On-Line Expertise with **HyperAct!**

Welcome!

Welcome to the HyperExpertise for Windows 386 Enhanced Mode Control Applet - it's FREE! HyperExpertise for Windows is a an entire series of Control Applets, in Windows Help format, designed to guide you through Windows optimization or problem solving tasks quickly and easily. HyperExpertise does more than just tell you what needs done, it uses HyperAct(tm) to **ACTUALLY PERFORM THE WORK!** This means *HyperExpertise automatically edits INI files and performs other functions* when you tell it to. This saves valuable time, and allows tasks to be completed faster and more easily.

If this is the first time you have used HyperExpertise for Windows it is recommended that you click on About HyperExpertise for Windows below to read how simple it is, and how much it can do for you. **This FREE applet** only covers major Windows 386 Enhanced mode functions. If you would like to have other HyperExpertise for Windows Control Applets, just click Other Control Applets below for a complete list.

Please choose:

About HyperExpertise for Windows

About 386 Enhanced Mode

Other Control Applets

About Infotivity Technologies, Inc.

About HyperExpertise for Windows

HyperExpertise provides several useful functions in addition to those found in regular Windows Help.   All functions are focused on helping you solve problems and improve Windows performance quickly,   without having to switch between applications numerous times just to make a simple change.

First, the HyperAct function automatically edits the appropriate Windows initialization or MS-DOS system files as required by a particular topic, and it does so with a very clear audit trail of what was done.   This function eliminates the time needed to   locate a and open a separate Windows application (and then learning that application if needed), looking for a apecific initialization setting, changing it, and then correctly saving the affected file.   Just click on the grey START button to tell HyperExpertise to implement a specific change to make changes quickly and accurately!

Second, HyperExpertise is organized around an extensive table of contents and word search function.   This provides you with many ways to find a solution to your problem, even if you do not know the exact words needed to describe it! The Master Table of Contents and each of it's categories describe problems as you see them, letting you zero in on a solution faster. Each categorie's Table of Contents is divided into sections listing it's Step-by-Step procedures and the individual topics.   The Step-by-Step procedures, identified by a yellow STEP title box, guide you through complex issues requiring many configuration settings to be addressed. Individual topics are called as needed by the Step-by-Step procedures, or they may be accessed manually from the Table of Contents.   Individual topics are always identified by a blue ACTION box, since they are usually what's called upon when an action needs taken.   Both Step-by-Step and ACTION topics can utilize ADVICE topics, which are identified by a pink ADVICE box.   Advice topics NEVER imlement changes of any kind.

Third, if you do not see what you are looking for,   a secondary and more general "Table of Contents" related feature may be utilized through the SEARCH function.   Just click on the SEARCH box found in the top menu line of any screen and then enter one of the Table of Contents categories shown below to display all of it's related topics.   Please note that **you are NOT limited to the following categories in any way**, and can search on any word or phrase you feel would be helpful.

SECONDARY Table of Contents Categories -   Enter one of the categories below, followed by a sub-category of Advice, Error,   Install,   Optimizing, or Planning.   For example, enter Disk Error to obtain a list of all topics relating to a Disk Error condition.

    Application
    Communications
    Desktop
    Disk
    Display
    Font
    Hardware
    Icon

Keyboard
Memory
Mouse
Multitasking
Printing
Windows

You may also use the SEARCH facility to obtain a list of all topics explaining the use of a specific Windows INI file setting or section.   Just key the setting or section name in as the word to search by.

Info -

Other Control Applets

The following is a list of all of the Control Applets we have done so far.   They each provide detailed control over a different part of Windows, using the same Help format and HyperAct as this one does.   All are very useful when the need arises, such as when you are installing a new printer or major application upgrade version and problems come up, or when several people share the same PC.   Why should you pay $50.00 (or more!) and spend wasteful hours just to solve a problem?   Let a HyperExpertise for Windows Control Applet do it!   Just send us your request   as outlined below.   The Control Applet packages are:

#1 Application Switching Problem Resolution -   solves and controls application switching problems.   Windows, MS-DOS, hardware, shortcut key, and display solutions.

#2 Clipboard Improvements & Control -   Improve Clipboard usage, streamline procedures, solve problems when cutting & pasting in Windows, MS-DOS applications.

#3 Communications Port Control - Control all aspects of serial communications ports.

#4 Desktop Appearance -   Control all aspects of the Desktop!   Borders, background, wallpaper, colors, icon spacing, etc.

#5 DOS 6 Upgrade Issues - Covers all aspects of upgrading to MS-DOS 6 with respect to Windows.   Pros, cons, how-to, what not to do, as far as Windows is concerned.**#6 Installing Windows** -   Solves Windows Setup problems, helps prepare MS-DOS environment for Windows.

#7 Keyboard Improvements -   Controls all aspects of keyboard operation when in Windows.

#8 Launching Multiple Desktops -   Allows multiple people to share a computer and let each have a Desktop suiting his or her needs.

#9 Mouse Problem Resolution   -   Solve and control mouse issues and click recognition issues.

#10 Multitasking Improvements - Improve and control multitasking, especially when using a mix of MS-DOS and Windows applications.

#11 Older PC Problem Solutions - Helps solve Windows problems on older PCs.

#12 Optimizing Windows Performance   -   Optimize Windows for better performance according to your specific needs.

#13 Printer and Font Control   -   Control many aspects of printer control and font selection.

#14 Running MS-DOS Applications   -   Controls all issues and solves many problems when running MS-DOS applications under Windows.

