

## Index

; as .INI file comment character, 159

! as field delimiter, 128

\* denoting built-in devices in SYSTEM.INI entries, 100, 193

^ in WIN.INI, 171

.2GR grabber files, 94, 290, 184, 409, 410

[.3gr] font sections in SETUP.INF, 96

32-bit disk access, 193, 245, 520-523

386 enhanced mode Windows. See also Standard mode Windows; Windows 3.1 described, 63, 238-239

memory

expanded memory, 238, 240-243, 249

extended memory, 239

system requirements, 9, 63, 217, 420

virtual memory, 243-247

networks, 36, 370-373

optimizing, 260, 271

removing support for, 502

troubleshooting, 34-36, 420-422

[386enh] section in SYSTEM.INI, 117, 193-218

.3GR grabber files, 94, 184, 290, 409, 410

386MAX memory manager, 34, 93, 154, 243, 247, 373, 421

[386 max] section in SETUP.INF, 93

3C505 Network Adapter Card, 375

3Com networks, 102, 143, 374-375

80286 and 80386 machines

files installed during Setup, 105-106,

memory, 228-229, 234, 247

system requirements, 9

8086 and 8088 machines, 229, 231

8514 display, 104-105, 139, 150, 312-314, 411

## A

A20 handler, 35, 44, 118, 193, 418

Acer computer, 35, 418

Adapter card. See Display adapter

Adapter segment, 231, 240, 241, 447, 455

Ad Lib, See MIDI

Administrative Setup (setup /a), 72-74

Adobe Type Manager (ATM), 28, 32, 44, 315, 336

Advanced Power Management driver, 140, 150

All ChargeCard, 375

ALR computers, troubleshooting, 12

AMI BIOS, troubleshooting, 12

Anarkey, 405

ANSI character set, 76, 188, 310, 315, 317

API (application programming interface), defined, 447

Append utility (MS-DOS), 405, 414

Apple LaserWriter Plus, 333

Application. See also Non-Windows applications; Windows applications

defined, 284, 447

files copied during Windows installation, 107-108

running at Windows startup, 168

Windows vs. non-Windows, described, 284

Application execution error, 39

Application swap files, 243-244, 290



APPS.INF  
content summary, 121-125  
customizing, 133  
editing procedure, 87  
format, 88-89  
non-Windows applications with PIF data in, 296-297  
Apricot Laser printer, 325  
ARCNet, 36, 11  
Arial font, 113, 310, 311, 317-320  
Artisoft LANtastic, 31, 113, 102-103, 375-377, 406  
ASCII character set, 310  
ASP Integrity Toolkit, 404  
Aspect ratio, and fonts, 314  
AST computer, troubleshooting, BIOS, 12  
AT computer. See IBM AT  
ATI display adapter, 411  
AT&T computer, 138, 139, 149, 187-188, 418  
Attrib command (MS-DOS), 369  
Audio CD, troubleshooting, 49, 435  
Austin computers, troubleshooting, 12  
Auto-detection for Setup, troubleshooting, 401, 432  
AUTOEXEC.BAT  
editing, with System Editor, 161  
modifying during Setup, 369  
optimizing MS-DOS 5.0 configuration, 248  
running a shared copy of Windows, 368

troubleshooting, 13-14, 398, 413, 416, 432  
AutoFont Support files, 315  
Automated Setup (setup /h), 75-81  
Award BIOS, troubleshooting, 12  
B  
Backfilling and bank switching, 211, 231, 234, 447  
Banyan VINES, 31, 102-103, 143, 150, 377-378  
Batch Mode Setup. See Automated Setup  
Baud rate, 174  
BIOS (basic input/output system)  
EBIOS identified in Setup, 120  
SYSTEM.INI entries, 199  
troubleshooting, 12, 23, 37, 421  
Bitmap files, for wallpaper, 153-154  
Bitstream fonts, 29, 34, 315, 336, 426  
Block devices, 34, 113  
[Blowaway] section in SETUP.INF, 116  
[Blue Max] section in SETUP.INF, 93  
Bold  
document and syntax conventions, 4, 6, 159  
font characteristic, 310, 313  
Boolean, as .INI entry value, 159  
[Boot] section in SYSTEM.INI, 184-186  
[Boot.Description] section in SYSTEM.INI, 187  
Boot disk, creating, 13, 14, 398  
BOOT.SYS, 406  
Break points, 206, 213  
Buffers  
COM port, 196  
data transfer, 209, 372  
defined, 447

DMA, 198, 201, 208, 372

Buffers, continued  
double buffering, defined, 449  
FIFO, 196  
hard disk, 201  
keyboard, 202  
network, 208-209, 218, 372  
non-Windows applications requirements, 190  
permanent swap file, 210  
printing from serial ports, 344  
settings in CONFIG.SYS, 259  
Building-font-database message, 328-329  
C  
Cannot-find-file error message, 414-415  
Canon Laser Beam printer fonts, 336-337  
Caret (^), and filename extensions, 171  
CD (audio) troubleshooting, 49  
CD-ROM, 21, 119, 435-436  
CEMM.EXE, 243, 247, 448  
CGA display, 145, 147, 149, 150  
Character-based interface, defined, 448  
Character sets, 314  
ANSI, 310, 315, 321  
ASCII, 310  
extended character codes, 321  
matching screen fonts to printer fonts, 316  
OEM, 310, 315, 321  
Windows 3.1, 316, 317  
Characters-per-inch (CPI), 311, 322  
Chips and Technologies, troubleshooting, 12, 410-411  
Chkdsk command (MS-DOS), 260  
Clean-boot floppy, 13, 14, 398  
Client application, defined, 353, 448  
Clipboard  
data formats and OLE, 355-356  
non-Windows applications, 291  
Clock speed, 448  
CMOS, 12, 25, 213, 430, 448  
Code pages  
defined, 448  
files in Setup, 97, 99  
translation tables, 147, 188  
U.S., 146, 448  
[Codepages] section in SETUP.INF, 99  
Code segments, kinds of, 236  
Color, 182, 207, 222  
[Colors] section in WIN.INI, 182  
COMMAND.COM, for troubleshooting, 13-14  
Command environment, 189  
Command prompt, 448  
Comments, in initialization files, 159  
Communications driver, 140, 184  
Compaq, MS-DOS version, 35, 433  
COM port  
in 386 enhanced mode, 206  
buffering, 196  
configuring, 174, 195-197  
driver, 140, 184  
hardware interrupts, 25, 197, 343  
printing from, 343-345  
ROM BIOS address conflicts, 346-348  
troubleshooting, 19, 31, 427-428  
Compound documents  
Clipboard support, 354-356  
described, 352-358, 448  
Compound documents, continued

