

More Information About Microsoft Windows Version 3.1

This document contains important information that is not included in the *Microsoft Windows User's Guide* or in online Help.

Note: If you plan on using a terminate-and-stay-resident (TSR) program with Windows, please read the SETUP.TXT online document first. It contains important information about running TSR programs with Windows version 3.1 and Windows Setup.

Using Write to View This Document

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To print the document, choose the Print command from the File menu.

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1.0 Running Windows with an Operating System Other Than MS-DOS

Microsoft Windows and MS-DOS work together as an integrated system. They were designed together and extensively tested together on a wide variety of computers and hardware configurations. Running Windows version 3.1 on an operating system other than MS-DOS could cause unexpected results or poor performance.

2.0 Preventing Stack Overflow

Stacks are temporary data structures that MS-DOS and applications use for processing hardware events. If, while setting up Windows, Setup detects hardware or software that require a certain stack size, Setup will place the following command line in your CONFIG.SYS file:

```
stacks=9,256
```

This should be sufficient most of the time. However, if you receive the Internal Stack Overflow message when running Windows in 386 enhanced mode, or if your system fails for no apparent reason when running Windows in standard mode (especially if you are setting up or moving the mouse), first try increasing the second number on the **stacks=** command line (for example, 256) If that doesn't work, try increasing the first number (for example, 9). For more information about the **stacks** setting and modifying the CONFIG.SYS file, see your MS-DOS documentation.

3.0 Using 32-Bit Disk Access

By default, 32-bit disk access is turned off to prevent disk errors on some battery-powered portable computers. However, 32-bit disk access may run correctly with some battery-powered portable computers, such as the Zenith MasterSport SL. If you want to try using 32-bit disk access, select the 32-bit disk access check box in the Virtual Memory dialog box (choose the 386 Enhanced option in Control Panel). For more information, see Chapter 14, "Optimizing Windows," in the *Microsoft Windows User's Guide*.

Caution: Before using 32-bit disk access on a battery-powered portable computer, it is highly recommended that you back up your hard disk. Because 32-bit Disk Access has not been fully tested on all battery-powered systems, you may receive disk errors while using it.

4.0 Using Memory Managers

This section describes problems you may encounter using memory managers with Windows version 3.1.

4.1 Solving Memory Conflicts by Using MONOUMB.386 or MONOUMB2.386

If you encounter the following message when starting Windows in 386 enhanced mode, your display driver may be accessing the monochrome address range (B000-B7FF), which prevents the memory manager from using this range for upper memory blocks:

"Windows cannot set up an upper memory block at segment B000. Exclude this address space by using the syntax of your memory manager. For more information, see the README.WRI file. Type WIN /S to start Windows in standard mode and choose the Read Me icon,"

To solve this problem, try installing MONOUMB2.386 on your system. MONOUMB2.386 is a device driver provided with Windows that allows certain memory managers to use the monochrome address range for upper

memory blocks, even if your display driver is accessing this range.

To install MONOUMB2.386:

1. Copy and expand the MONOUMB2.38_ file that is on your Windows disk to your Windows SYSTEM directory by typing the following at the MS-DOS prompt:

expand monoumb2.38_ c:\windows\system

2. Add the following setting to the [386Enh] section in the SYSTEM.INI file:

device=monoumb2.386

3. Start Windows.

Note: MONOUMB2.386 may not work with some memory managers, such as EMM386.EXE. In this case, you can try using MONOUMB.386, provided with the Windows Driver Library. To obtain a copy of the Windows Driver Library, contact Microsoft.

You can also exclude the address region B000-B7FF, which specifies that the memory manager should not try to use this address range for upper memory blocks. For information about excluding specific address ranges, see the following topic.

4.2 Solving Memory Conflicts by Excluding an Address Range

If you encounter the following message when starting Windows in 386 enhanced mode, and the address specified is not B000, you must exclude the address range.

"Windows cannot set up an upper memory block at segment xxxx. Exclude this address space by using the syntax of your memory manager. For more information, see the README.WRI file. Type WIN /S to start Windows in standard mode and choose the Read Me icon."

If the address specified is B000, you can try using MONOUMB2.386 or MONOUMB.386, as described in the preceding topic.

The method you use to exclude an address range depends on the memory manager you are using. For example, if you are using EMM386.EXE, you need to remove the **I=xxxxx** option from the **device=emm386.exe** command line in your CONFIG.SYS file, where **xxxxx** is the address range starting at the address specified in the error message.

If you are using QEMM, you need to include the **X=** option on the **device=qemm386.sys** command line in your CONFIG.SYS file. For example, to exclude the address range C000-C7FF, you would specify the

following:

device=qemm386.sys X=C000-C7FF

For more information about modifying your CONFIG.SYS file, see your MS-DOS documentation. For more information about installing and configuring EMM386.EXE, see Chapter 14, "Optimizing Windows," in the *Microsoft Windows User's Guide*. For information about installing and configuring other memory managers, see the documentation provided with your memory manager.

4.3 Using 386MAX

If you are running 386MAX with Windows version 3.1, note the following:

- Do not use options that limit the EMS swap region in the upper memory area. If you include **exclude=** options on the **386max** or **bluemax** command line or in the .PRO file (usually called 386MAX.PRO), make sure that the address range specified does not extend beyond A000.