#15 Security for Windows   -   Lock your system up in a vault or just protect your desktop.   All security controls in Windows are examined.

#16 Solving Control Problems   -   Everything from garbled output to control key conflicts is covered.

#17 Troubleshooting Windows -   Windows troubleshooting can be tricky.   This presents top-down formats for identifying and fixing a wide number of problem categories.**#18 Excel Tips** - A thorough Tips, Tricks, and Adjustments guide for using Excel in a more efficient manner, getting work done faster, and making Excel suit your special needs, through INI file adjustments.**#19 Access Tips** - A thorough Tips, Tricks, and Adjustments guide to Access. Speed work up, get work done more efficiently, and make Access suit your needs better, all

through file adjustments.**#20 Word** - This Control Applet helps you speed up printing, prepare documents faster, and optimize Word to suit your special needs, all through INI file adjustments and other tricks.

Each Control Applet above is **packaged in a SEPARATE .hlp file containing Advice and How-to** articles related to that Applet,   to insure you get all the help you need without taking up a lot of disk space! Satisfaction guaranteed!

Just send a written request listing the Control Applets you would like by number or name, and include $7.00 for each Applet to cover our cost of database updating, diskette, packaging, handling, and postage.   If requesting more than 3 deduct $3.00 on each one over three. Example - if requesting 5 Applets the cost would be $29.00 (3 Applets @ $7 ea.   = $21,   2 Applets @ $4 ea.   =   8, $21 + $8 = $29).   This handling fee includes any applicable sales tax.   It's better than buying expensive books or paying someone just to solve a problem one time!

Send your request and your floppy disk size along with your check,   to:

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Info -

About Infotivity Technologies, Inc.

Infotivity offers a well rounded and extensive blend of business management and real time control applications and object oriented C++ programming expertise.   Infotivity Technologies can help you meet your system or business objectives in the areas of network management, custom Windows HELP file development, application development, or application consulting.

All comments and questions about Windows applications or this product will be responded to, and may be sent to:

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Using Windows 386 Enhanced Mode

Windows 386 Enhanced Mode is the best mode you can use under Windows when in some situations,   especially if you need to run several DOS applications simultaneously with a Windows application.   Unfortunately, it is also one of the most difficult areas in Windows to optimize for maximum performance and usability, primarily due to the many different program issues involved.   This is especially true when trying to run several Windows and DOS application programs simultaneously.   The interaction of Windows settings, PIF settings, program requirements, and hardware resources makes optimizing or trouble shooting your system for peak performance very difficult without a well thought out plan.

The Expert Step-by-Step Sequences below can easily guide you through comprehensive or complex procedures:

Step-by-Step

Troubleshooting System Integrity Violations
Windows will not start or run in 386 Enhanced Mode
         Can NOT Access the Hard disk in 386 Enhanced Mode
         Improving Application Speed when Multitasking
         Multitasking MS-DOS applications when disk space is limited
         Increasing Disk Performance in 386 Enhanced Mode
         Memory Usage and Efficiency Improvements

The individual topics, with HyperAct as applicable,   are:

Application

Application or device control problems
Forcing Exclusive Full Screen Mode

Communications

Establishing the correct number of COM ports
Communications Port Contention

Display

Solving display distortion problems
Display Access Control
         CGA Snow Control

Disk

Temporary disk space shortage solution
Hard disk problems, older computers

Hardware

Older Bus Master Cards
Accessing Floppy Drives

Memory

Prevent EMM Drivers from Loading
Locking Expanded Memory
Memory shortage prevents Windows from starting, or running

Mouse

Using an MS-DOS Application mouse in a window

Multitasking

Multitasking Time priorities explained
Windows applications run slow, DOS programs in foreground
DOS applications run slow, Windows programs in foreground
DOS applications run slowly, Windows programs in background
Running several programs faster
Non-Windows applications run slow in own windows
Multitasking applications when memory is short

Performance

Improve performance, 32-BDA and permanent swap files

Swap Files

Location of Temporary swap file
Location of Permanent swap file
Changing the permanent swap file size

Windows

Windows Rebooting Problems
Making Windows Applications Exclusive

Advice -

Multitasking Time Slice Settings Explained

If your non-Windows and Windows applications run very slowly in Windows 386 Enhanced mode it could be because of incorrect time slice priority setting values.   The priority of Windows applications is found in the Control Panel 386 Enhanced dialog box, and the priority for non-Windows applications is found in the PIF used for each application.   It is VERY important to understand that these settings are not absolute.   **Just because a non-Windows time slice setting says 50 does NOT mean it gets 50% of all CPU time.**   This depends entirely on how MANY applications are currently running at the time.   For example, the table below illustrates what is happening when Windows is running in the foreground and two non-Windows applications are running in the background (simultaneously):

Virtual Machine (VM)	Control Panel/PIF Settings	CPU Time
System VM	100%	50%
MS-DOS VM1	50	25
MS-DOS VM2	50	25

It gets even worse if you are running more applications.   The following table illustrates how much CPU time is available to each application when FOUR applications are running. Please note that it really does not matter if the applications are in background or foreground.

Virtual Machine	Control Panel/PIF Settings	CPU Time
System VM	100%	32%
MS-DOS VM1	50	17
MS-DOS VM2	50	17
MS-DOS VM3	50	17
MS-DOS VM4	50	17

It   is very important to verify that the priority settings DO NOT actually control how many applications you can run under Windows at any given time, and therefore you must take steps to control which applications are actually running when using a given application.   The

actual CPU time given to an application is it's assigned time slice priority divided by the priorities of ALL applications currently running.