Edit menu commands supporting, 354, 357-358  
File Manager support, 354-355  
Compressed files, and installing Windows 3.1, 59  
Computers  
compatible with Windows 3.1, 488-494  
identified in Setup, 117-118  
specifying for Automated Setup, 78  
CONFIG.SYS  
editing, with System Editor, 161  
network adapter cards in, 371  
optimizing performance, 248, 259  
troubleshooting, 13-14, 398, 413, 432  
Context-sensitive help, 273, 277, 300  
CONTROL.INF  
content summary, 126-128  
editing procedure, 87  
format, 88-89  
Windows installation, 77  
CONTROL.INI, 161, 222  
Control Panel  
changing values in .INI files, 159  
initialization (.INI) file, 222  
installation information (.INF) file, 126-128  
maintaining Windows with, 82  
multimedia extensions, 46  
supporting files, 151  
CONTROL.SRC, 161  
Conventional memory  
described, 228-229  
freeing, 263  
operating problems, 44  
specifying for PIFs, 301  
Windows operating modes, 217, 235, 238  
Copy command (MS-DOS), 59, 73  
Core files (Windows), 136-137, 250-251  
[Country] section in CONTROL.INF, 128  
Courier font, 112, 313, 314, 317, 320, 336  
Courier New font, 318, 320  
CPU (central processing unit), 448  
CTRL+ALT+DEL  
defining behavior, in SYSTEM.INI, 204  
when to use, 256, 294-295  
Cursor, WIN.INI entry, 164  
Customizing files  
changing .INF files for  
custom applications, 130  
custom groups to Program Manager, 132  
custom PIF information, 133  
custom Setup, 128  
creating custom installation script, 77-78  
D  
Data Physician Plus, 404  
[Data] section in SETUP.INF, 90  
Date, defining formats, 172  
DDE (dynamic data exchange), defined, 439  
Debugging COM ports, 19, 346-347  
DEC Pathworks, 102, 143 150, 381, 379-382  
Default  
in .INI files, 159  
printer, WIN.INI entries, 165-166  
\_DEFAULT.PIF, 285, 289, 294, 300, 305-306  
Deleting files, 155, 500-504  
[DelFiles] section in SETUP.INF, 107-108  
Demand paging, 448, 451  
Desktop, 169-170, 182, 403, 442

[Desktop] section in WIN.INI, 169, 170  
Destination document (OLE), 353  
Device  
defined in WIN.INI, 181  
global, 201  
synonyms in SYSTEM.INI, 183  
Device command (MS-DOS), 264  
Device contention, and non-Windows applications, 291  
Device drivers. See also specific device driver types  
defined, 449  
memory management, 230  
specifying during installation, 77-78  
SYSTEM.INI entries, 187, 204  
troubleshooting, 10, 34, 46, 430  
Devicehigh command (MS-DOS), 248, 264-265, 413  
[Devices] section in WIN.INI, 181  
[Dialog] section in SETUP.INF, 90  
Direct Graphics Interface Standard (DGIS) display adapter, 412  
Direct memory access. See DMA  
Discardable code segment (in Windows applications), 236, 449  
Disk cache, 416, 441, 449. See also SMARTDrive  
Disk compacting utility, 245, 260  
Diskless workstation, 74, 259, 262, 369  
Disk partition, troubleshooting, 13-14  
Disk space. See also Swap files  
freeing by deleting files, 155, 500-504  
TrueType requirements, 320  
[Disks] section in SETUP.INF, 91  
Disk swapping. See Swap files

Display adapters  
compatible with Windows 3.1, 139, 495  
resolutions, supported by Windows 3.1, 144-145  
SYSTEM.INI entries, 194, 198  
troubleshooting, 20, 26, 408-420  
Display driver  
files, 139  
identified in Setup, 94-96  
optimizing performance, 260  
SYSTEM.INI entry, 185  
troubleshooting, 20, 27, 37, 44, 403, 408-412  
[Display] section in SETUP.INF, 95, 129  
DLL (dynamic-link library), 449  
.DLL filename extension, 138  
DMA (direct memory access)  
buffers, 198, 201  
defined, 449  
EISA machines, 199  
Micro Channel machines, 207  
network and paging, 207  
page addresses, 206  
[Dontfind] section in APPS.INF, 121  
DOS. See MS-DOS  
Doscue, 405  
DOS extender. See Extended memory manager  
[Dos mouse.driver] section in SETUP.INF, 101  
DOSX.EXE, 90, 136, 150, 290  
Dot matrix printers, 317, 322, 340  
Double buffering, 70, 201, 255-256, 439  
Double-click, defining, 165  
Doubledisk, 406  
Downloadable soft fonts

changing typeface names for, 337-338  
described, 312, 320-321, 330, 449  
Downloadable soft fonts, continued  
font installers, 140-141, 326-328  
HPPCL, 324-330  
page limit message, 330  
PostScript, 336  
TrueType installation, 320  
DPMI (DOS Protected Mode Interface), 237, 239, 295, 449  
Drivers. See also Display drivers; Keyboard drivers; Memory drivers; Mouse drivers; Multimedia drivers; Printer drivers, Sound drivers; System drivers  
described, 136-137  
identified in Setup, 94-97, 100-101, 113-114, 126  
incompatible drivers, in Setup, 58, 66  
MS-DOS drivers for use with Windows 3.1, 148  
removing files, 500  
requirements in UMBs, 264-266  
switches for MS-DOS system drivers, 258  
SYSTEM.INI entries, 185  
third-party, troubleshooting, 10, 27, 31, 399  
virtual support files, 150  
Windows Driver Library, 443  
[Drivers] section in SYSTEM.INI, 187  
.DRV (printer driver) file, 340  
Dr. Watson, and general protection faults, 37, 434  
DSWAP.EXE file, 150  
DTK BIOS, troubleshooting, 12  
Dynamic data exchange (DDE), defined, 449  
Dynamic-link library (DLL), defined, 449, 452

E  
[Ebios] section in SETUP.INF, 120  
Editing  
.INI and .SRC files, 159-161  
using System Editor, 160-161  
Edit menu commands and OLE, 357-358  
Edit utility (MS-DOS), 160  
EGA display device  
driver and grabber files, 139, 149  
fonts, 104-105, 312-314  
SYSTEM.INI entries, 199  
troubleshooting, 27  
virtual support files, 150  
EGA.SYS, 148  
EISA (Extended Industry Standard Architecture) bus machines, 197, 199, 240, 449  
[Embedding] section in WIN.INI, 178  
EMM. See Expanded memory manager  
EMM386.EXE  
backfilling with, 234  
defined, 230, 449  
deleting file, 155  
driver, 148  
emulating expanded memory, 228, 231, 258, 296  
incompatibility with memory expansion board, 259  
loading in CONFIG.SYS, 259, 264, 371  
network issues, 273, 284  
non-Windows applications, 238, 240, 242, 243, 296  
optimizing performance, 266-268, 268-269  
troubleshooting, 413-417  
EMMExclude=



- display driver conflicts, 411
- excluding UMB ranges, 199-200, 204, 212, 215
- troubleshooting UMB conflicts, 416-417, 420-421, 433
- EMS. See Expanded Memory Specification
- EMS memory. See Expanded memory
- Environment variables, 189, 301
- EPT ports, 174, 345-346
- Error 20 message, 330
- ESDI controllers, 421
- Etherlink, identified in Setup, 119
- Ethernet, troubleshooting, 11, 36
- Exec command (MS-DOS), 136
- Expanded memory. See also Expanded memory managers (EMM); Expanded Memory Specification (EMS)
  - board or card, 228, 234, 237-238, 242, 296
  - described, 228-229, 235, 449
  - driver, 209
  - LIM 3.2 and 4.0 EMS, 231, illus. 233
  - problems with, 235
  - upper memory area, illus. 232
  - in Windows
    - 386 enhanced mode, 238, 240-243
    - non-Windows applications, 230, 241, 301, 303
    - standard mode, 237-238
    - SYSTEM.INI entries, 194, 199-200, 209, 213, 214
    - troubleshooting, 415-417
  - Expanded memory managers (EMM). See also EMM386.EXE
    - 386 managers, 242-243, 456
    - backfilling and bank switching, 234
    - emulating expanded memory, 228, 230, 231, 258, 296, 449
    - ignoring third-party managers, 201
    - QEMM—386, 454, 515-518
    - troubleshooting, 23-34
  - Expanded Memory Specification (EMS), 230-235, 449, 450
  - Expanding files, 61, 152
  - Extended memory. See also Extended memory managers
    - described, 228-229, 450
    - requirements for
      - 386 enhanced mode, 9, 238-239, 250, 420
      - non-Windows applications, 237, 301, 303, 424
      - standard mode, 9, 235-237, 418
      - Windows, 9, 418, 420
    - SYSTEM.INI entries, 194, 213-214
    - troubleshooting, 34, 424
  - Extended memory managers (XMM). See also HIMEM.SYS
    - defined, 450
    - drivers, 236, 418-420
    - troubleshooting, for standard mode, 418-419
    - Windows 3.1, 150, 237, 247-248
    - Windows Setup, 90
  - Extended Memory Specification (XMS), 230, 450
  - [Extensions] section in WIN.INI, 171

