Chapter
13

This chapter provides information about troubleshooting Microsoft
Windows for both general users and experts. If you have trouble installing
Windows, or if Windows doesn't run as well as you expected, this chapter
will help you find out why and show you how to isolate and solve
common problems.

Related Information

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3.1" in "Welcome"

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About Troubleshooting

As a general orientation to troubleshooting, begin with these basic problem-solving actions:

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described in "Creating a 'Clean Boot' for Troubleshooting." later in this chapter.

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mode, to see if the problem is mode-specific.

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possible, while running the applications provided with Windows.

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files in the WINDOWS directory, looking especially for notes related to your specific hardware or for TSRs, device drivers, and other third-party software that you are running with Windows.

Windows is a stable environment that was tested on thousands of computers before it was shipped. However, your system might have a display adapter or other hardware that was not in existence during the latest Windows development cycle. This means you might be installing or running Windows on an untested configuration. This chapter, and the README files in your WINDOWS directory, can help you find solutions.

Getting Started with Troubleshooting

You can use this decision tree to begin troubleshooting for Windows.

Decision Tree for Troubleshooting Windows 3.1

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Decision Tree for Troubleshooting Windows 3.1

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or you get not-enough-memory messages.

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or you have hard disk problems.

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when you try to run a non-Windows application under Windows.

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or you have problems printing over a network.

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Creating a "Clean Boot" for Troubleshooting

Flowchart 1.5
 Clean Boot Disk

Use a "clean boot" floppy disk to boot your system for troubleshooting problems with incompatible TSRs and drivers and problems with conflicting uses of the upper memory area. Remember that you must reboot your system after any change in AUTOEXEC.BAT or CONFIG.SYS for the change to take effect.

To create a "clean boot" disk for troubleshooting:

1.

2.
AUTOEXEC.BAT, including only the drivers and programs necessary for the computer to boot and run Windows, and removing all other TSRs or drivers.

; if you have an EGA monitor

; if MS-DOS 3.3 or later

; make sure command.com

; is in the C:\DOS directory

; TEMP must point to a valid directory

3.Make a boot disk. To do this, place a disk in drive A and type the following command at the command prompt:

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4.
commands at the command prompt:

5.
following commands at the command prompt:

If you want to establish a system configuration that ensures optimal performance, or if you want to customize other features in Windows 3.1, you can also begin with a standard configuration by using the "clean boot" disk. Make one change at a time to make troubleshooting easier.

Note
packages. Avoid third-party drivers unless you can confirm that such drivers have been tested and are known to be compatible with Windows 3.1.

Troubleshooting Setup

Flowchart Series 1
Troubleshooting Setup

Windows Setup is two programs bound into one executable file. The first program is MS-DOS Mode Setup, which installs the critical system files used to start Windows. The second program is Windows Mode Setup, which installs the Windows applications and the supporting files, sets up the Program Manager groups, and installs printer drivers.

Many installation problems are caused by your system configuration–for example, by TSRs or third-party memory managers that conflict with the Windows memory managers. Failure can occur at three key points in Setup:

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If Setup fails at any of these stages, you might see an error message describing the problem, or Setup might crash and return to the command prompt, or your system might require rebooting. The following sections discuss possible solutions to problems you might experience during Setup.

Tip   To see a list of switches that you can use to start Setup, type setup /? at the command prompt.

Troubleshooting TSRs During Setup

Windows Setup can check your system for memory-resident programs, looking in AUTOEXEC.BAT and CONFIG.SYS and also checking the programs currently running in memory. If Setup finds a program with which Microsoft testing has uncovered problems running with Windows 3.1, a message appears on your screen, giving you the opportunity to continue with Setup or exit.

To check for conflicting memory-resident software with Windows Setup:

.

If you receive a message that incompatible TSRs or drivers are present when you try to run Setup, we recommend that you take the following steps.

To solve Setup problems related to incompatible TSRs:

1.
TSRs you are running. This information will tell you if you should install Windows 3.1 while this program is loaded.

If you choose to install Windows 3.1 without changing your system configuration, follow the instructions on the screen to continue with Setup.

2.
loaded, follow the instructions on the screen to exit Setup.

3.Uninstall the TSR by following instructions in the program's documentation or by removing the filename from your AUTOEXEC.BAT or CONFIG.SYS file.

4.

5.
memory-resident programs.

Some TSRs run with Windows if you start them after starting Windows. Read the SETUP.TXT file on Windows installation disk #1
for information about the best way to run a specific TSR with Windows.

Check the entries in the [incompTSR1] and [incompTSR2] sections in the SETUP.INF file in your Windows SYSTEM subdirectory for up-to-date lists of software that conflicts with Windows Setup. The TSRs listed in [incompTSR2] can cause problems with Setup. We recommend that you uninstall any of this software before running Windows Setup. The TSRs and device drivers listed in [incompTSR2] can cause problems if they are running when you run either Setup or Windows 3.1.

Troubleshooting MS-DOS Mode Setup

Flowchart 1.2
 Windows Hangs
During Setup

In the first stage of MS-DOS Mode Setup, Setup uses an auto-detection scheme to determine your system's hardware configuration, specifically identifying the type of processor, machine, display adapter, mouse, and network.

If Setup hangs your system or pops out to the command prompt at this point and your system doesn't have any TSRs running, then the Setup auto-detection scheme is probably causing the problem. You can start Setup with the /i switch to tell Setup to ignore auto-detection. To do this, type setup /i at the command prompt and press ENTER to start Setup.

If you turn off auto-detection, Setup will select a standard configuration. When the hardware configuration screen appears, the list will be similar to this:

Computer:
Display:
Mouse:
Keyboard:
Keyboard Layout:
Language:
Network:

If your system does not match the default settings, you might need to select the appropriate settings manually, following the instructions on screen.

These machines can be specifically selected during Setup:

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These networks (and specific versions of most networks) can be specifically selected during Setup:

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Troubleshooting Windows Mode Setup

The second point where Setup might fail occurs when MS-DOS Mode
Setup is finished and Windows Mode Setup is starting. During MS-DOS
Mode Setup, modifications are made to WIN.INI, identifying Setup as the
shell. The last thing that MS-DOS Mode Setup does is to start Windows.
Then Windows begins loading the Windows files, in this order:

1: WIN.COM
4: MOUSE.DRV
8: GDI.EXE
2: KRNL286.EXE
5: DISPLAY.DRV
9: USER.EXE
    or KRNL386.EXE
10: NETWORK.DRV
3: SYSTEM.DRV
7: COMM.DRV
11: SETUP.EXE

Flowchart 1.2
 Windows Hangs
During Setup

If you are not running any TSRs and your machine hangs when Windows
Mode Setup is starting to run for the first time, a file was probably unable
to load. Most problems with Setup failing at this point are due to an
incorrect display driver selection. Either the auto-detection scheme
incorrectly detected the system configuration or your custom choices were
incorrect.