Slow Windows Program Speed, MS-DOS program in Foreground

If your Windows applications seem to run very slow when a non-Windows application is running in the foreground, and you have tried adjusting the non-Windows application's PIF settings, an adjustment to the SYSTEM.INI [386Enh] section setting known as "WinTimeSlice=number,number" may be needed. You may need to increase the second number of this setting to try and speed up your Windows applications running in the background. The default value is 50, choose from the list below to INCREASE this value:

Value = 60 - click **START** to try a value of 60.

Value = 65 - click **START** to try a value of 65.

Value = 70 - click **START** to try a value of 70.

Value = 75 - click **START** to try a value of 75.

Value = 80 - click **START** to try a value of 80.

Slow MS-DOS Application Speed, Windows in foreground

If your non-Windows applications seem to   run very slow when a Windows application is running in the foreground, and you have tried adjusting the non-Windows applications PIF settings, an adjustment to the SYSTEM.INI [386Enh] section setting known as "WinTimeSlice=number,number" may be needed.   You may need to reduce the first number of this setting to try and speed up your non-Windows applications running in the background.   The default value is 100,   choose from the list to DECREASE this value:

       Value = 85 - click **START** to try a value of 85 .

       Value = 80 - click
START to try a value of 80 .

       Value = 75 - click
START to try a value of 75 .

       Value = 70 - click
START to try a value of 70 .

Actions!

Slow MS-DOS Program Speed, Windows in Background

If your non-Windows applications seem to   run very slow when a Windows application is running in the background, and you have tried adjusting the non-Windows applications PIF settings, an adjustment to the SYSTEM.INI [386Enh] section setting known as "WinTimeSlice=number,number" may be needed.   You may need to reduce the second number of this setting to try and speed up your non-Windows applications running in the foreground. The default value is 50,   choose from the selections below to DECREASE this value:

Value   =   40 - click **START** to try a value of 40.

Value   =   35 - click **START** to try a value of 35.

Value   =   30 - click **START** to try a value of 30.

Value   =   25 - click **START** to try a value of 25.

Value   =   20 - click **START** to try a value of 20.

Improving Application Speed when Multitasking

Running several applications simultaneously (multitasking) requires that a computer system's configuration be set up for maximum efficiency.   If the configuration is not setup properly the applications will run more slowly than normal or they will not run at all.

Many factors affect the suitability of a given computer configuration for multitasking. These factors range from the amount of memory available to the Windows mode in use.   Click ACTION to begin a sequence that explains the system component relationships involved when multitasking, and helps improve the efficiency of your system when doing so.

Actions!

Running Several Programs Faster

       If your computer seems to run slowly when running several applications simultaneously, you may be able to increase it's processing efficiency by adjusting the "MinTimeSlice=" setting.   This SYSTEM.INI [386Enh] section setting specifies the minimum number of milliseconds Windows should let an application run before transferring control to the next virtual machine in your system.   If you are running a number of applications at once, you may be able to obtain better processing speed by using a value of 30 for this setting. Since this setting is normally set to a value of 20, the applications will appear to operate a little more in a "jerky" fashion, but faster. Do not use a value higher than 35 or lower than 5 for this setting - it is counterproductive.

       Click **START** to enter a new value for MinTimeSlice.

       To **set MinTimeSlice to 20, the DEFAULT value** click

START .

START

MS-DOS Applications Run Slowly in their OWN Window

If you are experiencing slow performance when running several non-Windows applications simultaneously in their own windows, and each application does not change it's screen very often such as in accounting or databases, you can make an adjustment that will focus less CPU time on screen updates.   This adjustment affects the SYSTEM.INI [386Enh] "WindowUpdateTime= milliseconds" setting, which is normally set to 50.   A suggested rate is 35 or 40.   A setting of 37 would be a good starting point, although you can choose from any of the settings below.   This should help increase the performance of the non-Windows applications a little bit.

To **Adjust this parameter**, click **START** .
To **set WindowUpdateTime to it's DEFAULT** click
START .

START>

Cannot Run or Start Windows due to a Memory Shortage

If you are having difficulty trying to run Windows in 386 Enhanced mode because of a memory shortage, the following adjustment to the SYSTEM.INI [386Enh] section setting "WindowMemSize=" may help.   Set to a specific number of kilobytes, this adjustment will limit the amount of conventional memory Windows can use for itself.   Windows supplies a default value of -1, which allows Windows to use as much conventional memory as desired.   If memory shortages are preventing you from running 386 enhanced mode then try entering one of the settings listed below to limit the amount of conventional memory used by Windows.

To **set WindowMemSize to it's DEFAULT unlimited value** click **START>**.

To **set WindowMemSize to 384** click **START>**.

To **set WindowMemSize to 320** click **START>**.

To **set WindowMemSize to 256** click **START>**.

To **set WindowMemSize to 192** click **START>**.

To **set WindowMemSize to 128** click **START>**

START)

Hard Disk Problems on OLDER Computers

If you are trying to install Windows on an older computer and experiencing problem with it's hard disk, try adjusting the SYSTEM.INI [386Enh]   "VirtualHDIrq=' setting.   This setting is normally ON to allow the Windows 386 Enhanced mode to bypass the ROM routines that normally handle disk interrupts.   Not all drives are setup to accommodate this, especially the older ones.   If you would like to   try an OFF setting with an older or unusual disk drive select the first choice from the list below:

Turn OFF this setting -   click **START)**

Turn ON this setting -   click

START)

START

Number of COM Ports Needed Adjustment

If you need more than four COM ports to be recognized by Windows when running in 386 Enhanced mode, then the SYSTEM.INI [386Enh] section setting   "MaxCOMPort=" must be increased to equal the number of COM ports needed.   Click **START** to set this to six.