## F

  - FaceLift. See Bitstream FaceLift
  - Fastopen utility (MS-DOS), 406
  - File. See also specific types
    - copying
      - additional files to a user's directory, 130
      - from installation disks, 63

- files for Windows installation, 105-108
  - corruption, 43
  - deleted in Setup, 107-108
  - deleting to free disk space, 155, 500-504
  - expanding, 17
  - filenames translated in Setup, 115
  - ignored in Setup, 121
  - miscellaneous hardware and other support files, 154
  - printing to a file, 31, 33
  - removing, 500-504
- file= settings in CONFIG.SYS, 259
- FILE:, WIN.INI entry, 174
- File allocation table (FAT), 262
- File handles, 259, 373
- File Manager
  - changing values in .INI files, 159, 223
  - customizing, 278-279
  - initialization (.INI) files, 223
  - new features in Windows 3.1, 277
  - OLE support, 279, 354-355
- Filename extensions
  - associated with filenames, 171
  - defined in WIN.INI, 171
  - .PIF, 287
- Filenames
  - translated in Setup, 115
  - working with long filenames, 370
- File Size Information, Windows Resource Kit utility, 441
- FINSTALL.DIR file, 327-328
- Fixed font, 144, 311, 316
- Floppy drive, troubleshooting, 22-23, 25, 202
- Font. See also Downloadable soft fonts;
  - HPPCL printer fonts; PostScript fonts; Printer fonts
  - cartridges
  - dot-matrix printers, 322
  - HP LaserJet-compatible, 323-324
  - installing in printers, 316
  - Microsoft 1Z font cartridge, 314
  - PostScript, 336
  - converters, 27, 425
  - dot matrix printer fonts, 317, 322, 340
  - duplicate font names, 316-317
  - files, 104-105, 112, 144-147, 501
  - font families in Windows, 310
  - font matching in Windows, 316-317
  - installing, 315-316
  - kinds of
    - printer fonts, 312, 320-337
    - raster fonts, 311, 313-314
    - screen fonts, 175, 312
    - TrueType fonts, 311, 318-320
    - vector fonts, 311, 315, 317, 456
  - substituting font names, 175
  - Font cache, 318-319
  - FontEdit utility, 315
  - Font Installer, for HP LaserJet, 315-316, 321, 324-337
  - Font mapping table, 316
  - Font Metrics dialog box, 338
  - [Fonts] section in WIN.INI, 175
  - [fontSubstitutes] section in WIN.INI, 117, 175
  - .FOT file, 318
- G
- GDI
  - .EXE file, 137, 250

heap, 251, 442

General protection (GP) faults, 27, 37-38, 431-434

Grabber

- application execution error, 39
- defined, 94, 408, 450
- files, 148-149, 290, 292
- identified in Setup, 96
- SYSTEM.INI entries, 184
- troubleshooting, 26, 408-410, 423

Graphical user interface (GUI), defined, 450

Graphics adapter. See Display adapter

Graphics utility (MS-DOS), 405

Graphics Viewer, Windows Resource Kit utility, 440

Groups. See Program Manager group

[Group#] sections in SETUP.INF, 110-113, 133

[Groups] section in PROGMAN.INI, 220

.GRP file, 369

GUI (graphical user interface), 450

## H

Handshaking, 342, 344

Hard disk

- correcting interleave without reformatting, 258
- ensuring maximum space, 263
- interrupts, 25, 217
- optimizing performance, 258-260
- printing, space requirements, 30, 32
- Stacker, 17
- troubleshooting, 24, 34

Hardware

- adapters, and problems with expanded memory, 235
- compatible with Windows 3.1, 487-498
- creating custom Setup, 129
- general protection faults, 37
- manufacturer support, 482-483
- multimedia, 47-51
- optimizing performance, 258-259, 271
- support files, 154
- troubleshooting, 21-26, 35, 44, 430, 442

Headland Technologies display adapter, 410

Help window, WIN.INI entries, 178-179

Helvetica font, 175, 320

Helv font, 107, 314

Hewlett-Packard

- EBIOS for 80386 computer, 120, 150
- Intellifont, disabling, 28
- keyboard driver, 135
- mouse driver, 139, 148
- MS-DOS version, 35
- plotters, 332, 427
- Printer Control Language (HPPCL), 323
- printer drivers, 140
- printer fonts, 323-333
- soft font installer files, 141
- system driver (for HP Vectra), 138
- Type Director, 315
- Vectra, 138, 419
- virtual support files, 150

High area. See High memory area (HMA); Upper memory area

High memory area (HMA)

- defined, 228, 450
- disabling a network's HMA option, 373
- loading MS-DOS 5.0 into, 248, 263-264

troubleshooting, 413-415

HIMEM.SYS

accessing extended memory, 229, 230, 236,  
239

file, 148

loading in CONFIG.SYS, 259

optimizing, 248

troubleshooting, 412, 416, 418

“Hints,” for TrueType, 318

HP DeskJet printer fonts, 331-332

HP PaintJet printer fonts, 332

HPPCL-compatible printers  
driver files, 141  
fonts, 317, 321, 323-331  
setting up unsupported printers in Windows, 340  
types of, 330, 331  
HPPCL printer fonts  
described, 323  
downloadable soft fonts  
font summary file, 328-329  
installing, 324  
permanent vs. temporary downloading, 325-326  
recovering fonts after reinstalling Windows, 326-328  
soft font limits, 315, 330  
font cartridges, 323-324  
memory settings for, 323  
HP plotter printer fonts, 332  
I  
IBM 4019 Laser Printer fonts, 337  
IBM computer  
AT, A20 handler, 419  
DOS LAN requester. See IBM computer, OS/2 LAN Server  
MS-DOS version, 35, 433  
OS/2 LAN Server, 102, 383  
PC LAN Program, 102, 143, 383-384  
PS/2 computer, 24, 25, 150, 204, 412  
IDE drive, troubleshooting, 24, 217  
[incompTSR#] sections in SETUP.INF, 113, 401  
Independent software vendor (ISV), defined, 450  
.INI file, 369

Initialization (.INI) files. See also CONTROL.INI; PROGMAN.INI; SYSTEM.INI; WIN.INI; WINFILE.INI  
content summary, 158-159  
editing procedure, 159-161  
format, 158, 159  
preserving, after reinstalling Windows, 15  
source files, 161  
updated in Setup, 116  
[Ini.upd.\*] sections in SETUP.INF, 116  
[Installable drivers] section in SETUP.INF, 114  
Installation disks, 59  
Installation information (.INF) files. See also APPS.INF; CONTROL.INF; SETUP.INF  
content summary, 86-87  
customizing, 128-133  
editing procedure, 87  
format, 158-159  
Installing Windows 3.1  
Administrative Setup option (setup /a), 72-74  
AUTOEXEC.BAT modifications, 368-369  
Automated Setup (setup /h), 58, 74-81  
changing values in .INI files, 159  
creating system settings scripts for multiple systems, 76-81  
customizing, 60-61, 74, 76-81, 128-134  
Custom Setup, 58, 62, 64-65  
Express Setup, 58, 62, 64  
from floppy disks, 59  
hardware identification, 65-66  
installation information (.INF) file, 88-120  
maintaining Windows with Setup, 82-83  
MS-DOS Mode Setup, 58, 63-68, 401-402  
Network Setup (setup /n), 73-75