Certain display adapter chip sets lead Setup to detect the display adapter
incorrectly. Typically, this error is due to an incomplete implementation of
BIOS on older display adapters. For example, if the card is detected as a
Video 7 VGA with 512K and it is an older machine, the display adapter
might not be identifying itself correctly.

An easy test is to rerun Setup and select a basic display adapter (usually
EGA or VGA) to see if that works.

For more troubleshooting tips about display adapters, see
"Troubleshooting Display Problems" later in this chapter.

Note
Setup fails just as Windows is loading for the first time, check to see that
all the files in the list above are present on the network and that they are
not damaged.

Troubleshooting Windows Configuration

Five main topics are described in this section:

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Troubleshooting the Desktop Configuration

You might get an error message when you start Windows that indicates
a .GRP file is invalid or damaged, and that instructs you to reconstruct the
group. This error can occur if:

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·The files were moved into another directory, but the PROGMAN.INI file was not updated to reflect this change.

You might also need to rebuild groups if no group windows or icons appear when you enter Program Manager after starting Windows. To rebuild groups, follow the procedure outlined in Chapter 15, "Maintaining Windows with Setup," in the Windows User's Guide.

Troubleshooting TSR Compatibility Problems

Setup does not detect all memory-resident programs that might cause problems running with Windows. Also, if you run a TSR after installing Windows, Windows itself cannot detect a program to warn you if there is a problem. Two kinds of problems might occur:

·The interaction of the program with Windows might result in an unexpected system response such as a system crash or an incorrect display.

·

to get these programs to run together.

Flowcharts 5.6 and 5.7
 Disabling Norton Desktop and PC-Tools

If you have problems running Windows or a TSR program, check the list in SETUP.TXT in the Windows SYSTEM subdirectory to see if there is a known conflict and a solution. Otherwise, begin troubleshooting by removing the program from memory to see how well Windows runs when the program is not present.

TSRs That Cause Problems with Setup

These programs might cause problems with Setup and should be removed before installing Windows, but should work with Windows after installation:

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Version 3.0 appears to correct this problem.

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appears to correct this problem.

·PC-Kwik version 1.59 might cause Setup to crash. Version 2.0 appears to address this problem.

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installation, but you can run it with Windows after Setup is complete.

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the problem, but its authors recommend that you run ViruSafe with the /C-switch with Windows.

TSRs That Cause Problems Running with Windows 3.1

These programs cause problems running with Windows 3.1:

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certain circumstances. Version 4.01 appears to correct these problems.

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Windows applications to build valid paths for files they want to access. Do not use APPEND with Windows 3.1.

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Windows 3.1. We recommend that you do not use this program with Windows 3.1.

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Windows applications running under Windows 3.1. Printing from those VMs can be unpredictable, because the VM that has the focus sends its output to the printer, and printing becomes intermixed if you switch between non-Windows applications.

·

change the state of the joined drives during a Windows 3.1 session. This includes adding or removing joined drives from within Windows. We recommend that you do not use JOIN when running Windows Setup or Windows 3.1.

·LanSight version 2.0 is a utility for controlling and monitoring work-stations attached to a Novell network, and it requires TSRs to be loaded on the workstations before Windows is started. If a message asking permission to view the screen is sent from the supervisor workstation to a workstation running Windows 3.1, the workstation running Windows might require rebooting.

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entry in WIN.INI. Version 3.3+ appears to correct this problem.

·

mirror /u command if it is loaded from Windows standard mode using the File Run command.

·

Windows 3.1.

·Norton Utilities version 5.0 programs Diskreet and Ncache are not com-patible with Windows 3.1 and can cause your system to hang. Version 6.01 solves this problem, with some limitations.

·

cause inconsistent results under Windows 3.1 if you are trying to access files in a directory that DiskMon is monitoring. We do not recommend that you use this TSR with Windows 3.1.

·

386 to share a printer. Some Windows applications print garbage mixed with correct output when this TSR is in use.

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standard mode.

TSRs That Need Special Consideration

These programs will run with Windows if you take special action to make the two programs work together:

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tions from a menu, creates several sections in CONFIG.SYS and
AUTOEXEC.BAT. Windows Setup only modifies the first section in
CONFIG.SYS and AUTOEXEC.BAT. You need to manually modify the
other sections to use Windows 3.1 with the alternate configurations.

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might try to access. Vertisoft (makers of Doubledisk) has a DRVOFF
utility to make these phantom drives invisible to Windows 3.1. Contact
Vertisoft to get this utility if you want to run Doubledisk with Windows.

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in low-memory situations for Windows 3.1 to load and function properly.
Also, FASTOPEN causes File Allocation Table (FAT) problems when
used with disk defragmenting utilities.

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both standard and 386 enhanced modes if the TSR is loaded from within
Windows 3.1. If you use this product, we recommend that you load it
before starting Windows 3.1.

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Windows 3.1. To use KBFLOW, start Windows 3.1 first and run the TSR
from within Windows.

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PROMPT, and WINDIR to be lost when you run a non-Windows
application under Windows. If you are going to start Windows 3.1 from a
Le Menu menu option, we recommend that you set up Windows 3.1 as a
batch file menu option so that COMMAND.COM can be loaded before
Windows 3.1. (See the Le Menu documentation.)

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within a non-Windows application after it is launched in Windows if you want to use Click and Logimenu, even if the TSRs were loaded before starting Windows 3.1. After exiting Windows 3.1, reload these TSRs for them to function from the command prompt.

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a permanent swap file if this caching program is on a disk drive. Windows 3.1 will work with this program, however.

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hang if you launch it from a non-Windows application running under standard mode Windows. In 386 enhanced mode, it might cause your machine to reboot. Version 7.0 of PC-Tools appears to correct these problems. Even with version 7.0, however, you should not run Desktop from within a non-Windows application if the TSR was loaded prior to Windows 3.1. We recommend that you run Desktop from a PIF.

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period has expired if it is loaded before Windows is started. At that point, it is impossible to restore the Windows screen.

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with Windows 3.1. We recommend that you run SideKick from within Windows with a PIF instead of loading it as a memory-resident program.

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SPEEDFXR -X appears to work better with Windows 3.1, because it does not remain in memory.

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change the state of the substituted drives while running Windows. This includes adding or removing substituted drives from within Windows.

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disk drive as a removable drive, so your system might crash if you try to access this drive through File Manager. Other unexpected results can occur while deleting files through File Manager.

For information about running network drivers with Windows, see "Troubleshooting Networks" later in this chapter.

Troubleshooting Display Problems

Flowchart 2.3
 Display Adapter Problems

Many problems with garbled displays, inadequate screen refreshing, and other odd behavior are related to the display adapter or display driver. If you cannot find another explanation in this chapter for faulty behavior in your system, check the details in this section closely for a description of symptoms you may be experiencing.

