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Common Problems and How to Solve Them

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DOS Applications
Printing
Video problems
Mouse
Screen Savers
Communications
Multimedia
Network problems
Setup/Install
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Common Problems and How to Solve Them

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<u> </u>	Run Norton Disk Doctor to verify DOS' file-integrity
<u> </u>	Check for an invalid SHELL= entry
_	Change to the Standard VGA Video Driver
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- Don't cache compressed drives explicitly
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- The VirtualHDIRQ Setting
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- "Stack overflow"
- "Call to undefined dynalink"
- "Unsupported DOS Version"
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- Using Expand
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Common Problems and How to Solve Them

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- Try Running Windows in Standard mode
- Clear the LOAD= and RUN= lines and skip the Startup group
- Verify that you have at least 2 MB of free Disk Space
- Run Norton Disk Doctor to verify DOS' file-integrity
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- Change to the Standard VGA Video Driver
- Search for WIN.BAT
- Search for WINSTART.BAT
- Use /B to create a Boot Log during Startup
- Check for invalid characters in your .INI files
- Eliminating the "Unsupported DOS Version" error message
- Re-Install Windows into the same directory
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Using a mouse with a DOS application in a window

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Try Running Windows in Standard mode

The Windows environment is much simpler in <u>Standard mode</u> than in <u>Enhanced mode</u>. For example, Windows does not use free <u>Upper Memory Blocks (UMBs)</u>. <u>Virtual Device Drivers (VxDs)</u>, or features specific to 386 and higher machines to enhance performance. Because the Enhanced mode features are often related to the source of problems, you should try running Windows in Standard mode as a troubleshooting step.

To start Windows in Standard mode, use the command $_{\rm WIN}$ /s

If you start Windows from a batch-file, you can change to the <code>\WINDOWS</code> directory and type $_{\tt WIN.COM}$ /s

NOTE: Windows for Workgroups 3.11 does not include Standard mode. Proceed directly to <u>using</u> /D:SFVX to pinpoint Enhanced mode problems.

If Windows works properly in Standard mode, the next step is to try <u>using /D:SFVX to pinpoint Enhanced</u> mode problems.

Using /D:SFVX to pinpoint Enhanced mode problems

The Debugging switch turns off certain <u>Enhanced mode</u> features depending on the parameters you specify. The switches correspond to the following settings:

- SwitchEquivalent SYSTEM.INI setting:/D:SSystemROMBreakPoint=FALSE
- /D:F <u>32bitDiskAccess=</u>OFF
- /D:V VirtualHDIRQ=FALSE
- /D:X EMMExclude=A000-EFFF
- /D:C 32bitFileAccess=OFF
- (Windows for Workgroups 3.11 only) /D:T Loads Windows with no virtual device drivers. Cannot run DOS sessions, communications applications, or networking. (Windows for Workgroups 3.11 only)
- To use the Debugging switch, begin by giving the command $_{\tt WIN}$ /D:SFVX
- If you start Windows from a batch-file, change to the \WINDOWS directory and type WIN.COM /D:SFVX
- (If you are running Windows for Workgroups 3.11, use all six parameters.)

If Windows works with all four parameters specified, then start removing the parameters one at a time. When you discover which setting is required to solve your problem, you can make the appropriate change to your <u>SYSTEM.INI</u> file.

If using the Debugging switch does not resolve your problem, you may have <u>Conflicting Virtual Device</u> <u>Drivers.</u>

Conflicting Virtual Device Drivers (VxDs)

Click here if you are running Windows for Workgroups 3.11

Windows is a multitasking environment--it allows you to run multiple applications at the same time. However, many DOS programs were not designed with this ability in mind. As a result, they assume they have complete control over system components such as the keyboard and communications ports. To overcome this problem, Windows uses <u>Virtual Device Drivers (VxDs)</u>, software drivers that make each program think it has sole control of a given device.

Windows installs VxDs for many system components. Many applications replace these drivers with their own, or add additional VxDs to the system. Applications which commonly add or modify VxDs include anti-virus programs, backup programs, screen-savers, remote communications programs, and development environments. Unfortunately, most applications do not detect whether other VxDs are already installed which may conflict with their drivers. Most applications also fail to provide uninstall routines, so the drivers (which are often stored in the \WINDOWS\SYSTEM directory) are left behind even after you think you've removed an application.

To determine whether you are experiencing a VxD conflict, use the following procedure:

- 1 See if the problem occurs in <u>Standard mode.</u> VxDs are only loaded when Windows runs in <u>Enhanced mode.</u>
- 2 See if the <u>Windows Debugging switch (/D:SFVX)</u> solves the problem. This eliminates other Enhanced mode features from the list of suspects.
- 3 If the problem occurs when a DOS application is running full-screen, see if the problem goes away when you run the DOS program in a window using Alt-Enter.
- 4 See if any of the built-in VxDs have been modified. These appear in the [boot] section of <u>SYSTEM.INI</u>, and by default are set to the following: <u>display.drv=</u>vga.drv mouse.drv=mouse.drv (Imouse.drv for Logitech mice) <u>comm.drv=</u>comm.drv <u>system.drv=</u>system.drv (atm.system.drv if <u>Adobe Type Manager</u> is installed) <u>keyboard.drv=</u>keyboard.drv Try returning any modified VxDs to the Windows default to see if the problem goes away. If the problem disappears, contact the manufacturer for an update or help with solving the problem.
- 5 Check the [386Enh] section of your <u>SYSTEM.INI</u> for VxDs that have been added to your system. <u>Click here for a list of common VxDs.</u>

If you are not experiencing a VxD conflict, you may have a <u>WINSTART.BAT</u> file that is loading the offending program. Use Norton Utilities FileFind to search your drives for a WINSTART.BAT file, and if you find one continue diagnosing the problem by removing items from the batch-file. The batch-file could be anywhere in your <u>PATH</u>.

Troubleshooting Windows for Workgroups 3.11 VxDs

Windows for Workgroups includes three extra startup switches that are helpful in diagnosing VxD conflicts. Try using the following switches before returning to the topic <u>Conflicting Virtual Device Drivers</u> (VxDs):

- WIN /D:T Starts WFW without any VxDs loaded. You will be unable to run DOS sessions, communications applications, or networking (unless you load the real-mode network software using a NET START command prior to invoking Windows)
- WIN /N Starts WFW without any protected mode network drivers. You will be unable to run DOS sessions, communications applications, or networking (unless you load the realmode network software using a NET START command prior to invoking Windows). Use this switch to isolate the problem to a network issue if /D:T makes the problem disappear.
- WIN /D:FC Disables 32-bit File Access. See the section on <u>Troubleshooting 32-bit File Access</u> for more information on this topic.

Virtual Device Drivers (Alphabetical by Filename) Click here for a list sorted by Program Name

AD.386 ANTHOOK.386 AW5VCD.386 BCHKW.386 CAS30VCD.386 CAS31VCD.386 CCVCD.386 CCVCD.386 CCVCD.386 CCVKD.386 CCVKD.386 CCVKD.386 CCVXD.386 CCVXD.386 CMSDTAPE.386 CMSWTAPE.386 CMSWTAPE.386 CPBVXD.386 CPBVXD.386 CPBVXD.386 CPBVXD.386 CVW1.386 DIALIN.386 DIALIN.386 DIALIN.386 DIALIN.386 IFSMGR.386 INTERMIS.386 INTERMIS.386 INTERMIS.386 INTERMIS.386 INTERMIS.386 INTERMIS.386 MACH.386 M	After Dark Screen Savers (all modules) Intermission Screen Saver PCAnywhere for Windows Bounds Checker for Windows Intel Fax software Intel Fax software Carbon Copy keyboard driver Carbon Copy keyboard driver Colorado's tape backup software (DOS) Colorado Memory Systems (Windows version) Central Point Commute PCTools for Windows - Backup NortonLambert CloseUp Microsoft C + 7.0 Microsoft C v8.0 and Software Development Kit Shiva Netmodem/E Mindows for Workgroups 3.11 32-bit File Access Windows for Workgroups 3.11 32-bit File Access Intermission Screen Saver LANManager 1.0 Logitech mouse driver ATI Mach 8 Drivers v. 3.5 ATI Graphics UltraPro Microsoft C v8.0 Windows 3.1 - allows use of B000-B7FF Upper Memory Block Microsoft Nouse Driver version 9 Multiscope Debugger Symantec C++ Windows for Workgroups ODI Support My Advanced Backup Orchid Farenheit Driver Oxygen compiler Pharlap386 DOS Extender Norton Anti-Virus 3.0 and Norton Desktop 3.0 Borland C++ v.3.1 Borland TurboDebugger TurboCom drivers TurboCom drivers Sound Blaster Pro (Adlib support) Artisoft Sounding Board
VASBID.386 VASPID.386	Artisoft Sounding Board Adaptec ASPI for Windows
VASPID.386	Central Point PCTWin (SCSI Tape Support)

VASPID.386 Central Point Backup for Windows (SCSI Tape Support) VBROWSE.386 Windows for Workaroups browsing services for the network VCACHE.386 Windows for Workgroups 3.11 32-bit File Access VCD.386 Windows for Workgroups Virtual COM device VCD.386 Haves Enhanced Serial Port (ESP) Adapter Microsoft CodeView for Windows VCV.386 **VDDTI4.386** Tseng 4000 Video Drivers **VDMAD.386** Windows for Workgroups Virtual DMA driver **VDMAD.386** PCTools V7.1 Norton Backup & Desktop (Windows 3.0 only) VDMADX.386 VDMADX.386 PCTools 7.1 VDVALNET.386 LANManager Windows for Workgroups 3.11 32-bit File Access VFAT.386 PCTools V7.1 VFD.386 Central Point Backup (floppy) VFD.386 Norton Backup/DOS 6 Backup (and Norton Desktop) VFINTD.386 VHHSCAND.386 Logitech Hand Scanner VILOCK.386 DiskLock security software **VIPX.386** Novell v 3.11 **VIRTW.386** Irwin's backup software **VIRWT.386** Irwin EZTape (Accutrak) Backup VITD.386 Irwin's backup software VLANMAN.386 LANManager VMB.386 Microsoft C 7.0 - Spawn driver for Workbench VMCPD.386 Microsoft C 7.0 VMD.386 Windows for Workgroups Virtual mouse device **VNAVD.386** Norton AntiVirus (and Norton Desktop) VNB.386 Windows for Workgroups NetBEUI transport Norton Desktop 2.x **VNDWD.386** Windows for Workgroups Virtual NETBIOS interface VNETBIOS.386 Windows for Workgroups network support functions VNETSUP.386 VNETWARE.386 Novell v 3.11 VNSS.386 Norton Desktop 2.x VOPTD.386 PCTools for Windows Virtual DOS Interrupt Monitor **VPASD.386** ProAudioSpectrum/Studio pcANYWHERE for DOS 4.5 **VPCAW.386** VPCAW5.386 pcANYWHERE for Windows Windows for Workgroups Virtual parallel device VPD.386 VPD.386 Multimedia/Sound board (make unknown) Microsoft C++ 7.0, C 7.0, and Software Development Kit **VPFD.386** VPFD.386 WinICE Debugger VPICD.386 Windows for Workgroups Virtual Interrupt controller VPOWERD.386 Windows 3.1 (power-management on laptops) Windows Software Developers Kit VPROD.386 VRCHOUT.386 **QAPlus for Windows** VRCHSRL.386 **QAPlus for Windows** VREDIR.386 Windows for Workgroups network redirector VRSD.386 RealSound (Microsoft Golf and others) Sound Blaster Pro VSBD.386 VSBPD.386 Sound Blaster Pro Windows for Workgroups file and print server VSERVER.386 **VSGD.386** Sound Blaster Pro CD ROM Drive (Multimedia System) Windows for Workgroups VxD version of SHARE.EXE VSHARE.386 PCS 3270 terminal-emulation software VSLAND.386 VSNDSYS.386 Microsoft Windows Sound System VTDAPI.386 Windows 3.1 (Multimedia Timing Device API)

VTDEBUG.386	Borland Turbo Debugger
VWC.386	Windows for Workgroups virtual workgroup client device.
VWPD.386	WinProbe diagnostic software
VXDLDR.386	Windows for Workgroups 3.11 32-bit File Access
W32S.386	Windows 32S API (various applications)
WEMU387.386	Watcom C compiler
WINDEBUG.386	Microsoft C v8.0
WINDEBUG.386	Multiscope Debugger
WINDEBUG.386	Symantec C++
WPSLJVPD.386	Windows Printing System
WRESUME.386	Toshiba laptop "resume" feature
ZPRN.386	Zenographics SuperPrint v.3

Virtual Device Drivers (Alphabetical by Program) Click here for a list sorted by VxD name

VxD VASPID.386 AD.386 MACH32.386	Program Adaptec ASPI driver for Windows After Dark (all modules) ATI Graphics UltraPro
TDDEBUG.386 VTDEBUG.386	Borland Turbo Debugger Borland Turbo Debugger
TDDEBUG.386	Borland C++ v. 3.1
BCHKW.386	Bounds Checker for Windows
CCVKD.386	Carbon Copy keyboard driver
CCVKD30.386	Carbon Copy keyboard driver
CCVXD.386 CCVCD.386	Carbon Copy keyboard driver Carbon Copy keyboard driver
CCVCD30.386	Carbon Copy keyboard driver
VASPID.386	Central Point Backup for Windows (SCSI Tape Support)
VASPID.386	Central Point PCTWin (SCSI Tape Support)
WNTSR.386	Central Point Anti-Virus - all versions
CPBVXD.386	Central Point Backup (tape)
VFD.386	Central Point Backup (floppy)
COMMVXD.386	Central Point Commute
CHCOMB.386	Cherry Hill VM comm buffer Driver
CMSWTAPE.386	Colorado Memory Systems (Windows version)
CMSDTAPE.386	Colorado's tape backup software (DOS)
VILOCK.386	DiskLock security software
EDOS.386 FASTBACK.386	EDOS Fastback backup software
VCD.386	Hayes Enhanced Serial Port (ESP) Adapter
CAS30VCD.386	Intel Fax software
CAS31VCD.386	Intel Fax software
ANTHOOK.386	Intermission Screen Saver
INTERMIS.386	Intermission Screen Saver
VIRWT.386	Irwin EZTape (Accutrak) Backup
VITD.386	Irwin backup software
VIRTW.386	Irwin backup software
LANMAN10.386	LANManager 1.0
VDVALNET.386	LANManager
VLANMAN.386	LANManager
	Logitech mouse drivers
VHHSCAND.386 VPFD.386	Logitech Hand Scanner Microsoft C++ 7.0
VFFD.300	

CVW1.386 Microsoft C++ 7.0 MMD.386 Microsoft C 8.0 DOSXNT.386 Microsoft C 8.0 WINDEBUG.386 Microsoft C 8.0 CVWL.386 Microsoft C 8.0 VMB.386 Microsoft C 7.0 VMCPD.386 Microsoft C 7.0 **VPFD.386** Microsoft C 7.0 MOUSEVKD.386 Microsoft Mouse Driver V9 Microsoft CodeView for Windows VCV.386 MSLOOK.386 Multiscope Debugger WINDEBUG.386 Multiscope Debugger My Advanced Backup **MYABU.386** Norton Anti-Virus 3.0 and Norton Desktop 3.0 SYMEVENT.386 NortonLambert CloseUp CUPVIRTD.386 VFINTD.386 Norton Backup (& Norton Desktop) VDMADX.386 Norton Backup (Windows 3.0 only) VNAVD.386 Norton Desktop 2.x - Anti-Virus **VNSS.386** Norton Desktop 2.x - Screen Saver & Scheduler **VNDWD.386** Norton Desktop 2.x - Drive Windows VFINTD.386 Norton Desktop 2.x and 3.x- Backup VDMADX.386 Norton Desktop 2.x- Backup (Windows 3.0 only) VNETWARE.386 Novell v 3.11 **VIPX.386** Novell v 3.11 ORCHIDF.386 Orchid Farenheit Driver Oxygen compiler OXYGEN.386 pcANYWHERE for Windows AW5VCD.386 **VPCAW5.386** pcANYWHERE for Windows **VPCAW.386** pcANYWHERE for DOS 4.5 VSLAND.386 PCS 3270 terminal-emulation software VFD.386 PCTools v 7.1 PCTools v 7.1 VDMAD.386 VDMADX.386 PCTools v 7.1 PCTools for Windows - Backup CPBVXD.386 CPBNMI.386 PCTools for Windows - Backup PCTools for Windows Virtual DOS Interrupt Monitor VOPTD.386 PHARLAP.386 Pharlap386 DOS Extender ProAudioSpectrum/Studio VPASD.386 VRCHOUT.386 QAPlus for Windows VRCHSRL.386 QAPlus for Windows **VRSD.386** RealSound (Microsoft Golf and others) DIALIN.386 Shiva Netmodem/E Sound Blaster Pro CD ROM Drive (MultiMedia System) **VSGD.386** VSBPD.386 Sound Blaster Pro **VSBD.386** Sound Blaster Pro Sound Blaster Pro VADLIBD.386 MSLOOK.386 Symantec C++ WINDEBUG.386 Symantec C++ Toshiba laptop "resume" feature WRESUME.386 **VDDTI4.386** Tsena 4000 Video Drivers TurboCom COM port drivers TURBOBUF.386 TURBOVCD.386 TurboCom COM port drivers WEMU387.386 Watcom C compiler Windows for Workgroups Virtual parallel device VPD.386 VNB.386 WFW NetBEUI transport VNETBIOS.386 WFW Virtual NETBIOS interface

VREDIR.386 VSERVER.386 VBROWSE.386 VMC.386 VCD.386 VDMAD.386 VDMAD.386 VPICD.386 VSHARE.386 VMD.386 ISSMGR.386 IOS.386 VCACHE.386 VCACHE.386 VTDAPI.386 VTDAPI.386 VTDAPI.386 VPROD.386 WPSLJVPD.386 VSNDSYS.386 WPSLJVPD.386 VASBID.386 VASBID.386 VASBID.386 VPO.386	WFW network redirector WFW file and print server WFW browsing services for the network WFW network support functions WFW Virtual workgroup client device. WFW Virtual COM device WFW Virtual DMA driver WFW Virtual Interrupt controller WFW VxD version of SHARE.EXE WFW VxD version of SHARE.EXE WFW ODI Support Windows for Workgroups 3.11 32-bit File Access Windows 3.1 (Multimedia Timing Device API) Windows Software Developers Kit Windows 3.2 API (various applications) Windows Sound System (Microsoft) Windows 3.1 (power-management on laptops) Windows 3.1 - allows use of B000-B7FF <u>UMB</u> Windows Resource Kit additional drivers Windows Resource Kit additional drivers
VPFD.386 VWPD.386	WinICE Debugger WinProbe diagnostic software
ZPRN.386	Zenographics Super Print v. 3

Clear the LOAD= and RUN= lines and skip the Startup group

There are three ways to make Windows automatically run a program every time it starts. Since one of these programs may be causing your problems, you should temporarily eliminate them and see if the problem disappears.

First edit your <u>WIN.INI</u> file and place a semi-colon at the beginning of the <u>LOAD=</u> and <u>RUN=</u> lines in the [windows] section. To prevent Windows from running the applications in your Startup group, hold down the Shift key while Windows is starting. If the problem disappears, start putting applications back one at a time until you isolate the one that is causing the problem. To do this, create a second LOAD= line in your <u>WIN.INI</u>, and place the applications from the commented line onto the new line one at a time. Retest after each addition. To isolate the application within the Startup group, temporarily move all the applications into another group, then add them back one at a time.

NOTE: To simplify this process in the future, consider moving the applications on your LOAD= and RUN= lines into your Startup group. That way you can prevent them from loading simply by using the Shift key, without editing any .INI files. To make an application load minimized (the way LOAD= does), select the <u>icon</u> in the Startup Group, press Alt-Enter to bring up the Properties, and set the Run Style to Minimized.

Verify that you have at least 2 MB free Disk Space

Windows requires some free disk space to use for creating temporary files (even if you're using a <u>permanent swap-file</u>). If you are low on free disk space, Windows may refuse to start and simply return you to a DOS prompt without an error message.

To check how much free disk space you have on a drive, you can use the CHKDSK command and check the "Bytes available on disk" entry, or use the NDOS FREE command. Note that if you are using a compressed drive, the free space values are only approximations based on the compression ratios you have been achieving.

The drive that you need to check is the one pointed to by the TEMP variable. To see where this is pointing, type SET at the DOS prompt and read the line TEMP=. Verify that TEMP is pointing to a valid directory and that there are no trailing backslashes or spaces on the entry. Also <u>verify that your temporary</u> files are on uncompressed, local drives. If you do not have a TEMP variable set, Windows will use the root directory of the current drive. If you suspect that low disk-space is causing the problem, you will have to delete some files to make room for Windows or change the TEMP variable to point to a drive with more free space. To determine which Windows files you can delete, see <u>Reducing the Amount of Disk Space</u> <u>Used by Windows</u>

Run Norton Disk Doctor

Corrupted files or DOS structures can also prevent Windows from starting. Verify the integrity of your file system by running Norton Disk Doctor and correcting any errors. If any files are damaged, reinstall them from the original diskettes.

Check for an invalid SHELL= entry

The Windows <u>shell</u> is the program that runs whenever you start Windows. Exiting this program ends your Windows session. The shell is specified in the [boot] section of your <u>SYSTEM.INI</u> file. If the shell has been set to a program that does not exist, Windows will not start. You may receive an error message, or just be returned to a DOS prompt.

To verify the <u>SHELL=</u> entry open your <u>SYSTEM.INI</u> in a text-editor, look for the entry in the [boot] section, and modify it if necessary. If you are running Program Manager as your shell, the line should read SHELL=PROGMAN.EXE. If you are running Norton Desktop for Windows, the line should read SHELL=C:\NDW\NDW.EXE (for NDW 3.x) or SHELL=NDW.EXE (for NDW 2.x).

Change to the standard VGA video driver

Using an incorrect or corrupted video driver can prevent Windows from starting. You will usually see a black screen with the cursor blinking in the upper left-hand corner and the machine will lock.

- 1 Verify that the video driver is not causing your problems by changing to the standard VGA driver. Change to your Windows directory and run SETUP.
- 2 SETUP will show the current settings. If it doesn't, you started Windows from a different directory. Exit SETUP with <F3> and restart it from within your Windows directory.
- **3** Highlight the Display entry and press Enter.
- 4 Select the entry VGA from the list (if you already had VGA selected, you'll need to select a different driver and then re-run Setup and reselect VGA).
- 5 Windows may offer to use the existing driver. Press Esc and reinstall the files from your original Windows diskettes in case one of the files on your hard disk has become corrupted.