For example, **exclude=1800-A000** is acceptable, but **exclude=1800-B800** is not. If the address range specified by using the **exclude=** option extends beyond A000, Windows may not run properly in 386 enhanced mode. If you must exclude an address range above A000, use the **RAM=** option instead. For more information about this and other options, see your 386MAX documentation.

- Do not load SMARTDrive when QCache is running.

Note: The 386MAX setup program does not detect SMARTDrive version 4.0 and may recommend that you install QCache.

- If you update an earlier version of 386MAX to version 6.0, the 386MAX version 6.0 setup program may not remove the **LOAD=WINDOWS.LOD** line from your .PRO file. You can remove this line manually. It is not needed and removing it will free up a small amount of memory.

5.0 Using Advanced Power Management (APM)

Windows version 3.1 includes support for Advanced Power Management (APM). This enables Windows to extend battery life, display power-status information, and work together with the suspend features of battery-powered personal computers. To find out if your computer supports APM, contact your computer manufacturer.

If your computer supports APM, do the following to install it on your system:

1. Quit Windows.

2. Run Windows Setup and select one of the following system types:

- MS-DOS System with APM
- Intel 386SL Based System with APM

Select "Intel 386SL Based System with APM" if your computer has an Intel 386SL processor and supports the SL Enhanced Options for APM. Otherwise, select "MS-DOS System with APM."

3. Restart Windows.

A Power icon appears in the Control Panel window.

4. Choose the Power icon to configure power-management settings.

For more information about the settings, press F1 or choose the Help button while using the Power Management dialog box.

6.0 Using SMARTDrive Version 4.0

This section describes some solutions to problems that you might encounter when using SMARTDrive version 4.0 (provided with Windows version 3.1) together with specific applications or hardware.

6.1 Accessing Floppy Disk Drives on Older COMPAQ DESKPROS

On some COMPAQ DESKPRO 386/16 and 386/20 computers, you might experience problems accessing floppy disks when SMARTDrive version 4.0 is installed. To work around the problem, you can try one of the following solutions:

- Place the SMARTDrive buffer into low memory by adding the following option to the **smartdrv** command line in the AUTOEXEC.BAT file:

smartdrv /L

- Disable the caching on floppy disk drives by adding the following options to the **smartdrv** command line in the AUTOEXEC.BAT file:

smartdrv A- B-

For more information about these options, see Chapter 14, "Optimizing Windows," in the *Microsoft Windows User's Guide*.

6.2 Using SMARTDrive with Double Buffering

Most expanded-memory emulators attempt to optimize SMARTDrive by configuring it to load into upper memory blocks (UMBs). This will cause problems if you are running Windows in 386 enhanced mode with double buffering. If you need to use double buffering with SMARTDrive, make sure that SMARTDrive is configured in the CONFIG.SYS file to load into low memory. The command line should look like this:

```
device=smartdrv.exe /double_buffer
```

This problem applies only to the **smartdrv** command line in the CONFIG.SYS file. It does not apply to the references to SMARTDrive in the AUTOEXEC.BAT file. For more information about using double buffering with SMARTDrive, see Chapter 14, "Optimizing Windows," in the *Microsoft Windows User's Guide*.

6.3 Using SMARTDrive with Norton Utilities Version 6.0 Disk Monitor

Do not use the Disk Protect feature in Norton Utilities Version 6.0 Disk Monitor with SMARTDrive version 4.0. If you try to write to the protected drive, you will encounter an error and your system will fail. If you want to write to and cache a protected drive, add the drive letter to the **smartdrv** command line in your AUTOEXEC.BAT file. For example, if drive D is a protected drive, you would add the following:

```
smartdrv d
```

Or you can use the Norton cache program instead when using Disk Monitor.

6.4 Using SMARTDrive with SuperStor Disk-Compression Utility

- Do not use the Create Mountable Drive, Mount, and Dismount features of SuperStor after SMARTDrive is loaded. You must configure your SuperStor partitions before loading SMARTDrive. Windows Setup places the **smartdrv** command line first in your AUTOEXEC.BAT file. If your AUTOEXEC.BAT file includes "mount" configuration commands, make sure that the **smartdrv** command line follows the SuperStor configuration command lines.
- Also, you will receive read-write errors if you use SMARTDrive to cache a SuperStor compressed drive. To prevent SMARTDrive from caching the compressed drive, you must include the **drive letter-** option on the **smartdrv** command line.

For example, if drive C is the uncompressed drive, and drives E and F are the compressed SuperStor drives, you would include the following command line in your AUTOEXEC.BAT file:

```
smartdrv e- f-
```


6.5 Using SMARTDrive with Copy-Protected Games and Applications

When using SMARTDrive, you may encounter problems starting a copy-protected application that requires you to place the master disk in the floppy disk drive. To solve this problem, you need to disable caching on the floppy disk drive by using the **drive letter** - option when you load SMARTDrive. For example, if you load SMARTDrive from your AUTOEXEC.BAT file and are using drive A, you need to include the following command line in your AUTOEXEC.BAT file:

```
smartdrv a-
```

7.0 Using Multimedia Extensions Version 1.0 with Windows Version 3.1

This section covers information that is specific to using the Multimedia Extensions version 1.0 with Windows version 3.1. It also covers additional tasks you need to perform to configure your system properly for use with the multimedia extensions.