Display drivers actually have three parts:

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contains the code that knows how to talk both to the display adapter board (hardware) and Windows (software).

.

between Windows and non-Windows applications. The standard mode grabber only supports copying and pasting text; the 386 enhanced mode grabber supports copying text and graphics up to the standard VGA resolutions (video mode 13). The grabber is built into the display driver file, but requires supporting font files. These files use the filename extension .2GR for standard mode and .3GR for 386 enhanced mode (replacing the .GR2 and .GR3 extensions used in Windows 3.0).

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support for running non-Windows applications in virtual machines in 386 enhanced mode.

The naming conventions listed parenthetically are not required. However, most drivers use these naming conventions.

Display-related problems typically fall into two categories:

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adapter manufacturer).

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This section will help you determine the source of and solutions for display problems.

1.

In this case, the display driver may be incorrect or corrupted, and a correct driver must be installed. Or the problem may be related to NMIs, described in item #4 of this section.

2.You can't copy and paste data between non-Windows applications and Windows.

Usually this is because the grabber files are incompatible. You might encounter grabber problems in an incomplete installation of a third-party display driver. Windows might run fine, but non-Windows applications are not displayed correctly. To correctly install third-party display drivers, you must copy the driver and the appropriate grabber files, and you must also update the entries for 286grabber= or 386grabber= in the [boot] section of SYSTEM.INI.

3.
an incompatible display adapter.

The problem is probably that your system does not have a complete set of drivers for that display adapter. Or else that display adapter is not supported by Windows.

If the display adapter can be configured as standard VGA, set the card for that mode, and make sure Setup detects the appropriate display adapter, so that Windows recognizes the display adapter as a standard VGA board.

Also, check with the manufacturer to see if updated Windows 3.1 display driver files (.DRV, .2GR, .3GR, and VDDx.386 files) are available.

4.
leaves the screen blank.

A few display adapters use nonmaskable interrupts (NMI) to switch video modes to support higher resolutions and to switch modes on the fly. Display drivers shipped with Windows do not support this type of dynamic mode switching, and Windows will not update the display.

A typical scenario with NMI display adapters is that Windows runs correctly in standard mode, but when you try to run Windows in 386 enhanced mode, the logo screen appears briefly, then scrolls off the bottom of the screen, leaving the screen blank. Windows is actually running, but the screen is not being updated. (At this point, you can usually press ALT+F4 and ENTER to exit Windows and return to the command prompt.)

To solve the problem, check the manual for the display adapter to find out how to turn off the NMI or extended modes for the display adapter. For example, some ATI Technologies display adapters use NMI support, but ATI Technologies also provides Windows display drivers that handle NMI correctly.

5.
a non-Windows application in 386 enhanced mode.

The VDDx.386 and .3GR file versions are probably mismatched. If the Virtual Display Device and 386 grabber have mismatched versions, edit SYSTEM.INI to make sure that one of the following configurations is installed:

.
VGA:

[386enh]

display=*vddvga

WIN386.EXE file, rather than existing in a separate file.

.
adapters that require Windows 3.0 versions of VDD and 386 grabber files:

[386enh]

display=vddvga30.386

Some OEM display drivers for Windows 3.1 that are shipped with display adapters also include VDD files, 386 grabber files, or both. Be sure that the correct files are installed for the display adapter and that SYSTEM.INI is updated. If the OEM driver disks include a 386 grabber file, but SYSTEM.INI contains the entry display=*vddvga in the [386enh] section, you must change this entry to display=vddvga30.386. Also, the VDDVGA30.386 file must be copied and, if necessary, expanded into the Windows SYSTEM subdirectory from the Windows Setup disks.

6.
running Windows in 386 enhanced mode.

Some VGA-compatible cards such as Video 7 and Paradise use additional memory to enhance the performance of their cards. Display adapter boards with the main chips manufactured by Tseng Labs, Chips and Technologies, Paradise, and Headland Technologies also work this way.

Windows detects most of these cards and automatically excludes the additional memory. However, you must add an emmexclude=C400-C7FF entry in the [386enh] section of SYSTEM.INI if:

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configured Windows for the 8514.

.

recognize.

.

(secondary), and you have problems switching between full-screen non-Windows applications when running in 386 enhanced mode.

For more information about other problems that can be solved with entries for emmexclude=, see "Troubleshooting Windows Running in 386 Enhanced Mode" later in this chapter.

7.
properly.

The digital-to-analog converter (DAC) on the VGA card might need to be updated. Contact the display adapter manufacturer for an upgrade. In the meantime, if your application has a command to refresh the screen, you might be able to temporarily correct the display so that you can use the application. For example, if the display is a color display, you can type mode co80 at the command prompt and press ENTER.

See the application's documentation for information about commands that refresh the screen.

8.
problems.

If you do not update your display driver to a Windows 3.1 driver, Windows might not work properly when running in 386 enhanced mode. Update your Windows system configuration to use the Windows 3.1 SuperVGA driver if you have a video card and multifrequency monitor with 800x600 16-color resolution but are currently using a third-party Super driver or one of these Windows 3.0 Supplemental Drivers:

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The Windows 3.1 SuperVGA driver also contains new features and performance enhancements, including the ability to obtain over 50 percent more screen space when running Windows.

9.
improved performance.

If you are using a Texas Instruments Graphics Architecture (TIGA) or Direct Graphics Interface Standard (DGIS) display adapter, use the Windows 3.1 drivers for this display. Windows provides two versions of the TIGA display driver: "TIGA (Small Fonts)" and "TIGA (Large Fonts)."

We recommend that you use the Large Fonts version if you use the display at resolutions of 1024x768 and above. If you are using a 16-inch or larger monitor and want to fit more information on screen, use the Small Fonts version. To change the resolution, you must quit Windows and use the TIGAMODE utility or another resolution utility supplied with your display adapter. Unless you want to use a different version of the TIGA driver (Small Font or Large Font) to change font sizes, you don't have to run Windows Setup after changing your TIGA screen resolution.

If you use a TIGA-based display adapter and run Windows in 386 enhanced mode, you can increase the amount of conventional memory available to non-Windows applications by loading the TIGACD driver from WINSTART.BAT instead of from the AUTOEXEC.BAT file. This ensures that the TIGACD driver will load only when Windows is running and will not occupy conventional memory space in 386 enhanced mode.

We do not recommend loading the TIGACD driver from WINSTART.BAT if you run TIGA applications outside of the Windows environment. Also, to run Windows in standard mode on a TIGA display adapter, you must load the TIGACD driver into memory before starting Windows.

10.
plasma display, Video Seven 256-color adapter, or other hardware.

See the README.WRI file in the WINDOWS directory. The README file contains up-to-date information about problems with display adapters for specific hardware.