- new Setup features, 58
- overview, 57-62
- setting up multiple systems
- Installing Windows 3.1, continued
- Automated Setup option (setup /h), 72, 75-76
- creating a system settings script, 76-81
- setting up on a network
- Administrative Setup option (setup /a), 72-74
- disabling pop-up service to prevent Setup failure, 370
- Network Setup option (setup /n), 72, 74-75
- on network server vs. workstations, 74
- overview, 71-72
- shared Windows files, 72-73
- setting up on a single workstation, 71
- specifying the WINDOWS directory, 64
- switches for Windows Setup command, 60
- SYSTEM.INI settings, 370-371
- technical discussion, 62-71
- troubleshooting, 9-17, 399-403
- upgrading from an earlier version, 64-65
- Windows Mode Setup, 58, 68-71, 402-403
- Insufficient memory, 43
- INT 13, 252-253, 520-522
- INT 21, 349, 350, 520-522
- Intel, snapin, 24, 386
- Intellifont. See Hewlett-Packard Intellifont
- International support in Windows
- formats defined for Control Panel, 128, 172-173
- support files, 138, 147
- WIN.INI entries, 172-173
- Interrupts
- 32-bit disk access, 520-522
- COM ports, 19, 196, 197
- defined, 451
- floppy drives, 22
- hard disks, 24, 217
- keyboards, 193, 194, 203
- list of, 25
- memory-resident software, 202, 211
- mouse, 18, 208
- network, 36, 430
- printers, 165, 213
- system timer, 214
- virtual machines, 201
- [Intl] section in WIN.INI, 172-173
- Invisible Software\$NET/30 For Windows, 384
- I/O port, troubleshooting, 430
- [IO.\*] sections in CONTROL.INF, 126-129
- IPX Upgrade utility from Microsoft, 444
- IRQ. See Interrupts
- ISA computers (adapter locations), 240-241, 372, 433, 441
- ISV (independent software vendor), 450
- Italic
- document and syntax conventions, 4-6
- font characteristic, 310, 313
- J
- Join utility (MS-DOS), 405
- K
- Kernel, 90, 107, 137, 250, 451
- Keyboard
- buffer, 202
- compatible with Windows 3.1, 495
- defining behavior, 166
- drivers, 97, 138, 185, 187, 202

- identified in Setup, 97
- interrupts, 25, 203
- Keyboard, continued
- language tables, 138
- password, 204
- reboot, 204, 294-295
- tables, 98, 128, 138
- timeslicing, 202
- troubleshooting, 12, 422
- [Keyboard.drivers] section in SETUP.INF, 97
- [Keyboard] section in SYSTEM.INI, 187-188
- [Keyboard.tables] section in SETUP.INF, 98
- [Keyboard.types] section in SETUP.INF, 97, 129
- Keyname, defined, 87, 158
- L
- Language
  - code page, 188
  - defining international usage, 173
  - drivers and libraries, 138, 147, 185
  - identified in Setup, 120
  - supported by Windows 3.1, 147, 458
  - used for Windows Setup, 91
  - [Language] section in SETUP.INF, 120
- LAN Manager 348, 451, 456. See also specific networks
- LanSight, 405
- LANTastic. See Artisoft LANTastic
- Laser printers, and unsupported printer compatibility, 340
- LaserTools, 406
- LATCP DEFINE SCB command, 380
- Le Menu, 406
- LIM. See Expanded Memory Specification (EMS)
- [Lmouse] section in SETUP.INF, 101
- Loadhigh command (MS-DOS)
  - optimizing performance with, 248, 264-265
  - SYSTEM.INI entries, 204
  - troubleshooting, 413, 416
- Local heap, 251, 451
- Lockit utility, 405
- Logitech mouse
  - driver, 139, 148, 158
  - identified in Setup, 101
  - troubleshooting, 18, 407
  - virtual support file, 150
- Lotus 1-2-3, troubleshooting, 424-425
- Lotus/Intel/Microsoft (LIM). See Expanded Memory Specification (EMS)
- LPT port
  - configuring, in WIN.INI, 174
  - default I/O starting locations for, 343
  - hardware interrupts, 25, 343
  - printing from, 342-343
  - troubleshooting, 31, 426-427
- LPTx.DOS
  - printing method, 31, 174, 350, 376
  - troubleshooting, 427-428
- WIN.INI entry, 174
- LPTx.OS2. See LPTx.DOS
- LRU (Least Recently Used) paging, 205, 246-247
- M
- [Machine] section in SETUP.INF, 117-118, 129
- MAP ROOT command, 388
- Math coprocessor, interrupts, 25

MCA. See Micro Channel (MCA) computers

MCI (Media Control Interface), 143, 451

[MCI Extensions] section in WIN.INI, 177

[MCI] section in SYSTEM.INI, 189

Measures, defining formats, 172

Media files, 177

Media Player, troubleshooting, 47, 437

Mem command (MS-DOS)

troubleshooting with, 413, 417, 420

viewing system memory, 229-230, 264

Memory. See also 386 enhanced mode memory; Expanded memory; Extended memory; High memory area (HMA); Memory drivers; Standard mode memory; Upper memory area; Virtual memory

conventional memory, 228, 260, 263, 448

DPMI vs. VCPI specification, 247-248

excluding upper memory settings, 372

memory conflicts, 238-239

memory protection, 451

Microsoft Diagnostics utility (MSD.EXE), 229

network memory management with Windows 3.1, 370-372

non-Windows applications and PIF settings, 229, 301-305

optimizing performance, 258-259, 262

out-of-memory errors, 43

overview, 228-229

relative addresses of different kinds of, 229

requirements, 9, 249-250

types of, 228-229

viewing, in your system, 229

Windows system resources, 250-251

Memory drivers, 230

Memory expansion board, 258-259

Memory managers, 229, 230, 373. See also Expanded memory managers; Extended memory managers; Virtual Memory Manager (VMM)