If you were using a third-party driver and the VGA driver makes the problem go away, you can either try reinstalling the video driver you were using (in case it was corrupted) or contact the manufacturer for an updated driver.

Running SETUP from DOS (2 ways)

The Windows Setup program is smart enough to detect whether you are running it from DOS or Windows and act accordingly. You can run Setup from DOS in one of two ways:

- Starting Setup from the Windows directory allows you to modify the settings for that installation of Windows.
- Starting Setup from another directory allows you to install a new copy of Windows into a different directory.

Search for WIN.BAT

Verify that you aren't starting Windows from a batch-file that executes any other programs. The easiest way to do this is to change to your Windows directory and give the command WIN.COM. This will run Windows directly, bypassing any WIN.BAT file you may have created.

If this corrects the problem, use Norton Utilities FileFind program to search your drives for the WIN.BAT file and continue diagnosing the problem by removing items from the batch-file. The batch-file could be anywhere in your <u>PATH.</u> If you are using NDOS and cannot find a WIN.BAT, type ALIAS WIN to verify that you have not set up an alias for the command. If you have, give the command UNALIAS WIN.

Search for WINSTART.BAT

<u>WINSTART.BAT</u> is a special batch-file that Windows uses when running in <u>Enhanced mode</u>. Its primary purpose is to load <u>TSRs</u> that you want to be available in DOS sessions under Windows, but not in Windows itself.

Use Norton Utilities FileFind to search your drives for a WINSTART.BAT file, and if you find one continue diagnosing the problem by removing items from the batch-file. The batch-file could be anywhere in your <u>PATH.</u> If you are using NDOS and cannot find a WINSTART.BAT, type ALIAS WINSTART to verify that you have not set up an alias for the command. If you have, give the command UNALIAS WINSTART.

Use /B to create a Boot Log during Startup

Starting Windows with the /B switch will cause it to create a log of each component as it loads. After the startup process exits you back to DOS, you can examine the log to determine which component is causing the problem.

The log is stored in a file called BOOTLOG.TXT which is created in your Windows directory. Load the file into a text editor (or use the LIST command if you're running NDOS) and look for a line beginning with InitFailed near the bottom of the file to determine which driver is causing the problem. Reinstalling this driver will often correct the problem.

NOTE: If a BOOTLOG.TXT file already exists in the Windows directory, the results will be appended to the end of the existing file. You may wish to delete the file before using the /B switch.

Check for invalid characters in your .INI files

You may be experiencing problems because your <u>.INI files</u> contain invalid characters. To resolve this problem:

- 1 Change to your Windows directory and enter EDIT SYSTEM.INI
- 2 Move the cursor to the beginning of each section heading. The section headings are surrounded by square brackets (for example, [boot]).
- **3** Press the End key. If the cursor moves beyond the closing bracket, use the Backspace key to remove the extra characters.
- 4 After you have checked all the section headings, save the file and exit the editor.
- **5** Repeat the process for your WIN.INI file.

Eliminating the "Unsupported DOS Version" error

This misleading error message is caused when you use a utility to load your file handles into <u>Upper</u> <u>Memory Blocks</u>. File handles are a data structure which DOS uses to track files as they are opened. The number of file handles is determined by the FILES=nn statement in your <u>CONFIG.SYS</u> file. Each file handle consumes a small piece of <u>conventional memory</u>, which has prompted some developers to write utilities to move the file handles into UMBs.

Verify that you are allocating at least 50 file handles in your <u>CONFIG.SYS</u> file. If you are using <u>QEMM's</u> FILES command in your <u>AUTOEXEC.BAT</u> file to allocate the handles, try increasing the number of handles which you load via the <u>CONFIG.SYS</u> statement and reducing the number loaded using the FILES utility.

Re-Install Windows

If you have tried all of the preceding steps and still cannot start Windows, you may have corrupted one of the files that Windows needs to run. Try reinstalling Windows into the same directory that you are already using. This will replace the files with fresh copies off of the diskettes without losing any of the settings you have specified in your .INI files or any of your applications' settings.

To do this, change to the root directory of your C: drive and run SETUP. Choose the Custom Setup. When Setup prompts you for the target directory, enter the directory where Windows is already installed.

Fresh-Install Windows and then your applications

If reinstalling Windows into the same directory does not work, you may have a conflict between drivers that two applications have installed, or some other configuration error in your Windows setup. If you have enough disk-space, you should consider installing a second copy of Windows into a different directory and then installing only the applications you are having trouble with. This will tell you whether they will run under an unmodified installation of Windows.

Change to the root directory of your C: drive and run SETUP. When you are prompted for the target directory, enter a different directory from the one where Windows is installed. Let the Setup program modify your <u>PATH</u> and startup file settings to use the new copy of Windows. At the end of the installation, select the option to return to DOS. Remove any references to the old Windows installation from your startup files (being sure to remove the old Windows directory from your <u>PATH</u>).

Reboot your computer and test the new installation. If it works properly, start adding your applications and drivers back one at a time and test the system between each installation. This should help you isolate which program is causing your problems. Contact the manufacturer for assistance when you have determined the culprit.

Verify that there is sufficient available memory

Windows requires both <u>conventional</u> and <u>extended</u> or <u>expanded memory</u> to run. Verify that you have enough memory available using the following procedures:

- 1 Run MEM. Check the value in the Free column for both Conventional and Extended (XMS) memory. You should have 512K (approximately 524,000 bytes) free conventional memory, and at least 1 MB of extended memory.
- 2 If you have insufficient conventional memory, see the section on <u>Maximizing Conventional Memory.</u>
- 3 If you have insufficient available extended memory, make sure that you are not allocating too much memory to disk <u>caches</u>, RAM drives, or other programs that might use it. If no XMS memory is available, be sure that you are loading an XMS memory driver such as <u>HIMEM</u>, <u>QEMM</u>, or <u>386MAX</u>.

Verify that FILES=50 or more

DOS uses a data structure called file handles to track the files that you open. The number of file handles allocated by DOS is determined by the FILES=nn statement in your <u>CONFIG.SYS</u> file. If this number is too low, you will have trouble running Windows and its applications. Check the setting in your CONFIG.SYS file and be sure that it is set to at least 50. File handles consume very little memory; it is better to have too many than too few.

Use the latest HIMEM, EMM386, and other drivers

Verify that you are running the latest versions of <u>HIMEM</u>, <u>EMM386</u>, and any other drivers that you load on your system. Microsoft includes these drivers in several products, which often leapfrog each other in capabilities. For example, the HIMEM included in DOS 6 is newer than the one that ships with Windows. Always be sure to use the latest driver.

Use the correct DOS version for your machine Never run a version of DOS that was designed for another machine on your computer. For example, Compaq DOS should only be used on Compaq machines. To determine which version of DOS you are running, type VER at any DOS prompt.

Simplify your memory configuration

If you are having trouble running Windows or any applications, try simplifying your memory configuration to remove any potential conflicts. Look for the following culprits:

- Remove HIGHSCAN from your EMM386 line in CONFIG.SYS (If you are using QEMM, add the parameter X=F000-FFFF). HIGHSCAN looks in the F000-FFFF memory range for free space and attempts to use it as UMBs. If EMM386 is incorrect in assuming that a range is available, certain functions in the BIOS such as floppy-disk handling may stop working properly. For testing purposes, always try removing HIGHSCAN and see if the problem disappears. To prevent HIGHSCAN from being added to the EMM386 line, answer No when MemMaker asks if you want to scan aggressively for upper memory.
- Remove any INCLUDE statements from your memory manager. These are specified with the I= switch in both EMM386 and <u>QEMM</u>. The Include switch is used to add memory ranges that the memory manager would not otherwise recognize as available. For example, you can <u>Include the range B000-B7FF if you are not using monochrome VGA</u>. If you include an address that is in use by a peripheral, you will receive memory conflicts and the machine may lock.
- Turn off Stealth mode if you're using <u>QEMM</u>. QEMM's Stealth mode allows it to move <u>BIOS</u> code into <u>extended memory</u> and then remap the addresses for use as UMBs. Stealth mode is specified with the ST:M or ST:F switch on the QEMM line in your <u>CONFIG.SYS</u>. If you are experiencing problems, try turning off Stealth mode by removing these parameters and see if the problem disappears. If it does, contact Quarterdeck for help troubleshooting Stealth mode on your machine.

Look for UMB conflicts

<u>Upper Memory Block (UMB)</u> conflicts arise when two different programs or peripherals attempt to use the same range of upper memory. The most common cause is when a memory manager attempts to claim an address range that is in use by an adapter. Consult the documentation for network cards and other peripherals to determine if they use upper memory addresses and then exclude those addresses from your memory manager. Another common cause of conflicts is Super VGA adapters, which often occupy addresses in the range C000-C7FF. Although memory managers will recognize most peripherals, they may miss one. Additionally, other parameters can cause a conflict, such as specifying a page-frame that overlaps with a peripheral.

To determine where a UMB conflict exists, start by excluding the entire upper memory region from the memory-manager's use. (This will temporarily render you unable to load any programs into UMBs). Test to be sure the problem has disappeared. Then start narrowing down the exclusion until you find the location of the problem. For example:

- 1 Run MSD and select Memory. Note the addresses that appear as Available, Possibly Available, Used UMBs, and Free UMBs.
- 2 Exclude all these areas from your memory manager's use using the X= switch and EMMExclude statements in the [386Enh] section of your <u>SYSTEM.INI.</u>
- 3 Test. The error should have disappeared if it is a UMB conflict.
- 4 Remove the Excludes one at a time until you locate the range where the conflict occurs.
- **5** Reduce the size of the exclusion in half and retest. Continue narrowing down the exclusion until you've made it as small as possible.

NOTE: Any areas that you exclude from your memory-manager's use should also be excluded from Windows' use with the <u>EMMExclude=</u> statement in the [386Enh] section of your <u>SYSTEM.INI</u> file.

Verify that your temporary files are on uncompressed, local drives

Your temporary and swap files should always be stored on uncompressed, local drives. If you have a diskless workstation on a network, see the topic on <u>Placing a temporary swap-file on a network drive.</u>

To check this, type SET at a DOS prompt. The TEMP= variable specifies the location where your temporary files are being stored. Ensure that this points to a valid subdirectory on a local, uncompressed drive and that there are no trailing spaces or backslashes. If it does not, modify the SET TEMP line in your <u>AUTOEXEC.BAT</u> so that it does.

If you have insufficient available space on your uncompressed drives, you will have to resize the compressed drives to make more uncompressed space available.

To resize a DoubleSpace volume:

- 1 Remove any IMAGE files from the compressed drive. IMAGE files are created by Norton Utilities IMAGE program and are used for data recovery. To remove the files, change to the root directory of the drive and type FA /CLEAR IMAGE.*. The screen should report that 3 files have been changed. Use the command DEL IMAGE.* to remove the files.
- 2 Start DoubleSpace using the DBLSPACE command. Press Alt-D to drop down the Drive menu, then select Change Size. In the "New free space:" box, enter the amount of uncompressed space that you want on the drive. If you have a <u>permanent swap-file</u> enter a value of at least 2 MB. If you use a temporary swap-file, enter a value of 10 MB.

To resize a Stacker volume:

• Run DEFRAG /G to defragment the drive and activate the Grow/Shrink option. Set aside 2 MB of uncompressed space if you use a permanent swap-file or 10 MB if you use a temporary swap-file.

Check your PATH

For Windows to operate properly, the \WINDOWS directory must be in your <u>PATH</u>. To verify this, type PATH at a DOS prompt. When DOS displays the current <u>PATH</u>, look for the Windows directory. Also verify that all the directories in the <u>PATH</u> actually exist, and that there are no typographical errors (/ where there should be a \, etc.)

Your <u>PATH</u> is usually set in your <u>AUTOEXEC.BAT</u> file. If the <u>PATH</u> is not correct, the first place to look for errors is there. A program that you installed may have modified the <u>PATH</u>, or inserted a new <u>PATH</u> statement after the line you were using. Note that a <u>PATH</u> statement that includes the <u>environment</u> <u>variable</u> %PATH% appends directories onto the existing <u>PATH</u> rather than overwriting the <u>PATH</u>.

If the <u>PATH</u> statement in the AUTOEXEC.BAT is correct, your <u>PATH</u> may be getting modified in your network login script or in a batch file that you run from your AUTOEXEC.BAT file.

Finally, verify that your <u>PATH</u> is less than 127 characters long, including the string PATH=. This is the limit of a DOS command-line. If the line is too long, DOS will not interpret it correctly and you will have problems running your applications. Many programs place themselves in your <u>PATH</u> so that you can start them without changing to their directory, but they don't actually have to be in your <u>PATH</u> to work properly. Exceptions to this include Windows and Norton Desktop for Windows.

If you absolutely need more than 127 characters for your <u>PATH</u> and are running DOS 6, see the section on <u>Getting a 256-character PATH</u>.

Watch for disk cache problems Several common disk-<u>cache</u> configuration errors can cause your Windows system to function improperly. Watch for these common mistakes:

Don't use Expanded Memory (EMS) for your disk cache Don't explicitly cache compressed drives Use double-buffering with SCSI drives and non-VDS-compliant memory managers

Be sure your compressed drives are configured properly

There are several common configuration errors related to using compressed drives. Be careful of the following:

Don't point your TEMP variable to a compressed drive. See the topic <u>Verify that your temporary files are</u> on uncompressed, local drives for more information.

Never try to put a <u>permanent swap-file</u> on a compressed drive. Even though Windows may allow you to place the swap-file there, it will report that the file is corrupted every time you start Windows and refuse to use it. See the topic <u>Never put a Swap File on a Network or Compressed Drive</u> for more information.

If you use DOS 6.2's DoubleSpace, you may want to disable the AutoMount feature. This is on by default. AutoMount allows you to compress floppy or other removable disks and automatically mounts the compressed volume when you change disks. This causes many programs to poll all the floppy drives whenever you attempt to open a file, slowing down file access.

To disable AutoMount:

- **1** Exit Windows completely and run DBLSPACE.
- 2 Select Tools, Options and uncheck the Enable Automount box.
- 3 Allow DoubleSpace to restart your computer so the change takes effect.

Create a Minimal Configuration

If none of the above tips solves your problem, try creating a minimal configuration for running Windows and see if the problem disappears. Make a backup of your startup files, and then modify them to the following (making allowances for differing directory names):

CONFIG.SYS: DEVICE=C:\DOS\HIMEM.SYS FILES=50 BUFFERS=30

(use the most current HIMEM you have)

AUTOEXEC.BAT PATH=C:\WINDOWS;C:\DOS PROMPT \$P\$G

WARNING: Do not remove any drivers from your startup files that are required to access your drives! Examples include disk partitioning software, disk drivers, and compression software. In particular, do **not** remove any of the following drivers: ATDOSXL.SYS, ASPI4DOS.SYS, DMDRVR.BIN, SSTOR.SYS, HARDRIVE.SYS, EDVR.SYS, STACKER.COM, SSWAP.COM, and SSTOR.EXE.

Be sure to use <u>HIMEM.SYS</u> rather than a third-party memory manager. Reboot and see if the problem disappears. If it does, the problem is being caused by a line in your configuration files. Start adding the original lines back one at a time, rebooting and retesting after each addition. When you locate the line that is causing the problem, contact the vendor for a resolution.

NOTE: If you are running DOS 6.0, you can perform an interactive boot by pressing F8 when you see the message "Starting MS-DOS...". DOS will prompt you before executing each line in the <u>CONFIG.SYS</u>, allowing you to skip drivers for testing purposes. You will also be given the option of skipping the <u>AUTOEXEC.BAT</u> altogether.

If you are running DOS 6.2, you will be prompted through both the CONFIG.SYS and the AUTOEXEC.BAT, allowing you to perform the above testing without actually modifying your configuration files.

Troubleshooting QEMM

If you isolate the problem to <u>QEMM</u> using the procedures outlined in <u>Create a Minimal Configuration</u> above, try using the following tips to solve the problem:

- 1 Follow the tips in <u>Simplify your memory configuration.</u>
- 2 Read the section <u>Look for UMB Conflicts.</u> In particular, look for QEMM configuration parameters that may conflict with adapters in your system, such as a page-frame that is in the same area as your network card.
- **3** Follow the Analysis procedure outlined in the QEMM manual to determine which upper memory areas you need to exclude on your system.
- 4 Either use the QEMM RAM parameter, or exclude the area from B000-B7FF. Otherwise, both QEMM and Windows may try to manage this area, leading to conflicts.
- **5** Try the NOSORT and NOFILL parameters.
- 6 Read the Tech Notes that QEMM copied to your system during its installation, starting with the TROUBLE.TEC file. These will step you through the same troubleshooting procedures that Quarterdeck's technical support department uses on the phone.

Recent modifications to your system

If you have made any changes to the hardware or software on your system, try reversing those changes and see if the problem disappears. Common culprits include a new driver such as a video driver, an application that may have replaced one of Windows' built-in drivers with its own <u>VxD</u>, or a modification to your <u>CONFIG.SYS</u> or <u>AUTOEXEC.BAT</u>.

Overcoming out of memory messages

Windows may display an "Insufficient Memory" message when you still have plenty of memory available. Because Windows can use hard-disk space as <u>virtual memory</u>, it is relatively unusual to actually run out of memory. This message most often indicates one of two problems:

- 1 You are using a temporary swap-file and are low on disk-space. Windows cannot create any virtual memory because your hard disk is full. Free up some disk space and attempt the operation again.
- 2 You are low on system resources. System Resources are two special sections of memory that Windows creates and maintains to store data such as <u>icons</u>, buttons, and window information. These two "heaps", or data stacks, are used by the main Windows components which draw and maintain the display. Programs that make extensive use of buttons, toolbars, and icons often use disproportionately large portions of your system resources. The only way to reclaim those resources is to close some applications.

To check your remaining memory and resources, run the System Watch program in the "Norton Utilities - Windows" group. Verify that you have enough Windows Memory available, and that the values for User Resources and GDI Resources are above 35%. If the Resources figures drop below 25%, you may receive insufficient memory messages when launching programs and Windows may become unstable. Close some applications to free additional resources. You can also free some memory by setting your <u>wallpaper</u> to None.

3 If you have plenty of memory and resources, you may need to Increase the number of break points

If Windows' Help About dialog shows 0% Free System Resources, or other spurious information, see the section on <u>The Redistributable DLLs.</u>

Problems with the Registration Database

The Registration Database was introduced in Windows 3.1 and is used by Windows to manage OLE and DDE connections between applications. It is also used when you double-click a filename to launch an associated application or use drag-and-drop to launch or print files. If no entry exists in the Registration Database, Windows searches <u>the [Extensions] section</u> in <u>WIN.INI</u> to determine which applications are associated with which data files.

To view the Registration entry for a given file type, use the REGEDIT program. Select File, Run from the Program Manager or Norton Desktop main menu, and enter REGEDIT in the filename dialog. Windows will open a display with the various file-types listed on-screen. Double-click on the file type to display the commands Windows uses to open or print files associated with that application. The %1 parameter indicates the filename that is passed to the program.

If you run REGEDIT with the /v parameter, Windows will display the database in a tree format sorted by the file-type or file-extension for each entry. If you know you have a problem with a certain extension, say .TXT, run REGEDIT in this way and use Search, Find Key to search for the offending key and correct it.

If Windows does not properly launch an application when you double-click a data file, the Registration entry may be incorrect. Verify the entry and correct it if necessary. This may happen, for example, if two applications attempt to use the same file-type, or if you delete an application that previously modified your Registration Database and Windows can no longer find the application.

You can also modify the way Windows treats files that it accesses through the Registration Database. For example, see the section on <u>preventing Excel from prompting you before printing a drag-dropped file.</u>

You can also add applications such as DOS applications that do not make use of the Registration Database. For example, you can configure WordPerfect for DOS to launch and load a file when you double-click the document's name in File Manager. See the section on <u>Manipulating the Registration</u> <u>Database</u>.

If your Registration Database has become corrupted, you can rebuild it using the following procedure:

- 1 Delete the file REG.DAT. This file contains the Registration Database information.
- 2 Use Norton Utilities FileFind or File Manager to search all your drives for *.REG files.
- 3 Run REGEDIT.
- 4 Select File, Merge Registration File.
- 5 Merge the file SETUP.REG from your \WINDOWS\SYSTEM directory.

6 Use File, Merge Registration File to merge the rest of the *.REG files you located in step 2 above. Note that you will have to recreate any additions or modifications that you made to the Registration Database manually.

If you have rebuilt the Registration Database and it still is not operating correctly, you may have a problem with <u>The Redistributable DLLs.</u>

The [Extensions] section and Associations

When Windows cannot find an entry in the <u>Registration Database</u> for a file, it searches the [Extensions] section in your <u>WIN.INI</u> file. Errors in this section may render Windows unable to locate the association for a given file.

The [Extensions] section is maintained by the File, Associate command in File Manager or Norton Desktop. To see which application is associated with an extension, highlight the file and select File, Associate.

The following errors can cause Windows to have problems reading the [Extensions] section:

- 1 A missing square bracket ([or]) surrounding the [Extensions] heading or another heading in <u>WIN.INI.</u> In particular, be sure that the square bracket has not been inadvertently deleted from the first section in WIN.INI. This may happen if the file is loaded into an editor and the Del key is mistakenly pressed.
- 2 Entries in the [Extensions] section for applications that have been deleted. Remove the extra entries and restart Windows so that it re-reads the WIN.INI.
- 3 "Blank" lines that actually contain spaces, tabs, or other unprintable characters may cause Windows to parse the file incorrectly. Open the file in an editor and remove these characters.
- 4 An excessively large WIN.INI. Your WIN.INI file may become bloated with entries for applications that you have removed from your machine. Remove unnecessary sections (this will also improve your startup time, since Windows is reading a smaller file).

The Redistributable DLLs

Windows 3.1 includes 3 redistributable dynamic-link libraries (DLLs) which provide system-wide functions to applications running under Windows. These files are SHELL.DLL, VER.DLL, and TOOLHELP.DLL. Microsoft allows application vendors to ship these DLLs with their products in case the program is being installed on a Windows 3.0 system. However, Windows will behave erratically if you have multiple versions of these files on your machine at the same time. The only copies of these files should reside in your \WINDOWS\SYSTEM directory, and should be dated 3/10/92 (March 10, 1992) if you are running Windows 3.1.