Troubleshooting MS-DOS Configuration Problems

This section describes some problems related to the upper memory area and other MS-DOS issues. For information about problems with expanded memory, see "Troubleshooting EMS Memory" later in this section.

1.

You should be able to run programs in the upper memory area if all the following conditions are met:

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other device or devicehigh commands.

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must include either the noems switch or the ram switch. This command must appear after the device command for HIMEM.SYS but before any devicehigh commands.

·CONFIG.SYS contains a devicehigh command for each device driver you want to load into the UMBs.

.

resident program (TSR) you want to run in the UMBs.

If you have set up the system to run drivers and programs in the UMBs, but when you use the mem /c command, nothing appears in the upper memory section of the mem command output, you might be loading EMM386 with the ram switch in CONFIG.SYS, but your system might not have enough space in the UMBs to load programs or drivers.

To adjust EMM386 to provide additional space in the UMBs, follow the instructions in "Optimizing Use of the UMBs" in Chapter 6, "Tips for Configuring Windows 3.1." See also the Microsoft MS-DOS Getting Started booklet, p. 37.

Figure 13.1

PC memory map

2.
resident program (TSR) with the devicehigh or loadhigh command.

You might not be able to load that driver or TSR into a UMB. MS-DOS
5.0 device drivers and memory-resident programs should load into the
UMBs without any problems (except HIMEM, EMM386, and
SMARTDrive must be loaded in conventional memory).

Make sure the device drivers work by replacing the devicehigh command
with the device command, so the device is loaded into conventional
memory. You might also have to remove a size switch. If loading the
device driver with the devicehigh command was the problem, your
computer will now work properly.

3.
MS-DOS APPEND utility.

When Windows opens a file such as WINWORD.EXE, it records the
complete drive and path of this file, so that the file can be reopened later
without regard to the current drive and directory. For example, Windows
might record a path as C:\WINWORD\WINWORD.EXE.

The MS-DOS APPEND utility prevents Windows from reliably
determining the proper path of files. For example, if C:\EXCEL is the
current drive and directory when a file is opened, and D:\WINWORD is
on the APPEND search path, APPEND might cause Windows to
mistakenly build the filename as C:\EXCEL\WINWORD.EXE.

Later, when Windows tries to open this file again, an error occurs because
the file is not in the drive and directory indicated. This error results in the
message:

Change Disk
Cannot find WINWORD.EXE, Please insert in drive A:

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Windows Setup will warn you if APPEND is found in your configuration and ask you to remove it before Setup proceeds. But Windows will not warn you about its presence if you install APPEND after Setup. APPEND is usually found in AUTOEXEC.BAT, and it should be removed or commented out.

Troubleshooting EMS Memory Problems

This section discusses solutions for several problems that can occur if you use EMM386.EXE with Windows 3.1.

For more information about EMM386 and its startup parameters, see pages 605—609 of the Microsoft MS-DOS User's Guide and Reference. For more information about how to use program information files (PIFs) to provide expanded memory to non-Windows applications, see Chapter 7, "Non-Windows Applications," in the Windows User's Guide.

Tip   To see a list of the switches for controlling EMM386.EXE after it has been loaded, type emm386 /? at the command prompt.

Figure 13.2

Example of UMBs in the upper memory area

For a VGA or V7VGA display adapter,
a network card at
D000-D7FF, and an EMS 3.2 page frame
at E000-EFFF

1.
Windows in 386 enhanced mode.

If this happens, add the /y=path switch to the command line that loads EMM386 in CONFIG.SYS. This switch specifies the location of EMM386 when you start Windows. For example, if EMM386.EXE is in the C:\DOS directory, the command in CONFIG.SYS would be:

device=emm386.exe /y=c:\dos\emm386.exe

Make sure you specified the correct directory in CONFIG.SYS for the HIMEM.SYS and EMM386.EXE files. Also, make sure HIMEM and EMM386 are functioning properly. To do this, make a test boot disk with a CONFIG.SYS file that contains only the device commands for loading HIMEM and EMM386. The command that loads EMM386 should be:

device=c:\dos\emm386.exe noems x=a000-efff

And include a test AUTOEXEC.BAT file that contains the following:

path=c:\dos
prompt pg
set TEMP=C:\

If the computer stopped when you used the test disk to boot the system, you might have a problem with HIMEM or the hardware.

If the computer functions properly when you boot with this test disk, HIMEM works with EMM386.

2.

If you use a third-party disk-caching program other than SMARTDrive, it might not be working properly with EMM386. Remove that program temporarily and put a command in your AUTOEXEC.BAT file to load SMARTDRV.EXE. Contact the manufacturer of the third-party disk-caching program for more information about using it with EMM386.

3.

If the computer stops, and none of the preceding solutions have worked, EMM386 may be using the same memory addresses as another program or card. For example, this could happen when you install a network card or a card for a device.

If you suspect a memory-resident program (TSR) is causing the problem, edit the AUTOEXEC.BAT file to remove the loadhigh command so the program loads into conventional memory. If loading the program with the loadhigh command was the problem, the computer should now work properly.

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If your system has a card or drive that might conflict with EMM386, check its documentation to see what address space the card or driver uses. If the conflict occurs over a network, check with the network administrator to find which memory addresses are being used. Then use the x= switch to prevent EMM386 from using those addresses. For example, if your system's network card uses the D800h-DFFFh memory addresses, the command line that loads EMM386 in CONFIG.SYS should look like this:

device=c:\dos\emm386.exe noems x=d800-dfff

You can experiment with the command that loads EMM386 to determine which memory addresses are being used by the other program or device, as described in "Optimizing Use of the UMBs" in Chapter 5, "Windows 3.1 and Memory Management." For details about the command-line switches that can be used with EMM386, see Chapter 14, "Optimizing Windows," in the Windows User's Guide.

4.
EMM386 is installed.

The symptoms of this problem vary. Common symptoms include:

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out-of-memory message and stops running, or it behaves erratically and displays out-of-memory messages when you try to perform certain tasks.

.

you have no problem starting other non-Windows applications.

To solve the problem, change the device command line for EMM386 so that it includes the ram switch instead of the noems switch. If the application runs normally after you restart the computer, the noems switch caused the problem.

After you add the ram switch, other programs or drivers might not load into UMBs. (Use the mem /c command to find out.) If so, follow the instructions in "Adjusting EMM386 to Provide More UMBs" in Chapter 6, "Tips for Configuring Windows 3.1."

If your programs and device drivers still do not load into UMBs, the system might not have enough UMBs available to run those programs. See the computer's hardware documentation to find out which addresses are used.

Troubleshooting Windows Running in Standard Mode

If you have successfully installed Windows, then using the win /s switch should force Windows to start in standard mode, provided that:

Flowchart 5.9
 Cannot Run Windows in Standard Mode

.
.
.
.

If you cannot start Windows in standard mode, the problem is usually related to the XMS driver or to not having enough extended memory.

