

## SYSTEM.INI File Settings

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Windows initialization files contain information that defines your Windows environment. Windows and Windows applications can use the information stored in these files to configure themselves to meet your needs and preferences.

There are two standard Windows initialization files:

- WIN.INI, which primarily contains settings that you can use to customize your Windows environment according to your preferences.
- SYSTEM.INI, which primarily contains settings that you can use to customize Windows to meet your system's hardware needs.

This document describes the contents of the SYSTEM.INI file and explains how to change settings in the file. For information on the WIN.INI file, see the WININI.WRI online document.

**Caution:** Changing settings can lead to undesirable results when you run Windows. Before changing any setting, read "Changing Settings" later in this document.

### Format of the SYSTEM.INI file

The SYSTEM.INI file contains several sections, each of which consists of a group of related settings. The sections and settings are listed in the SYSTEM.INI file in the following format:

```
[section name]
keyname=value
```

In this example, **[section name]** is the name of a section. The enclosing brackets ([]) are required, and the left bracket must be in the leftmost column on the screen.

The **keyname=value** statement defines the value of each setting. A keyname is the name of a setting. It can consist of any combination of letters and digits in upper- or lower-case, and must be followed immediately by an equal sign (=). The value of the setting can be an integer, a Boolean value, a string, or a quoted string, depending on the setting. There are multiple settings in most sections.

You can include comments in initialization files. You must begin each line of a comment with a semicolon (;).

### Sections in the SYSTEM.INI File

The SYSTEM.INI file contains global system information that Windows uses when it starts. This information is organized into the following sections:

<b>Section</b>	<b>Does</b>
[boot]	Lists drivers and Windows modules.
[boot.description]	Lists the names of devices you can change using Windows Setup.
[drivers]	Contains a list of aliases (or names) assigned to installable device-driver files.
[keyboard]	Contains information about the keyboard.
[mci]	Contains a list of aliases (or names) assigned to media control interface (MCI) installable device-driver files.
[NonWindowsApp]	Contains information used by non-Windows applications.
[standard]	Contains information used by Windows in standard mode.
[386Enh]	Contains information used by Windows in 386 enhanced mode.

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## **How to Read the Listings in this Document**

In this document, settings in SYSTEM.INI are listed alphabetically within sections. However, the settings do not appear alphabetically in the SYSTEM.INI file. If you want to change a setting, you will have to search for the setting in the appropriate section.

Many of the settings explained in this file are rarely needed and will not appear in your SYSTEM.INI file unless you add them yourself.

The syntax, purpose, and recommended method for changing or adding each setting appear in the following format:

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**SettingName=<value-type>**

Default: The Windows default value for this setting.  
Purpose: Briefly describes the function of the setting.  
To change: Describes the recommended method for changing the value of this setting.

The <value-type> indicates whether the value should be a number, a letter, a range of numbers, a Boolean value, or something else. If you want to enable a Boolean setting, you can enter: True, Yes, On, or 1. If you want to disable the Boolean setting, you can enter: False, No, Off, or 0.

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## Changing Settings

When the Setup program created the SYSTEM.INI file, it assigned default values to many of the settings. Other settings, such as those in the [boot] and [keyboard] sections, and the Device, Display, EBIOS, Keyboard, Mouse, and Network settings in the [386Enh] section have values which correspond to the type of hardware you are using. Many settings listed in this document do not normally appear in your SYSTEM.INI file. Most of these settings have a built-in default value that is present whether or not the setting appears in SYSTEM.INI. It may be necessary to change one or more of these values to improve the performance of Windows or applications with your system.

**Caution:** Always back up your SYSTEM.INI file before you change any of its settings. That way, you can restore the original file if you make incorrect changes. Use extreme care when making changes to your SYSTEM.INI file. Your system will not work properly if you edit this file incorrectly.

You can change the values for some of the settings by using Control Panel or Windows Setup. However, to change most of the settings' values you must open the SYSTEM.INI file and edit it using a text editor, such as Notepad. Do not use a formatting editor, such as a word processor in document mode; it can corrupt your SYSTEM.INI file. The description of each setting is followed by a recommended method for changing the setting's value. Use this method whenever possible. For more information on how to use Notepad, see Chapter 12, "Additional Accessories" in the *Windows User's Guide*.

Any changes you make to SYSTEM.INI settings do not take effect until you restart Windows.

## [boot] Section Settings

The [boot] section contains a list of the drivers and Windows modules that are used to configure Windows each time you start it.

**Caution:** All settings in this section, except for CachedFileHandles, are required. If you modify or delete one of these settings, Windows might not work properly. There are no built-in default values for these settings; Setup assigns values based on your system configuration.

The [boot] section can contain the following settings:

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**286grabber**=<filename>

Default: None  
Purpose: Specifies the filename of the device driver (called a grabber) that makes a non-Windows application visible when you use Windows in standard mode.  
To change: Choose the Windows Setup icon from the Main Group window. This setting changes when you change the Display setting in Setup. If you are installing a device driver that is not included with Windows, run Setup from MS-DOS.

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**386grabber=<filename>**

Default: None  
Purpose: Specifies the filename of the device driver (called a grabber) that makes a non-Windows application visible when you use Windows in 386 enhanced mode.  
To change: Choose the Windows Setup icon from the Main Group window. This setting changes when you change the display setting in Setup. If you are installing a device driver that is not included with Windows, run Setup from MS-DOS.

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**CachedFileHandles=<number>**

Default: 12  
Purpose: Specifies the number of the most recently-used executable (.exe) and dynamic link library (.dll) files that can remain open. Windows keeps these files open so that they can be accessed quickly, ensuring optimal performance. However, some networks have a limit on the number of files that can be open on a server at a time. If you are having problems running Windows from a Network server, use a lower number for this setting. Valid numbers are 2 through 12.  
To change: Use Notepad to edit the SYSTEM.INI file.

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**comm.driv=<filename>**

Default: None  
Purpose: Specifies the filename of the serial communications driver you are using.  
To change: Use Notepad to edit the SYSTEM.INI file.

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**display.driv=<filename>**

Default: None  
Purpose: Specifies the filename of the display driver you are using.  
To change: Choose the Windows Setup icon from the Main Group window. If you are installing a device driver that is not included with Windows, run Setup from MS-DOS.

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**drivers=<filename-or-aliasname>**

Default: None

Purpose: Specifies the filename(s) or alias name(s) of the installable drivers that load when Windows is started. An installable driver is a dynamic-link library that is treated by Windows like a device driver. If the drivers you want to use include parameters, you must specify them by alias name. Alias names are defined in the [Drivers] section of the SYSTEM.INI file. You can list several file or alias names in this setting.

To change: Most setup programs add these settings to the SYSTEM.INI file when installing installable drivers, so you shouldn't need to change the settings. Use Notepad to edit the SYSTEM.INI file.

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**fixedfon.fon=<filename>**

Default: None

Purpose: Specifies the filename of the fixed system font used by Windows version 2.x. This font will still be used by version 2.x applications.

To change: Choose the Windows Setup icon from the Main-group window. This setting changes when you change the display setting.

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**fonts.fon=<filename>**

Default: None

Purpose: Specifies the filename of the proportionately-spaced system font used by Windows 3.1.

To change: Choose the Windows Setup icon from the Main-group window. This setting changes when you change the display setting in Setup.

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**keyboard.drv=<filename>**

Default: None

Purpose: Specifies the filename of the keyboard driver you are using.

To change: Choose the Windows Setup icon from the Main-group window and change the setting for the Keyboard option.

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**language.dll=<library-name>**

Default: None

Purpose: Specifies the name of the dynamic-link library that supplies language-specific functions. If no language library is specified, Windows uses the built-in U.S. English library.

To change: Choose the International icon from the Control Panel window and change the setting for the Language option.

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**mouse.drv=<filename>**

Default: None  
Purpose: Specifies the filename of the mouse driver you are using.  
To change: Choose the Windows Setup icon from the Main-group window and change the setting for the Mouse option.

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**network.drv=<filename>**

Default: None  
Purpose: Specifies the filename of the network driver you are using.  
To change: Choose the Windows Setup icon from the Main-group window and change the setting for the Network option.

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**oemfonts.fon=<filename>**

Default: None  
Purpose: Specifies the name of the font file for the OEM character set. This setting is associated with the display setting.  
To change: Quit Windows and then run Setup from MS-DOS. This setting changes when you change the Codepage or Display setting in Setup.