Multiple or outdated redistributable DLLs can cause the following errors:

- 1 "Call to Undefined Dynalink." This is caused when a program makes a call to a DLL and the function does not exist. This is most often caused by an outdated redistributable DLL. Search all your disks using Norton Utilities FileFind or FileManager for the filenames SHELL.DLL, VER.DLL, and TOOLHELP.DLL. Verify that these files exist in your \WINDOWS\SYSTEM directory and are dated 3/10/92 if you are running Windows 3.1. If they are not, <u>expand</u> the files from the Windows 3.1 distribution disks. Delete any copies of these files which are located in different directories.
- 2 All applications launch minimized, even though their properties dictate that they run Normal or Maximized. This is usually caused by an outdated SHELL.DLL. Follow the procedure in step 1 above to verify that you have only 1 copy of SHELL.DLL and that it is the correct version.
- 3 Windows reports 0% Free System Resources or you experience other resource problems. This is caused by outdated or multiple TOOLHELP.DLL files. Follow the procedure in step 1 above to verify that you have only 1 copy of TOOLHELP.DLL and that it is the correct version.

NOTE: To monitor system resources, run System Watch.

4 The Registration Database is not functioning correctly, and you have already tried rebuilding it. The SHELL.DLL file is responsible for handling calls to the Registration Database. Follow the procedure in step 1 above to verify that you have only 1 copy of SHELL.DLL and that it is the correct version.

Conflicts between programs

In some cases, a GPF will occur as a result of an interaction between two programs. This usually occurs when two programs are attempting to perform similar operations and interfere with one another. For example, if you have loaded two separate screen savers on your system, they may both be monitoring the system's activity to determine when to activate. When both programs attempt to monitor the system timer, a conflict ensues. Likewise, a screen-saver and scheduling program may conflict when monitoring the system timer. The key is <u>Isolating the problem and reproducing it</u> so you can determine the cause. If you cannot remove the conflict by removing a program or driver, contact the manufacturer to see if they have a fix or workaround for the problem.

Improper configuration of DOS/Windows/application

The most common cause of <u>GPFs</u> is a configuration problem somewhere within the system. For example, a program may be running out of file-handles, memory, disk-space, or system resources. See the following sections for help isolating the problem:

Try Running Windows in Standard mode Clear the LOAD= and RUN= lines and skip the Startup group Verify that you have at least 2 MB of free Disk Space Run Norton Disk Doctor to verify DOS' file-integrity Change to the Standard VGA Video Driver Fresh-Install Windows and then your application Insufficient Free System Resources

Corrupted file

The problem may be caused by a corrupted application file or an error reading the file from the disk. Run Norton Disk Doctor (NDD) and perform a Thorough surface test. Then try reinstalling the application into the same directory. This should maintain your configuration settings while installing fresh copies of the program files.

Increase the number of Break Points

Many of the advantages Windows provides are available because it takes advantage of the virtual machine capability of 386 and higher processors. Windows uses a data structure called break points to maintain the status of these virtual machines. Break points are consumed whenever you launch or close a DOS session, as well as when calls are made to DOS device drivers and some <u>VxDs</u>. By default, Windows allocates 358 of these break points, of which approximately 200 are consumed when it loads. Once a break point has been consumed, it cannot be reclaimed.

If you run out of break points you may start experiencing various problems, such as general protection faults, insufficient memory messages, and other errors. To overcome these problems, double the number of break points by adding the following statement to the [386Enh] section of your <u>SYSTEM.INI</u> file: <u>MaxBPs=</u>716

Program bugs

In some cases, the problem may be a bug in one of the applications you are running. Once again, the key is <u>Isolating the problem and reproducing it</u> so that the developer can come up with a solution. However, be aware that unless you have reproduced the problem under both <u>a Minimal Configuration</u> and under a <u>Fresh-Install of Windows and then your applications</u>, the vendor will be reluctant to acknowledge that the problem is with their application.

Isolating the problem and reproducing it

The single most important troubleshooting step is to isolate the problem as much as possible and determine the precise steps necessary to reproduce the problem.

The first step is always to simplify your DOS environment. See the section on how to <u>Create a Minimal</u> <u>Configuration</u>. This will immediately eliminate any of the programs you load during startup as the cause of the problem.

If the problem still exists, try simplifying your Windows environment by <u>clearing the LOAD= and RUN=</u> <u>lines and skipping the Startup group</u>. This will eliminate any other Windows programs that you run during Windows' startup.

Finally, verify that the problem still exists if you <u>Fresh-Install Windows and then the application</u>. This final step will determine whether the problem is caused by a <u>driver</u> or other program that is unique to your installation. If the problem disappears under a fresh installation, start adding back your programs and drivers one at a time, testing for the problem after each installation.

These steps will not only help you determine the precise cause of the conflict, they will also prevent the vendor from "finger-pointing" and trying to pass the blame onto another program. You might as well perform these steps before you contact the vendor, since they will have you perform them anyway (often on your long-distance or paid support time).

Using Dr. Watson

Starting with Windows 3.1, Microsoft began including a diagnostic program called <u>Dr. Watson</u> to make it easier to find the causes of <u>GPFs.</u> However, the information collected by Dr. Watson is of no use to the average user; it is intended for developers who can analyze the information in conjunction with a debugging environment to determine the precise cause of conflicts.

If you are experiencing periodic GPFs, it is often helpful to activate Dr. Watson to collect system information at the time of the error. This file can then be passed along to the developer to assist in finding the problem.

To use Dr. Watson:

- 1 Open File Manager and change to the \WINDOWS directory, or select the /WINDOWS directory in a Norton Desktop drive window.
- 2 Locate the file DRWATSON.EXE.
- **3** Drag the file into a group to create an <u>icon</u> for the program. If you want to run Dr. Watson every time you start Windows, place the icon in the Startup group.
- 4 When you experience a GPF, Dr. Watson will pop up a message box prompting you for the circumstances surrounding the error. Enter as much detail as you can about the programs you were running and the procedures you performed.

The Dr. Watson log will become larger with use as more incidents are appended to the file. You can load the file into a text-editor to delete old incidents that are no longer needed. If the file is too large to edit in Notepad, try using Desktop Editor. You can also use Windows Write or another word-processor, as long as you save the file in plain text format when you're finished.

Insufficient file handles

DOS allocates a data structure called file handles to track each file as it is opened. The number of file handles is specified by the FILES=nn statement in your <u>CONFIG.SYS</u> file. Windows uses a number of these file handles to open its files; if the setting is too low you may have trouble running your applications. If you are experiencing segment load failures, set the number of file handles to at least 50 and then try increasing it by increments of 10 to see if the problem disappears.

Low memory condition

Segment load failures can also be caused by a low memory condition. Run the System Watch program in your "Norton Utilities - Windows Programs" group. Verify that you have enough Windows Memory available, and that the values for User Resources and GDI Resources are above 35%. If the Resources figures drop below 25%, you may receive insufficient memory messages when launching programs and Windows may become unstable. Close some applications to free additional resources.

See the sections on <u>Overcoming out of memory messages</u> and <u>Maximizing available memory</u> for more information.

Error reading a file from disk

A segment load failure can also be caused when the program is physically unable to read the file from disk. Run Norton Disk Doctor and perform a Thorough surface test, correcting any errors that you find. If NDD corrects the errors but the segment load failure persists, reinstall the files from the original diskettes.

Corrupted file

Finally, a segment load failure can be caused by a corrupted application file. The program is able to read the file, but does not find the information it expects. Try reinstalling the application into the same directory and see if the problem disappears. This should preserver you configuration settings while copying a fresh copy of the application files.

Using a mouse with a DOS application in a window

Windows 3.1 includes the ability to use a mouse with a DOS application in a resizable window. If you are experiencing difficulty doing this, try the following:

- 1 Be sure that you're loading a DOS mouse-driver. Just because your mouse works in Windows, don't assume you've loaded a DOS driver -- Windows uses its own mouse driver, usually called MOUSE.DRV, that loads from <u>SYSTEM.INI.</u> Check your <u>CONFIG.SYS</u> and <u>AUTOEXEC.BAT</u> for a line that loads either MOUSE.COM or MOUSE.SYS.
- 2 Verify that you're running version 8.2 or later of the Microsoft mouse driver. The version number is displayed when the driver loads--stop the screen from scrolling with Ctrl-S or the Pause key to check the version number, or temporarily insert a PAUSE in your <u>AUTOEXEC.BAT</u> so you can read the screen output.
- 3 The Microsoft driver is included on the Windows diskettes and works with most mice. If Windows Setup detects a Microsoft mouse driver loading in your startup files at the time Windows is installed, it copies these files to your disk. However, you'll need to verify that the statement in your <u>CONFIG.SYS</u> or <u>AUTOEXEC.BAT</u> which loads the driver points to the correct file.
- 4 If the Microsoft driver was not installed for you, you'll have to install the files manually. <u>Use the</u> <u>Expand program</u> to install MOUSE.COM from Windows disk #4 (Disk #10 if you are using 720K diskettes). Be sure to use Expand rather than copying the file directly from the disk or it will not work. You should also <u>use the /Y switch to prevent problems with graphical pointers.</u>
- **5** Be sure that you are using a Windows 3.1-compatible video driver. Older display drivers may not be capable of operating a mouse in a resizable DOS window. Use the video driver included with Windows if necessary.
- 6 Verify that you haven't set <u>MouseInDoxBox=</u>0 in the [NonWindowsApp] section of your <u>SYSTEM.INI</u> file.

If you are having other problems using your mouse see the Mouse section.

Troubleshooting DOS applications

The most common cause of difficulty running DOS applications is an incorrect program information file (<u>PIF</u>). PIFs tell Windows how to run various DOS applications, setting parameters that affect memory requirements, keyboard and display usage, and other settings. Look for the following common errors:

- Even if you specify the full program name in an icon's Properties, Windows will use a .PIF if it has the same name. When you launch the program, Windows searches the current directory and the <u>PATH</u> for a PIF with the same name as the program. The settings in this PIF control the way the program is run. If you are having trouble running a DOS program, search the current directory and your <u>PATH</u> (or your entire disk) using Norton Utilities FileFind for a PIF with the same name as the program. To avoid confusion, it is always recommended that you directly specify the .PIF program name in the icon's Properties.
- 2 Incorrect Startup directory. Both the icon's Properties and the PIF file allow you to specify a startup directory for a program. For DOS applications the directory in the PIF will prevail, so you should always set the startup directory there. In most cases, this should be set to the directory where the program is located. Many DOS applications assume that they are being run from the directory where the main program is located, and will fail if they are run from another directory (some programs will run from another directory provided they appear in the <u>PATH</u>).
- 3 Try running the program directly from DOS, and from a DOS prompt under Windows. First verify that the program will run if you start it completely outside of Windows. If the program won't work in DOS, it won't work in Windows either. This will ensure that the program is functioning properly and that the problem is due to a configuration setting under Windows. If the program works in plain DOS, try opening a full-screen DOS session under Windows and verify that the program works when run from a DOS prompt.
- 4 If the program flashes a blank screen and then returns to Windows, set the PIF so that it will not Close Window on Exit. By default, when a DOS application terminates, Windows closes the session in which the program was executing. Leaving the session open will give you a chance to read any error messages that the application is displaying so you can determine the problem. To set this option, uncheck the Close Window on Exit box on the main PIF screen.
- 5 If you receive insufficient memory messages from the application, try setting the Memory Requirements, KB Required setting to -1. This allocates all available <u>conventional memory</u> to the application. Many applications require a great deal of conventional memory to run, and insufficient memory may be available in your DOS sessions under Windows. If you require more memory to run the application than is available under Windows, see the section <u>Maximizing Conventional</u> <u>Memory</u>.
- **6** Try using the PIF included in APPS.INF if it exists. APPS.INF is a file that ships with Windows and includes the correct PIF settings for over 200 common applications. To extract the PIF for a program, use the Setup program in your Main group. Select Options, Set up Applications. Then choose "Ask you to specify an application" and locate the filename on disk. Windows will create a PIF for the application (usually in the Windows directory).
- 7 Try checking the following settings in the PIF: Full Screen, Exclusive, High Graphics, Retain Video Memory. If an application does not display properly, try setting the Monitor Ports option.
- 8 If you experience difficulty cutting and pasting in DOS applications (lost characters, etc.), try disabling the Allow Fast Paste option in PIF's Advanced options.

Insufficient File Handles

File handles are a data structure which DOS uses to track files as they are opened. If a DOS applications reports that it has insufficient file handles when you run it outside of Windows, you need to increase the FILES=*nn* setting in your <u>CONFIG.SYS</u> file.

If you only receive the message when you run the application under Windows, add the setting $\underline{PerVMFiles=nn}$ to the [386Enh] section of your <u>SYSTEM.INI</u> file. By default, Windows provides 10 file handles to each DOS session. Some applications require more than this amount, and will fail unless you place this setting in the <u>SYSTEM.INI</u>.

Unable to switch away from a running DOS application If you are unable to switch away from a running DOS application, there are two possible reasons: you have enabled the "Prevent Program Switch" or "Directly Modifies" settings in the program's <u>PIF</u>; or the Alt-Tab, Ctrl-Esc, and/or Alt-Esc Shortcut keys have been disabled in the PIF's Advanced settings.

Eliminating the "Incorrect system version" error message

This error message only appears when you attempt to run full-screen DOS applications. It is caused when you have a problem with the configuration of your <u>Enhanced mode</u> video driver. The video driver is comprised of two files: one handles the display of Windows and windowed applications, while a file called a grabber handles the display of full-screen DOS applications. If the two components are from different video drivers, or the grabber becomes corrupted, you will receive this error message.

- 1 To correct the problem exit to DOS, change to the Windows directory, and run SETUP. Setup will show the current settings. If it doesn't, you started Windows from a different directory. Exit Setup with <F3> and restart it from within your Windows directory.
- 2 Highlight the Display entry and press Enter.
- 3 Select a different video driver. If you aren't already using the VGA entry, select that. If you are, select Super VGA (800x600, 16 colors). If Windows offers to use the existing driver, let it. Exit Setup.
- 4 Re-run SETUP, highlight the display entry, and press Enter. Reselect the video driver you were originally using. When Windows prompts you to use the existing driver, press Esc and reinstall the files from your original Windows diskettes or the driver diskettes. This will replace the driver files and ensure that the <u>SYSTEM.INI</u> settings for your video driver are correct.

Windows won't print

If you are unable to print from Windows, use the following troubleshooting procedures:

- 1 Try printing from DOS (completely exiting Windows first). This will verify that your printer is properly attached to and communicating with your machine. If you are using a non-PostScript printer, issue a PrintScreen or type the following command: COPY C:\CONFIG.SYS PRN (substitute LPT1, LPT2, etc. if appropriate) The printer should print the file. If the FormFeed light comes on but no page appears, take the printer off-line and press the FormFeed button. If you are using a PostScript printer, enter the following series of commands: COPY CON COM1 (substitute the port your printer is attached to if it is not COM1) SHOWPAGE Press the F6 key and press Enter. This should eject a blank page from the printer. 2 Check your TEMP variable. If the printer works in DOS, the problem lies within the Windows configuration. When Windows prints a file, it first spools the data to a temporary file located in the TEMP directory. Type SET at a DOS prompt and verify that the TEMP environment variable points to a valid sub-directory and does not have a trailing space or backslash. If TEMP is not set, then Windows will use the root directory of the current drive. If TEMP points to an invalid directory, use SET TEMP=dirname to point it to a valid directory and try printing again. You should also correct
- the line that sets the TEMP variable in your AUTOEXEC.BAT file.
- 3 Check available disk space on the drive pointed to by TEMP. Use the CHKDSK command on the drive pointed to by the TEMP variable and verify that the entry under "Bytes available on disk" is at least 2 MB.
- 4 Check your <u>printer driver</u> setup and reinstall the driver. Within Windows, open Control Panel and double-click the Printers icon. Verify that the Default Printer is set correctly, that it is connected to the correct port, and that it is not set to print to FILE:. If the settings appear correct, try using Add>> to reinstall the printer driver from the original diskettes.
- 5 Verify that the COM port settings are correct. If your printer is attached to a serial port, close the Printers dialog and double-click on the Ports icon in Control Panel. Select the serial port and verify that the settings are correct, usually 9600, 8 data bits, no parity, 1 stop bit, and Flow Control set to XON/XOFF (These settings may be different for your particular printer).
- 6 Reopen the Printers dialog and uncheck the Use Print Manager box. This will cause Windows to print the file directly, rather than spooling it to the Print Manager. Try printing again.
- 7 Select the Connect.. button and uncheck Fast Printing Direct to Port. This will cause Windows to print the file using the machine's <u>BIOS</u>, rather than communicating directly with the communication ports.
- 8 "Error 20" on Hewlett-Packard LaserJets and compatibles. This error is caused when you try to print a page that requires more memory than you have installed in your printer. LaserJets compose an entire page before printing it, and the page you are printing may contain complex graphics or other data that requires more data than your printer contains. Simplify the page, reduce the resolution in Control Panel's Printers dialog, or install more <u>RAM</u> in the printer.

Network printing

If you are experiencing trouble printing to a network printer, first check the items under <u>Windows Won't</u> <u>Print</u>. In addition, try the following:

- 1 If you cannot print to the network printer from DOS, the problem is network-related.
- 2 If the TEMP variable is set to point to a network directory, you must have Read, Write, Create, and Delete rights to that directory.
- **3** Open Windows Setup in the Main Group and verify that Windows is set up properly for your network.
- 4 Verify that you are using the latest network drivers. On a NetWare network, your IPX driver should be at least version 3.1, NETX must be version 3.26 or later, and the IPXODI and LSL drivers should be at least as current as the versions that ship with Windows.
- 5 If you are printing on a NetWare network, open Control Panel and select Printer, Connect..., Network..., Options.... Verify that the Form Feed, Enable Tabs, Enable Timeout, and Enable Banner check-boxes are all blank. (These options can be configured in DOS using the following switches on the CAPTURE command: /NA /TI=0 /NT /NFF /NB).
- 6 See the section on <u>Network problems</u> for other information on using Windows with your network.

Notepad doesn't wrap lines when printing Although Notepad's Edit, Word Wrap feature will wrap lines on the screen, those lines will not be wrapped when the file is sent to the printer. You must load the file into Write or another word-processor and print the file from there.

Excessive Flicker

If your screen flickers when running Windows, the problem is most likely the video driver or the resolution that you are using. Although many video cards and monitors are capable of running at Super VGA resolutions (800x600 or 1024x768), the refresh rate, or frequency with which the screen is repainted, is too low to prevent flickering. VESA, the standards body for Super VGA, recommends at least the following refresh rates:

Resolution	Vertical Refresh Rate	Horizontal Refresh Rate
640x480	72 Hz	37.7 KHz
800x600	72 Hz	48.4 KHz
1024x768	70 Hz	56.0 KHz
(non-interlaced)		

Some video systems use a technique called interlacing to achieve higher resolutions. Interlacing paints every other line on the screen with each pass of the electron gun. Unfortunately, this can also lead to a barely perceptible flicker that can become uncomfortable over time.

If your video system is capable of adequate refresh rates, verify that you are using the most recent revision of the correct video driver for your system. Adapter manufacturers are always updating their drivers to fix problems and improve performance, and usually provide the latest drivers free of charge on bulletin boards or through their technical support departments. Video drivers are usually installed and configured using the Windows Setup <u>icon</u> in your Main group. Some drivers also add an icon for the driver to the Control Panel.

Windows won't start

A corrupted video driver file, or selecting the incorrect video driver may render you unable to start Windows at all. See the section on how to <u>change to the standard VGA video driver</u> for instructions on troubleshooting video-related startup problems.

Try standard VGA

Most video-related problems can be traced to the video driver. The first step in troubleshooting any video problems is to use one of the generic video drivers that ships with Windows, usually the standard VGA driver. See the section on how to <u>change to the standard VGA video driver</u> for instructions on selecting this driver. If you were running Windows in a higher resolution, try using the Super VGA (800x600, 16 colors) driver that ships with Windows. If the problem disappears using one of the generic drivers, contact the driver manufacturer for more information. Adapter manufacturers are always updating their drivers to fix problems and improve performance, and usually provide the latest drivers free of charge on bulletin boards or through their technical support departments.

XGA displays

The XGA high-resolution adapters included in many IBM PS/2s do not work properly if you configure them for high-resolution using the Windows Setup program from DOS. If you select the XGA (Small fonts) or XGA (Large fonts) options from the DOS-based Setup program, Windows will not start and you will be returned to a DOS prompt without an error message.

To use these adapters, configure them for regular VGA operation (640x480) when you run Windows' Setup program from DOS. After Windows is running you can use the Windows Setup icon in the Main group to configure the adapter for high resolution.

In addition, as with many high resolution adapters, you should exclude the area from C000-C7FF from your memory manager using the X=C000-C7FF switch on the <u>EMM386</u> or <u>QEMM</u> line in your <u>CONFIG.SYS</u>. In addition, you should exclude the area from B000-B7FF.

Using the mouse hangs your system

If your mouse randomly hangs the machine when you are using it, you may be overflowing the hardware stacks allocated by DOS. Whenever you move the mouse it generates messages called interrupts which Windows queues for processing. If the number of interrupts outstrips the amount of space available for storing them, Windows may hang.

To overcome this problem, Microsoft recommends that you allocate 9 stacks of 256 bytes each. This is done by adding the following line to your <u>CONFIG.SYS</u> file:

STACKS=9,256

Windows adds this line by default when you install Windows.

If the above line does not solve the problem, try changing it to one of these combinations:

```
STACKS=12,128
STACKS=9,256
STACKS=12,256
STACKS=0,0
```

If changing the number of stacks does not solve the problem, you may have an interrupt conflict.

Machine hangs while loading drivers

If you machine hangs when you load the DOS mouse driver from your <u>CONFIG.SYS</u> or <u>AUTOEXEC.BAT</u> file, then you probably used COPY rather than EXPAND to move the driver file from the installation diskettes to your hard drive. The mouse drivers on the distribution diskettes are in a compressed form, and will hang your machine if you attempt to use them without decompressing them first.

To determine whether the driver is compressed, check the size of the file using the command DIR MOUSE in the directory where the files are installed (use Norton Utilities FileFind to search for MOUSE.* if you are unsure where the file is located). If you are using the version 8.2 of the Microsoft mouse drivers, the files are approximately 55K; if the size is closer to 31K then you used COPY rather than EXPAND.

See the section on <u>Using Expand</u> for instructions on manually reinstalling the file from the distribution diskettes.

Use the /Y switch to prevent problems with graphical cursors

Recent Microsoft mouse drivers include the ability to display the mouse-pointer as a graphical arrow even when you are running text-mode DOS applications outside of Windows. Using the graphical mouse pointer in a DOS application that you are running in a resizeable window can cause the mouse to behave erratically, locking the mouse pointer or leaving a residual image of the pointer on-screen when you switch back to an application.