7.1 Upgrading to Windows Version 3.1

To use the multimedia extensions with Windows version 3.1, first set up Windows with Multimedia version 1.0, and then upgrade to Windows version 3.1 by installing it into the same directory. If you set up Windows version 3.1 before setting up Windows with Multimedia, not all the files will be properly installed.

7.2 Configuring MIDI Setups

When you set up Windows version 3.1, Setup copies the multimedia extensions MIDI-setup file MIDIMAP.CFG to MIDIMAP.OLD, and then replaces it with an updated version. This version contains several new MIDI setups that support playing MIDI information authored according to General MIDI guidelines. If you want to use a setup in the new MIDIMAP.CFG file and are using sound drivers that are not provided by Windows, you will need to change the port settings to match the ports used by your sound device. To do this, use the MIDI Mapper option in Control Panel.

You can also use the original MIDIMAP.CFG file (renamed by Setup to MIDIMAP.OLD). You might want to do this if the original file contains custom MIDI setups that you created yourself or that were provided by your sound-device manufacturer. To use the original file, rename MIDIMAP.CFG to MIDIMAP.WIN, and then rename MIDIMAP.OLD to MIDIMAP.CFG. If the port settings in your original setups refer to the Ad Lib or Sound Blaster

ports and you are using different drivers, then you will need to change the port settings to match the output ports used by your sound device.

For more information about using MIDI Mapper to modify MIDI setups, see Chapter 5, "Control Panel," in the *Microsoft Windows User's Guide*.

7.3 Configuring Your Display

The multimedia extensions Display icon in Control Panel is not available when you upgrade from Windows with Multimedia version 1.0 to Windows version 3.1. If you need to change options for your display, use the Windows Setup application in the Main group in Program Manager to make these changes.

7.4 Sample MIDI File

The sample MIDI file CANYON.MID included with Windows version 3.1 that you can play with Windows Media Player is provided by Passport Designs, Inc.

7.5 Using HyperGuide

The information in HyperGuide refers to Windows version 3.0, not Windows version 3.1. If you need to use Windows documentation, see the *Microsoft Windows User's Guide* that comes with Windows version 3.1.

7.6 Using Music Box

Music Box is not fully compatible with Windows version 3.1. Although your compact discs will play correctly, you will encounter problems using the Save Info button in the Program dialog box to save disc-title and track-title information. If you want to modify this information, you must do so manually by editing the MUSICBOX.INI file. To add a new disc to the file, you can determine the disc ID number by viewing the information in the About dialog box.

7.7 Using Alarm Clock

The Alarm Clock in the Multimedia Extensions version 1.0 is not fully compatible with Windows version 3.1. If you are using the digital display, the time may appear slanted or a system error may occur, depending on the size of the Alarm Clock window.

8.0 Running Specific Non-Windows Applications

This section provides general information about running applications in Windows version 3.1. It also describes problems you might encounter while running specific non-Windows applications with Windows version 3.1.

8.1 Communications Applications

For best results when running a non-Windows communications application in the background, run it as an icon instead of in a window. Also, create a PIF (program information file) for the non-Windows communications application (if one does not already exist) and do the following:

- Select the Execute: Background check box.
- If you encounter errors during file transfers while running the application in the background, increase the Background Priority option in the Advanced Options dialog box.
- If you use a permanent swap file with 32-bit disk access, select the Lock Application Memory check box in the Advanced Options dialog box.

For information about using and creating PIFs, see Chapter 8, "PIF Editor," in the *Microsoft Windows User's Guide*.

8.2 Creative Labs JukeBox

If you are using a Sound Blaster sound card, do not set up or use the JukeBox application included in your Sound Blaster package with Windows version 3.1. JukeBox interferes with the Windows version 3.1 driver for the Ad Lib synthesizer and causes errors when you try to install the drivers for the Sound Blaster card.

8.3 Game or Timing-Sensitive Applications

Some game applications or applications that rely on the computer's timer may perform poorly in Windows version 3.1. You can try increasing the performance by turning off the **TrapTimerPorts** setting in the [386Enh] section of the SYSTEM.INI file, as follows:

TrapTimerPorts=Off

Note: The TrapTimerPorts setting is on by default. Turning it off may cause errors or a loss of data when transferring files by using a communications application. It is recommended that you leave this setting turned on when using a communications application.

8.4 Third-Party Expanded-Memory Emulators with MS-DOS

Version 5.0

Many expanded-memory emulators will cause problems if you use them to provide upper memory blocks (UMBs) for the MS-DOS version 5.0 **loadhigh** and **devicehigh** commands. If you want to use these MS-DOS commands to load drivers or applications high, then use the Windows EMM386.EXE expanded-memory emulator to provide UMBs instead. If you must use a third-party expanded-memory emulator, then use the load high feature provided with the emulator, instead of the MS-DOS commands.

8.5 PC Tools Applications

If you run a PC Tools non-Windows application in a window, or if you switch to it while Windows is running in standard mode, the display might be garbled, because PC Tools applications use a graphics font that is not displayed correctly (this problem does not occur if you run the application in a full screen when Windows is running in 386 enhanced mode).