1.
and preventing Windows from accessing that memory.

Decrease the size of the RAM drive or do not load the memory-resident software.

2.

Replace the driver with the version of HIMEM.SYS in the Windows package.

3.

HIMEM uses an algorithm to detect the machine type, then uses the appropriate routine to access extended memory. When HIMEM loads at boot time, it reports which A20 handler is installed. A20 is a technical reference to the line on the processor that allows access to extended memory. During boot time, the display should read:

Installed A20 handler number x.

The value for x identifies the routine used to access the A20 line.

Certain machine types cause HIMEM to mistakenly identify which A20 handler to use. To force HIMEM to use the correct driver, you must use the /m switch in the device=himem.sys line in CONFIG.SYS, where m identifies the type of computer as either the number or name from the following table.

Number
Computer type

1
IBM AT or 100% compatible

2
IBM PS/2

3
Phoenix Cascade BIOS

4
HP Vectra (A and A+)

5
AT&T 6300 Plus

6
Acer 1100

7
Toshiba 1600 and 1200XE

8
Wyse 12.5 Mhz 286

For example, either of the following lines can be used to tell HIMEM to use the IBM AT method of accessing extended memory:

device=c:\dos\himem.sys /m:at   or   device=c:\dos\himem.sys /m:1

The table above lists values for some of the most popular hardware. Contact your hardware manufacturer for specific values if your system does not match values in the table.

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For more details about using HIMEM.SYS with Windows 3.1, see Chapter 14, "Optimizing Windows," in the Windows User's Guide.

4.

To make more extended memory available:

Flowchart 5.8
 Out-of-Memory Errors

.

program needs. If the computer does not have enough physical extended memory, you might want to contact your hardware vendor to determine how to add more to the system.

.

these programs could be using too much extended memory. If so, reduce the amount of memory specified by editing the device command for each driver. For information about editing device commands in CONFIG.SYS, see pages 283§287 of the Microsoft MS-DOS User's Guide and Reference.

.

AUTOEXEC.BAT to start unnecessary programs that use extended memory.

Troubleshooting Windows Running in 386 Enhanced Mode

If you have successfully installed Windows, Windows will start automatically in 386 enhanced mode provided that:

.

.

.

.

This section describes solutions to problems you might encounter when trying to run Windows in 386 enhanced mode.

1.

Flowcharts 5.1 and 5.2
 Cannot Run in 386 Enhanced Mode

If Windows runs only in standard mode, this indicates that there may be a conflict in the Upper Memory Blocks (UMBs). This conflict occurs when Windows does not detect a network card, an extended video board, a scanner board, or some other device.

W
the /d:x switch, which excludes all of the upper memory area (similar to setting emmexclude=A000-FFFF in the [386enh] section of SYSTEM.INI).

If Windows runs when you use this switch, there was a conflict with some device in the UMBs. To solve the problem, you need to identify the boards or devices in the machine. Also, use MSD.EXE to see if either shadow ROM or shadow RAM is enabled in the E000 segment. After you determine which memory addresses the devices use, add an entry for the emmexclude= in SYSTEM.INI to avoid accessing that address range. For example, many high-resolution video boards use the address range above C000 to C7FF. In that case, the correct entry in SYSTEM.INI would be emmexclude=C000-C7FF.

Limiting the excluded range to the specific address range is important because Windows uses that memory address range to place the API translation buffers and page frame. If Windows cannot locate enough free memory in the UMBs, it will allocate conventional memory for the translation buffers, taking memory away from non-Windows applications that you want to run. For more information, see "Placing Translation Buffers in the Upper Memory Area" in Chapter 5, "Windows 3.1 and Memory Management."

Note
what drivers might be using the UMBs and their respective addresses. Also, you can type win /? at the command prompt to see a list of switches that you can use to run Windows 3.1.

2.

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When Windows starts in 386 enhanced mode, it installs the API translation buffers in any free UMB area it finds. Windows might also compete for memory with adapter cards that don't sign in at the memory area they occupy. The standard is for adapters to leave a ROM signature 0xAA55 followed by the size of the area that is being used, but not all cards do this. If Windows tries to use an area that appears to be free but that is also being used by an adapter card, the system might crash.

With 386 loadhigh drivers such as QEMM and 386MAX, there can be additional contention problems within the UMBs, because the loadhigh drivers might already be using that area. With conventional memory at a premium on most machines, you must consider how much memory to allocate to the loadhigh drivers and which areas to leave open for the translation buffers.

To keep the translation buffers from competing for memory, add the entry emmexclude=A000-EFFF to the [386enh] section of SYSTEM.INI. This entry tells Windows not to position the translation buffers in the UMBs. Windows will allocate the buffers in conventional memory.

If Windows 386 enhanced mode crashed before implementing this switch, and now it doesn't crash, the next step is to isolate the specific area causing Windows to crash:

.

the range C600-C800, which some display adapters use without warning. If your system uses shadow RAM or has copied either system BIOS or video BIOS into the UMBs, then you should turn the feature off, or exclude the area that is being used (usually emmexclude=E000-EFFF).

.

turning off the extended mode support, which is typically a nonmaskable interrupt (NMI). For details, see item #4 in "Troubleshooting Display Problems" earlier in this chapter.

3.
enhanced mode.

Flowchart 2.6
 Cannot Access Hard Disk

Windows 386 enhanced mode, without SMARTDrive loaded, supports
only standard ST506 and ESDI controllers. To use 386 enhanced mode
with SCSI or other nonstandard devices, you must load SMARTDrive.
When Windows detects SMARTDrive, it directs all disk access requests
through SMARTDrive, so that SMARTDrive can function effectively as a
double-buffering hard disk device driver, which eliminates most
compatibility problems.

But even if SMARTDrive is loaded, in some configurations you might
experience hard disk access errors, such as the following:

Cannot Read from Drive C:
Cannot Write to Drive C:
Drive C: Not Ready Error

If this happens, add the entry VirtualHDirq=off in the [386enh] section
of SYSTEM.INI. Also, you must have SMARTDrive installed without
the /B- switch. For example, add the VirtualHDirq=off entry to
SYSTEM.INI if you use a Plus Hardcard or a SCSI hard disk drive using
DMA.

This is the highest level of hard disk compatibility that can be achieved
under Windows 3.1. If you still experience hard disk problems, contact the
disk manufacturer for further assistance.

4.You get an internal-stack-overflow message while running Windows
in 386 enhanced mode.

Stacks are temporary data structures that MS-DOS and applications use for
processing hardware events. If you get a stack-overflow error:

.

.

CONFIG.SYS:

Windows Resource Kit

5.Typing slows down when you run more than one application, but your system seems to have plenty of memory.