To prevent this behavior, Windows Setup defaults to adding the /Y switch to the end of the line that loads your mouse driver. If you have installed the mouse drivers manually, you should add this switch to the line in your startup file as well.

Removing a lost or forgotten password

The screen savers included with Windows allow you to protect your machine with a password when the screen-saver is invoked. This password provides only limited protection, however, since rebooting the PC will allow someone to bypass the security and gain full access to the machine.

It is possible to remove the password from the screen-savers if you forget it or if a departed co-worker neglected to remove it:

- 1 Exit Windows and edit the <u>CONTROL.INI</u> file in the Windows directory.
- 2 Change the line PWProtected=1 to PWProtected=0.
- **3** Delete the line Password=xxxxxx
- **4** Save the changes and restart Windows.

Note that the entry on the Password= line is not the actual password; it has been encrypted to prevent an intruder from simply reading the entry.

Troubleshooting 32-bit File Access

The symptoms of a problem with <u>32-bit File Access</u> include severe instability, data corruption, and an inability to start Windows. Use the following procedure to troubleshoot the problem:

- 1 Start Windows with the command WIN /D:FC. This will disable both 32-bit Disk Access and 32-bit File Access. If the problem persists, it is not related to these features.
- 2 If the problem disappears, restart Windows with the command WIN /D:C. This will disable 32-bit File Access. If the problem disappears, disable the feature by running Control Panel, double-clicking the 386 Enhanced icon, and selecting Virtual Memory. Select the Change button and clear the 32-bit File Access check-box.
- 3 If you are using the Real Mode Mapper, disable it by renaming the RMM.D32 file in the \ WINDOWS\SYSTEM directory. To determine whether you are using the Real Mode Mapper, double-click the 386 Enhanced icon in Control Panel and select Virtual Memory. If you have a SCSI, ESDI, or a compressed drive using software other than DOS 6.2s DoubleSpace, and the Disk Status box shows 32-bit for the drive, then you are using the Real Mode Mapper. If renaming RMM.D32 makes the problem disappear, then <u>re-expand</u> the RMM.D32, IOS.386, and VXDLDR.386 files from your original diskettes. If the problem persists, you will need to use a FastDisk driver instead of the Real Mode Mapper, or disable 32-bit File Access.
- 4 If the /D:C switch did not fix the problem, disable FastDisk with the command WIN /D:F. If the problem disappears, check the documentation for your FastDisk driver or contact the manufacturer. If you are unable to resolve the problem, try switching to the Real Mode Mapper. Double-click the 386 Enhanced icon in Control Panel and select Virtual memory. Select Change, and clear the 32-bit Disk Access check-box.

VxD conflicts

Many screen savers install a <u>virtual device driver (VxD)</u> to monitor system activity and determine when the screen-saver is invoked. This VxD is often installed into the \WINDOWS\SYSTEM and loaded via the [386Enh] section of <u>SYSTEM.INI.</u> Even though you may think you deleted a screen saver from your system, the VxD may still be loading.

If you load two VxDs which perform similar actions, they may conflict with each other and cause problems with your system. Likewise, enabling both the built-in Windows screen-saver and a third-party screen-saver can lead to problems.

If you use a third-party screen-saver, disable the built-in saver using Control Panel's Desktop icon. When you install applications, use Norton Utilities Tracker program to track which drivers an application installs so you can reverse the changes if you remove the application.

Some common third-party VxDs include the following:

AD.386	After-Dark screen savers (including Star Trek, Disney, and other modules)
ANTHOOK.386	Intermission Screen Saver
INTERMIS.386	Intermission Screen Saver

Other VxDs which might cause conflicts with screen-savers include programs which trap the system timer, such as scheduling and reminder programs.

Exclusive DOS sessions

Most screen-savers have the ability to monitor system activity while you are in a DOS session under Windows (or running a full-screen DOS program under Windows). However, if you specify in the <u>PIF</u> that the DOS session is Exclusive, then the screen saver will not be able to monitor the system's activity and invoke properly. Most screen-savers include the ability to temporarily disable the program by moving the mouse pointer to a specific corner or invoking a key combination. If you will be running an Exclusive DOS session, use this ability to prevent conflicts with the screen saver.

IRQ conflicts

Hardware peripherals such as external modems, mice, scanners, plotters, and some printers (notably Apple PostScript printers) attach to your PC through a serial or COM port. Internal modems plug into an expansion slot in the system and act like a serial port without actually attaching to a port on your system. The ports generate signals called interrupts (IRQs) to notify the CPU that the attached peripherals require attention. Each COM port in your system is configured to use a specific IRQ to send its messages.

NOTE: To see which IRQs are in use on your system, see <u>Finding the installed ports and</u> their addresses.

The original PC specified two COM ports, numbered 1 and 2, and designated IRQ4 and IRQ3 as their standards, respectively. DOS 3.3 added support for two additional COM ports, numbered 3 and 4. However, there were no more IRQs available to assign to these ports as "standard", so IRQs 3 and 4 were given double-duty for the new COM ports.

Thus the standard IRQs are as follows:

COM1	IRQ4
COM2	IRQ3
COM3	IRQ4
COM4	IRQ3

This can cause problems if a device on COM1 and a device on COM3 both try to issue interrupts at the same time, since the CPU does not know which device needs attention.

If you are having trouble using a serial device such as a modem or mouse, verify that you are not attempting to use two COM ports that share an IRQ at the same time. For example, using a mouse on COM1 and an internal modem configured as COM3 may cause one of the two to stop functioning or the system to hang.

If you have three serial devices, the most common solution is to plug your mouse into COM1 and the other two peripherals into COM2 and COM4, being careful not to use the latter two peripherals at the same time. If that is impossible, or if you need 4 serial devices, consider purchasing a bus mouse. A bus mouse uses an expansion board which can be configured to use a different IRQ.

Finding the installed ports and their addresses

The easiest way to determine which COM ports are in your system, how they are configured, and the devices attached to them is to use Norton Diagnostics program included in Norton Utilities:

- 1 Exit Windows completely and run NDIAGS
- 2 Select File, Options and check the box next to "Search for serial ports". Press OK.
- **3** Select File, Hardware Configuration to display your port settings and the devices attached to them.

The comm.drv entry in SYSTEM.INI

The comm.drv entry tells Windows which communications driver to use. By default, Windows uses a file called COMM.DRV that ships with Windows. However, some applications (including most remote-control packages) replace the communications driver with a driver of their own. If you later remove the application, the driver is not restored to its default.

If you are having trouble using a communications programs under Windows (other than the remotecontrol package), try using the default driver that comes with Windows. If you are using a remote-control package, comment out the existing COMM.DRV entry and replace it with the following:

comm.drv=comm.drv

If you have deleted the remote-control package, you can simply change the existing line (you will probably want to change the keyboard.drv line back to its default of $\underline{\texttt{keyboard.drv=}}$ keyboard.drv also). Restart Windows and see if the problem disappears.

Don't switch away from a DOS communications program in Standard mode When Windows runs in <u>Standard mode</u> it can only run one DOS application at a time. When you switch away from the application, Windows temporarily switches it out of memory and reloads the program you switched to into memory. This will cause a communications program to drop its connection.

Don't cut or copy text from a windowed DOS communications program In a windowed DOS application, if you choose the Mark, Copy or Paste commands from the Edit menu, Windows temporarily suspends the application so it can move the selected text to the Clipboard. This will cause most DOS communications programs to drop their connection. Use the clipping facility built into many communications programs instead.

Using DOS communication applications under Windows

Don't switch away from a communications program in Standard mode Don't cut or copy text from a windowed communications program

Configuring the proper PIF settings

The <u>PIF</u> for your DOS communications program should use the following guidelines:

- 1 Don't check the Detect Idle Time box. This causes Windows to monitor the application for unused CPU cycles and give them to other applications, and will cause a communications application to drop its connection.
- 2 If you are using 32-bit Disk Access for your <u>permanent swap-file</u>, check the box to Lock Application Memory.
- 3 If you are attempting to run your communications program at 9600 baud, see the section on <u>High</u> <u>Speed Communications</u>

Troubleshooting Sound

If you are unable to get any sound from your sound hardware, try the following troubleshooting procedures:

- 1 Verify that the volume adjustment on the board has not been turned all the way down.
- 2 Verify that your speakers are receiving power and that the batteries (if required) are fresh.
- **3** Verify that you have plugged the speaker cable into the correct port (the microphone port accepts the same type of plug).
- 4 Try plugging a pair of headphones into the speaker port of your sound card and see if you receive sound. If you do, the problem lies with your external sound equipment rather than the configuration of the computer system.
- 5 Open the Control Panel's Drivers section and verify that you have the correct driver installed. Also verify that the settings match those of your hardware (IRQ, base address, <u>DMA</u>, etc.)
- 6 Open the Control Panel's Sound section and see if the Test button allows you to play any sounds. If the Test button has been grayed out, then you do not have a driver installed in Control Panel's Drivers section.
- 7 Verify that you do not have a conflict between the hardware settings of your audio card and other hardware in your system. Exit Windows completely and run Norton Diagnostics (NDIAGS). Select System, IRQ Status and verify that the IRQ you have chosen is not in use by another peripheral (such as a tape-drive controller or CD-ROM drive). On most machines with only 1 parallel port, IRQ 5 is available. Also verify that you do not have a <u>DMA</u> conflict with a tape-drive controller or other installed device. Unless the card's default base-address is in use by another peripheral, you should set the card to use its default address. If you change any of these settings, be sure to update the Drivers section of Control Panel to reflect the changes, then use the Sound applet's Test button to see if you get any sound from the new configuration.
- 8 If you have any DOS applications that make use of sound, such as games, try them to see if the board is working properly. If the board works in DOS, then the Windows driver has probably been configured improperly.
- **9** Try temporarily removing other adapters from your system to determine if there is a conflict between them and the sound board. When you locate the conflict, reconfigure one of the boards to avoid the conflict.
- **10** DOS games running under <u>Enhanced mode</u> will not be able to access the sound hardware. Run the game from DOS or under Windows' <u>Standard mode</u>.

Troubleshooting CD-ROMs

If you are unable to access your CD-ROM drive, try the following troubleshooting procedures:

- 1 Verify that the device-driver (provided by the manufacturer) is loading properly in the <u>CONFIG.SYS</u> when you boot the system. Watch for error messages when the driver loads.
- 2 Verify that you are loading the CD-ROM Extensions (MSCDEX) from your <u>AUTOEXEC.BAT.</u> Watch for error messages when the driver loads. You must use at least version 2.21 of the MSCDEX driver.
- **3** Run MSD from a DOS prompt outside of Windows. Select the Disk Drives button to list the drive letter assignments you are using.
- 4 Check the LASTDRIVE=x entry at the bottom of the MSD Disk Drives display. Verify that it specifies at least one drive letter after the last letter you are currently using for drives other than the CD-ROM. Note that if you are using DoubleSpace to compress your drive, it will reserve drive letters to refer to the host volumes of compressed drives that you create. Run DBLSPACE /LIST to display the drive letters in use by DoubleSpace. Use the LASTDRIVE=x: entry in your <u>CONFIG.SYS</u> to instruct DOS which drive letters to make available in your system.
- 5 Try accessing the disk from DOS outside of Windows. Change to the drive that refers to the CD-ROM and type DIR to get a directory listing. If no files appear, the disk in the drive may be an audio (music) disk. Replace it with a data disk and try again.
- 6 Use the /v parameter on the MSCDEX line to get a Verbose listing of information when the driver loads. Verify that the /D: xxxxxx label on the MSCDEX line and on the driver line in your <u>CONFIG.SYS</u> specify the same name for the drive. The /L: *d* parameter specifies the drive letter assigned to the drive by MSCDEX. Do not use the /E parameter, which enables the drive to use <u>Expanded</u> (EMS) memory if you will be using the drive under Windows.
- 7 Verify that the hardware settings for your CD-ROM are correct. Exit Windows completely and run Norton Diagnostics (NDIAGS). Select System, IRQ Status and verify that the IRQ you have chosen is not in use by another peripheral (such as a sound-card or tape-drive controller). On most machines with only 1 parallel port, IRQ 5 is available. Unless the controller card's default base-address is in use by another peripheral, you should set the card to use its default address.
- 8 Ensure that the terminator is properly installed (if your drive requires one) and that the connection to the controller or sound card is complete. Be sure that the ribbon cable is attached so that the stripe on the cable aligns with pin 1 of the connector on the card.

Both the personal and shared directories must be in the PATH

If you have installed Windows onto a network server using the SETUP /A and SETUP /N options, then both the user's personal directory and the shared directory on the network must appear in the <u>PATH</u> statement, in that order. Verify this by typing <u>PATH</u> at a DOS prompt after logging into the network. If you are running NetWare, ensure that when you MAP search drives you do not replace the Windows directories in your <u>PATH</u>. If you are, use MAP INSERT instead. Also, verify that the <u>PATH</u> is not longer than 127 characters including the PATH= string.

Interrupt/UMB problems

If you are having difficulty connecting to your network, verify that you do not have an interrupt (IRQ) or <u>upper-memory block (UMB)</u> conflict with your network adapter. Many network cards require that you assign both a block of upper memory and an available IRQ to them.

An IRQ is the means by which an adapter notifies the CPU that it requires attention. Many peripherals in your system require IRQs, including devices attached to serial (COM) ports, printer ports, and internal components such as the keyboard. Exit Windows completely, run Norton Diagnostics (NDIAGS), and select System, IRQ Status. Verify that your network card is configured to use an IRQ that is not being used by any other peripherals. Some cards are configured using jumpers on the board, while others can be configured using software switches when you load the drivers. If you have only 1 parallel port in your machine, IRQ5 may be available. If you do not use the parallel port installed in your system because you print only over the network, you may also be able to use IRQ7. Contact your network administrator for more information about configuring the IRQs for your network adapter.

An upper-memory block is an address between 640K and 1024K. These addresses are usually reserved for peripherals, but memory managers such as <u>EMM386</u> and <u>QEMM</u> can make the unused addresses available to load <u>device drivers</u> and <u>TSRs</u> into the space and increase available <u>conventional memory</u>.

- 1) If you are using any Include (I=xxxx-xxxx) statements on your memory manager line, try removing them.
- 2) Use MSD or <u>QEMM's</u> Manifest (MFT) program to locate the address used by your adapter and exclude it from the memory-manager's use. You should also exclude the area from Windows' use by adding an <u>EMMExclude=xxxx-xxxx</u> entry to the [386Enh] section of your <u>SYSTEM.INI</u> file.
- 3) If you are using EMM386's HIGHSCAN or QEMM's Stealth features (specified by an ST:M or ST:F parameter), try removing those parameters and see if the problem disappears.

NETX and SETVER

If you have installed DOS 6 and have not updated your version of NETX, you will receive an error message stating that NETX is not running on DOS 3.3 through DOS 5.0. To circumvent this problem obtain the latest copy of NETX, which works properly under DOS 6.

In the meantime:

- 1 Load SETVER in your <u>CONFIG.SYS</u> using a line like the following: DEVICE=C:\DOS\SETVER.EXE
- **2** After you have rebooted and loaded SETVER, enter the following command: SETVER *d*:*directory*\NETX.EXE 5.0

This will instruct DOS to report to NETX that you are running version 5.0 of DOS. NETX will operate properly until you receive the new driver.

Share may cause problems on certain networks

The DOS Share program prevents two applications from opening the same file with write privileges at the same time. Most networks include code which performs the same function. If given the choice, use the network's internal sharing mechanisms rather than the SHARE program included with DOS.

To prevent file conflicts when multiple users share a program on the file-server, mark the program's files read-only using File Manager, Norton Utilities File Attributes (FA) command, or a network utility.

Old NetWare LSL or IPXODI drivers

Windows 3.1 shipped with new versions of the LSL and IPXODI drivers for Novell NetWare. Setup copies these files into your Windows directory for local installations, or into the shared Windows directory on network installations. If you are using these drivers, be sure to use a version at least as current as the one shipped with Windows. If you use NETX, verify that you are using at least version 3.26.

NetWare's ShowDots setting

By default, Novell's server directories do not include the . and .. entries that DOS directories contain. This can make navigating directories in Windows <u>dialog boxes</u> more difficult, since you cannot double-click the .. entry to move up one level in the directory tree. To make NetWare emulate the . and .. entries, add the following entry to the SHELL.CFG file in the directory that contains your network drivers (you can create the file using any text-editor if it doesn't already exist):

ShowDots=ON

NOTE: This entry will cause problems with some older versions of NetWare 286's BINDFIX and MAKEUSER utilities.

File Handles and NetWare

File handles are a data structure that DOS uses to keep track of opened files. By default, NetWare's drivers provide only 40 file-handles, which is insufficient for running Windows and a number of applications. If you are having trouble opening several files at once, increase this number by placing the following entry in the SHELL.CFG file in the directory that contains your network drivers (you can create the file using any text-editor if it doesn't already exist):

File Handles=60

You should also verify that the FILES=nn statement in your <u>CONFIG.SYS</u> file allocates at least 60 file handles.

NetWare's NWPOPUP doesn't work

If you are unable to receive network messages while you are in Windows, check the following:

- 1 Be sure you are loading the NWPOPUP utility on the <u>LOAD=</u> line of your <u>WIN.INI.</u>
- 2 Verify that the NWPOPUP.EXE file is dated 3-10-92 or later. Use Norton Utilities FIleFind utility to search your drives and PATH and verify that there are no older versions of the program around.
- 3 Open Control Panel's Network dialog and verify that you have Messages Enabled in the Message Status at Startup box. Check the Network Warnings box.
- 4 Edit the following line in the [386Enh] section of your <u>SYSTEM.INI.</u> <u>TimerCriticalSection=</u>10000

Execute-only versus read-only attributes Some networks, such as Banyan VINES, offer the option of making applications execute-only. This setting may not work properly under Windows, and should be avoided. Instead, use File Manger, DOS' ATTRIB command, or a network utility to mark the files read-only.

Setup Switches

The DOS Setup program offers a number of switches that may help in specific situations. They include the following:

- /I Disable Hardware Detection. This switch prevents Windows from attempting to determine the hardware components of your system, such as the display, mouse, and network type. Use this switch if Setup hangs with the message "Analyzing system..."
- **/P** Recreate the default groups. This switch will not actually reinstall Windows, but will cause Setup to recreate the Main, Accessories, and Games groups. Use this switch if the group files become corrupted or you wish to return the groups to their default settings.

Three different ways that SETUP runs

Setup runs one of three ways depending where you launch it from:

If you start Setup from the \WINDOWS directory at a DOS prompt, it will launch a DOS-based program which allows you to modify the settings for that installation of Windows. Use this option to change an incorrect setting that has rendered you unable to start Windows (such as an incorrect or corrupted video driver).

If you start Setup from a DOS prompt in any other directory, it will launch a DOS-based program which installs a new copy of Windows from the installation diskettes. Use this when you are installing Windows for the first time, or are installing two different Windows installations (such as <u>Fresh Installing Windows</u> <u>and your applications</u> as a troubleshooting measure). You should also use this method when you are reinstalling Windows over itself to correct a corrupted or inadvertently deleted file.

If you run Setup from within Windows (using the Windows Setup icon in your Main group), you can perform three tasks:

- 1 You can modify the settings for that installation of Windows;
- 2 You can set up applications on your hard-disk, either individually or automatically (this option is also used to install the <u>PIF</u> Windows includes for an application, as discussed in Use APPS.INF to <u>create PIFs</u>);
- **3** You can add Windows components that you did not initially install, or remove components that you do not use to save disk space.

Using SETUP to reinstall a corrupted driver

One of the main things you'll use Setup for after Windows is installed is to reinstall a corrupted driver. If a driver's files are inadvertently deleted or corrupted in some way, Setup is used to install a fresh copy of the driver from the original diskettes. For example, if you have determined that a third-party video driver is the cause of a problem, try reinstalling the driver from the original diskettes and see if the problem disappears.

Don't use Expanded Memory (EMS) for your disk cache Never place a <u>cache</u> in expanded (EMS) memory. Windows does not work properly when other programs run in <u>expanded memory</u>. If your memory board offers a choice of configuring the memory as expanded (EMS) or extended (XMS), always choose extended. Windows can provide expanded memory to your DOS applications out of the <u>extended memory</u> pool.

Never run two disk caches at the same time

Running two disk <u>caches</u> at once will eventually lead to data loss. If you choose to replace your existing cache with a different one, be sure to remove the lines that load your old cache program from your startup files. Many caches will automatically do this when you install them, or will refuse to load if they detect another cache in memory.

Don't explicitly cache compressed drives

A compressed drive is actually comprised of a very large, hidden file on the host drive. When you <u>cache</u> the host drive, you automatically cache the compressed drive. Most newer disk caches (including <u>SmartDrive</u> and <u>Norton Cache</u>) recognize compressed drives and do not attempt to cache them. Do not override this by placing the parameters on the cache's command line to cache the compressed drive.

The VirtualHDIRQ Setting

This setting controls whether Windows handles interrupts from the hard disk controller itself, or passes them on to the <u>BIOS</u>. The default on most machines is True, which instructs Windows to handle the interrupts. Some disk <u>caches</u> require this setting to be turned off in order to work properly. If you suspect that you may need to change this setting, try starting Windows with the command WIN / D:V. If that corrects the problem, add the following line to the [386Enh] section of your <u>SYSTEM.INI</u>.

<u>VirtualHDIRQ=</u>FALSE

Flushing the Cache

Most <u>caches</u> use a technique called delayed writes to improve the performance of your computer. This technique returns control to you immediately when a disk-write is performed, allowing you to begin working on your next task. When there are idle CPU cycles, the write is performed and the data is committed to the disk. If the machine crashes or is turned off before the write occurs, the data might be lost. For this reason, most disk caches limit the amount of time that they will delay a write, and allow you to configure or turn off the option altogether.

If you perform a disk operation, such as saving or copying a file, be sure to allow the cache to process any delayed writes before rebooting or turning off the system. Waiting ten seconds (or until the hard-disk light stops blinking) is usually sufficient. Alternately, you can give a command to explicitly flush the cache, such as one of the following:

SMARTDRV /C NCACHE2 /DUMP SPEEDRV /DUMP

This process applies to when you exit Windows as well -- always be sure to let the cache flush completely before you reboot or turn the machine off. To automate this process, create a WIN.BAT file that includes the command to flush your cache after the command which runs Windows. Then the cache will be flushed automatically before you are returned to the DOS prompt. And <u>never turn off your machine while you're still in Windows</u>

Never turn off the machine or reboot from within Windows

When Windows is running it maintains several open files. When you exit Windows, these files are closed in an orderly manner and you are prompted to save any changes. Rebooting or turning the machine off from within Windows raises the possibility that these files will not be closed properly and that corruption will result. This result is even more likely if you use a deletion-tracking utility.