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**shell=<filename>**

Default: None (Setup initializes this value as PROGMAN.EXE)  
Purpose: Specifies the Windows program that runs when you start Windows. Unless you change this setting, Program Manager will run when you start Windows.  
To change: Use Notepad to edit the SYSTEM.INI file.

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**sound.drv=<filename>**

Default: None  
Purpose: Specifies the filename of the system sound driver you are using.  
To change: Use Notepad to edit the SYSTEM.INI file.

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**system.drv=<filename>**

Default: None  
Purpose: Specifies the filename of the system hardware driver you are using.  
To change: Quit Windows and run Setup from MS-DOS.

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**TaskMan.Exe=<filename>**

Default: taskman.exe  
Purpose: Specifies the task-switching application that appears when you press CTRL+ESC. If this setting does not appear in the SYSTEM.INI file, then Windows Task Manager is used as the

task-switching application.

To Change: Use Notepad to edit the SYSTEM.INI file.

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## **[boot description] Section Settings**

The [boot.description] section is a list of strings that are used to describe the devices you can change when you run Setup. There is no reason to change these settings. If you do change these settings, you will not be able to use Windows Setup to update your drivers to a newer version.

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## **[drivers] Section Settings**

The [Drivers] section contains a list of aliases (or names) assigned to installable driver files.

The [Drivers] section can contain the following settings:

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**<alias>=<driver filename>[parameters]**

Default: None

Purpose: Assigns an alias name to an installable device driver and specifies any parameters used by the driver. This setting is associated with the Drivers= setting in the [Boot] section of the SYSTEM.INI file. You can define multiple aliases by specifying multiple <alias> lines in the SYSTEM.INI file.

To change: Choose the Drivers icon in the Control Panel window, or use the installation program provided by the driver manufacturer. (Most installation programs add these settings to the SYSTEM.INI file when installing installable drivers, so you shouldn't need to change the settings.)

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## **[keyboard] Section Settings**

The [keyboard] section provides information about the keyboard.

**Caution:** All settings in this section are required. If you modify or delete one of these settings, Windows will not operate properly. There are no built-in default values for these settings; Setup assigns values based on your system configuration.

The [keyboard] section can contain the following settings:

---

**keyboard.dll=<filename>**

Purpose: Specifies the name of a dynamic-link library that defines the

layout for non-U.S. keyboards and keyboards not compatible with IBM-compatible systems. This setting is required for all keyboards except the following U.S. keyboards:

- IBM XT, PC/AT (R), or enhanced
- AT&T type 301 or 302
- Olivetti 83-key.

To change: Choose the Windows Setup icon from the Main Group window or the International icon from the Control Panel window.

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**oemansi.bin=<filename>**

Purpose: Specifies the name of a file that defines OEM/ANSI code-page translation tables for systems not using the U.S. OEM character set (code page 437).

To change: Quit Windows and then run Setup from MS-DOS. This setting changes when you change the Codepage or Display setting in Setup.

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**subtype=<number>**

Purpose: For some drivers, distinguishes special features for keyboards that otherwise have identical layouts. The following values are defined:

Type Value	Subtype Value	Meaning
1 2	Olivetti M24 83-key or AT&T 6300 type 301 83-key	
1	4	AT&T type 302 sometimes used on the 6300 Plus.
2	1	Olivetti 102-key ICO used on M24 systems.

This setting can also be used by other drivers. See the following setting (type=) for information about its values.

To change: Choose the Windows Setup icon from the Main Group window.

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**type=<number>**

Purpose: Specifies the keyboard type. It can be any one of the following values:

Value	Meaning
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- 1 IBM PC or XT compatible (83 keys)
- 2 Olivetti 102-key ICO
- 3 IBM AT compatible (84 or 86 keys)
- 4 IBM compatible, enhanced (101 or 102 keys)

If this setting is blank or missing, the driver selects a default type. For IBM-compatible keyboards (using the keyboard.drv driver), the default type is determined by the BIOS.

To change: Choose the Windows Setup icon from the Main Group window.

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### **[mci] Section Settings**

The [mci] section contains a list of the drivers that use the Media Control Interface (MCI) to play media files. These drivers are automatically installed when you run Setup.

To change: Choose the Drivers icon in the Control Panel window.

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### **[NonWindowsApp] Section Settings**

The [NonWindowsApp] section contains settings that affect the performance of non-Windows applications.

The [NonWindowsApp] section can contain the following settings:

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#### **CommandEnvSize=<bytes>**

Default: 0 with MS-DOS versions earlier than 3.2. Otherwise, the value for the /e: parameter in the shell= command line in the CONFIG.SYS file.

Purpose: Specifies the size of the COMMAND.COM environment. Note that running batch files with the extension .BAT starts COMMAND.COM, so this setting also applies to batch files. The value for this setting must be either 0, or between 160 and 32768. A value of 0 disables this setting. If the value is not valid, it will be rounded up to 160 or down to 32768. If the value is less than the current size of the actual environment, this setting will be disabled, as if it were set to 0. If you have specified the environment size in a PIF file for COMMAND.COM, the PIF file setting overrides this setting.

To change: Use Notepad to edit the SYSTEM.INI file.

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#### **DisablePositionSave=<Boolean>**

Default: 0

**Purpose:** When disabled, the position and font used in a non-Windows application is saved in the DOSAPP.INI file when you quit the application. If enabled, the position and fonts used by a non-Windows application whose settings have not been previously saved in the DOSAPP.INI file will not be saved. If enabled, the setting can be overridden for each non-Windows application by selecting the Save Settings On Exit check box in the Font dialog box.

**To change:** Use Notepad to edit the SYSTEM.INI file.

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**FontChangeEnable=<Boolean>**

**Default:** 1 on systems that use Windows 3.1 grabbers. 0 on systems that use Windows 3.0 grabbers

**Purpose:** Provides the ability to change the fonts when running non-Windows applications in a window on systems that use version 3.0 of the grabbers (usually 3.0 display drivers). Windows version 3.1 of the video grabbers (used in 3.1 display drivers) include built-in support for changing fonts when running non-Windows applications in a Window. If you are using a 3.0 grabber that has not been updated to include the ability to change fonts and you want to use this feature, enable this setting. However, with this setting enabled, your screen may lose characters and the cursor may change size and position slightly.

**To change:** Use Notepad to edit the SYSTEM.INI file.

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**GlobalHeapSize=<kilobytes>**

**Default:** 0

**Purpose:** Specifies the size of a buffer in conventional memory that Windows allocates when running in standard mode. This buffer can be used to share information among all non-Windows applications that are started from Windows. This setting has no effect when Windows is running in 386 enhanced mode.

**To change:** Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

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**LocalTSRs=<list-of-TSR-applications>**

**Default:** dosedit, ced

**Purpose:** Specifies which terminate-and-stay-resident (TSR) programs work properly if they are copied to each instance of a virtual machine. When you start Windows, it detects any TSR programs that are currently running. If the TSR is on the LocalTSRs list, Windows will place a copy of the TSR in each virtual machine you run. Many TSR's will not run properly if they are added to this list. Make sure your TSR is fully compatible with Windows and can be copied to a virtual machine before adding it to the list.

To change: Use Notepad to edit the SYSTEM.INI file.

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**MouseInDosBox=<Boolean>**

Default: 1 if an MS-DOS mouse driver with the extension .COM or .SYS that supports the use of a mouse with a non-Windows application is loaded. Otherwise, the default is 0

Purpose: Specifies whether the mouse is supported when running a non-Windows application in a window. Mouse support for non-Windows applications running in a window is automatically available if you are using a Windows 3.1 version of the grabbers. If you are using a Windows 3.0 version of the grabbers and you want mouse support, enable this setting. If you do not want mouse support, disable this setting.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**NetAsynchSwitching=<0-or-1>**

Default: 0, unless an application is running that supports the use of the Task Switcher API by the NETBIOS.

Purpose: Specifies whether or not you can switch away from an application (running in standard mode) after it has made an asynchronous network BIOS call. If disabled, you cannot switch away from an application after it has made an asynchronous network BIOS call. Switching away from some applications that make these calls might cause your system to fail. Once Windows detects an asynchronous NetBIOS call, you cannot switch away from the application, even if no more of these calls are made. Enable this setting if you are sure that the applications you use will not receive network messages while they are inactive.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**ScreenLines=<number>**

Default: 25

Purpose: Specifies the number of lines that will be displayed on the screen when running a non-Windows application. An application that specifies a different screen mode can override this setting.

To change: Use Notepad to edit the SYSTEM.INI file.