The timeslice for multitasking is taking processing time away from the foreground application. You can increase the foreground priority in the 386 Enhanced dialog box in Control Panel or in the application's PIF. Better still, you can increase the priority of the foreground application only when it receives a keystroke by adding the entry KeyBoostTime=.005 (or some larger increment) in the [386enh] section of SYSTEM.INI.

Troubleshooting for Non-Windows Applications

This section describes some solutions to problems that can occur while running non-Windows applications. See also the section "Troubleshooting Windows Configuration" in this chapter, because it discusses many problems that also relate to non-Windows applications.

1.

If you receive this error message when you try to run a non-Windows application from Windows 3.1, it is a Kernel internal error that indicates Windows has tried to execute a file that has an invalid format.

If this happens in standard mode, then either the WINOLDAP.MOD file or the 286 grabber is corrupted; if in 386 enhanced mode, then either the 386 grabber or WINOA386.MOD file is corrupted.

Flowchart 1.7
 Expanding Files from the Windows Disks

To solve this problem, copy the grabber file plus WINOLDAP.MOD or WINOA386.MOD file from the source disks, and expand these files, using EXPAND.EXE (which can be found on your Windows 3.1 installation disks or in your MS-DOS directory).

2.
mode.

.

application's PIF, check the Working Directory setting for the program item in Program Manager. This setting overrides PIF settings.

.

Editor to ensure that the application is controlling the keyboard and any COM ports it uses. Also, make sure No Save Screen is not checked.

.

checked in PIF Editor.

.

isn't checked, and that Keyboard is not checked in the Directly Modifies options in PIF Editor.

3.You experience problems running non-Windows applications in 386 enhanced mode.

.

resolution graphics application, check High Graphics in the PIF's Video Memory option and check Retain Video Memory.

Hercules or CGA adapter, check Low Graphics and make sure Retain Video Memory is not checked.

.

mode, make sure that an MS-DOS mouse driver is installed. See also Flowchart 2.8 for specific troubleshooting procedures.

memory.

.

options are checked. If text is garbled or the cursor is in the wrong place, make sure Emulate Text Mode is not checked.

.

Paste is not checked in the PIF Advanced Options dialog box.

4.
at the same time, but each application runs okay alone.

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You might have a device driver or memory-resident application that requires expanded memory or extended memory, but EMS or XMS memory is locked in the PIF for another non-Windows application. Examine the PIFs of all applications that run simultaneously, and clear the EMS Memory Locked and XMS Memory Locked options if you are trying to run applications simultaneously.

5.

If Lotus 1-2-3 no longer runs properly, or it prevents you from opening large files, there could be several causes:

.

least 384K. For information about how to make more extended memory available, see "Troubleshooting Windows Running in Standard Mode" earlier in this chapter.

.

enough extended memory. Specify that 384K of XMS memory is needed in the PIF. For more information, see Chapter 8, "PIFs and PIF Editor."

.

have loaded EMM386 with the noems switch.

Because Lotus 1-2-3 version 3.1 and EMM386 both run in protected mode, they need to communicate to avoid conflicts. Lotus and EMM386 can use the DPMI protocol to communicate. DPMI assumes that a page of expanded memory exists. A page is not available if EMM386 uses the noems switch. You must change the CONFIG.SYS setting. For example:

device=c:\dos\emm386.exe ram p0=d000

The ram switch gives programs access to both expanded memory and the UMBs. The p0=d000 setting specifies a page for EMS.

When you restart the computer after making this change, you'll be warned that a LIM 3.2-compatible page frame does not exist. The standard size for a page frame is 64K, but since Lotus 1-2-3 is using XMS memory (not EMS), it only needs a 16K page. This provides more space for programs in UMBs.

6.
Windows 3270 applications.

Check the README.WRI file for up-to-date notes on specific
applications.

7.
execution errors, or system integrity violations.

See Flowcharts 5.3, 5.4, and 5.5 for specific troubleshooting procedures.

Troubleshooting Fonts

1.You experience problems with your system when you choose
TrueType fonts.

Flowchart Series 3
 Font Problems

Some display drivers that cache fonts in unused video memory have
problems displaying TrueType fonts. If you experience problems, contact
your display adapter manufacturer for updated display drivers.

2.You use a third-party printer driver, and you cannot print
TrueType fonts.

Most printer drivers created for Windows 3.0 do not support TrueType
fonts. Use one of the printer drivers in your Windows 3.1 package, or
contact your vendor for an updated driver.

3.
when you use TrueType fonts.

Some font converters are not completely compatible with TrueType,
causing problems in code segments while running. If you experience
system crashes or other problems, do not use that font converter. Contact
the manufacturer for an updated version.

4.
experience problems when you use TrueType fonts.

You might have problems if you attempt to use TrueType on a system
with less than 2MB of memory. If you have such a system, to avoid low-
memory situations, choose vector fonts or bitmap fonts, and avoid
TrueType.
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5.
experience problems when you use TrueType fonts.

FaceLift is incompatible with some Windows 3.1 display drivers. Contact Bitstream for software updates, or disable FaceLift when you want to use TrueType. Or use your old Windows 3.0 display drivers with FaceLift.

6.You have a type manager installed in your system, but you want to remove it.

See Flowcharts 3.2, 3.3, and 3.4 for instructions on disabling Adobe Type Manager, Bitstream FaceLift, and HP Intellifont.

Troubleshooting Printing

Flowchart Series 4
 Printing Problems

Many of the printing problems reported to Microsoft Product Support Services are actually hardware or configuration problems not related to Windows. This section provides tips for general troubleshooting for printing, then provides solutions to some specific problems related to printing in Windows.

A Strategy for Troubleshooting Printing

If you have problems printing, begin with these steps to isolate a minimal number of variables. By eliminating the variables, you can solve the problem.

.

The PRINTERS file contains up-to-date information about printing from Windows with specific hardware.

.

Copy a file to the printer port to make sure the communication path is working correctly. To do this, at the command prompt, type dir > lptx or dir > comx (where x is the number for the port that the printer is connected to).

This method will not work for PostScript printers. To check a PostScript printer, copy TESTPS.TXT to the printer from your Windows SYSTEM subdirectory.

If you cannot print from MS-DOS outside of Windows, it's not a Windows printing problem. Contact your printer manufacturer or distributor.

.

Make sure the printer is turned on and that it is online. Check that it has paper and toner.

.

Make sure you include a SET TEMP statement in AUTOEXEC.BAT and that it points to an existing directory. For testing purposes, we recommend that you use the statement SET TEMP=C:\. Verify that enough space is free on the hard disk for spooling temporary files while printing. If the TEMP environment variable points to a network drive, you must have create and write access to the target directory.

.

The current printer driver can be seen by choosing the Printers icon in Control Panel. If the highlighted printer name doesn't match the printer that you are using, then you need to install a printer driver that does match the printer, as described in Chapter 5, "Control Panel," in the Windows User's Guide.

.

with the MS-DOS Mode command or with Control Panel settings.

