process, 206
 - options, 205
 - process, 204–205
- color profiles, 644–645
- COM, 828

- command prompt, 828
- communications, bidirectional, 210–211
- CompactFlash, 215, 828
- Compaq processors, 45–46
- compatibility
 - backwards, 183, 821
 - disk format, 114
 - universal serial bus, 791
- component video, 828–829
- composite video, 829
- compressed files, 317–319
- compression, 776, 829
 - data, 116
 - hard drives, 776
 - utilities, 617–618
- computer
 - activities, 5
 - basic concept, 253–254, 273–274
 - basic operation, 10–11
 - buying, 3–42
 - components, 11–14
 - data, 256–257
 - desktop versus laptop, 27–30
 - display subsystem, 121–154
 - expandability, 32–33
 - external devices, 18–19
 - form factor, 27–30
 - games, 35
 - general operation process, 257–260
 - hardware, 260–281
 - hardware/software relationship, 254–255
 - input and output, 255–257
 - interfaces, 268–269
 - operating principles, 253–260
 - operating system (OS), 254–255
 - plug and play, 280–281
 - purchase planning and research, 36–37, 37–38, 39–41
 - refurbished PCs, 41–42
 - resources, 275–281
 - service, 41
 - specifications, 19–21, 22–26
 - subsystems, 14–18
 - system cost, 26
 - system type, 38–39
 - typical I/O paths, 256
 - upgrading, 32, 397–435
 - user profile, 33–36
 - web browsing, 35–36
- computer aided design, 134
- computer games. *See* games.
- computer peripherals, 195–196, 874
- condenser microphones, 172
- consumables, in printing, 201–203
- conference, 568–569
- config.sys, 760–761, 799–801, 829
- connection
 - dial-up, 513–517
 - direct cable, 458–459
 - Ethernet, 447
 - hard drive, 83–84, 407–411
 - ISP, 179
 - logical, 62–64
 - MIDI, 674–676
 - network, 518
 - parallel, 870
 - peripheral bus, 266–268
 - physical, 60–62
 - printer, 210–216
 - satellite modem, 187
 - serial, 886
 - speeds, 363
 - switch box, 213
 - troubleshooting, 703–704
 - types, 425–427
 - utilities, 539–540
 - video, 648–650
- connectoid, 511
- connector, 362–364
- Content Transfer Encoding Method, 554
- continuous tone, 198–199, 829
- continuous voice recognition, 233
- control bus, 262
- controller, 93–104, 362, 367, 829
 - as drive interface, 268–269
 - and I/O buses, 269–271
 - types of, 96
- conventional memory, 278, 830
- conventions, used in this book, xi
- cookies, 534–536, 830
- Core OS components, 286
- CPU. *See* microprocessor.
- crash, 794, 830
- creative computer work, 34
- cursor, 830–831
- Cyrix processors, 45–46, 56

D

- DAT. *See* digital audio tape (DAT).
- data bus, 262
- data compression, 116
- data digital, 7-8
- data input and output (I/O), 255-257
- daughtercard, 831
- DB25, 831
- DB9, 831
- DCC. *See* Direct Cable Connection (DCC).
- DDR DRAM, 75
- DDR SDRAM, 831
- DDWG. *See* Digital Display Working Group (DDWG).
- debugging files, 723-724
- decoder, 831
- decoding
 - audio, 169
 - e-mail, 803-804
 - file attachments, 803-804
- defragmenting disks, 620-621
- demoware, 831
- density, 90-91
- desktop, 27-28, 30, 831
- Device Bay, 92-93, 362, 377-378, 832
- device driver. *See* driver.
- Device Manager, 275, 385-386, 388-389, 390, 700, 706, 707-708
- DFP, 152, 832
- DHCP, 832
- DHCP server, 513
- diagnostic programs, 730
- dial-up adapter, 511
- dial-up connection, 513-517
- dial-up network problems, 783-793
- dial-up networking, 513-517
- dial-up server, 497-498
- dialog box, 832
- digital audio, 832
 - versus analog, 666
 - digitizing process, 159
 - duplex, 161
 - editing, 666
 - equipment, 656
 - file formats, 660-662
 - hooking up, 664-665
 - MIDI and, 158, 659-662
 - normalizing files, 667-668
 - outputs, 170-171
 - recommendations, 173-174
 - recording, 664-668
 - sampling rates, 159-161, 658-660
 - special effects, 668-669
 - synthesized sound, 162-167
- digital audio tape (DAT), 115, 665
- digital camera, 196, 832
 - benefits, 222-223
 - compression, 224-225
 - features, 223
 - pixels per image, 223-224
 - printer connections, 215-216
 - recommendations, 228
 - related digital imaging devices, 226-228
 - resolution, 223-224
 - selection recommendations, 228
 - storage media, 225-226
- digital data, 7-8
- Digital Display Working Group (DDWG), 152
- digital ID, 555-556
- digital image storage, 225-226
- digital monitor connections, 152
- digital pictures
 - cleaning, 640-641
 - cropping and resizing, 637-638
 - editing, 635-637, 638-642
 - file formats, 625-628
 - printing, 643-645
 - resolution, 631-635
 - scanning, 629-638
 - sharpening, 638-639
 - sources, 626-628
 - special effects, 642-643
 - using in other programs, 645
 - using on the Web, 646-647
- digital processing, 832
- digital processor, 45-46
- digital subscriber line (DSL) technology, 191-193, 835
- digital versatile disc (DVD), 122, 836
- digital video, 140-142, 836
 - capturing, 650-651
 - completion, 653
 - connections, 648, 650
 - editing, 649, 651-652
 - special effects, 652
- digital video effects (DVE), 651
- digital-to-analog converter (DAC), 167, 171, 831