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**SwapDisk=<drive-colon-directory>**

Default: The directory pointed to by the TEMP environment variable; if there is no TEMP variable, then the default is the root directory of your first hard drive (usually labeled C:). If you do not have a hard disk, then the default is the root directory of your first floppy drive (usually labeled A:).

Purpose: Provides the name of the disk drive and directory to which

Windows running in standard mode swaps non-Windows applications.

To change: Use Notepad to edit the SYSTEM.INI file.

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## [standard] Section Settings

The [standard] section contains settings that are specific to running Windows in standard mode.

The [standard] section can contain the following settings:

---

### **FasterModeSwitch=<0-or-1>**

Default: 0

Purpose: Enabling this setting causes Windows running in standard mode to use a faster method of switching from protected to real mode on many 80286-based computers. When this setting is enabled, Windows responds quicker to hardware interrupts, allowing better throughput for interrupt-intensive applications, such as communications applications. In addition, you should enable this setting if you are using a Zenith Z-248 system and are losing characters while typing, or if you are using an Olivetti M-250-E and lose control of the mouse.

**Note:** This setting has no affect on 80386-based computers. Some early IBM-AT and compatible computers do not have the BIOS support necessary to use this setting. Enabling this setting on these computers may cause them to hang when starting Windows.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **Int28Filter=<number>**

Default: 10

Purpose: Specifies the interval of INT28h interrupts, generated when the system is idle, that are made visible (or reflected) to software that is loaded before Windows. Windows will reflect every nth interrupt, where n is the value of this setting. For example, a value of 1 reflects every INT28h interrupt, a value of 2 reflects every second INT28h interrupt, a value of 3, every third INT28h interrupt, and so on. Increasing this value might improve Windows' performance, but may interfere with some memory-resident software such as a network. Set this value to 0 to prevent any INT28h interrupts from being reflected. Setting this value too low (from 1 to 9) might interfere with communications applications.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**MouseSyncTime=<milliseconds>**

Default: 500

Purpose: Specifies the number of milliseconds that can elapse between mouse data bytes before Windows running in standard mode assumes that a mouse data packet is complete. This setting only affects Windows running standard mode on computers with an IBM PS/2 mouse interface.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**NetHeapSize=<kilobytes>**

Default: 8

Purpose: Specifies the size (in kilobytes) of the data-transfer buffer that standard-mode Windows allocates in conventional memory for transferring data over a network. If an application is not running correctly, your network may require a larger buffer than the default. Increasing this value will decrease the amount of memory available to applications. If no network software is running, this setting will be ignored and no memory will be allocated.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**PadCodeSegments=<0-or-1>**

Default: 0

Purpose: Setting this value to 1 causes Windows kernel to pad code segments with 16 bytes. This will prevent the last instruction in the segment from being too close to the segment limit for 80286 C2 stepping. Set this value to 1 if your 80286 system hangs in standard mode.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**Stacks=<number>**

Default: 12

Purpose: Specifies the number of interrupt reflector stacks used by the standard mode MS-DOS Extender (DOSX). Interrupt reflector stacks are used when the MS-DOS Extender needs to map a DOS or BIOS API from real mode to protected mode. If you receive a "Standard Mode: Stack Overflow" message, try increasing the number. You can specify a number between 8 and 64.

To change: Use Notepad to edit the SYSTEM.INI file.

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**StackSize=<bytes>**

Default: 384

Purpose: Specifies the size of the interrupt reflector stacks used by the

standard mode MS-DOS Extender.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

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## **[386Enh] Section Settings**

The [386Enh] section contains information specific to running Windows in 386 enhanced mode, including information used for virtual-memory page swapping.

The [386Enh] section can contain the following settings:

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### **32BitDiskAccess=<boolean>**

Default: Off if your hard disk is capable of supporting 32-bit disk access. Otherwise, this setting is not present in the SYSTEM.INI file.

Purpose: Turns 32-bit disk access on or off.

To change: Choose the 386 Enhanced icon in the Control Panel window. If this setting is not present in the SYSTEM.INI file, the 32-bit Disk Access check box will not appear in the Control Panel Virtual Memory dialog box.

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### **A20EnableCount=<number>**

Default: The value computed by the Win386 loader.

Purpose: Specifies the initial A20 enable count. (For more information about the A20 enable count, see your Extended Memory specification).

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

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### **AllVMsExclusive=<Boolean>**

Default: False

Purpose: If enabled, this setting forces all applications to run in exclusive full-screen mode, overriding all contrary settings in the applications' program information files (PIFs). Enabling this setting might prolong the length of the Windows session when you are running network and memory-resident software that is incompatible with Windows.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **AltKeyDelay=<seconds>**

Default: .005

Purpose: Specifies how much time Windows waits to process a keyboard interrupt after it processes an ALT interrupt. Some applications expect a slower processing rate than Windows in 386 enhanced

mode normally uses. Increase this value if such an application has trouble handling the ALT key.

To change: Use Notepad to edit the SYSTEM.INI file.

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#### **AltPasteDelay=<seconds>**

Default: .025

Purpose: Specifies how much time Windows waits before pasting any characters after the ALT key has been pasted. Some applications may require more time for recognition of the ALT keystroke.

To change: Use Notepad to edit the SYSTEM.INI file.

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#### **AlEMSLocked=<Boolean>**

Default: False

Purpose: If enabled, this setting locks the contents of expanded memory used by all Windows and non-Windows applications into memory (instead of swapping it to disk) and overrides the non-Windows application PIF settings for EMS Memory Locked. Set this value to True if you are using a disk cache program that uses expanded memory.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **AlXMSLocked=<Boolean>**

Default: False

Purpose: If enabled, this setting locks the contents of the extended memory used by all Windows and non-Windows applications into memory (instead of swapping it to disk), and overrides non-Windows application PIF settings for XMS Memory Locked.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting).

---

#### **AutoRestoreScreen=<Boolean>**

Default: True

Purpose: Specifies whether the display for non-Windows applications should be restored by Windows or the applications themselves when they become active. If enabled, Windows saves the display information for a non-Windows application in memory when you switch away from the application. When you switch back to the application, Windows uses this information to restore the screen. If disabled, the application must restore its own display by repainting the screen. This requires less memory, but can slow down performance since Windows can usually restore the screen faster.

**Note:** This setting only applies to VGA displays and affects only applications that notify Windows that they can update their

own screen automatically when Windows initiates a display update call.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**BkGndNotifyAtPFault=<Boolean>**

Default: True for VGA displays; False for 8514 displays.

Purpose: Specifies when a notification should be sent to a non-Windows application or to Windows to prevent the application from attempting to access the display (which might corrupt the display of a different application). This notification can be sent while switching to a different application or when attempting to access the actual display. If disabled, Windows sends a notification when switching between applications. Disable this setting if you are using a display that has special hardware, (for example, 8514 and TIGA). If you are using a VGA display, enabling this setting should work in most cases.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**CGA40WOA.FON=<filename>**

Default: None

Purpose: Specifies the filename of the fixed-pitch display font used for non-Windows applications with a display of 40 columns and 25 or fewer lines.

To change: Quit Windows and run Setup from the MS-DOS prompt. Change the the Codepage or Display setting.

---

**CGA80WOA.FON=<filename>**

Default: None

Purpose: Specifies the filename of the fixed-pitch display font used for non-Windows applications with a display of 80 columns and 25 or fewer lines.

To change: Quit Windows and run Setup from the MS-DOS prompt. to change the Codepage or Display setting.

---

**CGANoSnow=<Boolean>**

Default: No

Purpose: If enabled, causes Windows to do special handling to avoid snow appearing on an IBM CGA display device.

To change: Use Notepad to edit the SYSTEM.INI file.

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**COM1AutoAssign=<number-or-seconds>**

**COM2AutoAssign=<number-or-seconds>**

**COM3AutoAssign=<number-or-seconds>**

**COM4AutoAssign=<number-or-seconds>**



Default: 2  
Purpose: Indicates the contention detection values for each connected serial port. These values are used by Windows to determine how to arbitrate requests for the use of a device by more than one application, at least one of which is a non-Windows application. If the value is -1, Windows will display a warning message that asks you which application should be given control of the port. If the value is zero, any application can use the device at any time. If the value is a positive integer less than 1,000, this value represents the number of seconds after an application stops using the device before another application can use the same device.  
To change: Choose the 386 Enhanced icon from the Control Panel window.