To correct the problem, start your PC Tools non-Windows applications by using the **/NF** option. If your PC Tools non-Windows applications are included in a Program Manager group, use the Properties command to add the **/NF** option to the command line for the application. For more information about changing application properties, see Chapter 3, "Program Manager," in the *Microsoft Windows User's Guide*.

You can also include the **/NF** option in the application's program information file (PIF) by typing it in the Optional Parameters text box in PIF Editor, or you can use the PC Tools PC Config program to specify that PC Tools applications should use the Text Font to display information. For more information about changing an application's PIF, see Chapter 8, "PIF Editor," in the *Microsoft Windows User's Guide*.

8.6 WordPerfect Version 5.1

When running WordPerfect version 5.1 in a window, the Windows mouse pointer and the WordPerfect mouse pointer will not appear in the same place. To fix this problem, do the following:

1. In WordPerfect, press SHIFT+F1.
2. Select M for Mouse and A for Acceleration Factor.
3. Set the Acceleration Factor to 1.
4. Press ENTER three times to return to your document.
5. Enlarge the WordPerfect window to fill the entire screen.
6. Move the Windows mouse pointer into the WordPerfect window, and then

move it to the far-right edge of the window.

7. Move the mouse pointer to the far-left edge of the window.
8. Move the pointer back to the center of the window, and then move it down to the bottom edge.
9. Finally, move the pointer up to the upper-left corner of the window.

The Windows mouse pointer and the WordPerfect mouse pointer should now be in the same location.

8.7 3270-Emulation Applications

You may encounter problems using certain 3270-emulation applications with Windows version 3.1. If you are using one of these applications, it is recommended that you purchase the *Windows Resource Kit for the Microsoft Windows Operating System Version 3.1*. This kit provides troubleshooting information about using 3270-emulation applications, in addition to complete technical information about Windows version 3.1 for the support professional. It includes a technical reference manual and a disk containing helpful utilities, system resource viewers, drivers, and accessories. To order the Windows Resource Kit within the United States, dial:

1-800-642-7676

To order outside of the United States, dial the phone number for your area. You can find this number on the International Subsidiary card.

9.0 Using Specific Display Adapters with Windows Version 3.1

This section describes some problems you might encounter using specific display adapters or drivers with Windows version 3.1.

9.1 Installing Display Adapters by Following the Manufacturer's Instructions

The procedures that are provided by display-adapter manufacturers for installing display adapters may require you to replace or modify the SETUP.INF file in the Windows SYSTEM directory. This will cause problems in Windows version 3.1.

If your third-party display installation replaces or modifies the SETUP.INF file, follow these instructions instead to install the display-adapter drivers:

1. Rename the SETUP.INF file provided with your display-adapter package

to OEMSETUP.INF, and place it on the disk and in the directory containing the third-party display driver files.

2. Run Windows Setup from the Main group and select Other Display (Requires disk from OEM) from the list of Display options.
3. Insert the disk that contains the OEMSETUP.INF file and the driver files for your display adapter. Or, if these files are located on your hard disk, type the path to the directory that contains the files in the text box, and then choose the OK button.
4. Select the type of display adapter you want to use, and then choose the OK button.

Windows Setup copies all necessary files from the driver disk, and may request files from the Windows version 3.1 disks.

5. Insert any additional disks that are requested, and then choose the OK button.

If you accidentally overwrite the original SETUP.INF file, you can copy it from Windows Disk 1 back into your Windows SYSTEM directory.

9.2 Upgrading Display Drivers When Using Soft-Font Packages

If you are using certain soft-font packages, including Bitstream Facelift, Publisher PowerPak, and Hewlett-Packard Intellifont, Windows Setup may not update your display driver when you upgrade to Windows version 3.1. In this case, you need to update your display driver after you have set up Windows. To do this, run Windows Setup from the Main group, and then select the display driver you want to use from the list of Display options. For more information about using Setup after you have installed Windows, see Chapter 15, "Maintaining Windows with Setup," in the *Microsoft Windows User's Guide*.

9.3 Using Self-Configuring Display Adapters

Some display adapters can change their configurations to match what an application tries to do. For example, if an application tries to use a video graphics adapter (VGA) configuration and your display adapter is currently configured as an extended graphics adapter (EGA), the adapter can switch from an EGA configuration to a VGA configuration. This type of display adapter makes use of non-maskable interrupts (NMIs) to change its configuration while you work.

To use this type of display adapter with Windows running in 386 enhanced mode, you must disable the NMI (also called self-configuring, auto-switching, or auto-emulating) option. First, configure the display adapter, and then disable the NMI option. For more information, see your display-adapter

documentation.

9.4 Hercules Graphics Station

Hercules Graphics Station adapters are supported by Windows version 3.1 using the TIGA display drivers. If you encounter problems running Windows in 386 enhanced mode with the Hercules GS, try adding the following line to the [386Enh] section of your SYSTEM.INI file:

```
emmexclude=C000-CFFF
```

For more information about modifying settings in the SYSTEM.INI file, see the SYSINI.WRI online document.

9.5 LCD

If you use an LCD screen, set it for white text on a black background instead of black text on a white background. When using Windows, black text on a white background wears out LCD screens. See the documentation for your screen for instructions on how to do this.