Sometimes Windows crashes or hangs completely, and you have no choice but to reboot without exiting properly. When this happens, you should immediately run Norton Disk Doctor to see whether any corruption occurred.

Removable and floppy drives

Your disk <u>cache</u> needs to be aware of removable drives to ensure that it handles them properly. If not, the cache will not know when you change cartridges and will assume that the files and locations it initially read are still valid. When it attempts to write those files from the cache back to disk, it will overwrite data on the new disk. For this reason, most caches default to not caching floppy-drives.

This problem is aggravated if you are using write-delayed caching. In this case, you should be sure to <u>Flush the cache</u> before changing cartridges. If your disk cache is not explicitly compatible with the type of removable drive you are using, then you should flush and reset the cache every time you change cartridges.

Norton <u>Cache</u> included with Norton Utilities is compatible with most removable drive systems, including lomega's Bernoulli drives and the SyDos removable drives. NCache will lock the eject mechanism while writes are pending, and uses the change-line detect mechanism to determine when a cartridge has been changed.

<u>SmartDrive</u> does not lock the eject mechanism, and should be flushed and reset before changing cartridges if you are using write-delayed caching. Otherwise, It re-reads the directory each time is it accessed, so changing cartridges does not pose a problem.

Automounting Compressed Drives

Many disk-compression programs allow you to automatically mount compressed volumes stored on removable media such as floppy disks or removable drive cartridges. This behavior is the default in DOS 6.2's DoubleSpace and some versions of SuperStor. If your caching program is compatible with compressed drives, it should recognize this behavior and cache the appropriate drive. If not, then you should flush and reload the cache every time you change cartridges or floppy diskettes. And remember, <u>never explicitly cache compressed drives</u>

"EMM386 Exception Error"

An Exception 13 error (the most common) is caused when a program attempts to execute an invalid or privileged instruction. It is usually the result of a program bug, a conflict between two pieces of software, or a conflict between a piece of hardware and a piece of software.

This error is usually the result of an error in the configuration of your <u>upper memory blocks (UMBs)</u>. It occurs when two drivers or programs attempt to access the same region of upper memory, causing the memory manager to report a violation. Try the following procedures to find a solution:

- 1 Simplify your memory configuration.
- 2 Exclude the area of memory where the error occurs. The error message will display a memory address in the form XXXX:YYYY. Exclude the 64K region of memory specified in the XXXX portion of the address (A000-AFFF, B000-BFFF, etc.). If the error disappears, reduce the size of the exclusion as much as possible.
- 3 Look for UMB conflicts.

"Error loading PROGMAN.EXE"

This error indicates that Windows cannot load your <u>shell</u>, the program which launches when you start Windows and exits Windows when you close it. The default Windows shell is Program Manager, but you may also use a replacement shell such as Norton Desktop for Windows.

This error usually occurs for one of three reasons:

- 1 The <u>SHELL=</u> entry in the [boot] section of your <u>SYSTEM.INI</u> file is incorrect, or the specified file is not available. Open your SYSTEM.INI file and verify that there is only one SHELL= line. If you are using Program Manager as your shell, the line should read SHELL=PROGMAN.EXE. If you are using another shell, the line may be different.
- 2 The SHELL= entry is correct, but Windows is unable to load the specified program. This can occur if you are using a shell other than Program Manager, and Windows is unable to launch the shell. This may occur if the shell program's directory is not in the <u>path</u>, its files are damaged or missing, or you have removed the shell application from your disk but neglected to modify the SHELL= entry. The error occurs when the alternate shell recognizes that it cannot load, and is attempting to launch Program Manager instead. Try changing the shell entry to read SHELL=PROGMAN.EXE and launch Windows again. If Windows launches, try running the alternate shell as a regular Windows program. If it works properly, contact the manufacturer for assistance. If it does not, there is a problem with the configuration of the shell program.
- 3 There is something wrong with your DOS Configuration. The problem may be insufficient memory or file handles, or that the Windows directory is not in your <u>PATH</u>. (<u>Click here to return to the</u> <u>Contents listing for DOS Configuration troubleshooting topics</u>.)

"Application Execution Error. Cannot find file..."

This error will occur during Windows' startup if you have multiple spaces on <u>LOAD=</u> or <u>RUN=</u> entries in the [windows] section of your <u>WIN.INI</u>, or if the line is too long.

The LOAD= and RUN= entries allow you to launch a program automatically whenever Windows is started. You can have multiple entries on each line, but there must be no more than 1 space between each entry. If you have multiple spaces, Program Manager incorrectly assumes that the second space is another program and generates the above error when it cannot locate the program. Verify that there is only one space between each entry.

The LOAD= and RUN= lines are limited to 127 characters each. Verify that the entries in your WIN.INI conform to this limitation. If you need to run more programs than you can fit on these lines when Windows starts, use the Startup group instead. You can specify a Run Style of Minimized in the <u>icon's</u> Properties to make the icon mimic the LOAD= entries' behavior.

"Stack overflow"

This error occurs when the number of interrupts generated by a peripheral exceeds the space DOS has allocated to temporarily store those interrupts. The most common culprit is your mouse. See the section on <u>Using the mouse hangs your system</u> for suggestions on eliminating this error.

"Cannot find KRNL386"

This error usually occurs if there is a problem with your <u>DOS Configuration</u>, or if a crashed program has corrupted a portion of DOS' memory. If you have just experienced a program crash, reboot the computer and run Norton Disk Doctor to correct any disk errors before attempting to run Windows again. If any of the Windows files have been damaged, it may be necessary to <u>Re-Install Windows into the same</u> <u>directory</u> before it will run properly again.

"A serious disk error occurred..."

This error usually indicates that you need to turn off the <u>The VirtualHDIRQ Setting</u> or enable <u>double-</u> <u>buffering.</u> It can also occur if you have a bad spot on the surface of your hard disk. Verify that this is not the case by running Norton Disk Doctor and performing a Thorough Surface Test.

"Cannot find file..."

This error may occur if you are loading the DOS APPEND utility. This program lets you specify a list of directories that a program should look in for a data file if it does not appear in the current directory. It is similar to the <u>PATH</u> statement, except for data rather than program files. Unfortunately, the Append utility does not work properly with many programs, including Windows. Microsoft recommends that you not use Append if you are running Windows. Remove the lines which load the utility from your <u>AUTOEXEC.BAT</u> file and reboot your system.

"Unable to use xxxxx as a Bitmap"

This error is usually displayed in the Desktop section of Control Panel when you attempt to change the <u>Wallpaper</u> setting. It indicates that Windows has insufficient memory to display the file you have chosen as your wallpaper. Although you may be able to display the file in a paint program, the overhead associated with the file makes Windows unable to use that file as a background. You wouldn't want to use a file that requires <u>virtual memory</u> as your background, because Windows would constantly be accessing your disk to repaint the screen. Try selecting a different file, or convert the bitmap to one that uses fewer colors.

"Corrupt Swap-File Warning"

This error appears during Windows' startup if it is unable to access your <u>permanent swap-file</u>, or if it suspects that the file has been damaged. The permanent swap-file appears as a file called <u>386SPART.PAR</u> located in the root-directory of the given drive, with the Hidden, System, and Read-only <u>attributes</u> enabled. Problems that can trigger this error include:

- 1 The swap-file may be located on a compressed drive. Never place your swap-file on a compressed drive.
- 2 The swap-file was moved from its original location. You cannot move the swap-file manually; you must use the Virtual Memory option in the 386 Enhanced section of Control Panel to move the swap-file to a different location.
- 3 You have removed the attributes from the 386SPART.PAR file.

To correct the problem, answer Yes when Windows prompts you to delete the file. When Windows has loaded, follow the instructions under <u>Create a Permanent Swap-File</u>. If Windows is unable to delete the existing swap-file automatically, you can use Norton Utilities Disk Editor to remove the file before launching Windows.

"Group File Error"

This error occurs during Windows startup if Program Manager is unable to load one of the groups specified in your <u>PROGMAN.INI</u> file. If you answer No when Program Manager asks if you want to try to load the group in the future, then the line that references the group file will be deleted from PROGMAN.INI. If you answer Yes, Program Manager will leave the line in PROGMAN.INI.

This error can occur for two reasons:

- Program Manager cannot locate the .GRP file. This can occur if the .GRP file has been moved to a different drive or directory and the path in <u>PROGMAN.INI</u> was not updated. In this case, answer Yes to Program Manager's prompt, then correct the entry in PROGMAN.INI. The error can also occur if you directly deleted the .GRP file from File Manager or DOS, rather than deleting the group from Program Manager. In this case, select No to remove the line from PROGMAN.INI. Finally, it may occur if you have changed your network drive mappings and have not updated PROGMAN.INI to reflect the changes.
- 2 The .GRP file is damaged. If the path to the file in PROGMAN.INI is correct, the group file itself may have become corrupted. Answer Yes to load the group in the future, then replace the damaged file from your backup if you have one. If not, and the group is either your Main, Accessories, or Games group, you can recreate the defaults for these groups using SETUP /P. If it is another group, you will need to delete the entry from PROGMAN.INI and recreate the group by dragging the programs out of File Manager and placing them in a new Program Manager group.

VxD Conflicts

VxD conflicts may cause many different error messages, or simply cause a program to stop working correctly. See the section on <u>Conflicting Virtual Device Drivers</u> for more information.

Sharing Violations

The DOS SHARE program prevents two applications from opening the same file with write privileges at the same time. If you receive a Sharing Violation error message, it indicates that the SHARE program has detected a conflict while opening a file. This error can occur for several reasons:

- 1 The file is opened by two people (on a network) or two applications (on a standalone machine) with write access at the same time. The Share program notifies you of this condition to prevent one program from inadvertently overwriting another program's changes.
- 2 Share is unable to open a handle for the file, and mistakenly reports a violation. This condition frequently occurs if you use Share's default parameters. To overcome this situation, use the following command-line to load Share:

SHARE /L:500 /F:5100

The L parameter specifies the number of locks, or files which Share can maintain information about. The number specified in this setting should match the FILES=nn entry in your <u>CONFIG.SYS</u> file. The F parameter specifies how much memory Share allocates to store the pathnames of the program it tracks. The default of 2048 bytes may be insufficient to track many files, or files with long pathnames.

3 A program is not opening or closing a file properly. A program may be attempting to access a file in a way that, while violating DOS conventions, works in a plain DOS environment. This condition may occur if a program is deleting a file, perhaps to save a newer version, and a deletion-tracking utility is attempting to log the file in its tracking system. When you have identified the offending program, contact the manufacturer for more information.

Unable to create a permanent swap-file

Windows may report that it is unable to create a <u>permanent swap-file</u> on a drive for three reasons:

- 1 You are running a peer network software program, such as Lantastic or Windows for Workgorups, and are sharing the drive on which you wish to create the swap-file. Disable the peer network software and try again.
- 2 You are attempting to put the swap-file on a drive that cannot accommodate one. This may be due to a non-standard <u>sector</u> size, disk compression, or some other problem. See the section on <u>Creating a permanent swap-file</u> for more information.
- 3 If you are using a <u>disk cache</u>, you may need to disable it before creating the permanent swap-file.

Incorrect/Missing System Resources If Windows reports erroneous results for your available memory or system resources, you probably have a problem with TOOLHELP.DLL, one of <u>The Redistributable DLLs.</u> See that section for more information.

Lost or broken OLE link

The most common cause of this error is that you have moved or renamed the file to which you are linking. The drive and directory location of the linked file is hard-coded into the link, and will not be automatically updated if you move or rename the file. Recreate the link to update the location information.

Using Expand

The files on the Windows distribution disks are compressed to save space. The files are automatically decompressed by Setup when you install Windows or an individual component. However, you may find it necessary at times to manually decompress a file from the diskettes. Examples include switching to the Microsoft mouse driver or reinstalling the redistributable DLLs. To do this, use the Expand program.

NOTE: Do not use DOS' or File Manager's COPY command or the files will not work.

The DOS 5 and higher SETUP programs automatically copy the EXPAND program to your \DOS directory. If you do not have EXPAND available in your <u>path</u>, then copy it from Windows Disk #3 (if you have high-density 3.5" or 5.25" diskettes; Disk #5 for 720K diskettes and Disk #2 for 360K diskettes) to your Windows directory.

Expand uses the following syntax:

EXPAND d:\dir\filename.ex_ d:\dir\filename.ext

Substitute the appropriate drive letters and directory names for your system. Underscores at the end of the file extensions indicate that the files are compressed. In the target specification, the underscore must be replaced with the correct letter. If you do not know the correct final letter, consult the following chart:

Compressed	Uncompressed
Extension	Extension
38_	386
CO_	COM
DL_	DLL
DR	DRV
EX	EXE
FO	FOT (TrueType)
-	FON (screen font)
HL	HLP
SY	SYS
TT ⁻	TTF
VX ⁻	VXD
-	

Expand will decompress multiple files at a time, but does not accept wildcards on the command line. Simply specify all the filenames, separated by spaces, and enter a drive letter and/or directory name as the target (without the filename portion). Each file will be placed in the target directory with its complete name.

Fixing boot-sector viruses with FDISK /MBR

Many viruses infect your system by placing their code in the Master Boot Record, the portion of your disk that DOS reads first when you boot the system. The virus then loads the proper boot record information so you do not realize it has infected your system. An anti-virus program such as Norton AntiVirus can detect these viruses, as well as many other types, and remove them from your system safely. If you don't have an anti-virus program available, you can use an undocumented DOS command to remove a boot-sector virus. This command is safe to use on any standard DOS hard-drive that doesn't require special drivers or use nonstandard sector sizes or security software.

To remove a boot-sector virus:

- 1 Boot from a virus-free, write-protected DOS floppy disk. This should contain the same version of DOS that is on your hard disk.
- 2 Type DIR C:

If you see the message Invalid drive specification, quit this procedure. Your disk has an encrypting virus and to remove it you must use an anti-virus program like Norton AntiVirus.

3 Type FDISK /MBR This will reinitialize the Master Boot Record of your disk, eradicating the virus code.

Common boot-sector viruses include:

Virus Name Azusa Bloody! Chinese Fish	Aliases Hong Kong Stoned.June_4th Fish Boot	Symptoms Printer port problems "Bloody! June 4, 1989" message each 128th bootup "Hello! I am FISH, please don't kill me" on bootup;
Flip Joshi Michelangelo Monkey	Omicron	destroys CMOS information Flips screen upside down "type Happy Birthday Joshi" on January 5th Overwrites hard disk on March 6
NoINT Stealth.B Stoned Tequila	Bloomington STB, AMSES New Zealand	Destroys diskettes "Your computer is stoned" on bootup Graphic and message on bootup

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- Limit the Size of Windows' Swap File on Diskless Workstations to Improve Startup Times
- Share Program Manager Groups
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- Get a 256-Character PATH
- Modify the Keyboard Speed and Repeat Rate
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- Customize Setup so it Requires Little or No User Interaction
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Create a Permanent Swap File

When Windows runs out of <u>RAM</u> to perform an operation, it swaps inactive data to disk. By default, Windows creates a temporary file called a swap file to hold this data. Creating a permanent swap file sets aside a section of contiguous disk-space that Windows can swap to without the overhead of going through DOS. This dramatically improves Windows' performance in <u>Enhanced mode</u>. Use the following guidelines when creating a permanent swap file:

Only create a permanent swap file on a drive with 512-byte sectors Never put a swap file on a network or compressed drive For diskless workstations: limit the size of Windows' swap file to improve startup times Defragment your drive before creating a permanent swap file Creating the permanent swap file

Only create a permanent swap file on a drive with 512-byte sectors

Most hard drives have 512-byte sectors. Unless your drive requires a special driver such as Disk Manager to operate, then your drive probably meets this criteria. To verify this:

- Double-click on the System Information icon in your "Norton Utilities DOS Programs" group.
 Choose Disk Characteristics from the Disks menu.
- 3 Select the drive from the list in the upper-right corner of the screen.

Never put a swap file on a network or compressed drive

Never put a <u>permanent swap file</u> on a network drive (such as a Novell NetWare volume) or a compressed drive such as those created with DoubleSpace, Stacker, or SuperStor. Although Windows may let you create the file on a compressed drive, it will not operate properly.

Allowing Windows to swap to a network drive will impose a severe performance penalty on both the workstation and the network. If you are using a diskless workstation, see the section on <u>limiting the size of the Windows' swap file to improve start-up times.</u>

For diskless workstations: limit the size of Windows' swap file to improve startup times

If your machine does not have a hard-drive (such as a diskless workstation on a network), you can use a temporary swap file on a network volume. This is not an ideal situation, since it generates a high volume of network traffic and can impair Windows' performance.

Windows searches the drive where the swap file will be located in order to determine the appropriate size. This may take a long time on a large network volume. To reduce Windows' startup time when using a network drive for swapping, add the following entries to the [386Enh] section of your <u>SYSTEM.INI.</u>

PagingDrive=d
MaxPagingFileSize=4096
MinUserDiskSpace=2048

where d is the drive you will be swapping to the size in kilobytes for the swap file minimum amount of disk space to keep free after creating the swap file

NOTE: You cannot specify a subdirectory for the swap file. Windows will create it in the root-directory of the drive specified by PagingDrive. This drive letter should be created using the network's function to map a network volume as the root directory of the given drive letter. In Novell NetWare, this means using the MAP ROOT command. Most users do not have write access to the actual root-directory of network volumes; even if they did, multiple users may create their swap files in the same place, overwriting each other and causing Windows to crash.

Defragment your drive before creating a permanent swap file Because it bypasses DOS, Windows can only use contiguous disk-space for a <u>permanent swap file</u>. Before creating the swap file, use SpeedDisk to defragment your hard-drive. Perform a full optimization to move all files and directories to the front of the disk.

Creating the permanent swap file

To create the swap file:

- 1 Start INI Tuner.
- **2** Double-click the 386 Enhanced icon.
- **3** Click the Virtual Memory... button.
- 4 Click the Change>> button.
- 5 In the New Settings box, select the Drive for the swap file and set the Type to Permanent.
- 6 Enter a size up to the Recommended Maximum Size into the New Size box.

NOTE: Windows creates a special hidden file in your root directory called <u>386SPART.PAR</u> to hold the swap file. This file appears in SpeedDisk as an unmovable file.

Use Disk Caching

Disk caching sets aside some of your memory to speed up disk access. Windows can be very diskintensive, and using a disk cache may be the single best way to speed up Windows. Windows includes a disk-cache called <u>SmartDrive</u> (SMARTDRV.EXE) which you can use, but for better performance use <u>Norton Cache</u>.

Selecting an appropriate size cache for your system Don't explicitly cache compressed drives What double-buffering is and when it's required Use write-behind caching to improve performance Flushing the cache Use System Watch to monitor your cache's performance Set BUFFERS= to between 5 and 10 in CONFIG.SYS

Selecting an appropriate size cache for your system

You must strike a balance between the size of your disk cache and the memory left available to Windows. If you use too much <u>RAM</u> for the cache Windows will have to swap to disk more often, hampering performance.

If you are using <u>SmartDrive</u> and don't have a CD-ROM installed, then increasing the size of the cache beyond 2 MB will provide a marginal increase in performance. <u>Norton Cache (NCache)</u> and <u>Norton</u> <u>Speedrive</u> employ more sophisticated algorithms which take advantage of all the memory you provide them. If you're using a cache which supports CD-ROMs (such as Norton Speedrive or SmartDrive in DOS 6.2), a larger cache can significantly boost its performance.

SmartDrive, Norton Speedrive, and Norton Cache allow you to specify different sizes for their operation in DOS and Windows. Unless you need the memory for something else (such as <u>EMS</u>), make the cache as large as possible in DOS. Use the following table to determine an appropriate size for Windows:

Installed RAM	CD-ROM installed?	SmartDrive (DOS 6.2) cache size	SmartDrive (pre-6.2) cache size	Norton Cache/ Norton Speedrive size
< 4MB	n/a	256K	256K	256K
4 MB	n/a	512K	512K	512K
4-6 MB	n/a	1 MB	1 MB	1 MB
6-8 MB	n/a	2 MB	2 MB	2 MB
> 8 MB	No	2 MB	2 MB	Total RAM - 6 MB
> 8 MB	Yes	Total RAM - 6 MB	2 MB	Total RAM - 6 MB

NOTE: If you are using <u>32-Bit File Access</u>, it uses VCache instead of your regular disk cache when Windows is running. Correspondingly, you should set a smaller size cache for Windows. To determine which drives are not being cached by VCache, open a DOS session from within Windows and give one of the following commands:

SMARTDRV /S NCACHE /STATUS SPEEDRV /STATUS

Set a Windows cache size that is appropriate for the types of drives being cached (probably 0 unless you are using a CD-ROM or other removable drive)

Don't explicitly cache compressed drives

A compressed drive is actually comprised of a large file located on the host drive. As such, it is cached when the host drive is cached, and should not be cached separately. For example, if your E: drive is a compressed DoubleSpace drive created from space on your C: drive, then you should only cache C: and not E:. Many disk caches (including <u>Norton Cache</u> and <u>Norton Speedrive</u>) are smart enough to recognize compressed drives automatically.

What double-buffering is and when it's required

Double-buffering places a small buffer in <u>conventional memory</u> to handle <u>DMA</u> transfers to and from a hard-drive. It is required on machines that use all three of the following:

- 1 Bus-mastering <u>SCSI</u> hard-drives (as well as certain other drives);
- 2 Certain memory managers to load programs into upper memory blocks (UMBs); and
- 3 <u>Disk-caches</u> or other programs that write to the disk.

If Setup detects that your machine requires double-buffering, it will add the following line to your <u>CONFIG.SYS</u> file:

DEVICE=C:\WINDOWS\SMARTDRV.EXE /DOUBLE BUFFER

If the disk drivers and memory managers you use are Virtual DMA Services (VDS) compliant, then double-buffering is not required and can be turned off to improve performance. <u>QEMM, 386Max</u>, and Adaptec's SCSI drivers are VDS-compliant; <u>EMM386</u> is not.

NOTE: If you are in any doubt about whether the drivers you use are VDS-compliant, *do not* turn off double-buffering! It may result in data corruption or loss.

Use write-behind caching to improve performance

Many disk caches allow you to use write-behind caching to improve performance. Write-behind caching delays writes to the hard-disk until there are idle CPU cycles to use for the write. Because the computer returns control to you immediately, it makes the computer more responsive to your actions. While many disk caches, including <u>Norton Cache</u> and <u>Norton Speedrive</u> turn on write-behind caching by default, the Setup program for DOS 6.2 disables <u>SmartDrive's</u> write-behind caching with a /X switch. To enable this feature, remove the /X switch on the <u>AUTOEXEC.BAT</u> line that loads <u>SmartDrive</u>. You can further improve SmartDrive's performance by using the /N switch, which allows DOS to return the DOS prompt before SmartDrive has written all pending writes. Note that if you use this switch, you should be sure to <u>flush the cache</u> before rebooting or turning off the computer.