910 Index

- digitizing, 832–833
- dimensions, hard drive, 91–92
- DIMM, 68–72, 399–400, 401, 833
 - installing, 404
- DIP switch, 833
- DirecPC, 187
- direct cable connection (DCC), 458–459
- direct memory access (DMA), 97, 275–277, 711, 834
- Direct Music, 682
- direct network connection, 518
- directory, 309, 833
- directory services, 546–548
- DirectX services, 284–285
- DirectX technology, 174, 668
- disk defragmenter, 743–744, 749
- disk formats, 114–115
- disk recovery, 612–613
- disk space, freeing, 615–617
- disks, defragmenting, 619–620, 742–743
- display data channel (DDC), 147–148, 153, 831
- display subsystem
 - monitor, 144–154
 - video card, 121–144
- distribution, 833
- dithering, 206, 833
- dithering algorithms, 631
- DLL, 321–322, 833
 - moving, 723
 - shared files, 719–720
- DLS, 834
- DNS. *See* domain name server (DNS).
- DOCSIS, 190, 834
- document, 834. *See also* file.
 - applications and, 590–606
 - converting, 606–608
 - electronic, 609–611
 - opening, 602–603
 - printing, 609
- Dolby Digital, 107, 108, 169
- domain name, 834. *See also* Web address.
- domain name server (DNS), 467, 507–508, 834
- DOS, 294–298, 834–835
 - conventional memory, 294
 - DOS/Windows memory map, 294
 - expanded memory (EMS), 295
 - extended memory (XMS), 294, 295
 - himem.sys requirement, 295
 - management with Emm386.exe, 295
 - memory, 294–296
 - problems, 796–797
 - upper memory blocks (UMB), 294
- dot pitch, 147, 835
- dots per inch (dpi), 147, 199–200, 209, 835
- downloading, 311–319, 835
- downloading/uploading transfer rate, 179
- downstream rate, 179
- Dr. Watson, 736–739, 749, 794
- DRAM, 71–76, 835
- DreamWeaver, 572
- drive bays, 408
- drive cache, 89–90
- drive interfaces, 268–271
- drive letter problems, 775–776
- drive mapping, 483–485
- drive sharing, 482–485
- DriveSpace 3, 617–618
- drive speed, 87
- driver, 835
 - CD-ROM, 725–730
 - DOS, 797–801
 - extending BIOS, 286–287
 - installing, 384–385, 419–420, 709–710
 - real-mode, 710–711
 - removable, 881
 - removing, 389–393
 - troubleshooting, 706–711
 - updating, 709–710
 - upgrading, 385–389
- dropping out, 661
- DSL, 835
- DSL Lite, 192
- DSL modems, 191–193
- DSTN, 836
- DSVD modem, 186, 836
- dual boot, 836
- dual scan, 836
- dual-ported memory, 128
- duplex systems, 836
- DV. *See* digital video.
- DVD. *See* digital versatile disc (DVD).
- DVD-ROM, 107–108, 419, 837
- DVD-ROM drive, 20, 107
 - access time, 111
 - adding or upgrading, 418–420
 - installing, 419

- physical connections, 111–112
 - rotation speed, 108–111
 - variable speed, 109–110
- DVD-ROM driver, 725–730
- DVI, 152
- dye sublimation printing, 198–199, 837
- dynamic link libraries (DLLs), 285
- dynamic RAM. *See* DRAM.
- dynamics processing, 668

E

- E-IDE, 95, 97–98, 838
- e-mail, 838
 - account editing, 543–546
 - account establishment, 541–543
 - alternative communication options, 556–570
 - attachments, 552–555, 803–804
 - decoding file attachments, 803–804
 - finding addresses, 546–548
 - message formats, 802–803
 - message types, 548–551
 - problems, 802–804
 - security, 555–556
 - signature, 551–552
- ECC, 78, 837
- ECC memory, 405
- ECP, 211, 838
- editing
 - digital audio, 666
 - digital pictures, 642–647
 - ECP, 649–650
 - e-mail accounts, 543–546
 - files, 595–598
 - MIDI views, 677–679
 - online versus offline, 649–650
 - startup files, 763–764
 - video, 649–650, 651–652
- editor/librarian, 690–691, 838
- EDO, 74, 127, 838
- EDO RAM, 74, 127
- EIDE, 95, 97
- EISA, 838
- electronic document format, 609–610
- EMF, 838
- EMS, 838–839

- encoder, 839
- encoding, 553–555
- encryption, 555–556, 839
- enhanced resolution, 218
- enumeration, 839
- EPP, 211, 839
- EPROM, 424–425, 839
- equalization, 666–667
- ergonomic keyboard, 234–235
- error correction, 77–78, 839
- Ethernet, 446, 448, 840
 - adapters, 456, 511
 - cable, 458
 - connections, 447
- Ethernet card, 192
- Ethernet network card, 190
- executable file, 840
- expandability, 32–33
- expanded memory, 295, 840
- expansion card
 - installing, 380–383
 - upgrades, 32
- exporting, 840
- Ext2, 840
- extended data out RAM. *See* EDO RAM.
- extended memory, 840–841
- extended memory specification, 294
- extension, 592–594, 840
- external hardware, 371–378
- extraction, audio, 170, 662

F

- FAQ, 841
- fast page mode RAM. *See* FPM RAM.
- FAT, 85–87, 330, 413, 483, 841
 - extensions, 86
 - volume limitation, 86
- favorite. *See* bookmark.
- FDDI, 447
- FDISK utility, 290, 841
- file
 - backing up, 612–615
 - BAT, 822
 - boot, 759–760
 - changing associations, 596–598

continued

file (*continued*)

- compressed, 317–319, 617–618
- converting, 606–608
- corruption, 722–723
- creating, 598–602
- editing, 594–598
- executable, 840
- extensions, 592–594
- finding, 316–317
- format, 660–662, 841
- host, 469, 848
- initializing, 298
- managing, 611–621
- moving, 617
- opening, 602–604
- opening with other applications, 604–608
- printing, 305
- restoring/reinstalling, 767–768
- security, 481
- Send To command, 605–606
- sharing, 478–481, 608–609
- sound, 657–658
- standard MIDI, 157
- standardization, 591–592
- startup, 288, 292–297
- swap, 811
- system, 767–768
- templates, 600–602
- turning off, 762–766
- types, 594–598
- Windows installation, 337–338

file allocation table. *See* FAT.

file formats

- digital audio, 660–662
- digital pictures, 625–626

final mixdowns, 680–682

FIND utility, 316

firewall, 842

FireWire, 362, 842

firmware, 424–425

flames, 562

flash BIOS, 421–422

flash memory, 71, 842

FlashPix, 625, 626, 842

FlashPix CD, 627, 628

flatbed scanner, 217

flat panel, 149, 842

flat-panel monitors, 145, 146, 147, 152–153.
See also liquid crystal display (LCD).

flat-panel speakers, 176

flight simulator games, 240

floating point calculations, 842

floppy drive, 105, 107, 842

flopticals, 107

FM synthesis, 163–164, 843

folders, 309

font, 610, 652, 843

force feedback, 240, 843

form factor, 843

format, 843

FPM, 73–74, 127, 843

FPS, 843

fragmentation, 844

frame buffer, 121, 126, 128, 844

frame grabber, 227, 844

freeware, 312–313, 844

frequency, 844

FTP (File Transfer Protocol), 311, 504, 582–583, 693, 845

full bleed, 203

full duplex audio, 161

G

G.Lite, 845

game controllers, 239–240

gamepad, 240

games, 135

- DOS, 797–801
- and entertainment, 35
- flight simulator, 240
- multiplayer, 491–492
- playing over networks, 491

gamma, 845

gateway, 473, 845

Gb/GB, 845

Gbps/GBps, 845

GDI, 846

General MIDI, 846

GHz, 846

GIF, 625, 626, 646, 846

gigabit/gigabyte, 846

gigabyte, 9, 82

GNU Network Object Model Environment (GNOME), 349

Gopher, 504
 graphic tablets, 238–239, 846
 graphics, 652
 graphics device interface (GDI), 286
 grayscale imaging, 846
 grounding strap, 379
 GUI, 846–847

H

H.323/H.324, 847
 half duplex audio, 161
 halftone screens, 631
 halftone usage, 847
 halftoning, 199
 handwriting recognition, 847
 hard disk. *See* hard drive.
 hard disk controller. *See* controller.
 hard drive, 10, 847