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**COM1Base=<address>**  
**COM2Base=<address>**  
**COM3Base=<address>**  
**COM4Base=<address>**

Default: COM3Base=3E8h and the port address values located in the BIOS data area for COM1, COM2, and COM4.  
Purpose: Specifies the base (first) port for the serial port adapter you are using. Check your hardware documentation for the appropriate value.  
**Note:** Windows uses these values for both standard and 386 enhanced mode.

To change: Use the Advanced Settings dialog box for the Ports option in Control Panel.

---

**COMBoostTime=<milliseconds>**

Default: 2  
Purpose: Specifies the amount of time (in milliseconds) to allow a virtual machine to process a COM interrupt. If a communications application is losing keyboard characters on the display, you can try increasing this value.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**COM1Buffer=<number>**  
**COM2Buffer=<number>**  
**COM3Buffer=<number>**  
**COM4Buffer=<number>**

Default: 128  
Purpose: Specifies the number of characters that the device on the corresponding serial port will place in the buffer. Before changing one of these settings, see the corresponding

COMxProtocol setting to make sure that it has the proper value. Buffering may slow down communications on a port, but might be necessary to prevent some communications applications from losing characters at high baud rates. The size of the buffer required will depend on the speed of the machine and the application's needs.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**COMdrv30=<Boolean>**

Default: False

Purpose: Indicates, if enabled, that the Virtual COM Driver (VCD) will use its own copy of the serial communications driver's interrupt handler. This will improve performance of your COM ports. Enable this setting if you are using a Windows 3.0 serial communications driver. Disable this setting if you are using the standard Windows 3.1 serial communications driver.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**COM1FIFO=<Boolean>**

**COM2FIFO=<Boolean>**

**COM3FIFO=<Boolean>**

**COM4FIFO=<Boolean>**

Default: True

Purpose: Specifies whether the FIFO buffer of a COM port's 16550 Universal Asynchronous Receiver Transmitter (UART) should be enabled (true) or disabled (false). If a serial port does not have a 16550 UART, this setting is ignored.

**Note:** These values are used by Windows for both standard and enhanced modes.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**COM1Irq=<number>**

**COM2Irq=<number>**

**COM3Irq=<number>**

**COM4Irq=<number>**

Default: COM1Irq=4; COM2Irq=3; COM3Irq=4; COM4Irq=3 for ISA and EISA machines. COM1Irq=4; COM2Irq=3; COM3Irq=3; COM4Irq=3 for MCA machines

Purpose: Specifies which interrupt line is being used by the device on the corresponding serial port. Check your hardware documentation for the appropriate value. If there is a hardware conflict between ports, set this value to -1 to disable input for a COM port.

**Note:** Windows uses these values for both standard and 386 enhanced mode.

To change: Use the Advanced Settings dialog box for the Ports option in Control Panel.

---

**COMIrqSharing=<Boolean>**

Default: True for Micro Channel (TM) and EISA machines; False for all other machines

Purpose: Specifies whether COM interrupt lines are sharable between multiple serial ports or with other devices. Enable this setting if your machine uses the same interrupt for COM3 or COM4 as it does for COM1 or COM2.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**COM1Protocol=<XOFF-or-blank>**

**COM2Protocol=<XOFF-or-blank>**

**COM3Protocol=<XOFF-or-blank>**

**COM4Protocol=<XOFF-or-blank>**

Default: (Default is no entry, which is the same as any entry other than XOFF)

Purpose: Specifies whether Windows in 386 enhanced mode should stop simulating characters into a virtual machine after the virtual machine sends an XOFF character. Set the value for a port to XOFF if a communications application using that port is losing characters while doing text transfers at high baud rates. Windows will resume simulating characters when the virtual machine sends another character after the XOFF character. Leave this setting disabled if the application is doing binary data transfers; enabling this switch might suspend binary transmissions. Windows will not check for XOFF characters if this setting is blank or set to anything other than XOFF. If the application continues to lose characters after this setting is properly set, try increasing the corresponding COMxBuffer value.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**Device=<filename-or-\*devicename>**

Default: None (Setup assigns appropriate values based on your system configuration.)

Purpose: Specifies which virtual devices are used with Windows in 386 enhanced mode. This value can appear in two ways: either the name of a specific virtual device file, or an asterisk (\*) followed immediately by the device name. The latter case refers to a virtual device that is in the WIN386.EXE file. Filenames usually include the .386 extension. Multiple device lines are required to run Windows in 386 enhanced mode.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**Display=<filename-or-\*devicename> (See "Device=", above)**

Default: None (Setup assigns an appropriate value based on your system configuration.)

Purpose: Specifies the display device that is being used with Windows in 386 enhanced mode.

To change: Choose the Windows Setup icon from the Main Group window.

---

**DMABufferIn1MB=<Boolean>**

Default: No

Purpose: If enabled, Indicates that the direct memory access (DMA) buffer memory should be in the first 1MB of memory (above 640K, if possible) in order to be compatible with 8-bit bus master cards.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**DMABufferSize=<kilobytes>**

Default: 16

Purpose: Specifies the amount of memory (in kilobytes) to be reserved for the direct memory access buffer (DMA). This memory will be allocated above 640K, if possible. Windows in 386 enhanced mode will default to a DMA buffer size that will handle disk access.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**DOSPromptExitInstruc=<Boolean>**

Default: Yes

Purpose: If enabled, when you start the MS-DOS prompt a message box appears, with instructions on how to exit and switch away from the MS-DOS prompt. Disable this setting if you do not want to see the message.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**DualDisplay=<Boolean>**

Default: See "Purpose."

Purpose: Normally, when running in 386 enhanced mode, the memory between B000:0000 and B7FF:000F is used by the general system unless a secondary display is detected. Enable this setting if you are using a VGA-based color display and want EMM386.EXE to include this address space as an upper memory block (UMB). In addition to enabling this setting, you must include the **i=** option in the **device=EMM386.EXE** command line in your CONFIG.SYS file as follows:

**device=EMM386.EXE i=B000-B7FF**

If this setting is disabled, the address range is available on EGA systems, but not on VGA systems, because the VGA display device supports monochrome modes, which use this address space.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**EBIOS=<filename-or-\*devicename> (See "Device=", above)**

Default: None (Setup assigns an appropriate value based on your system configuration.)

Purpose: Specifies the extended BIOS device that is being used with Windows in 386 enhanced mode.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**EGA40WOA.FON=<filename>**

Default: None

Purpose: Specifies the filename of the fixed-pitch display font used for non-Windows applications with a display of 40 columns and more than 25 lines.

To change: Quit Windows and run Setup from the MS-DOS prompt. Change the Codepage or Display setting.

---

**EGA80WOA.FON=<filename>**

Default: None

Purpose: Specifies the filename of the fixed-pitch display font used for non-Windows applications with a display of 80 columns and more than 25 lines.

To change: Quit Windows and run Setup from the MS-DOS prompt. Change the Codepage or Display setting.

---

**EISADMA=<Boolean> or <channel>,<size>**

Default: 0,8; 1,8; 2,8; 3,8; 5,16w; 6,16w; 7,16w (Each pair goes with its own EISADMA setting.)

Purpose: Specifies the mode of operation of an extended DMA channel for Extended Industry Standard Architecture (EISA) machines only. This setting's value can take one of two forms. If you disable this setting, Windows will treat the machine as non-EISA, therefore avoiding all EISA-related logic. You can try disabling this switch if you cannot run Windows in 386 enhanced mode on your EISA machine. If you are using an EISA machine, you can specify the default transfer size for one or more DMA channels. The channels can operate in the following modes: 8-bit (8), 16-bit specified in words (16w), 16-bit specified in bytes (16b), or 32-bit (32). If you are not using

an EISA machine, Windows will ignore this setting.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **EMMExclude=<paragraph-range>**

Default: None  
Purpose: Specifies a range of memory that Windows will not scan to find unused address space. This has the side effect of turning off the RAM and ROM search code for the range. The range (two paragraph values separated by a hyphen) must be between A000 and EFFF. This scanning can interfere with some adapters that use the same memory area. The starting value is rounded down and the ending value is rounded up to a multiple of 16K. For example, you could set EMMExclude=C800-CFFF to prevent Windows from scanning the addresses C800:0000 through CFFF:000F. You can specify more than one range by including more than one EMMExclude line.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **EMMInclude=<paragraph-range>**

Default: None  
Purpose: Specifies a range of memory that Windows will treat as unused address space regardless of what may be there. EMMInclude takes precedence over EMMExclude if you specify ranges that overlap. The range (two values separated by a hyphen) must be between A000 and EFFF. The starting value is rounded down and the ending value is rounded up to a multiple of 16K. For example, you could set EMMInclude=C800-CFFF to ensure that Windows can use the addresses C800:0000 through CFFF:000F. You may specify more than one range by including more than one EMMInclude line.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **EMMPageFrame=<paragraph>**

Default: None  
Purpose: Specifies the starting paragraph where the 64K page frame will begin when Windows in 386 enhanced mode cannot find a suitable page frame. Allows an EMM page frame in an area containing some unused RAM or ROM. For example, you could set EMMPageFrame=C400 to start the page frame at C400:0000.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **EMMSize=<kilobytes>**

Default: 65,536  
Purpose: Specifies the total amount of memory available for mapping as

expanded memory. The default value allocates the maximum possible amount of system memory as expanded memory. Specify a value for this setting if you run an application that allocates all of the available expanded memory. If this is the case, you cannot create new virtual machines. If this value is zero, then no expanded memory will be allocated, but the EMM driver will be loaded. To disable EMM and prevent the EMM driver from loading, use the NoEMMDriver setting.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **FileSysChange=<Boolean>**

Default: Off in 386 enhanced mode; Not supported in standard mode.