Memory Usage and Efficiency Improvements

Several adjustments can be made to improve memory utilization when using Windows 386 Enhanced mode.   These can improve the speed or usability of Windows and non-Windows applications alike.   Click <u>ACTION</u> to begin this sequence.

START⟩

Memory or Control Problems with VIRTUAL Device Drivers

If you are using a third party VIRTUAL device driver and experiencing memory errors or control problems when running multiple applications, you should check with the manufacturer of the device driver about how many Break Points are needed.   If it is more than 200, which is the Windows default value, you should make an adjustment to the SYSTEM.INI "MaxBPs=number"[386Enh] section setting.   If you know how many are required by the device in question,   click **START⟩** to use that value.

Multitasking MS-DOS Programs with Limited Disk Space

When running Windows 386 Enhanced mode on a computer with a   very limited amount of free hard disk space several parameters come into play.   For example, you may be forced into using a temporary swap file since it does not permanently take up disk space like a permanent swap file does and gives you more flexibility.   If this is the case there are several things you can do that will help improve your application's and Windows' performance.   They are:

First, be sure your swap file is located in the best location.   Click <u>LOCATION</u> to review this and change the swap file location if needed.

Second, the SYSTEM.INI [386Enh]   "MaxPagingFileSize=" setting which specifies the maximum number of kilobytes a temporary swap file can be,   may be set to a default value that is smaller than what's optimum for best performance in this situation.   This setting designates the largest size a temporary swap file can be!   Since you need about 1MB per application,   the MaxPagingFileSize should be adjusted upward.   (The default size is 50% of the available free disk space.)   Be sure you allow enough space for the largest program you will use plus any required data files and program overlays.   Not having a large enough swap file could cause unnecessary disk accesses and slow performance.   If you are operating in a really cramped environment where disk space is a real problem you really should enlarge the disk or remove unwanted files and directories as a permanent solution.

Third, another SYSTEM.INI [386Enh] setting,   "MinUserDiskSpace=",   tells Windows how many kilobytes to leave free for uses other than temporary swap file use.   In cramped disk space situations this could conflict with temporary swap file requirements, and should be adjusted downward from the default value of 500Kb.

To display a dialog box for making the second and third adjustments mentioned above, click **START** .

START

Using an MS-DOS Application Mouse in a Window

If you wish to use a mouse in windowed   non-Windows applications that supports a mouse, then you should set the SYSTEM.INI [386Enh] section setting   "MouseSoftInit=" to ON.   This should permit the use of a mouse with non-Windows applications in a window.

To turn this setting On, click **START** .   If the screen display and cursor appear distorted, then turn this setting OFF   by clicking
START and use the non-Windows application in FULL screen mode.

START

Multitasking Applications when Memory is Scarce

If you are having trouble getting several applications to run simultaneously under Windows when using a computer with a MINIMAL amount of memory, then an adjustment to the SYSTEM.INI file   [386Enh] section setting   "MinUnlockMem=" may help.   This setting governs how much memory must be available for use and unlocked before one virtual computer can take over from another.   If not enough memory is available then the virtual machine cannot start.   This is defaulted to 40 kilobytes by Windows, but if memory is at a premium and you know your applications do not need this much you can reduce it.   This is especially applicable to applications such as accounting, contact management, and other disk intensive applications. Memory intensive applications such as word processing and spreadsheets require detailed evaluation before trying this solution.

To set MinUnlockMem to 30, click **START** .

To set MinUnlockMem to 25, click **START** .

To set MinUnlockMem to 20, click **START** .

Increasing Disk Performance in 386 Enhanced Mode

     The performance of your hard drive affects the speed and usability of all your applications directly.   The hard disk access time directly translates into how long it takes to load all or part of a program initially and during it's operation.   It also affects how long it takes to run several programs simultaneously, i.e., multitasking.

     Click <u>ACTION</u> to begin a sequence for improving your hard disk configuration.

START

Improve Disk Access by Increasing R/W Pages

You can improve Windows performance in 386 Enhanced mode when using a permanent swap file and 32-Bit Disk Access.   This can be done by setting the   SYSTEM.INI   [386Enh] section   "PageBuffers=" to the optimum number of buffers for your   computing needs.   The default is 4 buffers, consisting of 4K each.   If you are running several large applications simultaneously increasing this value could help tremendously,   but only if 32 bit disk access and a permanent swap file are in use.   Use the choices below to make your setting adjustment.

To increase PageBuffers to 6,   click **START** .

To increase PageBuffers to 8,   click
START .

To increase PageBuffers to 10,   click
START .

To increase PageBuffers to 12,   click
START .

To increase PageBuffers to 14,   click
START .

START

A Temporary Disk Space Shortage Solution

When disk space is at a real premium, and you can't finish a specific task due to a lack of available disk space, a TEMPORARY SYSTEM.INI [386Enh] setting adjustment may help. The "Paging=" setting that controls demand paging, i.e., virtual memory, is normally set to ON by Windows. If you temporarily need the disk space that would normally be used for this, then you can turn it OFF, but this will cause all applications to run slowly. If you would like to do this, click **START** now. Be sure to turn this setting back ON again when your affected task is completed.

To turn it back ON, click
START when you are completed with the temporary task.