- adding, 406–418
- adjustments, 758
- BIOS settings, 411
- care, 618–620
- compression, 776
- configuring settings, 407
- connections, 83–84, 407–411
- copying Windows CD files, 337–338
- defragmenting, 620
- dimensions, 91–92
- FAT16 versus FAT32, 85–86
- freeing up space, 615–617
- interfaces, 93–104
- operation, 82–83
- partitions, 84, 290–292, 413–414
- preparing for use, 413–414, 414–415
- problems, 773–776
- recommendations, 104
- reinstalling, 750–753
- removable, 105–106
- sharing, 482–483
- size limitations, 84–87
- size problems, 417–418
- specifications, 82, 87–93
- speed, 87
- storage capacity, 82
- testing the connection, 412

hardware

- adding, 371–383
- buses, 261–263
- drive interfaces, 268–269
- external, 371–378
- internal, 378–383
- overall structure, 260
- problems, 771–793
- processor, 264
- removing, 393–394
- resources, 275–281, 364–371
- troubleshooting, 705–718
- upgrades, 423–425

hardware accelerator, 133

hardware resources

- conflicts, 279–280
- device manager control, 275
- DMA channels, 276–277
- I/O addresses, 277
- IRQs, 276–277, 365–371
- levels of, 275–281
- limits, 365
- memory ranges, 277
- Plug and Play, 280–281

hardware synthesis, 166

head-mounted displays, 240

head-related transfer functions (HRTFs), 168

header, 627

HFS, 847

Hi-Color, 123

HiFD, 107, 118, 848

High Memory Area, 294

high speed access modem, 180

himem.sys, 295, 301

histogram, 636–637, 848

home networking, 472–478. *See also* network.

- phone lines, 476
- power lines, 476–477
- wireless, 472–478

home office, 33–34

HomePNA, 476

HomeRUN, 476

HomeSite, 572

host adapter, 373, 848

host file, 469, 848

hot plugging, 92, 371, 848

HPA, 151, 848
 HPFS, 849
 HTML, 520, 548–551, 849
 basics, 574–579
 tags, 576–578
 HTTP Protocol, 449, 693, 574–579,
 849
 hub, 376, 443, 473, 849
 hyperlink, 549, 849
 HyperTerminal, 781–782

I

IBM processors, 45–46
 I/O, 849
 I/O addresses, 277
 I/O buses, 269–271
 icon, 850
 IDE controllers, 83, 93–95, 410, 418, 850
 IDE interfaces, 418
 IEEE 1284, 850
 IEEE 1394, 83, 93, 95, 103–104, 362, 647–648,
 850. *See also* controller.
 IIP (Internet Imaging Protocol), 627
 image compression, 224–225
 image editor, 850
 image storage, digital, 225–226
 images. *See* digital pictures.
 imaging, continuous tone 198–199
 IMAP4, 850–851
 IMATIONIS-120 floppy writer 107, 118
 import, 851
 industry standard architecture (ISA) bus,
 266–267
 VESA local, 266
 Xbus, 272
 industry standard architecture (ISA)
 connector, 156, 854
 resource conflict, 714–717
 INF file, 851
 information, 6
 information movements. *See* data input and
 output (I/O).
 Infrared wireless (IrDA), 215
 INI file, 851
 inkjet, 851
 cartridges, 202–203
 printing, 196–199

input device, 16, 851
 built-in pointing devices, 237
 features, 232
 game controllers, 239–240
 graphic tablets, 238–239
 keyboard, 232–234
 mice, 235–237
 purchase recommendations, 240–241
 significance of, 231
 wireless, 236

installing
 cases, 401–404
 DIMM, 404
 drivers, 384–385, 419–420, 709–710
 expansion card, 380–383
 Linux, 348–353
 microprocessors, 428–430
 motherboards, 434–436
 operating systems, 328–354
 programs, 308–328
 software, 308–355, 459
 Windows 95, 332–334, 345–347
 Windows 98, 332–334
 Windows 2000, 347–348

instructions, 851
 Int13, 852
 interface, 95, 852
 interference, audio, 149
 interlace operations, 147
 interlaced signal, 852
 interleaving, 852
 internal hardware
 connections, 380–382
 drivers, 384–393
 pc cards, 383
 precautions, 378–379
 International Standardization Organization
 (ISO), 453
 International Telecommunications Union
 (ITU), 182
 Internet, 503–585, 852
 application sharing, 568–570
 connection to, 488–491, 510–518
 downloading programs, 311–319
 finding information on, 540–541
 operation, 504–518
 phone calls, 565–568
 problems, 780–785, 801–802
 security, 528–541

videoconferencing, 568–570
 website connections, 505
 Internet Connection Wizard, 513–514, 559
 Internet Engineering Task Force (IETF), 522
 Internet Service Provider. *See* ISP.
 InterNIC, 467–468
 interrupt, 852. *See also* IRQ.
 interrupt request. *See* IRQ.
 intranet, 492–496, 852
 I/O addresses, 275, 277–279
 IO.sys, 292–293, 853
 IOsubsys, 391
 IP address, 507–508, 513, 853
 IPX/SPX, 448, 853
 IRC (Internet relay chat), 563–564, 853
 IRDA, 853
 IRQ, 32, 213, 276–277, 711–712, 854. *See also*
 resources.
 device limits, 368
 users, 369–370
 ISA. *See* industry standard architecture.
 ISDN, 854
 ISDN modems, 187–190, 193
 additional call option (ACO), 190
 AO/DI technology, 188–189
 home office, 189
 multiple phone lines connections,
 189–190
 plain old telephone service (POTS), 189
 isochronous data, 104, 788
 ISP, 508, 558, 854–855
 ITU Protocol, 182

J

Java, 526–528, 529, 855
 Java Virtual Machine, 527, 531–532
 JavaScript, 526–528, 529, 855
 Jaz drive, 105, 112–113
 Jaz Traveller adapter, 364
 joystick, 240, 776–778, 855
 JPEG, 625, 626, 627, 646, 855–856
 jumpers, 280

K

Kb/KB, 856
 Kbps/KBps, 856

kernel, 286, 856
 Kernel Toys, 744
 keyboard, 16, 232–234
 ergonomic, 234–235
 notebook, 234
 problems, 776–778
 USB version, 241
 Windows keys, 232–233
 wireless, 236
 kilobit/kilobyte, 856
 kilobyte, 8–9
 Kool Desktop Environment (KDE), 349

L

L1/L2 cache, 264, 856
 label printers, 210
 laptop. *See* notebook.
 laser printer, 857
 laser printing, 196–199
 latency, 857
 LBA, 84, 857
 LCD. *See* liquid crystal display (LCD).
 LCD panel, 857
 LDAP, 547, 857
 LDI, 152, 857
 legacy devices, 271, 858
 level 2 (L2) cache, 264–265
 libraries, 858
 LILO, 858
 line conditioner, 245–246, 858
 line input, 676
 lines per inch (lpi), 209, 859
 Linux, 31, 858–859
 creating new user accounts, 353–354
 hardware recognition, 352
 installing, 348–353
 logging in, 353
 partitions, 351
 Lion, 243, 859
 Liquid Audio, 660, 692
 liquid crystal display (LCD), 122, 149–153
 active matrix, 150–151
 color and resolution limitations,
 151–152
 connection methods, 152–153
 passive matrix, 151
 live chat, 563–565

916 Index

local area network (LAN), 442, 857
 log, 859
 logging in/out, 859
 low pin count (LPC), 273
 low voltage differential (LVD) signaling, 102
 LPI, 859
 LPT, 860
 LS-120, 860
 lurkers, 561–562
 LVD signaling, 102

M

Macintosh

adding to your PC network, 470–472
 power chips, 55

MacOS, 31

macro, 860

Magic Lasso, 641

Magic Wand, 641–642

mainboard. *See* motherboard.