Purpose: Indicates whether File Manager automatically receives messages anytime a non-Windows application creates, renames, or deletes a file. If disabled, a virtual machine can run exclusively, even if it modifies files. Enabling this setting can slow down system performance significantly.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **Global=<device-name>**

Default: (all devices)

Purpose: Defines DOS devices loaded in CONFIG.SYS that need to be global to the system. The default setting for all devices is global. However, certain virtual devices might specify that a DOS device be local (for example, MS\$MOUSE). Use this setting to override that local specification. The <device-name> value must exactly match the case of the device name, or setting will not work. (Most device names are in all capital letters, therefore this value must usually be in all caps.)

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **HardDiskDMABuffer=<kilobytes>**

Default: 0 for AT architecture computers; 64 for micro-channel computers or computers that use Direct Memory Access (DMA) channel 3 (unless you are using SmartDrive and double-buffering is turned on. In this case the default is 0.)

Purpose: Specifies the amount of memory used for the DMA buffer. If you are using SMARTDrive and double-buffering is turned on, this amount is determined automatically. You may need to change this value if you are using a hard disk that supports DMA and are not using SMARTDrive, or if you do not have double-buffering turned on.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **IdleVMWakeUpTime=<seconds>**

Default: 8

**Purpose:** Causes timer interrupts to periodically "wake up" idle virtual machines after the specified number of seconds have elapsed. If a virtual machine does not use timer interrupts (Int 8 or Int 1Ch), Windows will not usually force timer interrupts into a virtual machine unless it is active. This setting forces the timer interrupts to occur. The value for this setting is rounded down to the lowest power of two (for example, 1, 2, 4, 8, 16, 32, 64).

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **IgnoreInstalledEMM=<Boolean>**

**Default:** No

**Purpose:** If enabled, Windows will start in 386 enhanced mode, even when there is an unknown expanded memory manager (EMM) running. This can cause the system to fail if memory-resident software was using EMM before Windows was started. Enable this setting only if no such software is installed or you are sure it will not be active when you are running Windows. This setting applies only to expanded memory managers servicing physical EMS hardware; Windows will not disable unrecognized 80386 expanded memory emulators.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **InDOSPolling=<Boolean>**

**Default:** No

**Purpose:** If enabled, prevents Windows from running other applications when memory-resident software has the InDOS flag set. Enabling this setting is necessary if the memory-resident software needs to be in a critical section to do operations off an INT21 hook, but will slow down system performance slightly.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **INT28Critical=<Boolean>**

**Default:** True

**Purpose:** Specifies whether a critical section is needed to handle INT28h interrupts used by memory-resident software. Some networks do internal task switching on INT28h interrupts. These interrupts might hang some network software, indicating the need for an INT28h critical section. If you are not using such software, you might improve Windows' task switching by disabling this setting.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **IRQ9Global=<Boolean>**

**Default:** No

**Purpose:** If enabled, converts IRQ9 masks to global. Enable this setting if



your system hangs when accessing a floppy drive. Or make sure your system accesses the floppy drive before starting Windows.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**Keyboard=<filename-or-\*devicename> (See "Device=", above)**

Default: None (Setup assigns an appropriate value based on your system configuration.)  
Purpose: Specifies the keyboard driver that is being used with Windows in 386 enhanced mode.  
To change: Choose the Windows Setup icon from the Main Group window.

---

**KeyBoostTime=<seconds>**

Default: .001  
Purpose: Specifies the amount of time (in seconds) an application runs with increased priority when it receives a keystroke. You can use this setting to increase the response to keystrokes when several background applications are running.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**KeyBufferDelay=<seconds>**

Default: .2  
Purpose: Specifies the amount of time (in seconds) to delay pasting keyboard input after the keyboard buffer is full. Some applications might require more than .2 seconds.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**KeyIdleDelay=<seconds>**

Default: .5  
Purpose: Specifies how much time Windows ignores idle calls after simulating a keystroke into a virtual machine. You can set this value to 0 to speed up keyboard input, but some applications might slow down significantly.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**KeyPasteCRSkipCount=<number>**

Default: 10  
Purpose: Specifies the number of times that a read status INT 16 call should return a status of empty for the keyboard buffer after pasting a carriage return before pasting another character. When Windows pastes information from the Clipboard to a non-Windows application, it must first paste the information to the BIOS keyboard buffer before pasting it into the application. This setting is used to slow down fast pasting from the Clipboard to the keyboard buffer so that the application can

handle all incoming characters from the buffer. If you seem to lose characters, or if the screen does not update often enough while pasting information from the Clipboard, increase this value. This setting is related to KeyPasteSkipCount

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **KeyPasteDelay=<seconds>**

Default: .003

Purpose: Specifies how much time (in seconds) to wait before pasting any characters after a key has been pasted. Some applications might require more time than .003 seconds for recognition of a keystroke.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **KeyPasteSkipCount=<number>**

Default: 2

Purpose: Specifies the number of times that a read status INT 16 call should return a status of empty for the keyboard buffer before pasting another character. When Windows pastes information from the Clipboard to a non-Windows application, it must first paste the information to the BIOS keyboard buffer before pasting it into the application. This setting is used to slow down fast pasting from the Clipboard to the keyboard buffer so that the application can handle all incoming characters from the buffer. If you seem to lose characters, or if the screen does not update often enough while pasting information from the Clipboard, increase this value. This setting is related to KeyPasteCRSkipCount

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **KeyPasteTimeout=<seconds>**

Default: 1

Purpose: Specifies how much time (in seconds) to allow an application to make the necessary BIOS calls for reading keyboard input before Windows will change from the fast paste (INT16h) to the slow paste (INT9h) mechanism.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **KybdPasswd=<Boolean>**

Default: True for IBM PS/2 computers; False for all other computers

Purpose: Specifies whether the virtual keyboard device (VKD) should support PS/2 8042 commands that implement password security. This setting only applies to 8042 keyboard controllers that are compatible with the PS/2 computer.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **KybdReboot=<Boolean>**

Default: True

Purpose: If enabled, Windows will attempt to reboot the computer using a keyboard controller command. On some computers this method is unreliable. If your computer hangs while rebooting, then disable this setting. In this case, Windows will quit and then display a prompt to press CTRL+ALT+DEL a second time.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **Local=<device-name>**

Default: None (In a standard SYSTEM.INI file, Setup will set Local=CON. See "Purpose.")

Purpose: Defines MS-DOS device drivers that need to be local to each virtual machine. The <device-name> value must exactly match the case of the device name, or this setting will not work. (Most device names are in all capital letters, therefore this value must usually be in all caps.) If a device driver is local, a separate copy of it will exist in each virtual machine, and each will keep different state information. Most device drivers will not function properly when this setting is used. An exception is CON, the DOS console device, which should be local to avoid filling a buffer with input from multiple virtual machines.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **LocalLoadHigh=<Boolean>**

Default: False

Purpose: Determines how extra memory in the UMB (Upper Memory Block) area is used when Windows is running on MS-DOS version 5.0. If disabled, then Windows uses all of the UMB area, leaving no extra UMB space available for Virtual Machines. If enabled, then Windows does not use all of the extra UMB area. In this case, UMB area is available locally to each Virtual Machine.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **LocalReboot=<on-or-off>**

Default: On

Purpose: Specifies whether you can press Ctrl+Alt+Del to quit applications that cause unrecoverable errors in 386 enhanced mode, without restarting Windows. If this setting is enabled, you can quit the applications. If this setting is disabled, pressing Ctrl+Alt+Del will restart your entire system (as it normally does.)