Memory-resident software. See TSRs

Micro Channel (MCA) computers

changing memory settings for network, 372

COM port settings, 197

DMA extensions, 207-208

interrupts, 197, 433

troubleshooting, 12

Microsoft 1Z font cartridge, 314

Microsoft Authorized Training Centers (ATCs), 460-466

Microsoft Certified Professional Program, 459

Microsoft Consultant Relations Program (CRP), 458

Microsoft Consulting Services (MCS), 452, 458

Microsoft Diagnostics utility (MDE.EXE), 229

Microsoft LAN Manager networks

described, 384-386

disabling expanded memory for, 385

disabling pop-up services, 386

driver, 143

identified in Setup, 102

MS-DOS LAN Manager Basic, 384

Microsoft Network

described, 387, 452

driver, 143

equivalent for other networks, 143, 368

identified in Setup, 102

MS-Net Redirector, 247, 348

Microsoft Product Support Download Service, 439



Microsoft University  
authorized training centers, 470-471  
training programs, 468-470  
MIDI, 48, 114, 143, 150, 437  
Mirror utility (MS-DOS), 405  
Mode command (MS-DOS), 348  
Modern font, 315, 317  
Mouse. See also specific types  
compatible with Windows 3.1, 139, 495  
defining behavior, 167, 169  
drivers, 139, 148, 186, 260  
identified in Setup, 100-101  
interrupts, 25, 208  
in non-Windows applications, 26, 190, 208, 296, 424  
serial mouse and COM port problems, 348  
in standard mode, 192  
troubleshooting, 18, 26  
virtual device, 150, 208  
in Windows Setup, 91  
MOUSE.COM and MOUSE.SYS, 148  
Mouse Systems mouse, 139, 150  
Movable code segment (in Windows applications), 236, 452  
MS-DOS  
OEM versions and general protection faults, 433  
optimizing performance, 259-260  
printing to LPT ports through MS-DOS, 345-346, 426  
troubleshooting, 35, 413-414  
unexpected MS-DOS error #11, 423  
version 5.0  
compatibility with Windows 3.1, 248, 249, 269-270  
device drivers for managing memory, 148, 230  
loading in the high memory area, 248-249, 263-264  
Windows 3.0 conflicts, 238  
MS-DOS Extender. See Extended memory managers (XMM)  
MS-DOS Mode Setup. See also Installing Windows 3.1  
configuration identification routines, 65-66  
described, 58, 63-68  
failure, 68  
MS-DOS version check, during Setup, 64  
modifying SYSTEM.INI for system configuration, 66-67  
setting the WINDOWS directory, 64  
troubleshooting, 401-402  
updating the Windows version, 64-65  
MS-DOS Prompt, 198, 287, 373  
MS-DOS system, hardware configuration, 401  
MS-NET. See Microsoft Network  
MS Sans Serif and MS Serif fonts, 112, 311, 313-314, 317  
Multimedia  
capabilities, supported by Windows 3.1, 143  
CD-ROM, 21, 436  
driver files, 114, 143  
SYSTEM.INI entries, 189  
troubleshooting, 46-51, 434, 435-437  
WIN.INI entries, 177, 179  
Multitasking. See also Timeslicing  
defined, 448, 452, 455  
demand paging and virtual memory management, 245-247  
PIF Editor options, 304  
problems running non-Windows applications,

373

vs. task switching, in 386 enhanced mode, 290-291

Windows vs. MS-DOS 5.0 task swappers, 249

Music Box, troubleshooting, 49, 436

N

Named pipes, 218, 448

NEC computer, MS-DOS version, 35

NetBIOS, 190, 208, 209, 381, 452

NetWare. See Novell NetWare

Network; See also Networks and Windows 3.1; specific network types

adapter card, 371

buffers, 208, 209, 218

Network, continued

compatible with Windows 3.1, 143, 401-402, 495

drivers, 143, 186, 209

interrupts, 202

printer redirection, 350

redirector software, and ROM BIOS data segment, 348-349

Token Ring, 214, 454

transport stacks, 371

virtual support files, 150

Network Assistant, Windows Resource Kit utility, 440

Networks and Windows 3.1. See also Network; specific network types

customizing Windows installation

modifying logon procedure to set paths, 369

restricting user actions, 221, 276

user environments, 374

installation information, 101-103

installing a shared copy of Windows

Administrative Setup (setup /a), 73-74

Automated Setup (setup /h), 76-81

copying Windows files to a user's directory, 130

forcing Network Setup option, 75, 130

Network Setup (setup /n), 74-75

procedures, 71-74

restoring previous connections, 177

IPX upgrade utility in Windows Resource Kit, 440

optimizing performance, 262, 370-373

printing, 31, 33

running a shared copy of Windows, 368-370, 443

shells, 431

supported networks

3COM, 102, 374-375

Artisoft LANtastic, 102-103, 376-377

Banyan VINES, 102-103, 377-378

DEC Pathworks, 102-103, 379-382

IBM OS/2 LAN Server, 102-103, 383

IBM PC LAN Program, 102-103, 383-384

Invisible Software\$NET/30 For Windows, 384

Microsoft LAN Manager, 102-103, 384-386

Microsoft Network, 102-103, 215, 387

Novell NetWare, 102-104, 387-391

TCS 10Net, 391

Ungermann-Bass Net/One, 392

swapping pages to a network drive, 247

troubleshooting

386 enhanced mode, 36

operation, 430-431

printing, 31, 33, 428

Setup, 11, 402

virtual support for, 150

[Network] section in SETUP.INF, 101, 129

[Network] section in WIN.INI, 177

[Network\_Specific] section in SETUP.INF, 103

[Network\_Version] section in SETUP.INF, 102

[New.groups] section in SETUP.INF, 109

NewSpace, 405

Nonmaskable interrupts (NMI), 209, 408-409, 421

Nonpreemptive scheduling, 291

Non-Windows applications. See also APPS.INF; PIF Editor option; PIFs (program information files)

defined, 284, 452

display updates, 217

error messages

execution error, 39

file-change messages, 200

incorrect system version, 410

Non-Windows Applications, continued

out-of-memory errors, 43

system integrity violation, 40

files providing support in Windows, 146, 148-149, 290, 292

memory for

expanded memory, 231, 237-238, 296

extended memory, 236-237, 238, 239-240, 295

requirements, 229

mouse, 18, 26, 208, 296

removing support for, 503

running in Windows 3.1, 288-293, 373

scrolling, 213

setting up, 283-288

SYSTEM.INI entries for, 293

optimizing performance, 258-262

tips, 294-295

troubleshooting, 30, 409, 423-424

[NonWindowsApp] section in SYSTEM.INI, 189-191

Norton utilities

Stacker and troubleshooting, 17

troubleshooting, 41, 44, 404, 405, 407

Not-enough-memory error message, 294

Novell NetWare

described, 387-390, 452

drivers and files, 143, 387, 444

increasing the file access limit, 389

NetWare Lite, setting parameters, 391

preparing to run with Windows, 388

Printer Assistant, 406

SETUP.INF information, 102-103,

troubleshooting, 31, 33, 349, 431

updating with Microsoft IPX Upgrade utility, 444

O

Object Linking and Embedding (OLE)

creating compound documents, 352-356

support in windows, 354-356, 360

troubleshooting, 45

WIN.INI entries, 178, 360

Object Packager, 355

OEM (original equipment manufacturer)

character set, 310, 315, 317

defined, 452

font, 144, 145

[OEMdisks] section in SETUP.INF, 91

OEMSETUP.INF file, 335

Olivetti computers, 138, 139, 149, 187-188

Online support services  
 bulletin board forums, 472-474  
 library services, 478  
 PC magazine forums, 475-477  
 OnTrack Disk Manager (DMDRVR.BIN), 13-14  
 Operating modes. See 386 enhanced mode; Standard mode  
 Operating system, defined, 453. See also MS-DOS  
 Orientation, printing, 322  
 Out-of-memory errors, 43, 251, 289, 323, 417  
**P**  
 Package, in compound documents, defined, 353, 443  
 Page fault, 243, 453  
 Page frames. See also Expanded memory defined, 447, 453  
 memory conflicts in 386 enhanced mode, 235, 239, 240, 242  
 specifying range in SYSTEM.INI, 200, 212  
 troubleshooting, 417, 425  
 Pageswap device, 245  
 Page swapping. See Paging; Virtual memory  
 Page table, 206, 433  
 Paging. See also Virtual memory  
 buffers, 210  
 described 245-246, 453, 456  
 drive, file, and disk space, 207, 210  
 maximum size, 206  
 Paradise VGA cards, troubleshooting, 410-411  
 Parallel port. See LPT port  
 Parity, 174  
 Password, setting up protection for a workstation, 374  
 Path, 13-14, 181, 453  
 Pathworks. See DEC Pathworks  
 PC-Kwik, 404  
 .PCM file, 324  
 PC-NET, 453  
 PC-NFS and Windows 3.1, 519  
 PC Tools,  
 Stacker and troubleshooting, 17  
 troubleshooting, 17, 22, 42, 44, 404, 407  
 Peak/DM BIOS, troubleshooting, 12  
 Pen Windows, 506-514  
 Permanent swap file, 210, 211, 260, 262  
 .PFM file, 325, 326  
 Phoenix Cascade BIOS, 12, 419  
 PIF Editor options, 301-305  
 .PIF filename extension, 287  
 PIFs (program information files). See also APPS.INF; Non-Windows applications; PIF Editor options  
 changing icons in Program Manager, 287-288  
 modifying, 133, 305-306  
 overview, 299-300  
 setting up PIF  
 after Windows installation, 286, 373  
 during Windows installation, 121-125, 285-286  
 from application manufacturer, 287  
 [PIF] section in APPS.INF, 122-125, 133  
 Pipe (|), in .INI parameters, 159  
 Plotters  
 fonts, 315, 317, 321, 332  
 setting up unsupported printers in Windows, 340  
 Plus Hardcard, troubleshooting, 24, 422  
 Pointing devices, 129, 139, 485. See also