Maintenance Wizard, 618–619, 739

mapping, 860

masking, 641

master boot record (MBR), 289–292, 756, 860

Mb/MB, 860–861

Mbps/MBps, 861

MDRAM, 125

media, 861

streaming, 889

MediaGX processor, 127

Media Player, 656, 658

megabit/megabyte, 861

megabyte, 8–9

megapixel, 861

memory, 425, 861

adding, 399–405

connection speed, 264

conventional, 830

DOS, 294–295

dual-ported, 128

ECC, 405

expanded, 840

expanded DOS, 295

extended DOS, 294–295

features, 68

flash, 71, 842

level 2 (L2) cache, 264–265

non-parity, 77–78

parity, 77–78, 405

printer, 425

problems, 794–797

RAMBus DRAM, 265–266

range, 215, 275, 277–279, 711

read only, 106, 286–287

recommendations, 78–79

reconfiguring, 404–405

single ported, 128

specs, 72–73

standard, 264

synchronous graphics random access, 127, 886

testing, 405

types, 71–76

upgrades, 32–33

video card, 126–130, 144

virtual, 303, 899

virtual channel, 76–77, 898–899

Windows, 278

message formats, 802–803

metatag, 861

MFD, 207–208, 862

MHz, 862

microphone, 171–172

microprocessor, 12, 44–68, 256, 830, 862

alternatives, 56–57

architecture, 52–56

cache, 44–45

connection types, 425–427

electrical specs, 62

installing, 428–430

logical connections, 62–64

multiprocessors, 59–60

operation, 44–45

notebook, 57–58

physical connections, 60–62

processing data bits, 54–55

recommendations, 66–68

RISC versus CISC, 55–56

speed, 47–48

types, 45–46

upgrading, 425–430

MIDI (Musical Instrument Digital Interface),

157, 162–163, 655, 659, 862

auto-accompaniment software, 691–692

- basics, 670–672
- connections, 674–676
- controller, 674
- differences from digital audio, 659–662
- editing views, 677–679
- final mix downs, 680–682
- general specifications, 682–688
- joystick port, 172–173
- music notation software, 688–690
- note number, 670
- operation, 672–674
- patch editor/librarians, 690–691
- problems, 787
- quantization with, 679–680
- sequencing programs, 672–688
- sound cards, 659–662
- standard, 163, 682–688
- standard file types, 681–682
- tracks versus channels, 672
- velocity, 670
- MIDI Manufacturer's Association (MMA), 682
- millennium bug. *See* Y2K problem.
- millisecond, 862
- MIME, 522, 553–554, 803, 862–863
- MiniDisc, 665
- mini-tower, 30
- mixer function, 169–170, 142
- mixing down, 666
- Mixman Studio, 670
- MJPEG, 142, 863
- MMX, 45, 53, 54, 863
- mobile module, 59
- modem, 16–18, 21, 864
 - 56K, 181–184
 - analog, 181–187
 - AO/DI, 188–189, 193
 - basic function, 178–179
 - cable connected, 190–191
 - DSL technology, 192–193
 - features, 179
 - high speed access, 180
 - improving access, 193–194
 - Integrated Services Digital Network (ISDN), 187–190
 - ISP connection, 179
 - line quality, 782–783
 - problems, 780–785
 - recommendations, 193
 - speed, 179–180, 182, 782–783
 - standards, 182
 - terminal adapters, 178
 - testing, 781–782
 - transfer rate, 179
 - voice-enabled, 184–186
 - wireless, 186–187
- modulation, 17
- monitor, 16, 864. *See also* screen.
 - audio interference, 149
 - built-in components, 148–149
 - CRT-based, 144–149, 153
 - features, 144, 148–149
 - flat-panel, 145, 146
 - LCD-based, 145, 149–153
 - recommendations, 153
 - resolutions, 146–147
 - sizes, 145
 - speakers, 148–149
 - USB hubs, 149
- Moore's Law, 37
- motherboard, 12, 380, 864
 - installing, 434–436
 - removing, 432–433
 - replacing, 431–436
- Motion Picture Export Group (MPEG),
 - formats, 107, 108, 138, 863, 865
- motion video acceleration
 - compression, 138–139
 - MPEG formats, 138
 - zoomed video, 139
- mouse, 16, 864
 - 3D, 236
 - cleaning, 237
 - features, 235–236
 - navigating without, 777–778
 - pointing alternatives, 237
 - problems, 776–778
 - PS/2, 235
 - trackballs, 237
 - USB, 235, 241
 - wireless, 236
- MP3, 660, 864
- MPEG. *See* Motion Picture Export Group (MPEG).
- MPU-401, 163, 865
- MTUSpeed, 539
- multibank DRAM, 125

- multichannel audio, 176–177
- multifunction printing devices, 207–208
- multimedia, 865
- multiple audio outputs, 170
- multiprocessor systems, 59–60
- multispeaker systems, 176–177
- multitasking, 865
- multitimbral synthesizers, 865
- music, 655–694
 - adding files to Web pages, 693–694
 - audio remixing, 669–670
 - converting files from the Web, 692–693
 - digital music applications, 668–692
 - MIDI basics, 670–672
 - MIDI sequencing programs, 672–688
 - MIDI software options, 689–692
 - music notation software, 688–690
 - putting sound files on the Web, 692–694
- Music Match, 657–658

N

- nanosecond, 865
- NetBEUI, 448, 461–462, 866
- NetBIOS, 465, 866
- NetMedic, 539
- NetMeeting, 568–569
- Netscape Messenger, 545–546, 547, 550, 552, 554, 559–560, 561
- NetWatcher, 500–502
- network, 439, 866
 - adding Macintosh, 470–472
 - architectures, 446–448
 - basic concepts, 440–455
 - binding, 463–464
 - building, 455–474
 - client-server, 450–451
 - clients, 459, 460–461
 - data, 441–442
 - expanding, 472–474
 - home, 474–478
 - layouts, 444–446
 - messaging, 499–500
 - monitoring, 500–502
 - names, 464–466
 - Open Systems Interconnection model, 451–455