To change: Use Notepad to edit the SYSTEM.INI file.

---

**LPT1AutoAssign=<seconds>**

**LPT2AutoAssign=<seconds>**

**LPT3AutoAssign=<seconds>**

**LPT4AutoAssign=<seconds>**

Default: 60

**Note:** These settings apply to Windows version 3.0 only. If you have upgraded to Windows 3.1, these settings may still appear in your SYSTEM.INI file, but will have no affect.

---

**LRULowRateMult=<number>**

Default: 10

Purpose: Specifies the value used for determining the low paging rate sweep frequency. The low paging rate sweep frequency is computed by multiplying the value for LRUSweepFreq by the value specified for this setting. Values between 1 and 65535 may be used.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**LRURateChngTime=<milliseconds>**

Default: 10,000

Purpose: Specifies the length of time that the Memory Manager stays at high rate with no paging before switching to low rate, and the length of time the Memory Manager stays at low rate with no paging before turning the Least-Recently-Used (LRU) Sweep off.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**LRUSweepFreq=<milliseconds>**

Default: 250

Purpose: Specifies the time between sweep passes. This is also the high paging rate sweep frequency.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**LRUSweepLen=<length-in-pages>**

Default: 1024 (Windows computes this value by dividing the value of LRUSweepReset by the value of LRUSweepFreq)

Purpose: Specifies the length in pages of the region swept on each pass. The value must be at least 1.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**LRUSweepLowWater=<number>**

Default: 24

Purpose: Specifies when the Least-Recently Used (LRU) sweeper should be turned on. When the number of free pages drops below this value, the sweeper is turned on.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**LRUSweepReset=<milliseconds>**

Default: 500

Purpose: Specifies the time desired for an ACC bit reset divided by 4 megabytes of pages. Therefore, the time to reset all ACC bits is: (numbr of pages in system+1023/1024) where 1024 pages = 4megabytes. The minimum value is 100.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**MapPhysAddress=<range>**

Default: None

Purpose: Specifies the address range (in megabytes) in which the memory manager preallocates physical page-table entries and linear address space. Use this setting if you are using a DOS device driver (such as an older version of RAMDrive that uses extended memory) that needs contiguous memory.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**MaxBPs=<number>**

Default: 200

Purpose: Specifies the maximum number of break points (a method for transferring control to 386 Enhanced Windows) that can be used by the Virtual Memory Manager. You may need to increase this value if you are using a third-party virtual device driver that requires more break points than the default value.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**MaxCOMPort=<number>**

Default: 4

Purpose: Specifies the maximum number of COM ports supported in enhanced mode. Change this value if you have more than 4 COM ports installed in your computer.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**MaxPagingFileSize=<kilobytes>**

Default: 50 percent of available disk space  
Purpose: Specifies the maximum size (in kilobytes) for a temporary swap file.  
To change: Choose the 386 Enhanced icon from the Control Panel window.

---

**MaxPhysPage=<hexidecimal-page-number>**

Default: Determined by Windows based on the highest physical page number detected by the Memory Manager during initialization.  
Purpose: Specifies the maximum physical page number that the Memory Manager can manage as a useable page. This setting allows pages to be added at a physical address beyond what the Memory Manager recognized during initialization. If the value specified is less than what the Memory Manager determines, the Memory Manager will ignore several physical pages that it would normally use, preventing the use of memory. This is useful if you are using a hardware device that cannot recognize all of the physical memory in your computer (for example, ISA DMA Network cards cannot access physical memory above 16 megabytes).  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**MCADMA=<Boolean>**

Default: True for MCA computers; False for all other computers  
Purpose: Specifies whether Windows should use the MCA extensions to direct- memory access (DMA). This setting only applies to MCA computers. Disable this setting if you are using an MCA computer, but the DMA extensions are not implemented.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**MessageBackColor=<vga-color-attribute>**

Default: 1 (for blue)  
Purpose: Specifies the background color of message screens, such as the screen that appears when you press Ctrl+Alt+Del.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**MessageTextColor=<vga-color-attribute>**

Default: F (for white)  
Purpose: Specifies the color used to display text in message screens, such as the screen that appears when you press Ctrl+Alt+Del.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

**MinTimeSlice=<milliseconds>**

Default: 20

**Purpose:** Specifies the minimum amount of time (in milliseconds) a virtual machine is allowed to run before other virtual machines can take over. A smaller value (such as 10 milliseconds) will make multitasking appear smoother, but will decrease overall system performance.

**To change:** Choose the 386 Enhanced icon from the Control Panel window.

---

**MinUnlockMem=<kilobytes>**

**Default:** 40

**Purpose:** Specifies the amount of memory that must remain unlocked and available for use when resuming a virtual machine if more than one virtual machine is running.

**To change:** Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**MinUserDiskSpace=<kilobytes>**

**Default:** 2000

**Purpose:** Specifies how much disk space (in kilobytes) to leave free when creating a temporary swap file. Use this setting if your system's paging drive has less available space than Windows can use for paging. This setting does not apply if a permanent swap file exists.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

**Mouse=<filename-or-\*devicename> (See "Device=", above)**

**Default:** None (Setup assigns an appropriate value based on your system configuration.)

**Purpose:** Specifies the virtual device that controls the mouse hardware in 386 enhanced mode.

**To change:** Choose the Windows Setup icon from the Main Group window.

---

**MouseSoftInit=<Boolean>**

**Default:** True

**Purpose:** Specifies whether Windows should convert INT 33h function 0 hard initialization calls to function 33 soft initialization calls, which do not reset the mouse hardware. If enabled, you can use a mouse with a non-Windows application that you start in a window. Disable this setting if the cursor and screen information appear garbled or distorted when using the mouse with an application. If you disable this setting, you may not be able to use the mouse when running a non-Windows application in a window.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

**NetAsynchFallback=<Boolean>**

**Default:** False  
**Purpose:** If enabled, Windows attempts to save a failing NetBIOS request. When an application issues an asynchronous NetBIOS request, Windows will attempt to allocate space in its global network buffer to receive the data. If there is insufficient space in the global buffer, Windows will normally fail the NetBIOS request. If this setting is enabled, Windows will attempt to save such a request by allocating a buffer in local memory and preventing any other virtual machines from running until the data is received or the timeout period (specified by the NetAsynchTimeout setting) expires.  
**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **NetAsynchTimeout=<seconds>**

**Default:** 5.0  
**Purpose:** Specifies the timeout period (in seconds) when Windows needs to enter a critical section in order to service an asynchronous NetBIOS request. It is used only when NetAsynchFallback is enabled. This value can include a decimal (such as 0.5).  
**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **NetDMASize=<kilobytes>**

**Default:** 32 on Micro Channel (TM) machines (IBM PS/2 or compatible); 0 on non-Micro Channel machines (IBM PC/AT compatible).  
**Purpose:** Specifies the DMA buffer size (in kilobytes) for NetBIOS transport software if a network has been installed. In this case, the buffer size is the larger value between this value and the value of DMABufferSize.  
**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **NetHeapSize=<kilobytes>**

**Default:** 12  
**Purpose:** Specifies the size (in kilobytes) of the data-transfer buffers in conventional memory that Windows allocates for transferring data over a network when running in 386 enhanced mode. All values are rounded up to the nearest 4K.  
**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **Network=<filename-or-\*devicename> (See "Device=", above)**

**Default:** None (Setup assigns an appropriate value based on your system configuration.)  
**Purpose:** Specifies the type of network you are using with Windows in 386 enhanced mode.  
**To change:** Choose the Windows Setup icon from the Main Group window.