9.6 Super VGA

- If you are using a video card and monitor (NEC MultiSync 3D/4D/5D or other multifrequency monitor) capable of 800x600, 16-color resolution with a third-party Super VGA driver, or one of the following drivers provided in the Windows 3.0 Supplemental Driver Library (SDL):
 - ▣ ATI Mode 54h (800x600 16 colors) v2.00
 - CHIPS Super VGA 82C451 (800x600 16 colors)
 - CHIPS Super VGA 82C452 (800x600 16 colors)
 - Paradise VGA (800x600 16 colors)

use the Super VGA (800x600, 16 colors) driver provided with Windows instead. If you do not update your driver, Windows may not work properly when running in 386 enhanced mode. In addition, the 3.1 driver contains new features and performance enhancements.

To install the Windows version 3.1 Super VGA driver, run Windows Setup from the Main group, and then select "Super VGA 800x600, 16 colors" from the list of Display options. For more information on using Setup after you have installed Windows, see Chapter 15, "Maintaining Windows with Setup," in the *Microsoft Windows User's Guide*.

• Super VGA VESA Mode 6Ah

Some Super VGA adapters support higher monitor-refresh rates at 800x600 resolution with a special VESA mode. If both your video adapter and

monitor support a higher refresh rate and if you are using the Super VGA driver, you may be able to get better video results by including the following setting in the [display] section of the SYSTEM.INI file:

svgamode=106

If you encounter problems using this mode, delete this setting from the SYSTEM.INI file, and then restart Windows.

9.7 Third-Party Display Drivers: Running Non-Windows Applications

If you are using a display driver that is not provided with Windows version 3.1 and you receive one of the following messages while trying to run a non-Windows application:

"Incorrect system version. Run the Windows Setup program again."

or

"386 System display type mismatch."

contact your display manufacturer for an updated driver. You can also solve this problem manually by installing 3.0 driver files. These files are included on the Windows version 3.1 disks.

If your display driver works in Windows version 3.0 using the standard VGA virtual-display-device file (specified by the **device=*vddvga** setting in the [386Enh] section of the SYSTEM.INI file), then do the following:

1. Copy and expand the VDDVGA30.386 file from the Windows 3.1 disk to your Windows 3.1 SYSTEM directory.
2. Change the **display=** setting in the [386Enh] section of the SYSTEM.INI file to: **display=VDDVGA30.386**
3. Restart Windows.

If your display driver works in Windows version 3.0 using the standard VGA grabber file (specified by the **386Grabber=VGA.GR3** setting in the [boot] section of the SYSTEM.INI file), then do the following:

1. Copy and expand the VGA30.3GR file from the Windows 3.1 disk to your Windows 3.1 SYSTEM directory.
2. Change the **386Grabber** setting in the [386Enh] section of the SYSTEM.INI file to: **386Grabber=VGA30.3GR**
3. Restart Windows.

9.8 TIGA

If you are using a Texas Instruments Graphics Architecture (TIGA)-based display adapter, make sure that you are using a TIGA display driver that is provided by Windows version 3.1. Windows provides two versions of the TIGA display driver, "TIGA (Small fonts)" and "TIGA (Large fonts)."

To install one of the drivers, run Windows Setup from the Main group, and then select the version you want from the list of Display options. For more information on using Setup after you have installed Windows, see Chapter 15, "Maintaining Windows with Setup," in the *Microsoft Windows User's Guide*.

Note: You cannot use Windows Setup to change TIGA screen resolution. If you want to change the resolution, you must first quit Windows, and then 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 fonts or Large fonts) to change font sizes, it is not necessary to run Windows Setup after changing your TIGA screen resolution.

9.9 VGA-Compatible

Most VGA-compatible display-adapter cards and main-adapter chips use additional memory to enhance their performance. When Windows is running in 386 enhanced mode and is configured for VGA, Windows detects most of these cards and automatically excludes the additional memory.

However, if you have an enhanced VGA that Windows does not recognize, you must exclude the additional memory yourself by adding the following line to the [386Enh] section of the SYSTEM.INI file:

emmexclude=C400-C7FF

For more information about modifying the SYSTEM.INI file, see the SYSINI.WRI online document.

9.10 Video Seven: Using 256-Color Support

Windows version 3.1 provides 256-color support at several resolutions for Video Seven display adapters that have at least 512K of video memory. The following table shows the Video Seven 256-color modes that are supported by the Video Seven display drivers provided with Windows version 3.1.

Model	640x480	720x512	800x600	1024x768
FastWrite 512K	Yes			
1024i 512K	Yes			
VRAM 512K	Yes	Yes		
VRAM II 512K	Yes	Yes		
VRAM II 1MB	Yes	Yes	Yes	Yes

If you are using a Video Seven display adapter that has at least 512K of video memory, you should use one of the Video Seven display drivers for 256-color video provided with Windows version 3.1. These drivers take full advantage of the performance improvements and mouse support in non-Windows applications. To install one of the drivers, run Windows Setup from the Main group, and then select the driver you want from the list of Display options. For more information about using Setup after you have installed Windows, see Chapter 15, "Maintaining Windows with Setup," in the *Microsoft Windows User's Guide*.