- operating systems, 451–452
- peer-to-peer, 450–451, 460–461, 479–481
- problems, 793
- protocols, 448–449, 459, 461–463
- ring, 445
- software, 459–466
- star, 444, 446
- structure, 443–446
- types, 449–451
- using, 478–502
- wireless, 477–478
- network connection, 518
- network control panel, 460
- network interface cards (NIC), 442, 866–867
- newsgroup, 557–563, 866
- NIC. *See* network interface cards (NIC).
- NiCAD, 243, 867
- NiMH, 243, 867
- NLX, 431, 867
- non-parity memory, 77–78
- normalizing, 867
- NOS, 451–452, 867
- notebook, 27–30, 32–33, 383, 857, 867
 - keyboards, 234
 - microprocessor, 57–58
 - power supply, 243
 - upgrading, 59
- NTFS, 86, 868
- NTSC, 868

O

- offline editing, 648
- OnNow, 244, 868
- OpenWith command, 605
- open source, 868
- operating system (OS), 31–32, 254–255, 868–869
 - choices, 31
 - installing, 328–354
 - network, 451–452
 - software layers, 281–282, 282–283
 - using more than one, 329–330
- OPL3, 869
- optical character recognition (OCR), 221
- optical resolution, 218, 869

- OS/2, 31, 869
 - OSI model, 452–455, 869
 - components, 453
 - data transfer, 453
 - layers, 453–454
 - OSR, 340, 341, 870
 - Outlook, 543–544, 545, 547, 549–550, 552, 554
 - Outlook Express, 543–544, 545, 547, 549–550, 552, 554, 558–563
 - output devices, 16
 - outputs, audio
 - digital, 170–171
 - mixer function, 169–170
 - multiple, 170
 - using S/PDIF, 171
 - overclocking, 428–429
 - overdubbing, 666, 673–674
- P**
- P&D, 152, 870
 - packets, 447, 508
 - page description language, 204
 - PageMill, 572
 - parallel connections, 870
 - parallel port, 18–19, 372–373, 870
 - pass through, 212
 - switch box connections, 213
 - types, 211
 - parallel port scanners, 219
 - parity, 870
 - parity memory, 77–78, 405
 - partition, 290–292, 330–332, 871
 - active, 292
 - adding or removing, 774–775
 - creating, 331–332
 - multiple, 292
 - problems, 774–776
 - types, 331
 - Partition Magic, 290, 331, 775
 - partition table, 290
 - passive matrix, 151, 871
 - passive matrix screens, 151
 - patch, 162, 323, 673, 871
 - path, 872
 - PC 98, 22–26, 872
 - PC 99, 22–26, 872
 - PC Card, 111–112, 383, 872
 - PC98/PC99, 872
 - PCI. *See* peripheral component interconnect (PCI).
 - PCI IRQ Steering, 717–718
 - PCMCIA, 873
 - PCX, 873
 - PDA, 873
 - PDF, 609–610, 873
 - peer-to-peer networks, 450–451, 460–461, 479–481, 874
 - Pentium, 45–46, 874
 - perceptual audio coding, 660
 - peripheral, 874
 - peripheral buses
 - accelerated graphics port (AGP) bus, 131, 132, 266–268
 - I/O buses, 269–271
 - industry standard architecture (ISA) bus, 266–267
 - peripheral component interconnect (PCI) bus, 131, 132, 266–267
 - resource conflict, 717–718
 - throughput rates, 363
 - universal serial bus (USB), 215, 269–270, 375–377, 790–791, 896
 - video card connections, 266–268
 - peripheral component interconnect (PCI), 132, 873
 - bus, 131, 262, 266–267
 - connectors, 156
 - resolving resource conflicts, 717–718
 - steering, 717–718
 - personal Web Server, 493–495
 - phone lines, 476
 - Photo CD, 625, 626, 628, 874
 - photo collages, 641–642
 - photo printers, 208–209
 - photo scanners, 220–221
 - physical modeling synthesis, 166
 - pianissimo, 689
 - Picture CD, 626–627, 628, 874
 - Picture Disk, 627, 628
 - Picture Disk Plus, 628
 - pictures. *See* digital pictures.
 - PIF (program information file), customizing, 797–799, 874–875
 - ping, 875

- PIO (programmed I/O), 97, 875
- pipelining, 47, 875
- pixel, 123–124, 875
- pixel doubling, 218
- plain old telephone service (POTS), 189, 877
- platform, 875
- Plug and Play, 280–281, 713, 716–717
- plug-in, 520–524, 875
- PNG, 625, 626, 646, 876
- PnP, 876
- point-to-point protocol (PPP), 442, 877
- pointing devices, 237
- pointing stick, 237
- polyphony, 156, 162, 876
- POP3, 876
- port, 18–19, 876
- positional audio. *See* 3D audio.
- POST (power-on self test), 288, 756, 877
- PostScript, 877. *See* page description language.
- POTS. *See* plain old telephone service.
- power, 231
 - batteries, 243
 - key issues, 241–242
 - line conditioners, 245–246
 - management, 244
 - notebook, 243
 - portable, 243
 - recommendations for peripherals, 248
 - significance of, 231
 - supplies, 242–244
 - surge protectors, 245
 - uninterruptible power supply (UPS), 247
- power connectors, 409
- power lines, home networking, 476–477
- power management, 244, 877
 - ACPI (Advanced Configuration and Power Interface), 244
 - Advanced Power Management (APM), 244
 - OnNow, 244, 868
 - problems, 788–789
- power supply, 242–244
 - redundant, 244
 - wattage, 243–244
- powerline-based networking, 246
- PPM, 877
- PPP. *See* point-to-point protocol.
- print quality, 200
- print resolution, 199–200
- print server, 451
- print speed, 201
- printer, 26, 195–196, 425, 478, 485–487
 - bidirectional communications, 210–211, 212
 - BIOS setup program, 211, 212, 215
 - color printing, 204–207
 - connections, 210–216
 - consumables, 201–203
 - cost per page, 201–203
 - digital camera, 215–216
 - digital photo, 208–209
 - driver, 210
 - dye sublimation technology, 198–199
 - features, 196
 - infrared wireless (IrDA), 215
 - inkjet, 196–199, 202–203
 - labels for, 210
 - laser, 196–199
 - memory, 425
 - multifunction, 207–208
 - OS support, 204
 - page description language, 204
 - paper size, 203–204
 - parallel ports, 211–212
 - print quality, 200
 - print speed, 201
 - problems, 778–779
 - recommendations, 216
 - resolution, 199–200, 631–632
 - selection, 216
 - sharing, 478, 485–487
 - specialty, 206–207
 - specialty papers, 203
 - switch boxes, 213–214
 - thermal transfer, 196
 - USB port, 215
- printer driver, 210
- printing
 - digital pictures, 643–645
 - files, 305
 - software function, 305
 - software operation concepts, 305
 - specialty, 609
- printing control language (PCL), 204, 873
- private key, 555–556
- problem definition, 698–699