START

Locating Temporary Swap Files in 386 Enhanced Mode

Two SYSTEM.INI   [386Enh] settings specify the location of the TEMPORARY swap file used in Windows 386 Enhanced mode, and one overrides the other for various reasons.   The location of the temporary swap file is very important to the efficiency of Windows and ALL your applications because it will directly affect the speed with which control passes from one application to another, and the applications ability to quickly access program overlays and data. It is a good practice to keep the location of the temporary swap file on the same drive as Windows or the next highest drive, as specified by your PATH statement (in CONFIG.SYS), since this will minimize the time spent traversing the PATH statement.   The first setting, "PagingDrive=", specifies the disk drive where Windows will attempt to place the temporary swap file, has no default value, and is used for compatibility reasons.   The second setting, "PagingFile=",   contains the full path and filename of the temporary swap file.   The default entry for this setting is the WINDOWS directory, filename WIN386.SWP.

It is very important to remember the second setting, PagingFile,   overrides the first.   This means that if the PagingDrive is not specified or does not exist, then Windows tries to put the swap file in the location shown by PagingFile=, since it will do this anyway.   To change the PagingFile setting, click **START**.

START〉

Locating Permanent Swap Files in 386 Enhanced Mode

The Windows 386 Enhanced mode's permanent swap file is kept on the drive specified by the SYSTEM.INI   [386Enh] setting   "PermSwapDOSDrive=letter".   If you want to maximize your system's performance it is best to specify the fastest of your hard drives, assuming there is enough free disk space on that drive.   It is well worth the time if you need to move some applications to different drives, in order to place the permanent swap file on the fastest drive you have, as measured by drive access time.   It is a good practice to keep the location of the permanent swap file on the same drive as Windows or the next highest drive, as specified by your PATH statement (in CONFIG.SYS), since this will minimize the time spent traversing the PATH statement.   If you know the drive letter to use, select the   appropriate drive below:

C Drive - click **START〉** .

D Drive - click
START〉 .

E Drive - click
START〉 .

F Drive - click
START〉 .

G Drive - click
START〉 .

H Drive - click
START〉 .

START

Permanent Swap File Size and Multitasking

If you are unable to run the number of applications you need to run simultaneously, it may be because your permanent swap file is not large enough.   The room available for use by a swap file directly governs the number of virtual machines you may run at the same time in Windows 386 Enhanced mode.   You should allow for at least 1 1/2 MB of permanent swap file space for EACH application you want run simultaneously.   Please remember that the space being talked about here is CONTIGUOUS hard disk space, the type typically found only in large quantities after you have defragmented a hard disk.   To increase the size of the permanent swap file you can use the Control Panel's 386 Enhanced icon, or you can use this product.   If you have just defragmented your hard disk(s),   and know the disk space available on the hard drive you want to use,   click **START** to adjust the SYSTEM.INI [386Enh]   "PermSwapSizeK=" setting.   This setting is in kilobytes.   1 MB = 1024 Kb.

START

MS-DOS Application Display Problems, under Windows

If you cannot get the text display to look right when running a   non-Windows application under Windows, and you have tried all other options, there is a SYSTEM.INI   [386Enh] setting adjustment that may help.   The setting name is   "ReserveVideoROM=", and it is normally OFF.   Your computer or installed equipment may be in conflict with this though.   If you are sure you have backups that are current, you can   click **START** to turn this   setting ON.

To turn this   setting OFF,   click **START** to turn this   setting OFF.

Troubleshooting System Integrity Violations - Advice

There are many possible causes for a Windows System Integrity Violation error message. These can range from application program errors to incorrect PIFs and SYSTEM.INI settings. When one of these errors occurs the best thing to do is follow a trouble shooting format designed to root out all the possible things that can obscure the cause.   Such   format is presented below. Use this format whenever a message similar to   "This application has violated System Integrity" is displayed on your monitor's screen.

FIRST   -   Determine if the message was displayed during a Windows or non-Windows application.   If it was during a Windows application go to step 2, and for non-Windows applications go to step 4.   Be sure all other applications are closed, i.e., not in use, during this test session.

TWO   -   Is the Windows application a Windows accessory such as Write?   If it is then reinstall the application using the original Windows distribution diskettes as described in step 3.   If not then you must call the manufacturer of the application for more information about using the application or application bug fixes.

THREE   - Make sure you have logged into the directory that contains your Windows files before reinstalling the Windows accessory program.

FOUR   -   If the non-Windows (DOS) application runs correctly when Windows is not running then go to step 5.   Otherwise contact the application's developer to help find out why it will not run correctly when run at the DOS level.

FIVE   -   If the non-Windows program runs OK at the DOS level start Windows in the Standard mode and test the DOS program again.   If the DOS application runs correctly in Windows Standard mode then go to step 11.   If it does not run OK in this mode then continue to step six.

SIX   -   Verify the application will not run correctly even when started from a DOS prompt using MS-DOS Prompt in Windows.   Do not try to start it from a PIF or using any other method.   If it runs OK this way then go to step 7, otherwise go to step 8.

SEVEN   -   The   DOS program you are trying to run needs a new PIF   created.   The PIF should first start a DOS session and then load the program.   Be sure and type in the FULL path to the filename and COMMAND.COM if these files are not in a directory included in the AUTOEXEC.BAT PATH statement, and use the /C parameter to ensure a full path for the program.

EIGHT   -   Check for a specific PIF file associated with this program.   If found verify the settings in this PIF file.   If one does not exist, or the one being used currently is getting old, go to step 9.