9.11 WinSpeed

The WinSpeed version 1.0 installation program, INSTALL.EXE, does not work properly with Windows version 3.1. It copies an incompatible version of the SETUP.INF file to your Windows directory. To install WinSpeed for use with Windows version 3.1, you must get updated installation disks from Panacea.

If you have already used the INSTALL.EXE program to install the WinSpeed drivers onto your system, the following message will appear when you try to run Windows Setup from the Main group:

"The SETUP.INF file on your system is not valid for use with this version of Setup."

To correct this problem, do the following:

1. If there is a SETUP.INF file in your Windows directory, delete it. (The SETUP.INF file should never be in your Windows directory.)
2. Copy the SETUP.INF file on Windows Disk 1 to your Windows SYSTEM directory.
3. Contact Panacea Inc. for updated WinSpeed installation disks that are compatible with Windows version 3.1, and then reinstall WinSpeed.

9.12 IBM XGA: Configuring Color and Resolution

Windows Setup will automatically configure an IBM XGA for 16-color, 640x480 resolution. If your monitor can support 256 colors or higher resolutions, you can configure your XGA to use the color and resolution settings you want. To do this, run Windows Setup from the Main group, and then select one of the following drivers from the list of Display options:

- XGA (640x480, 16 colors)

This is the default setting and should not be changed if you are using the plasma screen on the PS/2 model 75.

- XGA (640x480, 256 colors)
- XGA (Small fonts)
- XGA (Large fonts)

Both the Small and Large fonts settings configure the XGA for 1024x786 resolution and 256 colors, if your monitor supports it. Otherwise these settings configure your display for 640x480 resolution. Select Small Fonts if you have a large monitor (at least 16 inches) or want to fit more information on your screen. Select Large Fonts if you want to improve the readability of text.

Make sure that your monitor supports the XGA configuration you select. If it doesn't, you will be returned to the MS-DOS prompt when you try to start Windows.

For more information on using Setup after you have installed Windows, see Chapter 15, "Maintaining Windows with Setup," in the *Microsoft Windows User's Guide*.

9.13 IBM XGA: Using EMM386

To use the IBM XGA successfully with the EMM386 expanded-memory emulator, you need to manually prevent EMM386 from using the memory address range used by the XGA display. To do this, include the **X=** option on the **device=EMM386.EXE** line in your CONFIG.SYS file. For example:

```
device=EMM386.EXE X=C600-C7FF
```

Replace "C600-C7FF" with the correct value for the address range used by your XGA. To identify this range, run the System Configuration Program on the System Reference Disk for your Personal System/2 (PS/2), and select "Display Memory Map." A common range is C600-C7FF.

With some PS/2 model 75 plasma screens or with XGA configured for 640x480 resolution and 16 colors, you must also include the **NOEMS** or **RAM** option on the **device=EMM386.EXE** line in your CONFIG.SYS file. For example:

```
device=EMM386.EXE NOEMS X=C600-C7FF
```

Do not include the **i=B000-BE00** option on the **device=EMM386.EXE** line in your CONFIG.SYS file. This address range is used by the XGA when running Windows in 386 enhanced mode. Therefore, it cannot be used as upper memory area. Windows will not recognize XGA configurations if EMM386 is using this address range.

For more information about modifying your CONFIG.SYS file, see your MS-DOS documentation. For more information about installing the EMM386 expanded-memory emulator and configuring the way it uses

memory, see Chapter 14, "Optimizing Windows," in the *Microsoft Windows User's Guide*.

10.0 Using Specific Mice with Windows Version 3.1

This section describes some problems you may encounter using specific types of mice with Windows version 3.1.

10.1 Microsoft Mouse

Windows 3.1 includes version 8.20 of the Microsoft mouse drivers. If you have a Microsoft mouse, Setup installs the Windows mouse driver (MOUSE.DRV) in your Windows SYSTEM directory and an MS-DOS mouse driver (MOUSE.COM or MOUSE.SYS) in your Windows directory. If you have additional versions of the Microsoft mouse drivers on your system, make sure that you are using the mouse drivers provided with Windows 3.1.

If you use the Microsoft Mouse Control Panel version 8.0 or later, you need to set your MS-DOS **mouse** variable to the directory on your hard disk that contains the control-panel program files POINT.EXE and PANEL.COM. You can do this by modifying your AUTOEXEC.BAT file. For example, if the control-panel program files are located in the \MOUSE directory, you would add the following line to your AUTOEXEC.BAT file:

```
set mouse=c:\mouse
```

This ensures that the mouse settings are stored in the MOUSE.INI file located in the specified directory. If the **mouse** variable is not set correctly, you may experience problems with mouse acceleration and other mouse settings.

It is recommended that you use the mouse driver MOUSE.COM instead of MOUSE.SYS, and that you load MOUSE.COM from your AUTOEXEC.BAT file. If you use MOUSE.SYS, you may encounter problems saving MS-DOS mouse control-panel settings. If you must use MOUSE.SYS and encounter problems saving mouse settings, make sure you load it from your mouse directory instead of from your Windows directory.

For more information about installing the mouse drivers, see Chapter 4, "Troubleshooting," in *Getting Started with Microsoft Windows*.