- problems. *See also* troubleshooting.
 - audio, 786–788
 - compression, 776
 - crashes, 794–797
 - e-mail, 802–804
 - hard drive, 773–776
 - hardware, 771–793
 - Internet, 780–785, 801–802
 - joystick, 776–778
 - keyboard, 776–778
 - memory, 794–797
 - modem, 780–785
 - mouse, 776–778
 - network, 783–785, 793
 - partitions, 774–776
 - power management, 788–789
 - printer, 778–779
 - screen, 772–773
 - SCSI, 792
 - shutdown, 771
 - software, 793–804
 - sound card, 786–788
 - startup, 756–770
 - USB, 790–791
 - video display, 772–773
 - Web browser, 801–802
 - process, 746
 - processing, digital, 832
 - processor. *See* microprocessor.
 - program, 5
 - change, 673
 - diagnostic, 730
 - downloading off the Internet, 311–319
 - installing, 308–328
 - reinstalling, 326–328
 - protected mode, 878
 - protocol, 511, 621, 878
 - FTP, 311, 504, 582–583, 693, 845
 - HTTP, 449, 693, 849
 - IP, 621
 - IPX/SPX, 448
 - ITU, 182
 - network, 448–449, 459, 461–463
 - point-to-point, 442
 - Real Time Transport, 567
 - TCP/IP, 511
 - User Datagram, 567
 - protocol stacks, 449
 - protocol wrapping, 449
 - proxy server, 488–491, 878–879
 - PS/2, 879
 - psychoacoustical modeling, 660
 - public key, 555–556
 - Publisher 2000, installation, 319–321
- ## Q
- QIC. *See* quarter-inch cartridges.
 - quantization, 679–680, 879
 - Quarter Deck Expanded Memory Manager (QEMM), 295
 - quarter-inch cartridges (QIC), 115
 - Quick Time, 651
 - Quick View, 602–603
 - QWERTY, 232
- ## R
- RAID, 102, 142, 879
 - RAM. *See* random access memory.
 - Rambus, 880
 - RAMbus DRAM, 265–266
 - RAMDAC. *See* random access memory digital-to-analog converter (RAMDAC).
 - random access memory (RAM), 8–10, 71–76, 880
 - random access memory digital-to-analog converter (RAMDAC), 128, 130–131
 - ratings functions, 529
 - raw, 880
 - RCA, 880
 - RDRAM, 75–76, 144, 265, 880
 - read only memory (ROM), 106, 286–287, 883
 - real mode, 710–711, 881
 - RealAudio, 520, 880
 - RealPlayer, 520, 521
 - RealTime Transport Protocol, 567
 - RealVideo, 520, 653
 - recordable CD drive, 113–117, 826, 836
 - recordable DVD drive, 113–117
 - recording CDs, 663–664
 - recycle bin, 357
 - Red Book audio, 662
 - redundant array of inexpensive disks. *See* RAID.
 - redundant power supplies, 244

922 Index

refresh rates, 130
 registry, 285, 881
 changing settings, 300
 cleaning, 357–358
 file organization, 299–300
 fixing, 769–771
 Windows startup role, 299
 reinstalling
 hard drive, 750–753
 upgrades, 326–328
 Windows 95, 335–345
 Windows 98, 335–345
 Registry Checker, 739–740, 749, 769
 Registry Editor, 600–602
 REM, 881
 remixing audio, 669–670
 remote access server (RAS), 496–499
 removable drive, 105–106, 881
 removable storage device, 105–119
 adjustments, 758
 features, 106
 costs, 116–119
 hard drive, 105–106
 options, 112
 recommendations, 117–118
 sharing, 482–483
 removing upgrades, 325–326
 repetitive stress injuries (RSIs), 234
 resampling, 635
 resolution, 882
 charge-coupled device (CCD), 223–224
 color depth, 125–126
 CRT-based monitor, 146–147
 digital camera, 223–224
 digital picture, 631–635
 dot pitch, 147
 dot-per-inch (dpi) rating, 147
 enhanced, 218
 image size and, 633
 interpolation, 218
 noninterlaced operation, 147
 optical, 218
 printer, 199–200, 631–632
 scanner, 217–218, 631–632
 screen, 633–635
 video card, 123–124
 resource, 364–371, 882
 changing, 716–717
 limits, 365

 reserving, 715
 troubleshooting, 711–718
 resource conflict, 712
 ISA devices, 714–717
 PCI devices, 717–718
 RGB, 206, 882
 Rich Text Format (RTF), 548–551
 Richochet Wireless modem, 187
 RIMM, 68–72, 399–400, 404, 882
 ring network, 445
 RISC microprocessor, 55–56, 882–883
 Rise Technology processors, 45–46
 RJ-45, 883
 ROM. *See* read only memory (ROM).
 root directory, 883
 rotation speeds, 89
 router, 473, 488, 508, 883
 RTF, 548–549, 551, 883–884
 RTP, 567

S

S-RIMMs, 72
 S-Video, 890–891
 S/MIME, 555
 S/PDIF, 171, 665
 safe mode, 761–762
 sampling 690, 884
 SANDRA utility, 322, 746–748
 satellite modem connections, 187
 satellite speakers, 175
 ScanDisk, 618–619, 739, 749
 scanner, 7, 16, 195–196, 487, 629–638, 884
 bundled software, 221
 business card, 221
 color depth, 218
 enhanced resolution, 217–218
 features, 217
 flatbed scanners, 217
 interface types, 219
 optical resolution, 218
 ORC program, 221
 parallel port, 219
 photo, 220
 pixel doubling, 218
 quality, 217
 recommendations, 221–222
 resolution, 631–632

- SCSI-based, 219
- selection recommendations, 221–222
- sharing, 487
- sheet-fed, 217
- size and speed, 219–220
- specialty types, 220–221
- USB connections, 219
- screen, 150–151, 772–773
 - active matrix, 150–151
 - passive matrix, 151
 - problems, 772–773
 - resolution, 633–635
- SCSI. *See* Small Computer Systems Interface (SCSI).
- SDRAM, 75, 884–885
- SDSL, 885
- search engine, 540–541, 584, 885
- SECC, 885
- sector, 775, 885
- security
 - e-mail, 555–556
 - file, 481
 - Internet, 528–541
- seek time, 83, 885
- Send To command, 605–606
- SEPP, 885
- sequencer, 886
- sequencing programs, 672
- serial connection, 886
- serial port, 18–19, 886
- server, 450, 886
 - DHCP, 513
 - dial-up, 497–498
 - domain name, 467, 507–508, 834
 - print, 151
 - proxy, 488–491, 878–879
 - remote access, 496–499
- service pack, 886
- setup, 886
- SGRAM, 127, 144, 886
- shared files, 719–720, 886
- sharing, application, 586–570
- shareware, 312–313, 887
- sheet-fed scanner, 217
- shutdown problems, 771
- Signature Verification Tool, 741–742, 749
- SIMD, 54, 890
- SIMMs, 68–72, 399–400, 402–403, 405, 887
- simple network
 - adding Macintosh computers, 470–472
 - components, 455–456
 - direct cable connection, 458–459
 - expanding, 472–474
 - installing, 456–458
 - naming, 464–466
 - network software, 459–464
 - TCP/IP, 467–470
- single-ported memory, 128
- sleep, 887
- slot, 60–62, 430, 887
- slot cover, removing, 381
- Slot One system, 430, 887
- Small Computer Systems Interface (SCSI), 83, 219, 373–374, 648, 759, 792, 884. *See also* controller problems.
 - adapter, 759
 - common formats, 99–103
 - controllers, 93–94, 95, 412, 419
 - connection testing, 412
 - interfaces, 419
 - transfer rates, 99–103
- SmartMedia, 215, 887
- SMF, 157, 888
- SMTP, 888
- sneakernet, 155
- socket, 60–62, 888
- SODIMM, 68–72, 888
- software
 - auto-accompaniment, 691–692
 - basic connections, 281–282
 - BIOS, 288
 - conflicts, 720–724
 - copying, 416–417
 - inside Windows, 283–287
 - installing, 308–355, 459
 - layers, 281–283
 - MIDI options, 689–692
 - music notation, 688–690
 - network, 459–466
 - problems, 793–804
 - removing, 354–358
 - troubleshooting, 718–724
 - uninstalling, 356–357, 720–721, 793
 - updating, 721–722
 - Windows, 283–287