Flushing the cache

Because write-behind caching returns control to you immediately, you may believe a disk-write has completed before it actually has. To ensure that you do not lose data, you should always flush the cache before rebooting the machine or turning it off. This will prevent data loss from an interrupted write operation.

If you perform a disk operation, such as saving or copying a file, be sure to allow the cache to process any delayed writes before rebooting or turning off the system. Waiting ten seconds (or until the hard-disk light stops blinking) is usually sufficient. Alternately, you can give a command to explicitly flush the cache, such as one of the following:

SMARTDRV /C NCACHE2 /DUMP SPEEDRV /DUMP

You should also follow this procedure when exiting Windows--always be sure to let the cache flush completely before you reboot or turn the machine off. To automate this process, create a WINDOWS.BAT file that includes the command to flush your cache after the command which runs Windows. Then the cache will be flushed automatically before you are returned to the DOS prompt. And <u>never turn off your</u> machine while you're still in Windows.

Use System Watch to monitor your cache's performance

Norton Utilities includes a program called System Watch which allows you to monitor your disk cache's performance. This allows you to measure the performance implications of different cache configurations:

- 1 Double-click the System Watch icon in your Norton Utilities Windows Programs group.
- 2 Perform the operations you do most frequently.
- 3 Monitor the number of "cache hits" you receive. The higher your percentage of hits, the better performance you're receiving.
- 4 Change the cache configuration, repeat the previous two steps, and compare the results.

Set BUFFERS= to between 5 and 10 in CONFIG.SYS

A disk <u>cache</u> performs the same function as the DOS BUFFERS command, only more efficiently. Since DOS BUFFERS use 512 bytes of memory each and can actually slow your system's performance, you should reduce the number of BUFFERS that DOS allocates.

Edit your <u>CONFIG.SYS</u> file and reduce the number of BUFFERS to between 5 and 10. Do not reduce it any lower or your boot process (before the cache loads) may become very slow.

Maximize Conventional and Extended Memory

Windows craves memory. To make it run well, configure your machine to make as much <u>conventional</u> and <u>extended memory</u> available as possible.

Using HIMEM and EMM386 to increase available conventional memory Use DOS 6's MemMaker to automate the process of increasing available conventional memory Don't use Expanded Memory (EMS) unless you need it outside of Windows Using the MEMMAKER.STS file to further optimize memory Undoing MemMaker's changes Consider including B000-B7FF and E000-EFFF to increase your UMBs Determine the Optimal Place for the EMS Page Frame Using Third-Party Memory Managers to increase conventional memory Use PIF files and WINSTART.BAT to load TSRs only where you need them If given a choice between extended and expanded memory, use extended memory Reduce the number of BUFFERS you set up in CONFIG.SYS Turn off DoubleSpace's AutoMount to save 4.5K Configuring HIMEM for EISA machines with more than 16 MB of RAM

Using HIMEM and EMM386 to increase available conventional memory

DOS 5 and higher include two memory-management programs that can increase your available <u>conventional memory</u>. By loading <u>HIMEM.SYS</u> and <u>EMM386</u>, you can move part of DOS into the <u>High</u> <u>Memory Area (HMA)</u> above the 1 MB boundary, and create <u>Upper Memory Blocks (UMBs)</u> in the unused address spaced between 640K and 1 MB on 80386 and higher machines. A sample <u>CONFIG.SYS</u> that uses these programs would include the following lines:

DEVICE=C:\DOS\HIMEM.SYS DEVICE=C:\DOS\EMM386.EXE NOEMS DOS=HIGH,UMB

If you need <u>Expanded (EMS) memory outside of Windows</u>, substitute the RAM parameter for the NOEMS parameter above.

Once you have made the memory available, you can load <u>device drivers</u> and Terminate and Stay Resident programs (<u>TSRs</u>) into the UMBs and free up your conventional memory. Substitute the DEVICEHIGH command for the DEVICE statements in <u>CONFIG.SYS</u>, and preface <u>TSRs</u> with the LOADHIGH command. If you're using DOS 6, <u>the MemMaker program</u> can automate this process for you.

To see where programs and <u>device drivers</u> are loading, give one of the following commands:

DOS 6:	MEM	/C	/P
Other versions:	MEM	/C	MORE

Use DOS 6's MemMaker to automate the process of increasing available conventional memory

The MemMaker program will read your existing <u>CONFIG.SYS</u> and <u>AUTOEXEC.BAT</u> and automatically optimize them to maximize your <u>conventional memory</u>. Simply exit Windows completely, type <u>MEMMAKER</u>, and follow the prompts. Note that MemMaker will not optimize any programs you load from a nested batch file (a batch file that you call from within <u>AUTOEXEC.BAT</u>.)

Whenever you make changes to your startup files, such as installing an application which loads <u>device-</u> <u>drivers</u> or <u>TSRs</u>, you should run the MemMaker program again to re-optimize your memory.

NOTE: The MemMaker program will not work with <u>CONFIG.SYS</u> files set up to use the Multi-Boot configuration facilities of DOS 6.

Don't use Expanded Memory (EMS) unless you need it outside of Windows

Some DOS applications can take advantage of <u>Expanded Memory (EMS)</u>. If you run these applications under Windows, it will provide that memory from its pool of <u>extended memory</u>. Unless you require EMS outside of Windows, configure your memory manager not to provide EMS. This will give you 64K more of <u>Upper Memory Blocks (UMBs)</u> to load programs into. If you're using <u>EMM386</u> or <u>QEMM</u>, use the NOEMS parameter.

Using the MEMMAKER.STS file to further optimize memory

Although MemMaker will optimize your configuration files as they currently exist, you may be able to free even more <u>conventional memory</u> by changing the order in which you load your <u>drivers</u> and <u>TSRs</u>. MemMaker creates a file called MEMMAKER.STS in your DOS directory which includes the information you need to do this.

Open the MEMMAKER.STS file and go to the section called [SizeData]. The file will list two sizes for each program: The MaxSize, or largest amount of free memory that the program needs to load, and the FinalSize, or amount of memory the program occupies after it has completed loading. If possible, move the programs with the largest MaxSize values toward the beginning of your configuration files. This will make it more likely that there will be enough free upper memory for the program to initialize.

NOTE: Be aware that some programs and drivers must load in a certain order and cannot be switched.

Undoing MemMaker's changes

If MemMaker's changes make your system unusable, or for some other reason you want to reverse the changes, run MEMMAKER /UNDO to restore your configuration files to the state they were in before you ran MEMMAKER the last time. You can boot up using the Rescue Disk you created during Norton Utilities installation if your system has been rendered unbootable.

Consider including B000-B7FF and E000-EFFF to increase your UMBs

The address space between B000 and B7FF is used only for monochrome VGA. MemMaker will not automatically include this area if you are using a VGA monitor because it does not know if you are using color or monochrome. If you use color only, add the parameter I=B000-B7FF to the end of the EMM386 line in your <u>CONFIG.SYS</u>. This will give you an additional 32K of <u>UMBs</u> for loading programs high. If Windows gives you an error message when you try to start it with this inclusion, <u>expand</u> the file MONOUMB2.386 from Windows Disk #4 into your WINDOWS\SYSTEM directory and add the following line to the [386Enh] section of your <u>SYSTEM.INI:</u>

device=monoumb2.386

For more information on this setting, see the README.WRI file in your Windows directory.

The <u>EMM386</u> program included in DOS 5 does not attempt to use the address space between E000 and EFFF to set up <u>UMBs</u> (DOS 6 does). On most non-PS/2 machines, this memory is available. To verify if it is free on your system, run the Microsoft System Diagnostics (MSD) program included with Windows and view the Memory display. If the memory is available, include the region by placing the I=E000-EFFF parameter on the EMM386 line in your <u>CONFIG.SYS</u>.

NOTE: If this makes your machine unusable, use the Rescue Disk you created during Norton Utilities Install procedure to reboot your PC and remove the parameter.

Determine the Optimal Place for the EMS Page Frame

If you are using <u>EMS</u> memory for DOS applications outside of Windows, your memory manager will need to set up a 64K page-frame to handle EMS swapping. In order not to fragment your <u>UMBs</u>, place the page-frame at the top or bottom of the available memory area between 640K and 1MB. If E000-EFFF is available on your machine (as it is on most non-PS/2s), place the page-frame there. If not, place it in a 64K region that does not fragment your UMBS into two separate sections. Use the Microsoft System Diagnostics (MSD) program to view your Upper Memory Blocks and choose a suitable location. Then use the FRAME=*xxxx* parameter on the <u>EMM386</u> line in your <u>CONFIG.SYS</u> to specify the starting location of the page-frame.

Using Third-Party Memory Managers to increase conventional memory

You may want to consider using third-party memory managers to increase <u>conventional memory</u>. These include Quarterdeck's <u>QEMM</u> and Qualitas' <u>386Max</u>, among others. For example, QEMM includes advanced capabilities for loading programs high while using less conventional memory. The Optimize program automatically loads your programs high, and includes the ability to turn on some of QEMM's advanced features.

Use PIF files and WINSTART.BAT to load TSRs only where you need them

If you need a <u>TSR</u> only with certain DOS applications which you run under Windows, then use a <u>Program</u> <u>Information File (PIF)</u> to run a batch file that loads the TSR and the program you are running. That way the TSR will only take up memory in the DOS session in which you require it, leaving more memory available in other applications.

For example, if you need a <u>TSR</u> called POPUP only when you're using the program MYAPP, use a text editor such as Desktop Editor or Notepad to create a batch-file with the following lines:

POPUP

MYAPP

Then create a <u>PIF</u> that runs the batch-file rather than running MYAPP directly.

If you load a <u>TSR</u> that you need in Windows, but not in DOS applications that you run under Windows, create a batch-file in your Windows directory called WINSTART.BAT and load the TSR there. Windows searches for this special batch-file when you start it, and runs any commands it contains. The TSRs loaded from this file will be visible to Windows, but not to any DOS applications you run while in Windows. This may leave more memory available for the DOS applications.

NOTE: Windows only uses WINSTART.BAT when it is running in Enhanced mode.

If given a choice between extended and expanded memory, use extended memory Some memory boards give you the option of configuring the memory as either <u>extended</u> or expanded. Unless you need EMS outside of Windows, configure all the memory as extended. Windows will provide expanded memory to applications that require it.

Reduce the number of BUFFERS you set up in CONFIG.SYS

DOS uses a structure called BUFFERS when accessing your disks. The number of BUFFERS is determined in the <u>CONFIG.SYS</u> file by the line BUFFERS=n, m. If you are using a <u>disk-cache</u>, you can usually reduce n to between 5 and 10; you should not specify a number for m and force DOS to its default of 0. Since each buffer uses 512 bytes of memory, this can provide you with several kilobytes more of <u>conventional memory</u>. Don't reduce the number too much, or your boot process may become very slow. DOS 5 and 6 provide the ability to load BUFFERS into the <u>High Memory Area (HMA)</u> if there is room; reducing the number increases the possibility they they will all load into the HMA.

Turn off DoubleSpace's AutoMount to save 4.5K

DOS 6.2's DoubleSpace added a feature called AutoMount, which allows the driver to detect and automatically mount compressed volumes located on removable drives and diskettes. Turning this support off will reduce DoubleSpace's footprint in memory by 4.5K.

To turn off AutoMount:

- **1** Exit Windows completely and run DBLSPACE.
- 2 Choose Options from the Tools menu and uncheck the Enable Automount check box.
- 3 Allow DoubleSpace to restart your computer so the change takes effect.

Configuring HIMEM for EISA machines with more than 16 MB of RAM

If you have a machine with an EISA bus and more than 16 MB of memory, you have to use the /EISA switch on the <u>HIMEM.SYS</u> line in your <u>CONFIG.SYS</u> to make HIMEM see the additional <u>extended</u> <u>memory.</u> If you want HIMEM to ignore some of the extended memory, use the /INT15 switch (see the DOS documentation for more information on this switch).

Use a RAM Drive

If you have plenty of <u>extended memory</u>, you might consider setting up a RAM Drive for Windows' temporary files. The RAMDRIVE.SYS program uses extended or <u>expanded memory</u> to create a virtual drive. Because memory is many times faster than a hard-disk, this RAM drive will be very fast. Because the memory you set aside for the RAM drive is not available to Windows, you should only consider this procedure if you have more than 10 MB of <u>RAM</u> installed in your machine. The RAM drive needs to be large enough to hold the largest temporary file that Windows will create. Therefore it must be at least 1 MB in size, and considerably larger if you are printing graphics files.

Create the RAM drive in your <u>CONFIG.SYS</u> using a line similar to the one below: DEVICE=C:\DOS\RAMDRIVE.SYS 2048 /E

The number stipulates a size in kilobytes, while the /E specifies to use <u>extended memory</u>. In your <u>AUTOEXEC.BAT</u>, set the TEMP variable to point to the drive letter which is assigned to the RAM drive by DOS (usually the next available drive letter on the system).

A RAM drive can be compressed using Stacker so that it can effectively hold twice as much information. After the <u>PATH</u> line in your <u>AUTOEXEC.BAT</u> (which should include your Stacker directory), add the following lines:

```
CREATE e:
STACKER e:=d:\STACKVOL.DSK
SET TEMP=e:\
```

where *d*: represents the drive-letter that was assigned to your RAM drive and *e*: represents the next available drive-letter on your system.

DoubleSpace can compress a RAM drive also:

DBLSPACE /create x: /newdrive=y: /size=z where x is the host, y is the compressed drive letter, and z is the size of the CVF in MBs.

Optimize your Video Configuration Use the appropriate video driver for your system The number of colors you use affects your performance Using a higher resolution may be faster Be sure your board is configured for 16-bit operation

Use the appropriate video driver for your system

Windows' graphical interface requires manipulating a much larger amount of video information than character-based DOS applications. Windows provides a generic VGA driver that will work on most systems, as well as drivers for a select few other adapters. But using a video driver that is optimized to work with your particular video card can dramatically improve the performance you receive from Windows.

A video driver may have been included on a diskette with your video card. If not, you can receive one from the your video card's manufacturer either via their technical support bulletin-board (BBS) or on diskette. It is definitely worth checking with the manufacturer to ensure that you are using the latest version of the video drivers. Manufacturers are constantly updating their drivers to correct problems and improve performance.

The number of colors you use affects your performance The more colors your video driver is configured for, the slower its performance. 256 colors are much more pleasing than 16, and are probably worth the small performance hit. However, most users do not need the 32,000 colors that many adapters can provide, especially given the performance degradation they cause.

Using a higher resolution may be faster Many manufacturers invest extra time to improve the performance of their higher-resolution drivers because magazines use those drivers when performing comparative benchmarks. Test your video driver at a number of resolutions to determine which provides the best combination of comfort and speed.

Be sure your board is configured for 16-bit operation

Most cards can be configured to operate in either 8-bit or 16-bit mode. Be sure your card is configured for the latter mode, and that it is installed in a 16-bit slot.

On most AT-bus machines, an adapter can only run in 16-bit mode if all the other adapters in the same 128K region are also running in 16-bit mode. The most common culprit is a network card located in the C000-DFFF range that is configured for 8-bit operation.

Use 32-Bit Disk Access

Windows 3.1 added the capability to access certain hard-disks in <u>protected mode</u>, bypassing the BIOS and increasing hard-drive performance. In Windows 3.1, this capability is only available on hard drive controllers that are compatible with the Western Digital 1003. Windows automatically makes this determination, and only offers the option when the installed drive is compatible with 32-bit Disk Access. **To enable this feature:**

- 1 Open INI Tuner and double-click the 386 Enhanced icon.
- 2 Click the Virtual Memory button, then click Change.
- 3 If the drive is compatible with 32-bit Disk Access, a check box will appear which lets you enable the feature. Activate the check box, then select OK and allow Control Panel to restart Windows.

Windows for Workgroups 3.11 extended the 32-bit Disk Access capability to SCSI, ESDI, and compressed drives. You will usually use this feature in conjunction with <u>32-bit File Access</u>

Use 32-Bit File Access

In addition to <u>32-bit Disk Access</u>, Windows for Workgroups (WFW) 3.11 offers 32-bit File Access. This feature uses the protected mode of 386 and higher processors to bypass DOS while accessing the disk, significantly improving disk performance. The feature also includes VCache, a 32-bit protected mode replacement for SmartDrive. VCache works on a per-file basis, rather than reading contiguous sectors, and uses an improved algorithm that allows larger caches and more efficient performance.

32-bit File Access only works on local hard drives. It does not support network drives, or removable drives such as floppies and Bernoullis. It requires a 32-bit Disk Access interface, which is provided by either a FastDisk driver on Western Digital 1003-compatible drives, or the Real Mode Mapper included with WFW 3.11 for SCSI, ESDI, or compressed drives.

32-bit File Access is disabled by default. To enable the feature, open Control Panel and double-click on the 386 Enhanced icon. Select the Virtual Memory button and click Change. If the 32-bit Disk Access check box is available, enable it. If not, Windows will use the Real Mode Mapper to provide the disk interface. Then enable the 32-bit File Access check box. Set a Cache Size equal to the size you configured your regular cache for (See <u>Determining the Size of the Cache</u> if you need help setting the cache size). Select OK and allow Control Panel to restart Windows so the changes take effect.

WARNING: Be careful using <u>write-delayed caching</u> on a compressed drive other than a DOS 6.2 DoubleSpace volume if you have 32-bit File Access enabled! If the disk becomes full, a write to the disk will fail without an error message to the application, causing data loss.

NOTE: You must be using a <u>permanent swap file</u> to enable 32-bit File Access. The feature cannot be enabled if there are any open files when Windows initializes. For this reason, you cannot run a NET START command before starting Windows.

You can run WFW on either a stand-alone or a networked machine.

Most disk utilities such as Norton Disk Doctor and SpeedDisk will not run when 32-bit File Access is enabled. Norton Utilities will detect that it is running and prompt you to temporarily disable the feature. Other utilities may fail with an ambiguous error message. You can disable 32-bit File Access either of two ways: via Control Panel, or by starting Windows with the command WIN /D:C.

You cannot use 32-bit File Access on a DOS 6.0 DoubleSpace volume. You must upgrade to DOS 6.2. The VCache feature of 32-bit File Access does not use write-delayed caching on compressed drives other than DOS 6.2 DoubleSpace volumes. 32-bit File Access may actually slow down disk access on other compressed volumes.

You cannot use the DOS SUBST command with 32-bit File Access.

Don't Load Unnecessary Fonts

Many programs automatically install <u>fonts</u> into Windows. Some, such as Corel Draw, offer to install hundreds of fonts. Most users do not realize that loading all these fonts will dramatically increase Windows' load time and slow down your performance by consuming valuable system resources. Use Control Panel's Fonts <u>icon</u> to control which fonts are loaded.

You may choose to remove a font without deleting the font file from your hard-drive. That way if you need the font later, you can re-run Control Panel and quickly enable the font.

NOTE: You should never remove the MS Sans Serif font from Control Panel. Windows uses this font for <u>dialog boxes</u> and menus, and will not operate properly if it is removed.

Defragment your Drive Regularly

Over time, as files on your disk change, DOS is forced to store them in multiple pieces on your disk. Speed Disk will optimize your disk by collecting all of your files into contiguous pieces. This speeds harddisk access and makes data-recovery easier.

Speed Disk can be configured to run in the background whenever your machine is idle, perpetually keeping your disk optimized.

Use Patterns instead of Wallpaper

Windows can refresh a pattern much more quickly than it can repaint your <u>wallpaper</u>. Since this background is repainted frequently as you manipulate windows, the performance implications can be substantial. This is especially true if you are using a high-color bitmap as your wallpaper.

Improve the Performance of DOS Applications There are several steps you can take to improve the performance of DOS applications running under Windows:

Increase the WindowUpdateTime to improve screen response Turn off the FileSysChange setting Adjust the MinTimeSlice setting for multitasking DOS applications

Increase the WindowUpdateTime to improve screen response

The WindowUpdateTime= setting controls how frequently Windows refreshes the display of DOS applications running within a window. Increasing this value can improve the responsiveness of your DOS applications.

To increase the setting, edit the line in the [386Enh] section of your <u>SYSTEM.INI</u> file. The default is 50; try a value of 200.

Turn off the FileSysChange setting

The FileSysChange= setting determines whether Windows should monitor DOS sessions to watch for file and directory creations and destroys. It does this by hooking Interrupt 21h. Windows does this so that any open File Manager windows will be aware of changes you make to your disk structure while in a DOS application. Turning this feature off will speed up file operations within DOS applications. To change the setting, edit the line in the [386Enh] section of your <u>SYSTEM.INI</u> file and change the value to OFF.

Adjust the MinTimeSlice setting for multitasking DOS applications

The <u>MinTimeSlice</u> setting specifies the minimum amount of processor time a DOS application will receive before it can be interrupted. A smaller value will make switching applications smoother, but can degrade overall performance. A higher value will delay switching applications slightly, but may improve performance.

To change the setting, edit the line in the [386Enh] section of your <u>SYSTEM.INI</u> file and change the default of 20. Try a value of 5 and see if it improves the performance of your DOS sessions.

Devote more Processing Time to the Foreground Application

The Scheduling section under INI Tuner's 386 Enhanced icon determines how the system divides processing time between Windows applications. Since you are usually most concerned with the foreground application, increase the percentage of processing time this application receives. Double-click the 386 Enhanced icon. In the Scheduling box, increase the Window in Foreground value to raise its priority relative to background operations. Windows adds the numbers together, then gives each set of tasks a percentage of processing time equivalent to their share of the total. In other words, a Foreground value of 200 and a Background value of 50 will result in foreground applications receiving 4 times as much processing time as background applications.

NOTE: Setting a value to 10,000 makes that set of tasks exclusive -- that is, no other applications will receive processing time. *Never set a value higher than 10,000.*

Prevent DOS 6.2's HIMEM from Testing Extended Memory Every Time You Boot Up

DOS 6.2's HIMEM defaults to testing your <u>extended memory</u> every time you boot up. This test is designed to locate bad <u>RAM</u> modules. However, it takes a few extra seconds each time you boot, and is usually unnecessary. To save that time during your boot sequence, add the parameter /TESTMEM:OFF to the HIMEM line in your <u>CONFIG.SYS</u>. file

Mouse Around with Startup Time When Windows starts, it searches your COM ports sequentially looking for a mouse. If your mouse is on COM2:, moving it to COM1: can slightly reduce your startup time.