---

**NMIReboot=<Boolean>**

Default: No

Purpose: If enabled, causes a reboot to occur when a nonmaskable interrupt is received.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**NoEMMDriver=<Boolean>**

Default: False

Purpose: If enabled, prevents Windows in 386 enhanced mode from installing its expanded memory driver. This differs from setting EMMSize to zero, which does not prevent the EMM driver from being loaded.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**NoWaitNetIO=<on-or-off>**

Default: On

Purpose: Specifies whether or not to convert synchronous NetBIOS commands to asynchronous commands. When this setting is enabled, synchronous NetBIOS commands are converted. This can improve overall system performance when running several applications.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**OverlappedIO=<Boolean>**

Default: Off, if InDOSPolling is enabled; Otherwise, On

Purpose: If enabled, several virtual machines can make read and write requests to a disk before the first request has been completed. If disabled, virtual machines cannot issue a request to read or write to a disk until any previous read and write requests have been completed.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

**PageBuffers=<number>**

Default: 4

Purpose: Specifies the number of 4K page buffers used to store asynchronous read and write pages. This setting is used only if you are using 32-Bit Disk Access and a permanent swap file. You can specify a value between 0 and 32. Increasing this value can improve Windows' performance.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**PageOverCommit=<number>**

Default: 4  
Purpose: Specifies the multiplier for determining the amount of linear address space the Memory Manager will create for the system. The amount of linear address space that the Memory Manager will create is computed by rounding up the amount of available physical memory to the nearest 4 megabytes and then by multiplying that value to the value specified for this setting. You can specify a value between 1 and 20. Increasing this value increases the amount of available linear address space, causing the size of data structures to increase. This also increases paging activity proportionately and can slow down the system.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **Paging=<Boolean>**

Default: Yes  
Purpose: Enables or disables demand paging (virtual memory) and permanent and temporary swap files. Disable this setting only if you need the disk space normally used for a temporary swap file.  
To change: Choose the 386 Enhanced icon from the Control Panel window.

---

#### **PagingDrive=<drive-letter>**

Default: None  
Purpose: Specifies the disk drive where Windows in 386 enhanced mode will create a temporary swap file. This setting is ignored if you have a permanent swap file. If you don't have a permanent swap file and no drive is specified or the specified drive does not exist, Windows will attempt to put your temporary swap file on the drive containing your SYSTEM.INI file. If the specified drive is full, paging will be disabled.  
To change: Choose the 386 Enhanced icon from the Control Panel window.

---

#### **PagingFile=<path-and-filename>**

Default: WINDOWS\WIN386.SWP  
Purpose: Specifies the path and filename for the temporary swap file that is created when you start Windows in 386 enhanced mode. This file is deleted when you quit Windows. This setting overrides the PagingDrive setting.  
To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **PerformBackfill=<Boolean>**

Default: Auto (Windows automatically checks to see if it needs to fill in memory based on how DOS is occupying memory.)  
Purpose: Specifies whether or not to allocate a full 640K of memory to a computer that has less than 640K of base conventional memory.

Enabling or disabling this setting overrides the automatic checking done by Windows.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting, because Windows can automatically detect whether or not to perform a backfill.)

---

#### **PermSwapDOSDrive=<drive-letter>**

Default: None

Purpose: Specifies the disk drive where Windows in 386 enhanced mode will create a permanent swap file. This setting is ignored if you are using a temporary swap file.

To change: Choose the 386 Enhanced icon from the Control Panel window.

---

#### **PermSwapSizeK=<kilobytes>**

Default: None

Purpose: Specifies the desired size in kilobytes of a permanent swap file.

To change: Choose the 386 Enhanced icon from the Control Panel window.

---

#### **PerVMFILES=<number>**

Default: 10; 0 if SHARE is installed.

Purpose: Specifies the number of private file handles Windows should allocate to each virtual machine. Increase this value if an application does not have enough file handles to run. The total number of file handles, including the global handles specified in the FILES= statement in CONFIG.SYS, cannot exceed 255. If it exceeds 255, this value will be rounded down. Set this value to 0 to prevent the allocation of any private file handles. If SHARE is installed, then this setting is ignored in the SYSTEM.INI file.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **PSPIncrement=<number>**

Default: 2

Purpose: Specifies the amount of additional memory, in 16-byte increments, that Windows should reserve in each successive virtual machine when the UniqueDOSPSP setting is enabled. The setting that works best for your machine might vary depending on your memory configuration and the applications you are running. Valid values are 2 through 64. See UniqueDosPSP for more information.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **ReflectDosInt2A=<Boolean>**

Default: False

**Purpose:** Indicates whether Windows should consume or reflect DOS INT 2A signals. The default means Windows will consume these signals and therefore run more efficiently. Enable this setting if you are running memory-resident software that relies on detecting INT2A messages.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

**ReservedHighArea=<paragraph-range>**

**Default:** None

**Purpose:** Specifies a range of memory that Windows will not scan to find unused address space. This has the side effect of turning off the RAM and ROM search code for the range. The range (two paragraph values separated by a hyphen) must be between A000 and EFFF. This scanning can interfere with some adapters that use the same memory area. The starting value is rounded down and the ending value is rounded up to a multiple of 4K. For example, you could set ReservedHighArea=E100-E3FF to prevent Windows from scanning the first 12K of memory starting at E100. You can specify more than one range by including more than one ReservedHighArea line.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

**ReservePageFrame=<Boolean>**

**Default:** True

**Purpose:** Specifies whether Windows should give preference to EMS page frame space or conventional memory when it has to use one of the two to allocate MS-DOS transfer buffers. This choice is necessary when Windows cannot find space (other than EMS page frame space) between 640K and 1MB. If enabled, this setting will preserve EMS page frame space at the expense of conventional memory. If your non-Windows applications do not require expanded memory, disable this setting to make more conventional memory available to non-Windows applications.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

**ReserveVideoROM=<Boolean>**

**Default:** False

**Purpose:** Instructs Windows that video read-only memory exists in pages C6 and C7. If the text font appears scrambled when starting non-Windows applications, enable this setting.

**To change:** Use Notepad to edit the SYSTEM.INI file. (You should not need to change this setting, because the default setting causes Windows to detect video ROM correctly.)

---

**ROMScanThreshold=<number>**

**Default:** 20

**Purpose:** Specifies a parameter used for determining if a memory area in the adapter region (usually between C000-EFFF) that has no ROM header or incorrect header information is read-only memory (ROM). The number for this setting specifies how many different values must occur within the memory area to determine whether or not it is ROM. If the number of transitions is greater than the value for this setting, Windows recognizes the memory as ROM. If the number of transitions is less than the value, Windows recognizes the memory as usable memory. A value of 0 disables this setting, causing Windows to recognize this memory area as usable.

**To change:** Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

#### **ScrollFrequency=<number>**

**Default:** 2

**Purpose:** Specifies the number of lines you can scroll in a non-Windows application that is running in a Windows before its display is updated.

**To change:** Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

#### **SGrabLPT=<port-number>**

**Default:** None

**Purpose:** Routes all printer interrupts on the specified port to the Windows screen rather than to the current virtual machine.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **SyncTime=<Boolean>**

**Default:** True

**Purpose:** If enabled, Windows periodically synchronizes its time with the computer's CMOS clock. If this setting is disabled, Windows usually maintains the correct time, unless TrapTimerPorts is disabled and you are running applications that can cause the system time to run faster or slower than the actual time. This setting is related to the TrapTimerPorts setting.

**To change:** Use Notepad to edit the SYSTEM.INI file.

---

#### **SystemROMBreakPoint=<Boolean>**

**Default:** True if Windows is started in real mode of the 80386/486 CPU. False if Windows is started in virtual mode of the 80386/486 CPU. Most 386 memory managers, such as QEMM and 386MAX, require this value to be set to false. If a 386 memory manager is running Windows is started in virtual mode. Otherwise, Windows is started in real mode.

**Purpose:** Specifies whether Windows should use ROM address space

between F000:0000 and 1MB for a break point. Windows in 386 enhanced mode normally searches this space to find a special instruction that is used as a system break point. If this address space contains something other than permanently available ROM, you should disable this setting.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **SysVMEMSLimit=<number -or-kilobytes>**

Default: 2048

Purpose: Specifies how many kilobytes of expanded memory Windows is permitted to use. Setting this value to 0 prevents Windows from gaining access to any expanded memory. Setting it to -1 gives Windows all the available expanded memory that it requests.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **SysVMEMSLocked=<Boolean>**

Default: No

Purpose: Specifies whether to swap expanded memory being used by Windows applications to the hard disk. Locking expanded memory (enabling this setting) can improve the performance of a Windows application that uses it, but can slow down the rest of the system.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

---

#### **SysVMEMSRequired=<kilobytes>**

Default: 0

Purpose: Specifies how many kilobytes of expanded memory must be free in order to start Windows. Leave this setting at zero if no Windows applications require expanded memory.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **SysVMV86Locked=<Boolean>**

Default: False

Purpose: If enabled, causes the virtual-mode memory used in the system virtual machine to remain locked in memory instead of swapping it out to disk.

To change: Use Notepad to edit the SYSTEM.INI file. (Because Windows controls this process, there is no need to change this setting.)