- software layers
 - application programs, 281–282
 - interconnections, 281–282
 - operating system, 282–283
- software operation concepts
 - BIOS setup, 288–289
 - booting, 288–297
 - printing, 305
 - running applications, 302–305
 - Windows startup, 298–302
- software synthesis, 166–167
- Sony/Philips Digital Interface Format (S/PDIF), 171, 884
- Sound Blaster, 159, 163
- sound card, 155, 888
 - audio outputs, 169–171
 - audio processing effects, 167–169
 - capabilities recommended, 173–174
 - DAC in, 167
 - digital audio, 158–163
 - duplex support, 161
 - features, 156–157
 - microphones, 171–172
 - MIDI/joystick port, 172–173
 - modems and, 161, 184, 185
 - polyphony, 162
 - problems, 786–788
 - synthesized sound, 158, 162–167
 - synthesizer, 158
- sound files
 - playing back, 657–658
 - on the Web, 692–694
- sound modeling, 166, 888
- sounding technologies, 660
- spam, 562, 888
- speakers, 148–149, 153
 - 3D, 176
 - flat panel, 176
 - key specifications, 174–175
 - multispeaker systems, 176–177
 - powered versus unpowered, 175–176
 - purchasing tips, 177–178
 - recommendations, 177
 - satellites and subwoofers, 175
 - technologies, 175
 - traditional, 176
 - for USB-based audio, 177
- special effects, 642–643, 652, 668–669
- specialty papers, 203
- specialty printers, multifunction devices, 207–208
- speculative execution, 47, 889
- speed
 - of buses, 263, 264–265, 274,
 - microprocessor, 47–48
 - RAM, 74–75
 - rotation, 108–110
 - variable, 109–110
- splitter, 192
- SPP, 211, 889
- SRAM. *See* static RAM.
- SSL (Secure Sockets Layer) connection, 529
- Standard MIDI File, 157
- star network, 444, 446
- startup files, 288, 889
 - autoexec.bat, 296–297, 301, 760–764
 - boot, 759–770
 - booting, 292–297
 - bootlog.txt, 761
 - config.sys, 760–761
 - customized, 799–801
 - DOS memory problems, 294–296
 - editing, 763–764
 - IO.sys, 292–293
- startup, Windows
 - files summary, 301–302
 - initialization files, 298
 - registry function, 298, 300
 - registry storage, 298
- startup floppy. *See* boot disk.
- startup problems, 756–770
- static electricity, 378–379
- static RAM, 71–76, 889
- stereo speakers, traditional, 176
- storage, 10, 889
- streaming, 653
- streaming audio, 660–661
- streaming media, 889
- streaming SIMD, 53–54, 890
- subnotebook, 890
- subwoofer, 175, 890
- SuperDisk, 107
- surge protectors, 245
- surge suppressor, 890
- SVGA, 890
- swap file, 891
- switch, 891
- switch box function, 213–214

switching hub, 473
 symmetrical multiprocessing (SMP), 59–60
 synchronization, 891
 synchronous DRAM. *See* SDRAM.
 synchronous graphics random access
 memory. *See* SGRAM.
 synthesized sound, 158
 FM synthesis, 163–164
 hardware versus software synthesis, 166–167
 MIDI (musical instrument digital interface)
 music, 158, 162–163
 physical modeling synthesis, 166
 polyphony, 162
 wavetable synthesis, 164–165
 synthesizer, 670, 891
 synthesizer patch, 673
 system bus, 62–64, 261–262, 891
 System Configuration Editor, 742–743, 749
 System Configuration Utility, 732–733, 748
 System File Checker utility, 336, 733–735, 748
 system file extracting, 767–768
 System Information utility, 366, 731–732, 748
 System Monitor, 744–745
 System Resource Meter, 744–745, 749

T

tag, 892
 tape backup, 115–116
 tape drive, 115–116
 TB, 892
 TCP/IP, 567, 892
 protocol, 448, 462, 511
 setting up, 467–470
 settings, 784–785
 technical support, 41
 Telnet, 504
 temp, 892
 terabyte, 893
 terminal adapter, 178. *See also* modem.
 Terminate and Stay Resident (TSR) program,
 295
 TFT, 893
 thread, 558, 745, 893
 threaded discussions, 558
 throughput, 90, 893
 rates, 363
 sustained, 106

TIFF, 625, 626, 893
 time compression/expansion, 668
 titles, 652
 Token Ring, 447
 topology, 893
 touchpad. *See* trackpad.
 tower, 30, 893
 TraceRoute, 785
 Tracert, 539–540
 track, 893
 trackball, 237, 894
 trackpad, 237, 894
 transfer rates, 96–97
 Trojan horse, 528
 troubleshooting
 basic checks, 703–705
 connections, 703–704
 documentation, 702–703
 drivers, 706–711
 hardware, 705–718
 resources, 700–702
 software, 718–724
 solution testing, 703
 strategies, 698–703
 tools, 724–753
 updates, 704–705
 upgrades, 704–705
 Windows 95 tools, 742–753
 Windows 98 utilities, 730–742
 True Color, 123
 TrueType font, 894
 TV inputs, 139–140
 TV tuner card, 139, 140
 TWAIN, 629–630, 636, 639, 894
 Tweak UI, 601–602
 type 1 font, 894

U

UADSL, 894–895
 UDP, 567, 895
 UltraATA. *See* UltraDMA.
 UltraDMA, 95, 97–98
 UMB, 294, 895
 UNC, 895
 unified memory architecture (UMA), 127
 uniform resource locator (URL), 505–507,
 896