10.2 Genius Mouse

If you are using a Genius mouse and are running non-Windows applications in 386 enhanced mode, the mouse may not work properly, especially if you have several non-Windows applications running at the same time.

To correct this problem, add the following line to the [386Enh] section of your SYSTEM.INI file:

local=PC\$MOUSE

For more information about changing settings in the SYSTEM.INI file, see the SYSINI.WRI online document.

10.3 Logitech Mouse

- Some Logitech mouse models are detected as "Microsoft or IBM PS/2" mouse models by the Setup program. In this case, Setup will install the mouse driver for the Microsoft or IBM PS/2 mouse. If you have a Logitech mouse, you should use the Logitech mouse driver instead.

To install the Logitech mouse driver, run Windows Setup from the Main group, and then select Logitech from the list of Mouse options. For more information about using Setup after you have installed Windows, see Chapter 15, "Maintaining Windows with Setup," in the *Microsoft Windows User's Guide*.

- When installing the Logitech mouse driver, Windows Setup copies the LMOUSE.COM file to your Windows directory. This is the mouse driver that is required in order to use the Logitech mouse with non-Windows applications. To use your mouse with non-Windows applications, you need to load LMOUSE.COM before you start Windows. You can do this by adding it to your AUTOEXEC.BAT file. You will also need to add the following line to the [386Enh] section of your SYSTEM.INI file:

local=PC\$MOUSE

10.4 Logitech Cordless Mouse

If you have a Logitech Cordless mouse and you run Windows in 386 enhanced mode, you may encounter problems, such as an unresponsive pointer, when running MS-DOS Prompt or non-Windows applications in a window. To correct this problem, you need to do the following:

1. Change the baud-rate setting for the mouse driver. To do this, add the following line to the [LogiMouse] section of the SYSTEM.INI file:

BaudRate=1200

2. Include the **1200** option in the command line that loads the MS-DOS Logitech mouse driver (which is provided with Windows 3.1) as follows:

LMOUSE 1200

Add the above line to your AUTOEXEC.BAT file to load the mouse driver each time you start your system. The next time you start Windows, your mouse should work correctly.

10.5 Logitech or Microsoft Ballpoint Mouse on a Toshiba T2200SX

If you are using a Toshiba T2200SX computer with a BIOS version earlier than 1.20 and you have a Logitech or Microsoft ballpoint mouse connected to the PS/2 mouse port, you may have problems moving the mouse pointer. If the mouse does not respond, try connecting your mouse to the serial port instead, or contact Toshiba for an upgraded version of the BIOS.

10.6 Mouse Systems Mouse on PS/2 Ports

The "Mouse Systems" serial and bus mouse drivers provided with Windows do not support a Mouse Systems mouse when it is connected to a PS/2 style mouse port. If you are using a Mouse Systems mouse connected to a PS/2 style mouse port, Setup installs the "Microsoft or IBM PS/2" mouse driver for you. This is the correct driver. Do not change it.

11.0 Using Additional Hardware Configurations with Windows Version 3.1

This section contains information about using Windows version 3.1 with different types of computers and hardware configurations.

11.1 CD-ROM Drives

- If you are using a CD-ROM drive with Windows 3.1, you should use version 2.21 of Microsoft MS-DOS CD-ROM Extensions (MSCDEX) with all configurations of CD-ROM drives. If you use version 2.20 or later, you must also remove the following setting from the [386Enh] section of the SYSTEM.INI file:

device=LANMAN10.386

This setting can cause some CD-ROM drives to timeout and fail with versions later than 2.20 of MSDCEX. However, if you must use a version earlier than 2.20 of MSCDEX, the above setting is required in the [386Enh] section of your SYSTEM.INI file.

- If a CD-ROM drive causes instability in your system or causes your system to fail, you may need to update the CD-ROM driver. Also, the MCI (Media Control Interface) driver MCICDA.DRV may not work properly with older CD-ROM drivers. Contact your CD-ROM-drive manufacturer about

obtaining an updated driver.

11.2 EISA Systems with More Than 16 Megabytes of Extended Memory

On some EISA (extended industry standard architecture) computers, there may be more extended memory available than the system's Int 15h/88h BIOS call can detect. On these computers, HIMEM.SYS uses only the amount of extended memory detected. This can result in a large amount of unused memory.

You can have HIMEM.SYS use all available extended memory by using the **/EISA** option in the CONFIG.SYS file. For example, if HIMEM.SYS is located in your WINDOWS directory, you would use the following command line in the CONFIG.SYS file to take advantage of all available extended memory:

```
device=c:\windows\himem.sys /EISA
```

If you use the **/EISA** option, do not load any device drivers that use the Int 15h/88h BIOS call to allocate extended memory before loading HIMEM.SYS. If you do, your system may not work properly. If you must reserve some extended memory for device drivers or applications that use the Int 15h/88h BIOS call, you can specify the amount of memory in kilobytes that you want reserve by using the **/INT15=** option. For example, if you want to reserve 128 kilobytes of extended memory, you would use the following command line in the CONFIG.SYS file:

```
device=c:\windows\himem.sys /EISA /INT15=128
```

HIMEM.SYS must still be loaded before other device drivers in the CONFIG.SYS file.