---

#### **SysVMXMSLimit=<number-or-kilobytes>**

Default: 2048

Purpose: Specifies the maximum amount of memory (in kilobytes) the extended memory driver allocates to DOS device drivers and

memory-resident software in the system virtual machine. Set the value to -1 to give an application all the available extended memory that it requests.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **SysVMXMSRequired=<kilobytes>**

Default: 0

Purpose: Specifies how many kilobytes of extended memory must be reserved by the XMS driver in order to start Windows. Leave this setting at zero if there are no XMS users in the system virtual machine.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **TimerCriticalSection=<milliseconds>**

Default: 0

Purpose: Instructs Windows to go into a critical section around all timer interrupt code, and specifies a timeout period (in milliseconds). Specifying a positive value causes only one virtual machine at a time to receive timer interrupts. Some networks and other global memory-resident software may fail unless this setting is used. However, it slows down performance and can make the system seem to stop for short periods of time.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **TokenRingSearch=<Boolean>**

Default: True

Purpose: If enabled, Windows searches for a token ring network adapter on machines with IBM PC/AT (R) architecture. Disable this setting if you are not using a token ring card and the search interferes with another device.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **TranslateScans=<Boolean>**

Default: No

Purpose: If enabled, Windows will translate a keyboard's scan codes to make them compatible with standard IBM scan codes. Use this setting only if you have a keyboard that generates non-standard scan codes. This setting is used only for the Switcher Screen and fullscreen message boxes.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **TrapTimerPorts=<Boolean>**

Default: True

Purpose: Specifies whether Windows should trap read and write

operations to the system timer ports that are performed by applications. If disabled, Windows will not trap these operations, allowing applications that frequently read or write to the timer to run faster. However, this may interfere with Windows' ability to keep accurate system time. If disabled, Windows can usually detect when an application has changed the timer interrupt interval and then make any adjustments to the time. If your system's time appears to be running fast or slow, enable this setting. If you do not want to enable this setting, enable the SyncTime setting. This causes Windows to check the time periodically and then make any necessary adjustments.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **UniqueDOSPSP=<Boolean>**

**Default:** True (If you are running a network based on Microsoft Network or LAN Manager. See the NETWORKS.WRI online document to find out whether the network you are running is one of these); False for all other networks.

**Purpose:** If enabled, Windows starts every application at a unique address (PSP). Each time Windows creates a new virtual machine to start a new application, Windows reserves a unique amount of memory (*i* bytes) below the application. For example, if the first application is loaded at address *M*, the second application is loaded at address *M+i*, the third at *M+2i*, and so on. The amount of memory (*i*) is determined by the PSPIncrement setting. These settings ensure that applications in different virtual machines all start at different addresses. Some networks use applications' load addresses to identify the different processes using the network. Disabling this setting on such networks, might cause one application to fail when you exit another because the network interprets them as the same application. If you enable this setting, slightly less memory is available for non-Windows applications.

To change: Use Notepad to edit the SYSTEM.INI file.

---

### **UseableHighArea=<paragraph-range>**

**Default:** None

**Purpose:** Specifies a range of memory that Windows will treat as unused address space regardless of what may be there.

UseableHighArea takes precedence over ReservedHighArea if you specify ranges that overlap. The range (two values separated by a hyphen) must be between A000 and EFFF. The starting value is rounded down and the ending value is rounded up to a multiple of 4K. For example, you could set UseableHighArea=E100-E3FF to ensure that Windows can use the first 12K of memory starting at E100. You may specify more than one range by including more than one



UseableHighArea line.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **UseInstFile=<Boolean>**

Default: False

Purpose: Specifies whether Windows should look in the INSTANCE.386 file for information it can use to determine whether data structures within MS-DOS need to be local. There are two other methods for giving Windows this information: internal tables within the device, and an INT 2Fh call documented in the OEM Adaptation Kit. Both methods are preferable to using this setting; it is provided only for compatibility with Windows/386 version 2.x.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **UseROMFont=<Boolean>**

Default: True

Purpose: If enabled, Windows uses the soft font stored in the video read-only memory (ROM) for displaying messages that appear when non-Windows applications are running in a full screen, and for displaying the text that appears when switching away from a non-Windows application. Disable this setting if the font used to display messages is different than the font used in the application, or if random dots and shapes appear on your screen.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **VGAMonoText=<Boolean>**

Default: True

Purpose: Instructs Windows to ignore the video memory address space in VGA displays, usually used for monochrome adapters. When this setting is disabled, Windows can use the B000h through B7FF range for upper memory space, provided that no hardware device is using these addresses and your applications do not use the monochrome display mode of your VGA adapter.

**Note:** This setting applies to VGA displays only.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **VideoBackgroundMsg=<Boolean>**

Default: True

Purpose: If enabled, Windows displays a message when a background application is suspended, or if its display cannot be updated properly because video memory is low. Disabling this setting turns off the warning message. This setting affects all non-Windows applications that are currently running.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **VideoSuspendDisable=<Boolean>**

Default: False

Purpose: Specifies whether or not to suspend applications running in the background if their display become corrupted. If this setting is enabled, the application continues running. If disabled, applications become suspended and a warning message appears, if the VideoBackgroundMsg setting is enabled.

**Note:** This setting applies to VGA displays only.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **VirtualHDIrq=<Boolean>**

Default: On for AT-compatible computers; Off for all other computers.

Purpose: If enabled, Windows in 386 enhanced mode can terminate interrupts from the hard disk controller, bypassing the ROM routine that handles these interrupts. Some hard drives might require this setting to be disabled in order for interrupts to be processed correctly. If this setting is disabled, the ROM routine handles the interrupts, which slows down system performance.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **WindowKBRequired=<kilobytes>**

Default: 256

Purpose: Specifies how much conventional memory (in kilobytes) must be free in order to start Windows.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **WindowMemSize=<number-or-kilobytes>**

Default: -1

Purpose: Limits the amount of conventional memory Windows can use for itself. The default value (-1) indicates that Windows can use as much conventional memory as it needs. If there is not enough memory to run Windows in 386 enhanced mode, try entering a positive value less than 640.

To change: Use Notepad to edit the SYSTEM.INI file.

---

#### **WindowUpdateTime=<milliseconds>**

Default: 50

Purpose: Specifies the amount of time (in milliseconds) Windows takes before it updates the display of non-Windows applications running in a window.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**WinExclusive=<Boolean>**

Default: No

Purpose: If enabled, all of the computer's processing time is allocated to Windows whenever a Windows application is in the foreground. If this setting is enabled and a Windows application is in the foreground, no non-Windows application will run.

To change: Choose the 386 Enhanced icon from the Control Panel window.

---

**WinTimeSlice=<number,number>**

Default: 100,50

Purpose: This setting contains two numbers. The first number specifies the relative amount of processing time (based on the MinTimeSlice setting) given to all Windows applications running in the foreground, relative to the time allocated to all non-Windows applications running in the background. The second number specifies the relative amount of processing time given to all Windows applications running in the background when a non-Windows application is running in the foreground. The range of valid numbers is 1 through 10000. The important value is the ratio of these settings to the corresponding settings in the PIF's of the active non-Windows applications.

To change: Choose the 386 Enhanced icon from the Control Panel window.

---

**WOAFont=<font filename>**

Default: DOSAPP.FON

Purpose: Specifies which font file(s) are loaded into memory when running non-Windows applications. These fonts are also available to your Windows applications as long as a non-Windows application is running.

To change: Quit Windows and then run Setup from MS-DOS. This setting changes when you change the Codepage or Display setting in Setup.

---

**XlatBufferSize=<kilobytes>**

Default: 8

Purpose: Specifies the size of the low-memory buffer used to map MS-DOS calls from protected mode to virtual 386 enhanced mode. Increasing this value can improve the performance of protected mode Windows applications that read or write information in a large number of bytes (for example, some database applications). However, this may decrease the amount of memory available for running non-Windows applications and may cause problems on networks that use named pipes. These networks may require a value of 4. The value you specify is

rounded to the next 4-kilobyte increment. For example, if you set this value to 5, Windows rounds it up to 8.

To change: Use Notepad to edit the SYSTEM.INI file.

---

**XMSUMBInitCalls=<Boolean>**

Default: Ususally true, but may be false depending on the extended memory manager you are using.

Purpose: Specifies whether or not Windows should call the extended memory driver's upper memory block (UMB) management routines.

To change: Use Notepad to edit the SYSTEM.INI file. (You should never need to change this setting.)

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