Remove Unnecessary Entries from your .INI files Because Windows parses each line of <u>SYSTEM.INI</u> and <u>WIN.INI</u> as it starts, you can accelerate the startup process by eliminating lines that belong to programs no longer on your disk. The easiest way to do this is to use INI Editor and scan the section headings for programs that you've deleted.

Limit Icons to Save System Resources By limiting the number of Program Manager or Quick Access (in Norton Desktop) groups and group items, you can save system resources that would otherwise be allocated to them.

Install more RAM and a Faster Video Subsystem

If none of these suggestions provide adequate performance, you may need to upgrade your hardware. If you have less than 8 MB of <u>RAM</u>, installing more memory and increasing the size of your disk <u>cache</u> is probably the single most effective way to speed up Windows. Configure the memory using the tips mentioned above.

Windows is very video-intensive, and may be restricted by the large volume of graphics information your video system must manipulate. A faster video card may help remove this bottleneck if it is restraining your system.

If your CPU is slower than a 386-33, you may need to upgrade your hardware to achieve adequate Windows performance.

Duplicate Custom Color Schemes

If you need to match a custom color scheme created on another computer, copy the [Colors] section from that computer's <u>WIN.INI</u> file into your own WIN.INI. This proves especially handy when several machines are being used to capture screens that will be incorporated into a single printed document--like screen shots in a manual.

Eliminate Wallpaper to Free Memory You can free up some Windows memory by eliminating your <u>wallpaper</u>. Set <u>Wallpaper=</u> in <u>WIN.INI's</u> [Desktop] section, or choose Desktop from the Control Panel and set the wallpaper to None.

Customize your Wallpaper

Most people know that Windows offers a variety of screen backgrounds called <u>wallpapers.</u> However, not everyone knows that you can use your own favorite images as wallpaper too, provided you convert them to .BMP or .RLE format. For example, you can scan in a picture of your children, save it in .BMP format, and use it as your wallpaper. Libraries of .BMP images are available on most BBSs for those who lack the desire to create their own images.

By default, Windows only searches the WINDOWS directory for .BMP images when you're in Control Panel's Desktop accessory. However, you can use images in other directories by specifying a full search path to the image (for example, C:\IMAGES\KIDS.BMP)

Make Icons Keep their Distance

If the text under your <u>icons</u> is running together, adjust the spacing between icons by using INI Tuner's Advanced Desktop icon. This will adjust the <u>lconVerticalSpacing=</u> and <u>lconSpacing</u> values in <u>WIN.INI's</u> [Desktop] section.

NOTE: If you are using Norton Desktop for Windows, you'll want to use the <u>lconSpacingX=</u> and <u>lconSpacingY=</u> statements to affect the spacing of Norton Desktop's Quick Access groups.

Modify Windows' Startup Behavior There are several ways you can modify the way Windows starts: Suppress the display of the Windows logo Display your own custom logo instead of Microsoft's Suppressing the Startup group Changing Windows' shell

Suppress the display of the Windows logo

There are three ways to suppress the display of the Windows logo upon startup. Note that none of these methods will actually reduce the time it takes to start Windows; your screen will display black instead of the logo.

The first method involves launching Windows with WIN<space>:. The second method is to type WIN<space><F7>. The <F7> keystroke will create an ampersand (@) character. Using either of these methods from a DOS prompt is somewhat inconvenient. If you want to use them regularly, consider creating a batch-file to launch Windows with the appropriate command. Note that if your batch file is not written to handle other Windows startup parameters, such as the /S command to run Windows in <u>Standard mode</u>, that it may confuse you later on. One option to writing a more complicated batch-file is to specify the .COM extension when you want to use a special parameter, as in the following:

WIN.COM /S

This will bypass the batch-file that you created.

When SETUP installs Windows on your machine, it builds the WIN.COM file out of three components: WIN.CNF, which actually launches WINDOWS, and two video-specific components which together display the logo. The third, and perhaps simplest method for suppressing the logo, is to copy WIN.CNF from your WINDOWS\SYSTEM directory over the WIN.COM file in your \WINDOWS directory. From a DOS prompt in your \WINDOWS directory, type:

COPY SYSTEM\WIN.CNF WIN.COM

NOTE: If you re-run SETUP and change your video-driver options, you'll need to repeat this procedure. Alternatively, you may want to copy WIN.CNF to a different .COM filename so that SETUP will not overwrite it. If you do, simply run that command to launch Windows.

Display your own custom logo instead of Microsoft's

The Windows logo is merely a Run Length Encoded (RLE) graphics file that SETUP adds into WIN.COM when it is created. To display your own custom logo, create a new WIN.COM that uses your chosen graphic (in .RLE format) instead of Microsoft's.

Create the graphic you want to use, or convert an existing graphic into .RLE format using a graphics program that offers such conversions. .COM files are limited to 64K in size, so be aware that the .RLE file you use must be smaller than 55K for this procedure to work. Because .RLE files are compressed, a file with large sections of a single color (such as a solid background) are most likely to meet this criteria. Backup your existing WIN.COM file to WIN.BAK using the following command within your WINDOWS directory:

COPY WIN.COM WIN.BAK

Then build a new WIN.COM file (or use a different name if you prefer) by giving the following command: COPY /B SYSTEM\WIN.CNF+SYSTEM\VGALOGO.LGO+yourfile.rle WIN.COM

NOTE: If you re-run SETUP and change your video-driver options, you'll need to repeat this procedure. Alternatively, you may want to change WIN.COM to a different filename so that SETUP will not overwrite it. If you do, simply run that command to launch Windows.

Suppressing the Startup group To prevent Windows from running the applications in your Startup group, hold down the Shift key while Windows displays its startup logo. If you have suppressed the startup logo, hold down Shift while the black screen is displayed.

NOTE: This procedure will not prevent items on the <u>LOAD=</u> and <u>RUN=</u> lines in your <u>WIN.INI</u> from executing.

Changing Windows' shell

By default Windows uses Program Manager as its <u>shell</u>, but this is not required. Symantec produces Norton Desktop for Windows, a replacement shell that integrates and improves upon the functions of Program Manager and File Manager, and includes utilities such as Norton Backup, Norton Anti-Virus, screen savers, and file-viewers.

You may also want to use File Manager as your shell. To do this, edit your <u>SYSTEM.INI</u> file and change the shell= entry in the [boot] section as follows:

shell=winfile.exe

If you only run one program with Windows, you might make that program your shell, causing Windows to run the program upon launch and automatically close Windows when you exit that program.

Use Fonts

There are several ways you can manipulate Windows' <u>fonts.</u> <u>Change the font displayed under your icons</u>

Use the WingDing graphical characters in your documents Using the copyright, foreign character, currency, and other typographical symbols from the ANSI character set

Changing the font Windows uses in title bars and menus

Removing Adobe Type Manager

Change the font displayed under your icons

By default Windows uses the MS Sans Serif <u>font</u> to display your <u>icon</u> titles. When running in highresolution mode, some people have trouble reading the smaller fonts Windows uses. By modifying the following settings in the [desktop] section of your <u>WIN.INI</u>, you can change the font Windows uses: <u>IconTitleFaceName=</u>font The font name that you want Windows to use name

IdentifyIntermsThe size of the font. The default is 8. $\underline{IconTitleStyle=}n$ 0 for normal, 1 for bold fonts.

NOTE: Norton Desktop will not use these settings when displaying your icon titles.

Use the WingDing graphical characters in your documents

The WingDing <u>font</u> included with Windows contains arrows, pointing fingers, and circled numbers that offer a fancy alternative to traditional bulleted lists. The font also includes keyboard, mouse, and diskette pictures, as well as happy faces and check boxes. These characters work with all the Windows <u>printer</u> <u>drivers</u>.

The easiest way to use the characters is to launch the Character Map applet in your Accessories group (if you're running Norton Desktop, you can use the Keyfinder application instead). Select the WindDings font from the Font drop-down list box. Click the picture once to zoom in for a closer look, or double-click the character to place it in the Characters to Copy box. When you have selected all the characters you want to use, press the Copy button to copy them to the Clipboard. Switch back to your document, and Paste the characters where you want to use them.

Using the copyright, foreign character, currency, and other typographical symbols from the ANSI character set

Windows <u>fonts</u> use the ANSI character set, which includes many special typographical symbols. Using a copyright symbol or correct fractions adds polish and professionalism to your documents. The ANSI set also includes accented foreign symbols and typographically correct quotation marks instead of the ugly generic set on the keyboard.

There are two ways to access these symbols. The first is to use the Character Map applet in your Accessories group (if you're running Norton Desktop, you can use the Keyfinder application instead). Select the font you're using from the Font drop-down list box. Click the symbol once to zoom in for a closer look, or double-click it to place it in the Characters to Copy box. When you have selected all the characters you want to use, press the Copy button to copy them to the Clipboard. Switch back to your document, and Paste the characters where you want to use them.

The second method is to click on the character and note the keystroke in the lower right-hand corner of the Character Map display. This will tell the you keystroke used to insert the character directly in your document. While holding down the Alt key, type the four-digit number (you must include the leading zero) on the separate numeric keypad on the right side of your keyboard. When you let go of the Alt key, the character will be inserted in your document. If you use these characters frequently, you may consider making a small reference table of the keycodes so you can enter the characters without using the Character Map application.

Changing the font Windows uses in title bars and menus

Windows uses a special <u>font</u> called the system font in menus and on title bars. To use a different system font, edit your <u>WIN.INI</u> and add the following line to the [windows] section:

SystemFont=fontname.fon

You can use any font with a .FON extension. Browse the list of fonts in <u>WIN.INI's</u> [font] section and pick your favorite. If you pick an invalid font, Windows will use the default system font for your installation (usually VGASYS.FON for VGA installations, 8514SYS.FON for high resolution installations).

Removing Adobe Type Manager

If you installed <u>Adobe Type Manager</u>, the [boot] section of your <u>SYSTEM.INI</u> will include the following two lines:

system.drv=atmsys.drv

atm.system.drv=system.drv

If you later decide to remove ATM, combine the two lines into one and remove the references to ATM: <u>system.drv=</u>system.drv

You should also use INI Editor to comment out the [PostScript,LPTx] section of your WIN.INI file to prevent Windows from loading those fonts.

When you restart Windows, ATM will not load.

Use the Icons in MORICONS.DLL for your Common Applications

The MORICONS.DLL file contains <u>icons</u> for Common Applications such as WordPerfect, Lotus 1-2-3, and Quicken, as well as many generic icons.

To use these icons if you use Norton Desktop as your shell:

- 1 Hold down the Alt key and double-click on the icon you want to change.
- 2 Select Change Icon from the sliding bar at the left of the Properties box.
- 3 Type MORICONS.DLL into the Alternate Icon File box, or use the Browse icon or history list to select the file.
- 4 Select the icon you want from the display, and select OK

To use these icons if you use Program Manager as your shell:

- 1 Hold down the Alt key and double-click on the icon you want to change.
- 2 Click the Change Icon button.
- **3** Type MORICONS.DLL into the filename box, select the icon from the display, and select OK twice to make the change.

Use Super VGA to See More of Your Applications at Once

Most newer VGA cards are capable of operating in 800x600 or even 1024x768 mode. While this makes everything smaller on the screen, it also allows you to see a full page-width in your word-processor and more cells in your spreadsheets.

For both performance and aesthetic reasons, the best approach is to use the video driver that your adapter's manufacturer provides. These drivers offer better performance, more colors, and often have enhancements such as larger <u>fonts</u> for use at high resolutions. Install the video driver using Windows Setup.

If you don't have a video driver from the manufacturer, you can try using the Super VGA driver that comes with Windows. Run Windows Setup from the Main Group, select Options, Change System Settings, then select Super VGA (800x600, 16 colors) from the drop-down list.

Using Drag-and-Drop to Launch Applications

Windows supports the use of drag and drop from the File Manager to launch applications or print files. Simply select the data file you want to modify by clicking and holding the left mouse-button, then drag it to the application you want to launch. You can drop it on either an <u>icon</u> in a group, or on the program's minimized icon if it is running. Programs that support the Multiple Document Interface (MDI) can open multiple data files at once. Dropping a file on a running MDI application will open a new document window for the file you drop.

Norton Desktop for Windows supports more extensive drag and drop manipulation. Files can be dropped on a SmartErase <u>icon</u> to be deleted, a Viewer icon to view the files in their native format, or a Backup or Anti-Virus icon. You can drop a <u>drive icon</u> onto another application such as Norton Anti-Virus to scan the entire disk. Finally, you can drag your program icons out of their groups and drop them directly on your <u>wallpaper</u> to make a button that is always accessible.

Use NDOS with Windows

Configure Windows to run .BTM files if you are using NDOS Make your DOS Prompt icon run NDOS

Configure Windows to run .BTM files if you are using NDOS

If you have chosen to use the enhanced NDOS command processor included with Norton Utilities, you should add the BTM extension to the <u>Programs=</u> line in the [windows] section of your <u>WIN.INI</u> file. BTM stands for Batch To Memory, and indicates NDOS' ability to run batch files faster by reading them into memory all at once rather than a line at a time. If you use this facility, you will probably want to regain the ability to run a batch file by double-clicking on the filename the way you do with .BAT files.

Make your DOS Prompt icon run NDOS

To make Windows run NDOS when you select the DOS Prompt <u>icon</u> in your Main Group (or when you select Run DOS from Norton Desktop's File menu), edit DOSPRMPT.PIF and change the Program Filename to NDOS.COM. To make the session start in your root directory, specify C:\ in the Startup Directory box.

Manipulate the Registration Database

Windows 3.1 introduced the Registration Database, a configuration file that maintains information on how to launch and print from Windows applications. This information is used to support OLE, and drag and drop operations within Windows. Many applications add the appropriate information to your Registration Database when they are installed, but older Windows applications and DOS applications do not. You may also want to alter the way the registration information is configured.

The Registration Database is contained in a file named REG.DAT. Microsoft includes a program called REGEDIT which allows you to manipulate the data contained in this file. Running REGEDIT without any parameters brings up a list of the applications which the Registration Database recognizes. Doubleclicking on any one allows you to modify the entries for the application.

Running REGEDIT /V will present a tree that shows the structure of the Registration Database by filetype. If a certain type of application (for example, a .TXT file) does not operate as expected when you try to launch or print it, run REGEDIT /V to modify how Windows handles the file.

Make your Mouse more Tolerant of Movements when you Double-Click

If you move your mouse more than 4 <u>pixels</u> between clicks, Windows will treat the two clicks as separate actions, rather than as a double-click. This can cause you to inadvertently move an item rather than perform some action on it. To reduce Windows' sensitivity to movement between double-clicks, make the following changes in the [windows] section of your <u>WIN.INI</u> file:

DoubleClickHeight=pixels

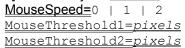
DoubleClickWidth=pixels

Set the value to twice the number of <u>pixels</u> that you want to be able to move between clicks. Windows creates a zone equal to the value you enter, centered over the active pixel on the first click. The larger the value, the more tolerant Windows will be of mouse movements. If you find that clicks that you intend to be separate are being interpreted as a double-click, reduce the value.

Adjust the Mouse Speed in Control Panel The speed of the mouse (measured as the distance the pointer moves for a given amount of motion on your part) can be adjusted using the Mouse <u>icon</u> in Control Panel. If you have trouble tracking the mouse, try decreasing the speed.

Adjust the Acceleration of the Mouse Pointer

Windows' accelerates the mouse pointer 's speed when you move the mouse faster. The threshold where it begins accelerating, and the amount it accelerates, are determined by the following settings in the [windows] section of your <u>WIN.INI:</u>



If MouseSpeed is set to 0, Windows will not accelerate the mouse's movement. If MouseSpeed is 1, Windows will double the speed of the mouse if it moves more than the number of <u>pixels</u> listed in the MouseThreshold1 setting between mouse interrupts. If MouseSpeed is 2, Windows will quadruple the speed of the mouse when it moves more than the number of <u>pixels</u> listed in MouseThreshold2 between mouse interrupts.

Use Mouse Trails on Laptops to Keep Track of the Mouse Pointer

The slower LCD screens used on many laptops makes it difficult to follow the movement of the mouse cursor. If you have trouble keeping track of the mouse cursor, try enabling the Mouse Trails option in the Mouse section of Control Panel. You can further customize this feature by setting the number of trails that Windows creates. Edit the <u>MouseTrails=</u> setting in the [windows] section of your <u>WIN.INI.</u>

Use the Enhanced Features in Microsoft's Mouse Driver version 9.0

Version 9.0 of Microsoft's mouse driver adds several new features. The mouse can be configured to automatically move to the default button of any <u>dialog box</u> when it is opened. It can also wrap around the screen, re-appearing at the left side if you move it off of the right. You can also set a hot-key to return the mouse-pointer to the center of the screen, or to zoom in on the area beneath the mouse. Finally, the driver offers different sizes and colors for the mouse pointer. The driver is available directly from Microsoft.

Make File Manager Come Up the Way You Like It

File Manager allows you to choose different sort orders, determine which file properties to display, and customize other options. When you have configured the file panes to your liking, turn off the Save Settings on Exit option under the Options menu. Then hold down the Shift key and double-click the <u>Control menu</u> or select File, Exit. This will save the File Manager configuration you have created.

Select Multiple Files

In addition to using the Select Files option under the File menu, you can select multiple files using the mouse. To select a range of files, click on the first file and hold down the Shift key while clicking on the last file. All the files in between will be selected also. To select a discontinuous group of files, hold down the Ctrl key while clicking on each filename.

Display Hidden and System Files or just a Select Group of Files

Select View, By File Type and File Manager will allow you to determine which files are displayed. For example, if you're only interested in the .TXT files in a given directory, enter *.TXT in the Name box and all other files will be excluded from the file pane. The same <u>dialog box</u> offers the option to display files marked with DOS' hidden and system <u>attributes.</u>

Display a File's Properties Quickly or Modify its Attributes with Alt+Enter If you don't have the file properties turned on by default, you can still view them quickly by holding down Alt and double-clicking on the filename. File Manager will open a <u>dialog box</u> that displays the properties and contains check boxes for the file's DOS <u>attributes</u>.

Tile File Manager Windows Side-by-Side rather than Top to Bottom If you hold down the Shift key while selecting Window, Tile File Manager will tile your open windows side-by-side rather than its default of top to bottom. This display is more similar to popular DOS file managers such as Norton Commander.

Print a Directory Listing To print a directory listing, choose Run from the File menu and type COMMAND /C DIR dirname > PRN. If you have a laser-printer, you may need to take the printer off-line and press the Form Feed key to eject any partial pages.

Print a File Directly from File Manager

Choosing Print from the File menu will cause File Manager to launch the application used to create a file and automatically print it. If you'd like to print a file that is not associated with any applications, such as a READ.ME file or a PostScript file that you have saved to disk, select File, Copy and enter PRN as the destination. File Manager will print the file.

Expand all Directories Automatically when you Open a Drive Holding the Shift key down when you click on a <u>drive icon</u> will perform the same function as opening the drive window and selecting Tree, Expand All.

Create/Delete Whole Trees at Once

You can create or delete a multi-level subdirectory in a single step. To create a directory called DATA with a subdirectory called WORK, select File, Create Directory and enter \DATA\WORK in the dialog box. File Manager will recognize that you want to create the entire directory structure and create it in one step. Similarly, you can delete an entire tree at once also. If you want to delete a program directory and all of its subdirectories, simple enter the program's directory and File Manager will (after prompting for confirmation) delete the sub-directories as well. For example, to delete the \DATA directory and its WORK subdirectory in one step, select File, Delete and enter C : DATA in the dialog box. File Manager will remove both directories.

Using Drag-and-Drop to Launch Programs and Print files

Windows supports the use of drag and drop from the File Manager to launch applications or print files. Simply select the data file you want to modify by clicking and holding the left mouse-button, then drag it to the application you want to launch. You can drop it on either an <u>icon</u> in a group, or on the program's minimized icon if it is running. Programs that support the Multiple Document Interface (MDI) can open multiple data files at once. Dropping a file on a running MDI application will open a new document window for the file you drop.

Norton Desktop for Windows supports more extensive drag and drop manipulation. Files can be dropped on a SmartErase icon to be deleted, a Viewer icon to view the files in their native format, or a Backup or Anti-Virus icon. You can drop a <u>drive icon</u> onto another application such as Norton Anti-Virus to scan the entire disk. Finally, you can drag your program icons out of their groups and drop them directly on your <u>wallpaper</u> to make a button that is always accessible.

Update the Registration Database to Include DOS and Other Applications that Don't Use It

You can Manipulate the Registration Database to add applications using the REGEDIT program.

- 1 Choose Add File Type from the Edit menu.
- 2 In the Identifier box, make up a keyword to identify the type of file this item will refer to. The description cannot contain spaces. For example, you might use WPFILE for a WordPerfect/DOS document.
- 3 In the File Type box, enter a text description for the item, such as "WordPerfect for DOS document."
- 4 With the Open radio button active, enter the Command to use when opening a data file of this type. Use %1 where you want Windows to substitute the filename. For example, WP %1 will launch WordPerfect and load the filename that you double-clicked.
- 5 Select the Print radio button and enter the Command Windows should use when you drag a file to the Print Manager icon or select File, Print. For most Windows applications, use the filename followed by /p and a %1 for the filename. For DOS applications, check the manual to see if the application supports a command-line parameter to print a file, or perhaps create a print macro that you can invoke with a command-line parameter.
- 6 Unless you are familiar with DDE, leave the Uses DDE check box unchecked and the DDE box empty.

Batch Print up to 20 Files

If you have a group of files to print, force Windows to print them in a batch so you can devote your time to another task. This frees you from sending a file to the printer, waiting for it to spool or print, starting the next print job, and so on.

Enable Print Manager in the Control Panel, Printers <u>dialog box</u> if you aren't already using it. Select the Pause button to temporarily suspend printing. Now send all your files to the printer. They will be <u>queued</u> in Print Manager, but will not print. When you have queued all the jobs you need to print, you can click Print Manager's Resume button to print the whole batch while you play a game of Solitaire or eat lunch.

Prevent Excel from Prompting You when You Drag-Drop Print a File or Use the File Manager File/Print Command

Windows' <u>Registration Database</u> determines how an application prints a file that is dropped onto the Print Manager <u>icon</u> or printed using File Manager's File, Print menu. By default, Excel is configured to prompt for confirmation before printing a worksheet. To disable this prompt:

- 1 Choose Run from the File menu and type REGEDIT.
- 2 Double-click on the Excel Worksheet entry in RegEdit's display window.
- 3 Click the Print radio-button in the Action box.
- 4 In the DDE box, delete the question marks in the DDE Message and DDE Application Not Running entries. Select OK to save the changes.