To determine if your device driver or application use the Int15h/88h BIOS call, see the documentation for your device or contact your device dealer. For more information about using HIMEM.SYS with the **INT15** option, see Chapter 14, "Optimizing Windows," in the *Microsoft Windows User's Guide*.

11.3 Epson Screen Savers

Some Epson computers have screen-saver utilities that clear the screen after a specified period of inactivity. With Windows version 3.1, the screen saver might detect that the system is idle when it is not. Windows will function properly even though the screen is blank, but nothing will be displayed until you quit Windows and then restart it.

See the documentation that you received with your Epson computer for instructions on how to turn off the screen saver.

11.4 Everex 386/25 with EMM386.EXE

If you are using an Everex 386/25 with EMM386.EXE, include the following options on the **device=emm386.exe** command line in your CONFIG.SYS file:

```
device=EMM386.EXE X=C600-C7FF
```

11.5 NCR 925 with EMM386.EXE

If you are using an NCR 925 with EMM386.EXE, include the following option on the **device=emm386.exe** command line in your CONFIG.SYS file:

```
device=EMM386.EXE X=  
E000-EFFF
```

11.6 Non-US Keyboard Layouts: Using Application Shortcut Keys

Some non-US keyboards show two characters per alphabet key and three characters per alphanumeric key. To type the second or third character, you must press and hold down CTRL+ALT or ALTGR before pressing the key. If you are using such a keyboard layout, do not use keys that show two or three characters as application shortcut keys.

11.7 Plus Hardcard

- To run Windows version 3.1 with a Hardcard, you must include the following line in the [386Enh] section in the SYSTEM.INI file:

```
VirtualHDIRQ=Off
```

For information on how to modify the SYSTEM.INI file, see the SYSINI.WRI online document.

Note: This procedure is not necessary if you are using a Hardcard II or a Hardcard II XL.

- It is also recommended that you use SMARTDrive with a Hardcard. For more information about using SMARTDrive, see Chapter 14, "Optimizing Windows," in the *Microsoft Windows User's Guide*.

11.8 SCSI Hard Disk Using DMA

If your computer has a SCSI hard disk that uses Direct Memory Access (DMA), you must include the following entry in the [386Enh] section of the

SYSTEM.INI file:

VirtualHDIRQ=Off

In addition, you must have SMARTDrive installed and you must NOT disable double-buffering by removing or remarking out the **VD** option in the CONFIG.SYS file.

11.9 Columbia Data Products SCSI Hard-Disk Controller

To use the Columbia Data Products SCSI hard-disk controller with Windows version 3.1 in 386 enhanced mode, you must update the Columbia Data Products SCSI driver to version 3.35 or higher.

11.10 Serial Ports on 80286-Based Computers: Improving Performance

If the baud rate-setting for your COM ports is 9600 or higher and you are experiencing slow COM performance or are losing characters when sending or receiving information using a communications application in standard mode, try the following solutions to correct the problem. Try solution one first. If that doesn't work, then try solution two, and so on:

1. Reduce the number of MS-DOS drivers and terminate-and-stay-resident programs (TSRs) loaded from your CONFIG.SYS file.
2. Add the following line to the [standard] section of the SYSTEM.INI file:

FasterModeSwitch=1

Note: The FasterModeSwitch setting may not work on older systems or systems that are incompatible with Windows version 3.1. In this case, Windows may fail when you start it.

3. Do not load MS-DOS 5.0 into upper memory (do not include the command line **dos=high** in your CONFIG.SYS file).

11.11 Sound Blaster Audio Card

If you are using a Sound Blaster audio card that includes a Digital Signal Processor (DSP) chip earlier than version 2.0, you may want to upgrade to version 2.0 to improve audio performance. To find out which version of the DSP chip you currently have, run the TEST-SBC.EXE utility included in your Sound Blaster package. To receive version 2.0 of the DSP chip, contact Creative Labs, Inc.

11.12 Tandy 2500 XL with MS-DOS in ROM

The Tandy 2500 XL can be configured to use MS-DOS in read-only memory (ROM). If you want to use this feature, after you run Windows Setup you must run the Tandy setup program (SETUPXL). Modify your configuration so that your AUTOEXEC.BAT and CONFIG.SYS files are read from drive C.

11.13 Wyse Computers

If you are using a Wyse computer to run Windows, you might need to modify the **device=HIMEM.SYS** line in your CONFIG.SYS file to read:

```
device=[path]HIMEM.SYS /M:WYSE
```

12.0 Other Online Documents

The following table describes other online documents that contain important information about Windows version 3.1 that is not included in the *Microsoft Windows User's Guide* or in online Help:

Document	Contains
APPS.HLP	Information about updating some older Windows applications for use with Windows version 3.1. You can view this file by starting Windows Help from any application, and then using the Open command on the File menu to open the file. For more information about using Help, see Chapter 1, "Windows Basics," in the <i>Microsoft Windows User's Guide</i> .
SETUP.TXT	Information about problems that may occur when you are setting up Windows.
PRINTERS.WRI	Information about using fonts and printing in Windows version 3.1, including notes about specific printers and font packages.
NETWORKS.WRI	Information about running Windows with specific network configurations.
SYSINI.WRI	Information about the settings in the SYSTEM.INI file.
WININI.WRI	Information about the settings in the WIN.INI file.