See the MS-DOS User's Guide for information about the mode command. In Windows, choose the Ports icon in Control Panel to configure the COM port. Make sure that the printer is selected, and then try to print. If there is a program that redirects or reconfigures the printer at the MS-DOS level, you should print to LPTx.DOS (where x is the port number), which tells Windows to let the operating system handle the printing. For details, see "WIN.INI [Ports] Settings and the LPTx.DOS Method" in Chapter 10, "Printing."

.

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Flowchart 2.2
 Serial Port Problems

If you have a serial printer, make sure the communications settings are correct. The settings on the printer and the Windows 3.1 settings should be the same. In Windows, the communications settings are set in Control Panel. Almost all serial printers, including Hewlett-Packard plotters and most PostScript printers, use a setting of 9600 baud, no parity, 8 bits, 1 stop bit, and hardware handshaking.

To make sure that the printer has the same settings as Windows, use the printer's interactive front panel or DIP switches.

Handshaking for PostScript printers can be set in the Options section of the Windows Printer Setup dialog box. The PostScript driver will send a short program to the printer telling it to switch to the desired handshaking mode.

.

Check the decision tree shown in "Determining Print Method" in Chapter 10, "Printing." If the decision tree indicates that Windows is trying to print directly to a parallel port on the system, try overriding this with the LPTx.DOS method discussed in that chapter.

.

LPTx.DOS method.

You must use LPTx.DOS if you are printing to a network-redirected port that is also present in hardware. For example, your system might have a physical LPT1 port in the machine and also have a virtual LPT1 on the network. Again, this is only necessary if your system is on a network and you are not using a Windows network driver.

Also, make sure you are using an up-to-date Windows network driver. For more information, see "Troubleshooting Networks" later in this chapter.

Tips for Specific Printing Problems

The following items suggest solutions to specific printing problems.

1.

This error message can occur on a network or on a physical parallel port. If your system is on a network, make sure you are using the right Windows network driver. If you are not using a Windows network driver, and the network is not supported, make sure you use the LPTx.DOS method.

Windows 3.1 requires that the Centronics Paper Out signal be Off and that the Select In signal be On. If one of these conditions is not met, Windows gives a cannot-print error message when you try to print. The possible causes of such a problem include:

.

.

·The printer uses an incompatible print-sharing device, switchbox, or buffer.

For testing purposes, remove all such devices and connect the printer directly to the computer's parallel port with a single cable. If the problem persists, try a different cable. If you use a switchbox to switch printers electronically, test printing with the switchbox removed. If you are printing over a network, print locally (directly connected to the machine) to see if the network is part of the problem.

Check the TEMP variable in your AUTOEXEC.BAT file. Make sure you haven't run out of disk space.

2.

You can set the Windows printer time-outs for each individual printer in the Printers section of the Control Panel. The time-out options are Device Not Selected and Transmission Retry. The Device Not Selected option indicates how long Windows will wait for the printer to be online before it gives an error. The Transmission Retry option sets the time that the printer will stay busy before Windows gives an error.

Try increasing the Transmission Retry setting. The Transmission Retry time-out starts counting as each character is sent to the printer. If the time-out lapses before the printer is ready to accept another character, you'll get a printer error message.

3.

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.

.

If the problem is intermittent, or if it only happens with a particular application, download the PostScript Error Handler to help debug the problem.

To get a PostScript error report:

1.
in the Printer Setup dialog box.

2.
check the Print PostScript Error Information option. Specify any other options you want in the dialog box, then choose the OK button.

3.

If you see a PostScript error message, the problem is being caused by your application or by the degree of compatibility of your PostScript printer.

If you don't see a PostScript error message, recheck the other solutions discussed in the previous section.

Troubleshooting Networks

Most network-related problems that occur in 386 enhanced mode are related to the system configuration. Conflicts with hardware occur in three areas:

.

.

.

You might also experience problems with specific network drivers.

Make sure you read the NETWORKS.WRI file in the WINDOWS directory for up-to-date information about running Windows on a network. Also, check the Network selection in the Windows Setup dialog box to be sure that the correct network option was selected during Windows installation.

1.
hardware.

If you suspect interrupt conflicts, refer to the list of IRQs in Troubleshooting Flowchart 2.7. You can run MSD.EXE from the command prompt to see what devices or boards are using specific IRQs.

2.

Flowchart 2.2
 Serial Port Problems

If you suspect that the memory port addresses are conflicting, determine the I/O port addresses for the add-on boards in the system. Then select an address that does not conflict.

Typical I/O port addresses allowed on network adapters do not conflict with the machine. However, the add-on boards often conflict. On some machines, the CMOS Setup program identifies the I/O ports that the communications devices and other standard devices are using.

3.

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The shared-memory addresses are located in the UMBs and can cause subtle problems when video cards are in high-graphics mode or when the network card is being accessed.

Also, shadow RAM and shadow ROM can cause memory address conflicts, so you might want to investigate the CMOS Setup to check for shadowing options.

4.

First, review the NETWORKS.WRI file for any information about your specific network driver.

Some network shells and drivers cause problems. For example, Novell shells earlier than version 3.01e can cause problems, especially if you use the EMSNET3.COM, EMSNET4.COM, XMSNET3.COM, or XMSNET4.COM shell. These shells have exhibited random problems, but the most significant and reproducible problems concern printing.

.

Windows 3.1. NETX.COM will run on any version of MS-DOS 3.0 or higher.

.

loaded. Closer inspection of the garbage printout might reveal that the print job started at address 0:0 and printed out the interrupt vector table, the MS-DOS environment, or other factors. These clues can help you find the source of the problem.

Troubleshooting GP Faults

Flowcharts 5.3-5.5
 GP Faults and Other Errors

A General Protection fault (GP fault) occurs when a Windows application writes to a memory space where it doesn't have access. This corrupts any other code that already occupies that memory space. In Windows 3.0, after a GP fault happened, sometimes the memory was so corrupted that even applications that didn't cause the problem could trigger a GP fault message; the system remained unstable so that you had to exit Windows and reboot the system.

W

Windows 3.1 are significantly more reliable. A new internal feature called Parameter Validation checks for invalid parameters.

If you do see a GP fault message while running Windows 3.1, the message will provide specific information about which application caused the error and where the error occurred. You can probably continue running the application after a GP fault, so that you can save your work before exiting the application.

You can use Dr. Watson, a utility provided with Windows 3.1, to learn more about what is causing a GP fault. For details, see "Dr. Watson and GP Faults" later in this section.

W
CTRL+ALT+DEL if a Windows application or a non-Windows application is hung or is not responding to the Windows command to close. When you use local reboot, you will see an error message with instructions for closing the application.

Tips for Troubleshooting GP Faults

This section describes a few reasons why a GP fault might occur.

1.
version (2.x) under Windows 3.1.