NINE   -   Make a new PIF file for the program in question.   Verify the FILE Properties   that currently exist for the program before making a new PIF, then start to make one with EMS and XMS settings of 0 Desired and Required.   When the PIF is done test the program again under Windows 386 Enhanced mode.   If it does run remember this is a temporary fix because it still may not be set right.   If it does not run or if it does go to step 10.

TEN   -   You must obtain the correct PIF setting values for this program.   Also question the developer about using the program in a   multitasking environment.   Is it compatible with Windows 386 Enhanced mode?

ELEVEN   -   The SYSTEM.INI file must be changed by adding the [386Enh] section setting EMMEXCLUDE=A000-EFFF.   Click **START** to   do this now, then restart Windows and test the application again.   If it works correctly go to step 12, otherwise go to step 13.

TWELVE   -   Make the range   designated by the EMMEXCLUDE setting just entered   the same as your hardware requirements.

THIRTEEN   -   Use your CLEAN BOOT diskette to reboot the computer from scratch.   Once the computer is running again test the program again.   If it works correctly go to step 14, otherwise go to step 10.

FOURTEEN   -   There is a TSR or device driver being used in the standard boot configuration that conflicts with the program.   You must go through the process of adding one   item at a time , then rebooting the system and testing the program in question, until the problem driver or TSR is found.

Windows will NOT start or run, 386 enhanced - Advice

Windows 386 Enhanced Mode is the best mode you can use Windows in, especially if you need to run several DOS applications simultaneously with a Windows application. Unfortunately, it is also one of the most difficult items to trouble shoot if something goes wrong since so many commands and hardware issues could be involved.   It is best to always use a well thought out trouble shooting format such as the one presented below so that oversights and omissions are eliminated or reduced.   The format below is designed specifically to help determine WHY a computer system will not run in Windows 386 Enhanced mode and then help you solve the problem responsible.

FIRST   -   Verify the error message received when you attempted to start Windows in 386 Enhanced mode.   If NO error message was displayed go directly to step three below.

TWO   -   Focus your efforts on the situation or problem identified by the error message.   Some of the more common ones are listed as follows.   If the error message states "FastDisk Validation Failure" this means your hard disk is not 100% compatible with the Western Digital WD1003 disk controller.   Click **START** to comment out "DEVICE=*INT13" and "DEVICE=*WDCTRL" in your System.ini [386Enh] section.   If this works and your system does start in Windows 386 Enhanced mode you should check your hard drive and controller out very carefully by calling the manufacturers and testing the disk's accuracy.   Another frequent error message is "DEVICE VHD NOT FOUND".   This means the parameter DEVICE=*BLOCKDEV is missing in your SYSTEM.INI file.   Click **START** to ADD this parameter to the System.ini file .

THREE   -   Which mode does Windows run in by default when you start it?   If it does not run at all then go to step six below.   If Windows runs in Standard mode go to step four.

FOUR   -   Exit from Windows back to the DOS prompt and then restart Windows by entering the command   WIN /3 at the DOS prompt and pressing ENTER.   If Windows does run in 386 Enhanced mode now you should go to step five.   If Windows still will not run in 386 Enhanced mode go to step six.

FIVE   -   Your computer does not have enough memory to fully utilize Windows 386 Enhanced mode properly.   You will not be able to load TSRs and other software such as device drivers into the Upper Memory Blocks without causing major RAM shortages.   Increase the amount of physical RAM your computer has if you need to use 386 Enhanced mode.

SIX - Try to start Windows by entering   WIN /S   at the DOS prompt and then pressing ENTER.   If Windows starts successfully go directly to step eight, otherwise go to step seven below.

SEVEN   -   Something has happened to your computer hardware or software settings since Windows was installed.   If you have installed a new hard drive or application software   this could happen very easily.   You should reinstall the Windows device drivers that were originally in place before making such a change and then try to start Windows again.   If it does start successfully go directly to step nine.   If it still will not start go to step eight.

EIGHT   -   You must CLEAN BOOT your computer using a Clean Boot backup diskette, then

RENAME your Startup.grp file when the DOS prompt appears.   You can do this by changing directories to the Windows directory, then enter REN STARTUP.GRP STARTUP.HYP and press ENTER.   Once this is done restart Windows by entering WIN /S at the DOS prompt.   Start this program and topic again and click **START** to comment out the LOAD= and RUN= lines in your WIN.INI file.   When this is done try and restart Windows in 386 Enhanced mode by entering WIN /3.   If Windows still will NOT start and run in 386 enhanced mode go to step eleven.   If Windows will now start and run in Windows 386 Enhanced mode go to step 10.

NINE   - Obtain more detailed information by contacting the manufacturer of the device or device driver that was just removed.

TEN   -   You must now begin the process of identifying the problem program.   Reload each program by hand, one at a time, testing Windows ability to start and run in 386 enhanced mode with each.   If Windows is still able to run in 386 Enhanced mode try it with the program started in the LOAD=   parameter.   If Windows is still able to run in 386 Enhanced mode then try starting one of the programs in the original Startup.grp and then testing Windows again .   Do this until one of the programs or Windows displays an error message or Windows stops running 386 Enhanced mode.   This identifies the problem application , and you should contact the developer of this software for more information.

ELEVEN   -   Verify that the correct version of DOS is installed on your computer.   It MUST be MS-DOS Version 5.0 (or higher),   OR,   IF IT IS EARLIER THAN DOS 5.0, IT MUST BE THE CORRECT OEM Version for your computer.   Before DOS 5.0 almost ALL major clone manufacturers had a proprietary OEM version of MS-DOS.   Either install MS-DOS 5.0 or higher, or make sure the OEM version for your computer is installed.