## Mouse

[Pointing device] section in SETUP.INF, 100, 129

Point size, font characteristic, 310, 315, 318, 453

Pop-up messages (network), 73, 370

Ports, 174, 180. See also COM port; LPT port

## PostScript printers

cartridges, 336

described, 335-336

drivers, 141-142

fonts, 317, 333, 335-336

printing error information, 336

specifying virtual memory, 334

troubleshooting, 30, 426-427, 429

TrueType, 333-334, 335

unsupported printers in Windows, 340

Preemptive scheduling, 291

Printer. See also Printer fonts; specific printers

compatible with Windows 3.1, 140-142, 496-498

drivers, 27, 126-128, 140-142, 500-501

interrupts, 213

specifying during Setup, 80

troubleshooting, 30-33, 427-429

TrueType compatibility, 27, 318, 425

Printer cartridge metrics (.PCM) file, 324

Printer fonts. See also specific printers and printer types

character sets for, 321

defined, 312, 320

dot matrix printers, 322

HP-compatible printers, 323-333

PostScript printers, 333-336

printable screen fonts, 312, 320, 322, 453

Printer ports. See also COM port; LPT port

port entries in the ROM BIOS data segment, 346-348

troubleshooting, LPTx.DOS method, 345-346

.WIN.INI entries, 180, 181

[PrinterPorts] section in WIN.INI, 180

Printer Setup, 159, 315, 321

## Printing

determining Windows printing method, 349

network, 177, 350

setting up unsupported printers, 340-341

technical issues related to, 339-349

troubleshooting, 30-33, 426-429

Print Manager, 168

[Progman.groups] section in SETUP.INF, 110, 132

## PROGMAN.INI

contents, 219-221

modifying for custom user environments on networks, 374

preserving, after reinstalling Windows, 15

Program information files (PIFs). See PIFs

Program Manager. See also Program Manager groups

changing values in .INI files, 159

customizing, 132, 272-274, 276

initialization (.INI) file, 219-221

maintaining Windows with, 83

restricting user action, 221

Program Manager groups

created during Setup, 109-111

customized, 132, 220, 273-274

setting up shared groups, on networks, 274-275, 374

[Programs] section in WIN.INI, 181

Protected mode, 150, 239-240, 454

Pyro!, 407

Q

QEMM—386 expanded memory manager

386 enhanced mode support, 243, 247

described, 454, 515-518

networks, 373

troubleshooting, 34, 421, 517-518

Quadtel BIOS, troubleshooting, 12

R

RAM drive,

creating a RAM disk, 230

during Setup, 70

optimizing performance, 259

swap files with, 245

TEMP variable on diskless workstations, 262, 369

troubleshooting, 418-419

RAMDRIVE.SYS, 148, 259, 265

Random access memory (RAM), described, 228

Raster fonts, 145, 311, 313-315, 317, 454

README files

choosing not to install, 79

compound documents, 353

files for, 154, 443

Read-only files on network, 73, 369

Real mode, and Windows 3.1, 9

Rebooting

CTRL+ALT+DEL use, 204, 256, 294-295, 432

defining behavior, in SYSTEM.INI, 204

from a batch file, 256,

nonmaskable interrupts, 209

non-Windows applications, 294-295

Windows, after installation, 71, 77, 80-81

Reference materials, 483-486

REG.DAT file, 359, 454

REGEDIT.EXE, 360-365

Registration database, 454

described, 359

installing or modifying file types, 361-363

restoring a deleted or corrupted registration database, 363

Registration Info Editor

described, 360

filename extensions defined, 171

installing a .REG file, 361

modifying .REG file types, 363

restoring the registration database, 363

supporting files, 151

WIN.INI entries, 178

Reinstalling Windows, 15

Resolution

display, 144-145

printer, 314, 318, 322

Restricting user actions, in Program Manager, 221

[Restrictions] section in PROGMAN.INI, 221

RIPLMEM.EXE program, 379

Roman font, 315, 317

ROM BIOS

debugging a COM port, 347-349

INT 17, 349

shadowing, 267

use of upper memory area, 212-213, 216, 231, illus. 232

[Run] section in SETUP.INF, 90

## S

- Screen fonts, 144-146, 175, 312
- Screen savers, 154, 168, 374
- Script font, 315, 317
- SCSI
  - adapter card (ADAptec 1540B), 380
  - drive, 24, 421, 520
- SDK (Windows Software Development Kit), 454
- Segmentation, for Windows code, 256, 456
- Semicolon, as comment character, 159
- Serial communications port. See COM port
- Server
  - database, 448
  - file, 450
  - network, 177, 454
  - print, 453
  - Server applications (OLE), 353, 454-455
- [Settings] section in PROGMAN.INI, 219
- Setup. See Installing Windows 3.1; Windows Resource Kit disk setup; Windows Setup
- SETUP.EXE file, and installing Windows on a local drive, 66
- SETUP.INF
  - checking during Setup, 64
  - content summary, 88-89
  - customizing, 128-133
  - editing procedure, 87
  - format, 88-89
- SETUP.INF, continued
- sections
  - copy-files sections for applications, 107-108
  - copy-files sections for Windows, 105-106
  - display driver, 94
  - fonts, 112
  - general installation, 89
  - incompatible driver, 113
  - keyboard and code pages, 97
  - mouse driver, 100
  - network installation, 101-103
  - Program Manager groups, 109-111
  - system configuration, 117
  - system fonts, 104
  - Windows installation, 64, 77
- [Setup] section in SETUP.INF, 89
- SETUP.SHH file, 76-77
- Setup switches
  - setup /a, 73-74
  - setup /h, 75-76
  - setup /i, 65, 401
  - setup /n, 11, 74-75
  - setup /t, 400
- summary, 60
- Shadow RAM, 250
- Shadow ROM, 420, 430, 455
- Share command (MS-DOS), 368
- Shared memory, troubleshooting, 430
- Shared resources, 304, 455
- Shell command (MS-DOS), 260
- [Shell] section in SETUP.INF, 94
- Shortcut keys, defined in PIFs, 302-303
- SideKick, 407
- Small Font, 112, 310, 314, 317
- SMARTDrive 3.x, illus. 252
- SMARTDrive 4.0
  - described, 252-256, 439
  - double buffering, illus. 253, 255-256