If an application was designed for Windows versions earlier than 3.0, it displays a dialog box when you try to start it, describing this error. If the application has not been specifically designed to run under Windows 3.0 or later versions, it will trigger a GP fault.

2.You manually selected an incorrect machine or network during Windows installation, or Setup's auto-detection misidentified elements of your system.

When you install Windows 3.1 on some machines and networks, you can't use Setup's auto-detection as described in "Troubleshooting Setup" earlier in this chapter. Instead, you have to override the default and specifically make the correct selection, or Windows will not operate properly. If you don't specifically select these machines and networks, you might get a GP fault.

For details about system selections in Setup, see "Troubleshooting MS-DOS Mode Setup" earlier in this chapter.

3.
incompatible terminate-and-stay-resident programs (TSRs) or unsupported network drivers.

You can test your system for incompatible TSRs or unsupported network drivers by temporarily removing them so that the system is at a minimum operable configuration. If doing this solves the GP fault problem, then you've begun to isolate the cause.

To find the specific cause, replace the lines for the TSRs and network drivers in CONFIG.SYS or AUTOEXEC.BAT one by one until the problem reappears. Then you'll know which one is causing the GP fault.

4.
enhanced mode.

Page-mapping conflicts only occur in Windows 386 enhanced mode. And this usually occurs because Windows doesn't see the page frame and so maps over it when you are using a third-party EMS manager instead of EMM386.EXE.

Test for a page-mapping conflict by running Windows with the win /s switch (standard mode) or the win /3 /d:x switch (excluding the upper memory area). If the problem doesn't happen, you might be experiencing a page-mapping conflict in the UMBs.

To isolate the problem, start by excluding the entire UMB from mapping with an emmexclude=A000-EFFF entry in the [386enh] section of SYSTEM.INI, then begin narrowing the range as described in "Troubleshooting Windows Running in 386 Enhanced Mode" earlier in this chapter.

If you have a Micro Channel (MCA) bus machine, such as an IBM PS/2, you might be able to determine the location of hardware adapters by booting with the machine's Reference Disk. If you have a standard ISA machine, consult the documentation for the adapters, or contact the manufacturer's technical support services to find out which memory locations they use.

5.

If your machine is not running the right version of MS-DOS, you might get GP faults. You should only use OEM versions of MS-DOS (such as Compaq MS-DOS or IBM PC-DOS) on OEM hardware platforms. For example, only use Compaq MS-DOS on Compaq machines.

To determine which version of MS-DOS to use, follow this rule:

.

.

DOS, use Microsoft MS-DOS and upgrade to version 5.0.

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Dr. Watson and GP Faults

Dr. Watson is a Microsoft diagnostic tool that provides detailed information on the internal state of Windows when a system error occurs. If an application error occurs, Dr. Watson automatically creates a special file in your WINDOWS directory named DRWATSON.LOG. Dr. Watson also prompts you for details about the circumstances under which the application error occurred. Sometimes Dr. Watson detects a fault that might not be fatal, and you are given the opportunity to ignore the fault or close the application.

When you choose the Ignore option after an application error is detected, Windows continues without performing the faulting instruction. You might be able to save your work in a new file at this point, but do not continue using the application for other actions. We recommend you exit Windows after saving your file, then restart Windows.

If you ignore a fault, the same dialog box might appear again. If choosing Ignore a few times doesn't allow you to continue operation, choose Close to terminate that application, because that is the only option available.

When you choose Close, the General Protection Fault dialog box appears, with an explanation and some data that may be useful in tracking the source of the error. Save this information. Contact your application vendor to discuss the source of the application error.

Troubleshooting Multimedia

This section provides some tips for troubleshooting the multimedia accessories.

1.

Flowchart Series 6
 Multimedia Problems

Make sure your computer has installed the multimedia extensions to Windows by opening the Control Panel in Program Manager. The multimedia extensions add the following icons: Display, Drivers, Joystick, MIDI Mapper, and Screen Saver. If these icons aren't there, you must run Windows Setup to install the multimedia extensions.

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2.

Flowchart 6.5
 Sound

·Make sure you have the speakers plugged into the correct port. With some configurations, it's easy to confuse the microphone port with the speaker port.

·Make sure that speakers are getting the power they need to operate. Some speakers require an external power source or batteries.

·

turned all the way down.

·

correct audio driver installed and that the settings are configured according to the hardware manufacturer's documentation.

3.

If you can hear audio, but it's too loud or too soft, check the volume control on your PC hardware and make any necessary adjustments. Also check the batteries in your speakers to see if they need to be replaced.

4.
supports audio.

Several non-Windows applications support audio. If you try to run one of these applications in 386 enhanced mode, the following message might appear: "This application will not be able to use audio." This is because Windows 386 enhanced mode takes over the audio hardware and won't relinquish control to a non-Windows application. You can run the application with audio in two ways:

·

·

the command prompt. This will let you run the non-Windows application from Windows with audio intact.

5.

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Flowchart 2.4
 Cannot Access
CD-ROM

·

connected to the correct port. Also, some drives require an external terminator. Make sure this is installed if needed. See your CD-ROM drive documentation for details.

·

installed this at the same time as you set up your CD-ROM drive. Contact your CD-ROM drive manufacturer to obtain this software.

·

your AUTOEXEC.BAT file to make sure the directory that holds the MSCDEX software is in the path.

6.

·Make sure you place the disc in its drive caddy before inserting it into the drive.

·

·

installed and configured the hardware according to the manufacturer's directions.

·Make sure to use the correct kind of disc. CD-ROM discs contain information and multimedia applications; CD audio discs contain music. You can't use File Manager or any other MS-DOS or Windows file commands on an audio disc.

·

damaged. Excessive heat can warp or even melt a disc. Scratches and fingerprints on the surface can cause problems. Clean a disc by wiping with a soft cloth from the center of the disc outward in a straight line. Do not use alcohol-based cleaning solutions.

7.

If Music Box won't play a disc or plays very slowly, check the following:

Flowchart 6.4
 Music Box

.

sure to place the disc in its drive caddy before inserting it into the drive.

.

that doesn't have audio.

.

software (MSCDEX). If you're using an older version, this can cause Music Box to play too slowly. Contact your CD-ROM drive manufacturer to obtain the latest version of MSCDEX.

8.

Flowchart 6.6
 Sound Recorder

.

plugged into the correct port.

.

.

.

correctly. If you set it too low, you can see the audio recording, but you won't be able to hear it when you play it back.

9.

Flowchart 6.2
 Media Player

.

in the Control Panel to see whether you have a MIDI driver set up and ready for use.

.

menu.

.

hardware, check the MIDI Mapper settings in Control Panel.

10.

.

Device menu.

.

Control Panel to see whether you have the Microsoft MCI Driver for MMP set up and ready for use.

11.

.

in Control Panel to see whether you have the correct audio driver set up and ready for use.

.

menu.

.