TWELVE   -   Verify the correct version of HIMEM.SYS is running on your computer . Windows 3.1 requires HIMEM version 3.01 or higher.   If you are sure it is correct then go to step fourteen.

THIRTEEN   -   If you have doubts about the viability of your HIMEM.SYS, you can recover a fresh version from the original diskettes that your latest version of Windows came on.   Use the EXPAND utility to recover this file and put on your hard disk.

FOURTEEN   -   Verify the correct A20 handler is loaded for your HIMEM.SYS.   Test Windows ability to run 386 Enhanced mode once this is done.   If Windows is still not able to start and run in 386 Enhanced mode contact the computer manufacturer before going to step fifteen.

FIFTEEN   -   Start Windows from the DOS prompt using the command WIN /D:XSV and pressing ENTER.   If Windows runs now go to step 16, if it doesn't then go to step 21.

SIXTEEN   -   Exit Windows and restart it using the command   WIN /D:XV.   If it does run OK go to step 18.   If it does not run any longer,   go to step 17.

SEVENTEEN   -   The   "SystemROMBreakpoint" parameter in the SYSTEM.INI [386Enh] section should be OFF, especially if you are using a 386 memory manager such as QEMM or 386MAX.   Click **START** to verify or do this now.   Go to step 18 when done.

EIGHTEEN   -   Exit Windows if necessary and then enter WIN /D:X at the DOS prompt and press ENTER to start Windows.   If Windows runs OK go to step 20.   If Windows does not run go to step 19.

NINETEEN   - Click **START** to add the VirtualHDIRQ=OFF parameter to the System.ini file

[386Enh] section.   Go back to step 18 and re-test Windows.

TWENTY   -   Be sure the appropriate Extended Memory Manager driver range is excluded if you are going to use an EMM driver in CONFIG.SYS.

TWENTY ONE   -   Check the computer hardware for any IRQ or address conflicts.   If found remove the conflicting devices or rearrange their configuration.   Test Windows again when this is done.   If Windows still won't run properly go to step 22.

TWENTY TWO   -   Turn ALL video and ROM shadowing, and hardware caching through CMOS Setup.   Test Windows again.   If no success is indicated then go to step 23.

TWENTY THREE   -   Remove all hardware not needed for the computer to turn on, then reboot and start Windows again.   If the computer still will not run Windows in 386 Enhanced mode then go to step 24.

TWENTY FOUR   - Obtain detailed information about this situation from the computer manufacturer.   Re-install the entire Windows system but leave all ROM and VIDEO shadowing turned off.

Can't use the hard drive in 386 enhanced mode - Advice

If you have received an error message that states-

"NOT READY READING DRIVE C:"

or whichever drive contains your Windows system,   when trying to run Windows in 386 Enhanced mode, you must follow a detailed trouble shooting format that takes your hardware and software into consideration.   Such a format is presented below.

FIRST - Turn your computer off, wait 30 seconds, and then turn it back on again.   Once it has rebooted back to the DOS prompt try running a DOS program directly from this point.   If you cannot run a DOS program that reads a file and writes it back to the hard disk without errors you have a system or DOS level error, NOT a Windows error.   Go to step two, otherwise go to step three if your DOS system is working fine.

TWO   - Call your computer manufacturer for more detailed information.   If you have replaced your original hard drive with a new one call the hard drive manufacturer.

THREE   - Are you using a PLUS Hardcard device?   If you are then read step four and follow it's instructions.   If you are not using such a device go directly to step five.

FOUR   -   The driver of the PLUS Hardcard must be version 1.70 or higher, and is named ATDOSXL.SYS.   This file must be loaded in your system's CONFIG.SYS file.   **START** to load this now if you like.   Also be sure the memory range C800 - C9FF is excluded from general purpose usage.   This can be done   by putting the line EMMEXCLUDE=C800-C9FF in your SYSTEM.INI file [386Enh] section if you don't use an extended memory manager such as EMM386, QEMM, or 386MAX.   To enter this EMMExclude setting click **START**.   If you do use an extended memory manager then this memory range must be excluded in the extended memory manager command contained in your CONFIG.SYS file.   Go to step five once this is done.

FIVE - If you are not using a PLUS Hardcard, or if you are and have completed step four, then you must adjust the SYSTEM.INI file in it's [386Enh] section.   The parameter VIRTUALHDIRQ= must be set to OFF.   Click **START** to make this change now, and then test your hard drive again under Windows.   If it still does not work go to step six.

SIX -   Obtain more information from the manufacturer of your computer or hard   disk replacement if you have upgraded your hard drive.   You can leave the setting adjustment done in the previous step intact.

Locking Expanded Memory

If you run a disk caching utility to increase performance, and it uses the old style expanded memory, the AllEMSLocked setting in the System.ini [386enh] section must be ON.   To verify

this,   click .

Actions!

Forcing Exclusive FULL screen mode

If you are trying to run network or other MS-DOS memory resident applications such as TSRs that are not fully compatible with Windows, then UAEs (Uninterruptable Application Errors) are probably causing you problems.   These UAEs can be reduced or avoided by forcing all applications to run in full screen mode instead of in their own windows.   If you want to try this,   click **386 Enhanced Actions!** to turn the System.ini [386enh] AllVMsExclusive setting ON.

To turn this switch setting OFF,   click **386 Enhanced Actions!** .

Display Access Control

If your computer display becomes corrupted when switching between applications or if it suddenly displays garbled pieces of another display, then Windows needs to be instructed to send more accurate messages to all of the applications that are running.   Follow the steps below to do this.