926 Index

- uninstaller program, 356–359
 - uninstalling
 - software, 720–721, 793
 - Update Wizard, 741, 749
 - uninterruptible power supply (UPS), 247, 896
 - Universal ASDL, 192
 - universal serial bus (USB), 215, 269–270, 375–377, 896
 - audio, 177
 - compatibility, 791
 - hub, 149, 215, 376–377
 - port, 18, 215
 - power issues, 790–791
 - problems, 788, 790–791
 - speakers, 177
 - user profiles, 33–36
 - UNIX, 348, 895
 - unpowered speakers, 175
 - Update Device Driver Wizard, 388, 389
 - Update Wizard Uninstall, 741–742, 749
 - updates, 424–425
 - updating
 - drivers, 709–710
 - software, 721–722
 - Web sites, 584
 - upgrade, 895. *See also* expandability.
 - automatic, 324–325
 - removing, 325–326
 - troubleshooting and, 704–705
 - upgrading
 - applications, 323–326
 - BIOS, 420–423, 430
 - computers, 397–435
 - drivers, 385–389
 - DVD-ROM drive, 418–420
 - expansion cards, 32
 - microprocessors, 59, 425–430
 - PCs, 397–435
 - Windows 95 CD, 343–345
 - Windows 98, 334
 - Windows 3.1, 338–345
 - upper memory, 896
 - upstream rate, 179
 - user profile, 33–36
 - utilities
 - compression, 617–618
 - connection, 539–540
 - disk, 618–620
 - FDISK, 290
 - FIND, 316
 - SANDRA, 322, 746–748
 - signature verification tool, 741
 - system configuration, 732–733, 748
 - System File Checker, 336, 733–735, 748
 - System Information, 366, 731–732, 748
 - version conflict, 321, 735, 748
 - Windows 98 troubleshooting, 730–742
 - User Datagram Protocol, 567
 - Uencode, 553, 896–897
- ## V
- V.34, 897
 - V.90, 897
 - vCard, 552
 - VDSL, 192
 - vector graphics, 897
 - verify, 335
 - Version Conflict Manager (VCM), 321, 735, 748
 - VESA local bus (VL-Bus), 266–267
 - VGA, 898
 - video, 647–653
 - composite, 829
 - compression, 650–651
 - connection, 648–650
 - digital, 140–142, 836
 - editing, 649–650, 651–652
 - graphics, 652
 - saving, 653
 - special effects, 652
 - titles, 652
 - zoomed, 138, 904
 - video acceleration
 - hardware accelerator, 133
 - motion, 137–139
 - 2D graphics, 133
 - 3D graphics, 134–137
 - video adapter. *See* video card.
 - video camera, 227–229
 - video capture, 898
 - video capture card, 227, 648
 - video card, 12–13, 20, 258, 898
 - accelerated graphics port (AGP), 126, 131–132
 - acceleration, 133–139

- color depth, 124–126
 - frame buffer, 121, 126
 - interfaces, 131–132
 - memory, 126–130, 144
 - peripheral bus connections, 266–268
 - purpose, 121–122
 - recommendations, 143–144
 - refresh rates, 130–131
 - resolution, 123–124
 - specifications, 122
 - TV inputs, 139–140
 - video recording, 140–143
 - video card memory, 126–130, 144
 - bit width, 128–130
 - dual-ported, 127–128
 - types, 127–128, 144
 - unified memory architecture (UMA), 127
 - video circuitry, 122. *See also* video card.
 - video recording, 141–143
 - access port, 141
 - recording to disk, 141–143
 - videoconferencing, 568–569, 898
 - virtual channel memory (VCM), 76–77, 898–899
 - virtual machine, 392, 527
 - virtual machine manager, 391–392
 - virtual memory, 303, 899
 - virus, 290, 724, 899
 - VL-bus, 266–267, 899
 - VMM32, 391–392
 - voice enabled modem, 184–186
 - voice over IP, 566
 - voice recognition, 233, 900
 - volume, 900
 - volume control, 786
 - VRAM, 127, 144, 900
 - VxD, 900
- W**
- WAN, 900
 - warranties, 906
 - WAV, 900
 - wave audio. *See* digital audio.
 - waveform, 901
 - waveguide. *See* physical modeling synthesis.
 - wavetable synthesis, 901
 - process, 164
 - RAM storage, 164–165
 - sound quality, 165
 - Web address, 581–582. *See also* uniform resource locator (URL).
 - Web applications, 525–536
 - Web browser, 505–506, 518–519, 824
 - e-mail, 35–36
 - performance, 536–539
 - problems, 801–802
 - Web browsing, customizing, 518–541
 - applications on, 525–526
 - bookmarks and favorites, 524–525
 - cookies, 534–536
 - finding information, 540–541
 - Java and ActiveX, 526–528
 - optimizing, 536–540
 - surfing, 528–534
 - utilities, 539–540
 - Web page
 - adding files to, 693–694
 - creating, 572–581
 - graphic design, 573–574
 - posting, 582–583
 - testing, 580–581
 - Web ring, 585
 - Web server, 492–495, 583
 - Web site, 901
 - building, 570–585
 - connecting with, 505–510
 - creating, 492–493
 - element addition, 579–580
 - navigation, 580
 - publicizing, 584–585
 - testing, 580–581
 - updating, 584
 - WebTV, 36
 - WinAmp, 657
 - Win.ini, 901
 - Windows, 31–32, 794–797, 901
 - Core OS, 286
 - drivers, 286–287
 - registry, 283
 - services, 283–284
 - Windows 2000, installing, 347–348
 - Windows 3.1, upgrading, 338–345
 - Windows 95
 - CD upgrades, 343–345
 - diagnostic tools, 742–753

continued

928 Index

- Windows (*continued*)
 - installing, 332-334, 345-347
 - reinstalling, 335-345
 - upgrading, 334, 338-345
 - version history, 341-343
 - Windows 98
 - installing, 332-334
 - reinstalling, 335-345
 - Resource Kit, 701-702
 - troubleshooting utilities, 730-742
 - upgrading, 334
 - Windows CE, 29
 - Windows keys, 232-233
 - Windows Report Tool, 742, 749
 - Windows Resource kits, 701-702
 - Windows software
 - basic input/output system (BIOS), 286-287
 - Core OS components, 286
 - DirectX services, 284-285
 - drivers, 286-287
 - dynamic link libraries (DLLs), 285
 - layers structure, 283
 - Windows startup, 298-302
 - files summary, 301-302
 - initialization files, 298
 - registry function, 298
 - registry storage, 298
 - Windows Update, 324-325, 325-326, 708
 - WINS, 901
 - WinStone, 129
 - WinTop, 745-746
 - wireless modems, 186-187
 - cellular phones, 187
 - satellite link, 187
 - wizard, 376, 388, 902
 - Add New Hardware, 376
 - Add Scheduled Tasks, 614
 - Internet Connection, 513-514, 559
 - Maintenance, 618-619, 739
 - Update Device Driver, 388-389
 - word size, 54-55
 - workstation, 902
 - World Wide Web (WWW), 505, 902
 - WRAM, 127
 - WYSIWYG, 574, 902
- X**
- x86 processors, 52-53, 56-57, 902
 - Xbus, 271, 272, 902
 - Xeon, 45
 - XGA, 903
 - XML, 574, 575, 902-903
 - XMS, 903
- Y**
- Y2K problem, 420
- Z**
- Z-Buffer, 903
 - ZIF (zero insertion force) socket, 429
 - Zip drive, 105, 112, 903
 - zoomed video, 138-139, 904