- installation of, 70
- optimizing Windows performance, 230, 259
- Stacker, 17, 256
- troubleshooting, 416, 421-422
- viewing switches, 258
- SMARTDrive Monitor, Windows Resource Kit utility, 441
- SMARTDRV.EXE, 148
- SoftCraft WYSIFonts, 315
- Soft fonts. See Downloadable soft fonts
- SoftIce Debugger, 404
- Sound
  - drivers on Windows Resource Kit, 443
  - files, 154
  - troubleshooting, 48-51
  - WIN.INI entries, 179
  - SoundBlaster, files identified in Setup, 114
  - Sound Recorder, troubleshooting, 51, 436
  - [Sound] section in WIN.INI, 179
  - Source document, for OLE, 355
  - [Special\_adapter] section in SETUP.INF, 119
- Speedfxr, 407
- Speedstor, troubleshooting, 13-14
- Spooler, 168, 455
- SQL (Structured Query Language), 455
- Stacker, 13-14, 17, 66, 244, 256
- Stack overflow error, 422
- Stacks, in CONFIG.SYS, 422
- Standard mode Windows. See also 386 enhanced mode Windows; Windows 3.1 described, 63, 235
- memory
  - conventional memory, 235
  - expanded memory, 236-238
  - extended memory, 235-237
  - system requirements, 9, 63, 410
  - optimizing performance, 260
  - removing support for, 502
  - troubleshooting, 44, 418-419, 423
- [Standard] section in SYSTEM.INI, 191-192
- Startup directory, specifying in PIF Editor, 301
- Startup group, 58, 220
- Startup requirements, for Windows, 249-250
- Stop-bits, 174
- Subst command (MS-DOS), 390, 407
- SuperPrint, troubleshooting, 32
- SuperVGA, troubleshooting, 20, 411, 421
- Swap disk, for non-Windows applications, 191
- Swapdisk memory manager, 230
- SWAPFILE.EXE, file deleted in Setup, 107
- Swap files
  - changing size and location of, 244
  - creating, for virtual memory, 238, 244
  - non-Windows applications using, 290, 521-522
  - permanent, 210, 211, 244-245, 260, 262
  - temporary, 207, 210, 244
- Virtual Memory Manager, 243-244
- Swappable code segment (in Windows applications), 236
- Swapsize, defined, 236
- Switches, command-line
  - Mem command (MS-DOS), 229-230
  - MS-DOS system drivers, 258
  - PIF Editor options, 301
- Setup, 60
- Windows, 249
- Symbol font, 112, 314, 317, 318, 333



- System
  - configuration specified in Setup, 117-120, 401-402
  - modifying settings during Setup, 65-66
  - requirements, 9, 418, 420
  - System Editor, 160-161
  - System events, WIN.INI entries, 179
  - System font, 104, 144-145, 312-315
  - SYSTEM.INI
    - contents, 183-218
    - content summary, 183
    - entries for
      - 386 enhanced mode performance, 271
      - conventional memory, 238, 250
      - disabling expanded memory, 241
      - hardware configurations, 66-67, 271
      - network performance, 272, 370-371
      - standard mode performance, 238
      - virtual memory, 246
    - preserving entries, after reinstalling Windows, 15
    - source file (SYSTEM.SRC), 66, 161
    - updates defined in Setup, 116
    - Windows 3.1 changes, 162-163
    - Windows installation changes, 66, 77
    - System integrity violation, 40
    - System Information screen, illus. 66, 77
    - System memory, displaying current use, 442
    - System Resource Monitor, Windows Resource Kit utility, 442
    - System resources, 250-251, 442
    - System screen fonts. See System font
    - [System] section in SETUP.INF, 117-120, 129
    - System settings script, 75-81
    - SYSTEM.SRC, 77, 161
    - SYSTEM subdirectory
      - defined, 58
      - files defined for Setup, 93, 127
  - T
    - Tandon, troubleshooting, 12
    - Task Manager
      - defined, 290, 373
      - specifying, 186
      - SYSTEM.INI entry, 186
      - vs. Windows Task List, 248, 249
      - WIN.INI entry, 164
    - TCS 10Net, 102, 391
    - TEMP directory, 369
    - TEMP environmental variable
      - “clean boot” disk, 398
      - optimizing performance, 262-263
      - printing requirements, 427
      - setting RAM drive as, 259
      - troubleshooting, 13-14, 427
    - Windows on a network, 369, 427
    - Temporary swap file
      - described, 243-244
      - optimizing performance on a network, 260, 262
      - SYSTEM.INI entries, 207, 210
    - Terminal font, 144, 313, 317
    - Texas Instruments Graphics Architecture (TIGA) display adapter, 412
    - Third-party
      - memory managers, 269-270
      - soft fonts, 316
    - task manager, 272
    - Thunder Board (Media Vision), files identified in Setup, 114

TIGA display driver, 139, 150, 412

Time

- defining formats, 172
- interrupts, 25, 214, 215, 373
- synchronizing with CMOS clock, 213

Time-out settings, for printer ports, 180

Timer (MCI driver), 114, 143

Timer interrupts, 214, 215, 373

Timeslicing

- between Windows and non-Windows applications, 291-292
- defined, 455
- keyboard, 422
- PIF Editor options, 304
- virtual machines, 207
- Windows applications, 217-218

Times New Roman font, 113, 310-311, 317-318, 320

Tms Rmm font, 107, 314

Token Ring networks, 214

TopDesk, Windows Resource Kit utility, 442

Toshiba computer, 12, 412, 419

Training, 466-467, 468-471. See also Microsoft Authorized Training Centers (ATCs); Microsoft Certified Professional Program; Microsoft University

[Translate] section in SETUP.INF, 115

Translation buffers, 239

- controlling mapping in upper memory, 239, 241, 242
- freeing conventional memory, 268-269

Transmission retries, 169

Transport stack, 371

Trantor (TSCSI.SYS), 407

Troubleshooting

- 386 enhanced mode, 420-422
- creating a “clean boot” disk, 398
- desktop configuration, 403
- display problems, 408
- EMS memory problems, 235, 237, 415-417
- fonts, 425
- general protection faults, 431-433
- MS-DOS configuration problems, 413-414
- multimedia, 434
- networks, 430-431
- non-Windows applications, 423-425
- printing, 426-429
- Setup, 399-403
- standard mode, 418-419
- strategy, 396-398
- TSRs, 400, 404-407
- UMB conflicts, 237
- TrueType
  - benefits, 318
  - Canon printers, 337
  - changing typeface names, 337-338
  - described, 311, 318-320
  - disk space, memory, and speed, 319-320
  - files, 113, 146, 318
  - HPPCL printers, 323
  - IBM 4019 laser printers, 337
  - installing more fonts, 315
  - number of fonts on a system, 320
  - PostScript printers, 333-335
  - printer support, 316, 317, 319
  - troubleshooting, 27, 425-426
  - using in Windows applications, 319, 320
  - WIN.INI entries, 176

[TrueType] section in WIN.INI, 176

Tseng Labs display adapter, 410

TSRs (terminate-and-stay resident software)

- described, 239, 294, 455
- optimizing performance, 259, 261
- identified in Setup, 113, 401, 404
- SYSTEM.INI entries, 202, 211, 214
- troubleshooting
  - general protection faults, 37, 432
  - in Setup, 10, 13-14, 66, 400-401, 404
  - in Windows, 404-407, 414
- .TTF file, 318
- Typeface, defined, 310

U

Underscore (\_), as indicator of compressed files, 59

Ungermann-Bass

- network card, 392
- XNS transport stack, 384

Universal printer driver, 318, 321-322, 330

Unrecoverable application error (UAE), local reboot, 204

[Update.files] section in SETUP.INF, 115

Upper memory area. See also Upper memory blocks (UMBs)

- conflicting uses of, in 386 enhanced mode, 242
- described, 228-233, 237-238
- illus., 229, 232, 233
- placing translation buffers in, 241
- troubleshooting, 414, 415-417

Upper memory blocks (UMBs)