FIRST,   click **START** to verify the fastest method of handling non-Windows application screen display.   This turns ON the AutoRestoreScreen setting in the System.ini [386enh] section.

SECOND,   click **START** to verify the best method of handling VGA displays.

THIRD,   click **START** to verify the best method of handling TIGA and 8514 displays.

Actions!

CGA Snow Control

To eliminate "snow" appearing on an older CGA display when running under Windows, click **START** to verify the best method of handling CGA displays.

Actions!

Communications Port Contention

Communications problems can have a number of causes.   The biggest cause when multitasking several applications that share the same communications port is port contention. Only one application can use a port at the same time.   If you are using more than one application that is dependent on communications, and the applications are all using the same communications port, then the proper port contention technique must be in place within the SYSTEM.INI [386enh] section, using the COMxAutoAssign setting.   The small x in COMxAutoAssign stands for the number of your communications port.   If the port's COMxAutoAssign setting is -1 windows will always display a question asking you which application should have control of the port.   If it is set to 0 then any application can have the port at any time.   If it is greater than 0, then that number will represent the number of seconds one application must wait to use the port after another finishes using the same port.   Choose your port(s) from the list below to make the appropriate communications contention control:

COM1 port -   click **START**
COM2 port -   click
START
COM3 port -   click
START
COM4 port -   click
START

Actions!

Older Bus Master Cards

If you are trying to install Windows on an older computer, you may be experiencing difficulty getting it to run Windows 386 enhanced mode due to an 8 bit bus master card.   These cards insist on having the DMA buffer in the 1st MB of memory.   This can be forced to happen by   clicking   **START** to turn on the appropriate INI switch.   If you are using MS-DOS 6, you should run MemMaker over again using aggressive settings.

Turn this setting OFF -   click   **START**

Actions!

Accessing Floppy Drives

If your computer hangs, i.e., becomes unresponsive, when it reads from a floppy drive, a change in the way Windows handles IRQ9 interrupt signals is called for.   This INI switch should be ON, and you can do this by clicking **START** now.

To turn this switch OFF, click   **START** and restart Windows.

Actions!

Windows Reboot Switch Problems

If your computer hangs (becomes unresponsive) when you try to reboot it while Windows is running, the cause could be a slightly incompatible keyboard. The solution is to adjust the KybdReboot setting to OFF. This adjustment will cause Windows to quit and display a prompt asking you to press CTL+ALT+DEL a second time to confirm the reboot request. To make this adjustment, click **START** now.

To turn it back ON again, click **START** and restart Windows now.

Actions!

Prevent EMM Drivers from Loading

If you do not now use, or plan to use, any applications that access the older EXPANDED memory model then there really is no need to use up memory loading a driver that will never be used.   Only MS-DOS applications would need to access expanded memory.   To implement this adjustment, click **START** .

To turn this switch OFF, click   **START** and restart Windows now.

Actions!

Making Windows Applications Exclusive

If you use ONLY Windows applications, and want to be sure Windows will get ALL of the computer's processing time , a simple adjustment will prevent any time from being set aside for other tasks.   Click **START** to make this adjustment by turning WinExclusive ON.

Turn this switch OFF by clicking **START**

START

Back Up Critical System Files!

It is always important to have a current backup of your MS-DOS and Windows configuration and initialization files. These are AUTOEXEC.BAT, CONFIG.SYS, the Windows *.INI files, and the Windows *.GRP files. There are two ways to create this backup if you do not already have one. Please review both and the select one to make your backup. We recommend the first way if you are unsure about the status of your backups.

A. THE BEST WAY

The best type of backup is one on a floppy disk or 3.5" diskette. You should be able to reboot (restart) the basics of your entire computer system, plus access any basic system configuration data, from a diskette. This type of diskette is called a BOOTABLE DISKETTE. A bootable diskette should contain everything needed to start MS-DOS running, and also everything needed to configure Windows when you start it. This means the Windows INI (initialization) and Group files are copied, so your groups, desktop, and other Windows configuration settings should be on the diskette. The following steps make such a diskette for you.

**STEP ONE - **Insert a diskette in your diskette drive. This will be either drive A or B.

**STEP TWO - **The diskette should be formatted to ensure reliability, and to put the hidden system files on it. To format the floppy disk please select the appropriate drive from the list below:

Drive A click **START**
Drive B click
START

STEP THREE - **The next step in making a bootable backup disk for your system is to copy CONFIG.SYS, AUTOEXEC.BAT, the Windows initialization (INI), and the Group files to the floppy. Click **START to do this now. Note that all GROUP file (GRP) copies on the diskette will have an extension of PYP.

That's it. Your bootable backup diskette is done! It now contains the minimum information needed to boot your computer and still obtain Windows configuration files from a diskette. If you would like, you can copy any unusual drivers, TSRs, or BAT files you may use to this disk as well, or the initialization files that may be used by any other application. The more things you back up, the safer you are!

B. FAST SAVE METHOD

If you know a bootable backup diskette exists, you might also want a copy of your MS-DOS and Windows initialization (INI) files made on your hard disk. Do this ONLY if you are happy with the current INI files, or you are just starting a WinDigest session, by clicking **START** . This will make copies of all the Autoexec.bat, Config.sys, and all INI files in the Windows directory. Each initialization file copy will have the same filename as it's source but an extension of HYP, Group file copies will have an extension of PYP. Don't forget to copy anything else you might want to save, using the same naming convention. That's it!