- controlling, in 386 enhanced mode, 242
- defined, 237, 455
- dual display adapters, 198
- excluding ranges, 199-200, 204, 212, 215, 416-417
- illus., 415
- mapping, 242
- optimizing use of, 263-266, 266-268
- troubleshooting for
  - 386 enhanced mode, 420-421
  - general protection faults, 433
  - networks, 430
  - non-Windows applications, 425

USER

- .EXE file, 137, 250
- heap, 250-251, 442
- User groups, listed by location, 479-481
- User interface, defined, 450
- User name, specifying in Windows Setup, 77, 79

[User] section in SETUP.INF, 92

- .USP file, 325

V

Vaccine, 404

VAR (value-added reseller), defined, 456

VCPI (Virtual Control Program Interface), 237, 247, 295, 456

VDefend, 404

VDNET.386 virtual device driver, 381

Vector fonts, 145, 311, 315, 317, 456

VGA

- driver and grabber files, 139, 149
- font files, 104-106, 312-314
- memory addresses, 216
- troubleshooting, 20, 26, 409-412, 424
- virtual support file, 150

Video memory

SYSTEM.INI entries, 212, 216  
 troubleshooting, 424, 425  
 Video Seven VGA  
 driver and grabber files, 139, 149  
 troubleshooting, 403, 410, 412  
 virtual support file, 150  
 Viralert, 404  
 Virex-PC, 404  
 Virtual COM Driver, 196  
 Virtual device, 150, 456  
 Virtual Display Driver (VDD), 94, 102, 408, 410  
 Virtual DMA Services, 255-256  
 Virtual Hard Disk (VHD), 34, 422  
 Virtual Keyboard Device (VKD), 204  
 Virtual machine (VM)  
 addresses for applications, 215, 453  
 COM port interrupt processing, 196  
 described, 239  
 device drivers in, 204  
 idle interrupts, 201  
 memory  
 allocation, 211, 213-214  
 expanded memory, 213-214  
 extended memory, 213-214, 239  
 printer interrupts, 213  
 read-write requests, 209  
 SYSTEM.INI entries, 193, 196, 205, 207, 213-214  
 timeslicing, 207, 291  
 Virtual memory  
 32-bit disk access, 520-523  
 386 enhanced mode, 243-247  
 creating swap files for, 244-245  
 defined, 453, 456  
 demand paging, 245-247, 448  
 management of, 243, 245-247  
 optimizing, 245, 520-523  
 pages, page swapping, and page table, 230, 245, 245-246  
 PostScript printer requirements, 334  
 swapping pages to network drive not recommended, 247  
 Virtual Memory Manager (VMM), 206, 230, 243, 245-246  
 Virtual Mouse Device (VMD), 100  
 ViruSafe, 404  
 VMM. See Virtual Memory Manager (VMM)  
 VT320 terminal emulator application, 380  
 W  
 Wallpaper, 153, 154, 170  
 Wave audio, 114, 154, 437  
 Western Digital  
 32-bit disk access and 1003 controller standard, 520, 523  
 Ethercard Plus, 388  
 troubleshooting, 11, 34, 36  
 WIN386.EXE file, 136, 150, 245  
 WIN.COM, 11, 68, 136-137, 152  
 [Win.\*] copy-file sections in SETUP.INF, 108-109, 130-131  
 Win command switches, 249  
 Window (on screen)  
 running non-Windows applications in a, 292-293  
 WIN.INI entries, 164-169, 178-179  
 Windows 2.x, troubleshooting, 432  
 Windows 3.1. See also 386 enhanced mode Windows; Standard mode Windows; Windows applications; Windows Setup

- compatibility with MS-DOS 5.0, 269-270
- configuration, troubleshooting, 403-417
- foreign language versions, 458
- maintaining Windows
  - on a network, 369-370
  - using Setup, 82
- minimum installation, 504
- MS-DOS 5.0 configuration for, 248-249, 261
- new features in
  - 32-bit disk access, 520-523
  - Character Map, 321
  - File Manager features, 277
  - icons, 288
  - multimedia, 135
  - network features, 368
  - Object Linking and Embedding, 352
  - PIFs, 285
  - printing, 278
  - Program Manager features, 273
  - Setup, 58
  - SMARTDrive 4.0, 252-256
  - swap file features, 244
  - system registration database, 359-363
  - TrueType fonts, 311, 318-320
  - universal printer driver, 318, 321-322
  - upper memory management, 243

- Windows 3.1, continued
  - optimizing performance
    - adjusting UMBs, 263-266, 266-269
    - hardware, 258-260
    - MS-DOS, 259-260
    - network, 262
  - Windows configuration, 260
  - Windows applications
    - custom installation, 130
    - defined, 284, 456
    - files, 151-152
    - removing, 500
    - troubleshooting, 43
  - WINDOWS directory
    - defined, 58
    - files copied to by Setup, 92, 130
    - installing Windows in, during Setup, 77-78
    - personal vs. shared, 368
    - setting during installation, 64
  - Windows Driver Library, 478
  - Windows files
    - core files, 136, 137
    - deleting, 155, 500-504
    - driver files, 136-143
    - font files, 144-146
    - MS-DOS support files, 148-150
    - overview, 135-136
    - Windows applications and related files, 151-155
  - Windows for Pens, 506-514
  - Windows help files, 152, 503
  - [Windows Help] section in WIN.INI, 178-179
  - Windows Mode Setup
    - checking for SMARTDrive, 70
    - completing Setup, 71
    - custom application installation, 69-70
    - first stages of, 58, 68
    - system files update, 70
    - troubleshooting, 402-403
    - updating from earlier Windows version, 71
  - Windows Resource Directory
    - hardware support, 482-483
    - online services, 472-478
    - reference materials, 483-486
    - training services, 458-471
    - user groups, 479-481
  - Windows Resource Kit disk
    - downloading, 439
    - installing a sound driver file, 444
  - Microsoft IPX upgrade utility, 444
  - README files, 443
  - setup, 444
  - utilities described, 440-442
- Windows Driver Library, 443, 444
- [Windows] section in SETUP.INF, 93
- [Windows] section in WIN.INI, 164-169

Windows Setup. See also Installing Windows 3.1

Administrative Setup option (setup /a), 72-74

Automated Setup (setup /h), 58, 75-81

Custom Setup, 58, 64-65

Express Setup, 58, 64

MS-DOS Mode Setup, 58, 63-68, 401-402

Network Setup (setup /n), 73-75

overview, 58-63

setup-related files, 152-153

shell, 94

switches for Windows Setup command, 60

technical discussion, 62-71

troubleshooting, 9-17, 399-403

Windows Mode Setup, 58, 68-71, 402-403

Windows shell, 272-276, 277-279

[Windows.system \*] sections in SETUP.INF, 93

Windows Technical Support Library, 478

[Winexec] section in SETUP.INF, 90

WINFILE.INI, 223

Wingding (TrueType font), 146

WIN.INI

changes in the system registration database, 354

content, 163-182

content summary, 163

preserving, after reinstalling Windows, 15

size, 163

source file (WIN.SRC), 16, 77, 161

substituting screen fonts in, 335

Windows 3.1 changes, 116, 161-162

Windows installation changes, 77

WinOldApp file, 148, 290, 292, 423

WIN.SRC, 16, 77, 161

WINSTART.BAT file, 261

Workstations, network, 71,75, 456

.WPD (Windows PostScript Definition) file, 335

Wyse computer, 12, 419

X

X.25 network communications protocol, defined, 456

XGA display driver, 139, 150, 380

XGAAIDOS.SYS, 406

XMM. See Extended memory managers (XMM)

XMS. See Extended Memory Specification

XMS memory. See Extended memory

Z

Zenith, troubleshooting, 12, 35