Improve Laser Printer Performance by Setting the Correct Memory Size for your Printer

Windows cannot take advantage of the memory in your laser printer if it doesn't know it exists. To check the memory setting for a PCL (LaserJet) printer, launch Control Panel and double-click the Printer <u>icon</u>. Select your printer, click the Setup button, and adjust the memory setting.

If you have a PostScript printer, use the TESTPS.TXT file located in your WINDOWS\SYSTEM directory to determine the appropriate memory settings. Select the file in File Manager, choose File, Copy, and enter PRN (or LPTx or COMx, where x is the number of the port your PostScript printer is attached to) as the destination. This will cause your printer to create a summary page of information. Note the Max Suggested VM (K) number. Now open Control Panel, select the printer and press the Setup button. Select Advanced and enter the Max Suggested VM value into the Virtual Memory box.

Adjust Print Manager's Priority

Windows can vary the amount of processing time that Print Manager receives. To make a job print faster (at the expense of other running applications), select Options, High Priority. Selecting Options, Low Priority will cause the other applications to perform faster and Print Manager to print more slowly.

Use AppleTalk with LaserWriters for Faster Printing

Apple LaserWriters can be connected to a PC through either a serial port or an AppleTalk port. Since most PCs don't have an AppleTalk port, that limits your options to the very slow serial port on your machine. However you can purchase an AppleTalk adapter for less than \$50 and install it into your PC to dramatically increase the speed of an Apple LaserWriter.

Use the Generic Driver for Fast Draft Prints

Printing fancy graphics such as lines, shading, and borders adds to the complexity of a print job, causing it to take substantially longer to print. By using the Generic/Text Only <u>printer driver</u> for draft prints, you can speed your printer's operation without having to modify your data files.

- 1 Open Control Panel and double-click the Printers icon.
- 2 Select the Add>> button and double-click on Generic /Text Only. Insert the appropriate Windows diskettes to install the driver. Close Control Panel

When you want a fast draft print from your application, select File, Print Setup and choose the Generic/Text Only printer. When you're ready to print the final copy, change to your normal printer driver.

Maintaining your LaserJet Soft-Font Information when Reinstalling Windows

The Windows LaserJet driver offers an undocumented way to maintain your soft <u>font</u> information when you reinstall Windows.

Before reinstalling:

- **1** Run Control Panel and select the LaserJet driver.
- 2 Click Setup, Fonts. This will open a <u>dialog box</u> titled Font Installer.
- 3 Hold down the Shift and Ctrl keys while clicking the Exit button, and Windows will display a dialog box prompting you to "Create installer directory file". Accept the default, or modify it if your fonts are stored in a different font or directory.

After reinstalling Windows:

- 1 Reopen Control Panel, select the LaserJet driver, and click Setup, Fonts.
- 2 Hold down the Shift and Ctrl keys while clicking the Add Fonts button.
- 3 In the resulting dialog box, enter the drive and directory where you created the FINSTALL.DIR file (usually C:\PCLFONTS\FINSTALL.DIR). Click OK.
- 4 Select the fonts you want and choose Move.
- 5 When prompted for a target enter C:\PCLFONTS (or whatever the original location of the fonts was). This will update your <u>WIN.INI</u> file and install the fonts into Windows without having to recopy the fonts.

Getting Back a PrintScreen Function

Windows reassigns the PrintScreen key to perform a <u>screen capture</u>. This disables the normal function of the key, leaving no easy way to dump a screen-shot to the printer.

To regain this function:

- 1 Press PrintScreen to save an image of the entire screen to the Clipboard, or use Alt-PrintScreen to save just the active window.
- 2 Run Paintbrush or some other graphics application.
- 3 Zoom all the way out, then select Edit, Paste to insert the contents of the Clipboard. Drag the hatched box away from the edge of the space and click off of the workspace. Paintbrush should display your screen shot.
- 4 Zoom back to a normal view, then print the graphic using the File, Print menu selection.

Decrease the Time that Must Elapse between a DOS Application and Another Application Sharing the Printer

Windows defaults to waiting 60 seconds before letting any other application use a printer that a DOS application has used in <u>Enhanced mode</u>. To reduce this time, edit the [386Enh] section of your <u>SYSTEM.INI</u> and modify the line:

LPTxAutoAssign=seconds

where x refers to the parallel port your printer is attached to. Try a value between 3 and 5, then increase it if you find your print jobs getting intermixed.

Using Fast Alt+Tab Switching

To switch quickly from one application to another, without pausing to repaint the screen between each application, use fast Alt+Tab switching (sometimes called CoolSwitching). Set <u>CoolSwitch=</u> in <u>WIN.INI's</u> [Windows] section, or choose Control Panel's Desktop icon and check the Fast "Alt+Tab" Switching check box.

Associate .INI with INI Editor to make editing your configuration files easier

Norton Utilities contains a special editor that makes working with <u>INI files</u> much easier. Associating .INI files with INI Editor allows you to edit your configuration files quickly by double-clicking on the filename in File Manager or Norton Desktop. An even faster way to edit the file is to choose Run from the File menu type the .INI filename. Windows launches INI Editor and opens the .INI file.

To associate .INI files with INI Editor:

- 1 Run File Manager or open a Norton Desktop drive window.
- 2 Choose Associate from the File menu
- 3 In the Extension box, enter INI.
- 4 In the Associate With box, enter C:\NU\INIEDIT.EXE and click OK.

Make an Application Launch Minimized If you hold down the Shift key while launching an application, Windows will run that program minimized. If you always want to run the program this way, open the <u>icon's</u> Properties dialog and change the Run Style to Minimized.

Assign Ctrl+Esc to Another Program

Pressing Ctrl+Esc from within any Windows application will launch Task Manager. To make Windows launch a different program when you press this key combination, edit the following line in the [boot] section of your <u>SYSTEM.INI.</u>

<u>Taskman.exe=filename.exe</u>

Possibilities include the Clock, Cardfile, your personal information manager, or any other application you switch to often throughout the day.

Create New Items in Program Manager To quickly create a new program item in a Program Manager <u>group window</u>, hold Alt and double-click on any blank space in the group window. The Program Item Properties <u>dialog box</u> appears.

Save your Program Manager or File Manager Configuration without Exiting the Program

The only documented way to save your Program Manager or File Manager setup is to enable the Save Settings on Exit button and close the program (exiting Windows in the case of Program Manager). A much faster way to save your settings is to hold down the Shift key while double-clicking the Control box or selecting File, Exit. This has the added convenience that you don't have to remember to disable Save Settings on Exit the next time you run the program to prevent inadvertently saving over your changes.

Print a Text or PostScript File by Copying It to PRN A quick way to print a text or PostScript file is to locate it in File Manager and select File, Copy. Enter PRN for the destination and the file will be printed. This is a great way to print your .<u>INI files</u> out for reference.

Let Setup Create PIFs for Your DOS Applications

Windows includes a file called APPS.INF that includes the information required to set up Program Information Files (<u>PIFs</u>) for many common applications. To access this data, run Windows Setup from your Main group and select Options, Set up Applications. Let Setup search your disk, or set up a specific application by entering its filename into the <u>dialog box</u>. Windows will create a PIF for the file with the correct settings.

In most cases you can modify these PIFs to improve the application's performance.

Let Cardfile Dial Your Phone for You

If you have a modem in your machine that is also connected to your phone, you can let Cardfile dial your phone numbers for you:

1 Press F5 to open Cardfile's AutoDial box and click the Setup>> button.

2 Configure the COM port and speed settings, and enter the dialing prefix if your phone requires one. Now when you want to dial the number on the current card, press F5. Cardfile will search the card for a number it recognizes as a phone-number, and prompt you to dial it. Press Enter or click OK to dial the number.

NOTE: Cardfile may not be able to dial phone numbers on some PBX systems.

Use INI Editor to Edit Your .INI files

Norton Utilities contains a special editor that makes working with <u>INI files</u> a breeze. The INI Edit program allows you to quickly move between sections of an INI file and view or modify the entries in each. With a single click you can add and remove entries, edit or comment lines, or sort a section. INI Edit can also invoke File Compare to compare two files and highlight the differences. And the whole time, INI Advisor is just a click away to guide you through the process.

Use Sysedit to Edit Your Startup Files

While <u>INI Edit</u> makes working with <u>INI files</u> easier, Microsoft includes an undocumented editor in your \ WINDOWS\SYSTEM directory called SYSEDIT. This editor loads your <u>CONFIG.SYS</u>, <u>AUTOEXEC.BAT</u>, <u>WIN.INI</u> and <u>SYSTEM.INI</u> files so you can perform quick modifications. Choose File, Run to try the editor; if you find it useful then create an <u>icon</u> for it in one of your groups.

Use Windows' Shortcut Keys

Several keyboard shortcut keys make navigating around Windows quick and easy when you're already using the keyboard. These include:

- Alt+Tab switches you back to the last application you were running. If you hold the Alt key down, successive taps of the Tab key will cycle you among all your running applications.
- Ctrl+Esc open Windows Task Manager. To configure this keystroke to run a different program, see <u>Assign Ctrl+Esc to Another Program</u>
- Alt+Enter Three uses depending on the context.
 - Holding Alt and pressing Enter when a program <u>icon</u> is highlighted brings up the icon's Properties;
 - Holding Alt and pressing Enter on a file in the File Manager brings up the file's properties and lets you modify its DOS <u>attributes</u>; and
 - Pressing Alt+Enter in a DOS application under <u>Enhanced mode</u> switches the application back and forth between full-screen and windowed mode.

Table of Commonly Used Keyboard Shortcuts

Keystroke	Action
Alt+Tab, Tab	Cycles you among your running applications (hold Alt down until you
	locate the application you want to switch to)
Ctrl+Esc	Brings up the Task Manager. To configure this keystroke to run a different
	program, see <u>Assign Ctrl+Esc to Another Program</u>
Alt+Enter	Performs one of three tasks depending on the context:
	 In a DOS application, it toggles between full-screen and windowed
	mode
	 In Program Manager it brings up the Properties of an icon or group
	 In File Manager it brings up the Properties of a file and lets you modify
	its DOS <u>attributes.</u>
Alt+F4	Closes the current application
Ctrl+F4	Closes the current child window of an application
Alt+Spaceba	Opens the application's Control menu
r	
Alt+Hyphen	Opens the child window's <u>Control menu</u>
Ctrl+Tab or	Switches you to the next child window in an application that supports the
Ctrl+F6	Multiple Document Interface
PrintScrn	Captures the current screen and copies it to the Clipboard
Alt+PrintScrn	Captures the active window and copies it to the Clipboard

Commands that you should NOT run in a DOS box under Windows

Windows is a multitasking environment, which allows you to run multiple programs at once.

WARNING: Although you can start a DOS session while running Windows by clicking on the DOS prompt <u>icon</u> in your Main group, there are certain programs you should never run while in this mode.

The primary group of programs in this category are DOS commands which modify the structure of your disk:

FDISK FORMAT (formatting diskettes is OK) CHKDSK /F (running CHKDSK without the /F prompt is OK) RECOVER UNDELETE (the Windows UNDELETE program is OK) RD or RMDIR DELTREE

You should also avoid loading disk <u>caches</u> from a DOS prompt under Windows. These programs should be loaded before starting Windows, usually in your <u>AUTOEXEC.BAT.</u>

In addition, you should avoid running disk diagnostic, optimization, and repair utilities from a DOS prompt. Norton Utilities are smart enough to detect that Windows is running and refuse to run. Finally, you should never delete files that Windows or its applications have open.

To remind yourself that Windows is running and you should not run these programs, see the tip on <u>changing the DOS prompt under Windows.</u>

Change your DOS Prompt when You're Running a DOS Session

Although Windows displays a reminder that it is still running when you first shell to DOS, that message can quickly scroll of the screen once you've entered a few commands. Instead of relying on your memory, set the <u>environment variable</u> WINPMT in your <u>AUTOEXEC.BAT</u> to change your prompt when running a DOS command-line session under Windows. This will remind you that Windows is running and help prevent you from running applications that shouldn't be run from a DOS prompt. For example, try the following line in your <u>AUTOEXEC.BAT</u>:

SET WINPMT=Type EXIT or press Alt+Tab to return to Windows\$_\$P\$G This will change your prompt for DOS sessions to a two-line reminder that you are running Windows. The underscore character inserts a line-feed; other special characters you can include in your prompt are:

- \$P Current drive and path
- \$N Current drive only
- \$T Current time
- \$D Current date
- \$V MS-DOS version number
- \$G > (greater than sign)
- \$L < (less than sign)
- \$Q = (equal sign)
- \$\$ \$ (dollar sign)
- \$B | (pipe)
- \$_______ Inserts a line-feed (moves the remainder of the prompt to a new line)
- \$E ASCII escape code (code 27) see your DOS documentation on using this
- \$H Backspace (deletes the last character written to the prompt)

Increase your Environment Space for DOS Applications

Windows will not automatically inherit the environment size you specified in the SHELL= line in your <u>CONFIG.SYS</u> file. If you need more environment space for your DOS applications, add the following line to the [NonWindowsApp] section of your <u>SYSTEM.INI</u> file:

<u>CommandEnvSize=</u>bytes

Copying Text from DOS Applications

If you often copy text from a DOS application to a Windows application, modify the <u>PIF</u> to run the DOS program in a window. Then set <u>MouseInDosBox=</u> in <u>SYSTEM.INI's</u> [NonWindowsApp] section. When you use the right mouse-button to drag over the text, it's automatically sent to the Clipboard.

NOTE: When MouseInDosBox=0, the DOS application will not recognize the mouse when it's running in a window. If you want to use a mouse in a windowed DOS program, MouseInDosBox=1 is required.

Suppressing the Message when Shelling to DOS

Windows displays the following message whenever you shell to DOS:

Type EXIT and press Enter to quit this MS-DOS prompt and return to Windows Press Alt+Tab to switch to Windows or another application Press Alt+Enter to switch this MS-DOS Prompt between a window and full screen

To prevent this message from being displayed, add the following line to the [386Enh] section of your <u>SYSTEM.INI:</u> file

DOSPromptExitInstruc=FALSE

This tips works well in conjunction with modifying your prompt to remind you that Windows is running.

Use Alt+Enter to Quickly Switch a DOS Application's Screen Mode

When Windows is running in <u>Enhanced mode</u>, the Alt-Enter key-combination will toggle a DOS application between windowed and full-screen mode. This is useful when you decide that you'd like to cut-and-paste some information from your full-screen DOS application into a Windows application:

- 1 Press Alt+Enter to window the application, then select Edit, Mark from the <u>Control menu</u> in the upper-left corner of the window
- 2 Drag the mouse across the text, select Edit, Copy from the <u>Control menu</u>, then use Alt+Tab to switch to the target application
- 3 Choose Paste from the Edit menu or use Ctrl+V to paste the information.

Increase the Video Refresh Rate for Your DOS Applications If the video of your DOS applications seems sluggish under Windows, try increasing the refresh rate. Simply modify the following line in the [386Enh] section of your <u>SYSTEM.INI</u> file: <u>WindowUpdateTime=</u>200 (the default is 50)

Change the Font Size of DOS Applications under Windows

Although Windows allows you to run your DOS applications within a resizable Window, that doesn't help much if the application assumes it will have access to the full screen and is unusable in a smaller window. Windows in <u>Enhanced mode</u> has the ability to change the <u>font</u> that DOS applications use for their display, making them more amenable to running in a window.

- 1 If the application is not in a window, press Alt+Enter to put it into one.
- 2 Select the Fonts option off the <u>Control menu</u> in the upper left corner.
- 3 Select a font that you like, then be sure that the Save Settings on Exit check box is enabled.
- 4 Windows will remember the font size for the application the next time you run it.

Change the Number of Lines per Screen for Your DOS Applications

Most DOS applications will support the 43- and 50-line mode that VGA adapters provide. This is especially helpful for DIR and other listings that would otherwise require multiple screens. To configure your DOS sessions for this option, modify the following line in the [NonWindowsApp] section of your <u>SYSTEM.INI:</u>

ScreenLines=43 | 50

PIF Tips

Windows uses a Program Information File (PIF) to determine how to run DOS applications. These files store settings for the memory requirements, screen display, and other options that determine the application's behavior:

Let Setup create PIFs for your DOS applications Modify your PIFs to improve the performance of DOS applications Modify DEFAULT.PIF to improve the performance of DOS applications that don't have a PIF Assign Shortcut Keys to switch to a DOS application that is already running Allow a DOS application's window to be closed while the application is still active Using environment variables in your PIFs Use a question mark to make Windows prompt you for optional parameters

Let Setup Create PIFs for Your DOS Applications

Windows includes <u>PIF</u> information for over two hundred common applications in the APPS.INF file. To use this information, let Windows Setup create the initial PIF for your application:

- 1 Open the Main group and double-click on the Windows Setup icon.
- 2 Select Options, Set up Applications.
- 3 If this is the first time you are setting up the PIFs for your DOS applications, allow Windows to search your drives for applications it recognizes. If you are simply adding a new application to your existing setup, then choose the option for a single application.

After you have created the PIFs, you will probably want to modify them to improve their performance.

Modify your PIFs to improve the performance of DOS applications

By default, Windows selects very conservative settings for your DOS applications. To improve their performance, try changing the following settings in the Advanced portion of each application's <u>PIF</u>:

- 1 Turn off all the entries in the Monitor Ports section
- 2 Increase the application's Foreground Priority. This will make Windows devote more processing time to the application when you are actively using it, improving that application's performance relative to background tasks. This setting can be modified on-the-fly from the application's <u>Control</u> <u>menu</u>.

Modify _DEFAULT.PIF to improve the performance of DOS applications that don't have a PIF

It is not necessary to create a customized <u>PIF</u> for each DOS application you run. Windows will use the _DEFAULT.PIF file to determine the application's settings if a PIF does not exist. To improve the performance of applications without PIFs, make the following changes to the Advanced section of _DEFAULT.PIF:

- 1 Turn off all the entries in the Monitor Ports section
- 2 Increase the application's Foreground Priority. This will make Windows devote more processing time to the application when you are actively using it, improving that application's performance relative to background tasks. This setting can be modified on-the-fly from the application's <u>Control</u> <u>menu</u>.

Assign Shortcut Keys to switch to a DOS application that is already running

The Advanced section of the <u>PIF</u> for an application includes the option of setting a shortcut key to switch to that application if it is running, Activate the option by clicking on the box with your mouse, then use a combination of Alt, Shift, and Ctrl with a keystroke to assign a hot-key combination to the application. If Windows will not accept the keystroke, you may be attempting to use a keystroke that has been reserved for a different operation. Be careful not to assign the same keystroke to two different applications.

NOTE: Shortcut keys cannot be used to launch an application. You can use the Shortcut Key setting in an <u>icon's</u> Properties to assign a key combination to launch the program, provided that Program Manager is the active window when you press the keystroke.

Allow a DOS application's window to be closed while the application is still active

When you attempt to exit Windows with a Windows application still running, the running application is queried to see if there is data that needs to be saved. If there is, you are presented with a Save dialog and then Windows closes the application. Windows cannot perform this action with DOS applications, and thus does not normally allow you to exit while a DOS application is active.

To overcome this limitation, select the Allow Close When Active check box in the Advanced section of the application's <u>PIF.</u>

WARNING: Be careful to save any data in your DOS applications before attempting to exit Windows, or the unsaved data will be discarded!

Using environment variables in your PIFs

To include an <u>environment variable</u> in a <u>PIF</u> file, enclose the variable name in percent signs (%). For example, you may want to set the Startup directory for an application to each network user's personal directory using an entry like <code>%username%</code>. Windows will evaluate the variable's value (which you have previously established with a SET statement) and respond accordingly.

Use a question mark to make Windows prompt you for optional parameters Sometimes you'll want to use different startup parameters for an application, such as the name of a file to be edited. To make Windows prompt you for the information when the program runs, place a question mark in the Optional Parameters box in the PIF.

Using multiple PIFs with different options for one application

You may want to run an application different ways at different times. For example, you may want to have one <u>icon</u> which runs a DOS prompt full-screen and another which runs DOS in a window. Likewise, you may want to create a separate icon to start an application in each of several data directories. To do this, create multiple <u>PIFs</u> for the application, then assign each to its own icon.

Modify how Windows Allocates Processing Time to Applications

Windows divides the computer's processing time between all running applications in a process known as scheduling. The relative processing time an application receives is determined by:

- Each DOS application has a background and foreground priority assigned in the Advanced section of its <u>PIF.</u>
- Windows and all Windows applications have a priority assigned to them as a group.

Windows adds up the values of all the applications that are running, then gives each task a percentage of the machine's processing time based on its priority relative to the total of all the applications currently running.

To make your applications more responsive, you probably want to increase the foreground priority of both your DOS and Windows applications. This is done in the PIF for DOS applications, and in the 386 Enhanced section of Control Panel for Windows applications.

NOTE: The total value off all your applications cannot exceed 10,000.

Don't Let Windows Swap to a Network Drive If possible, configure Windows to swap to a <u>permanent swap file on a local drive.</u> Allowing Windows to swap to a network drive will impose a severe performance penalty on both the workstation and the network.

Sharing Program Manager Groups

Sharing a group reduces administrative overhead when you upgrade software. Instead of having to update each individual user's groups, the administrator can update a single group that all users load.

To create a shared group:

- 1 Configure the group to contain the items to be shared.
- 2 Copy the file to a network directory where your users have read access.
- 3 Mark the file with the DOS read-only attribute.
- 4 From each user's workstation, select File, New and establish the path to the shared group. To make the inclusion of the group file a part of the standard network installation, see the section on automatically configuring PROGMAN.INI to see your shared groups.

Streamlining the network workstation installation

You can make several modifications to the shared Windows installation that will make workstation installations faster and more consistent. Some of these modifications are especially useful if users perform their own workstation installations.

Installing third-party drivers into a shared copy of Windows Edit SETUP.INF to remove nonexistent hardware options Customize Setup so it requires little or no user interaction Configure defaults for new users' SYSTEM.INI and WIN.INI Standardizing the LaserJet soft-font information across workstations Auto-configure PROGMAN.INI to see your shared groups Set default options for the NetWare options in Control Panel

Installing third-party drivers into a shared copy of Windows

When you install a third-party driver into Windows, it places the driver into your WINDOWS\SYSTEM subdirectory and copies an OEMSETUP.INF file that contains information for installing the driver. A shared install does not have a \SYSTEM directory, and multiple OEMSETUP.INF files will overwrite each other, making installation difficult if not impossible.

There are two methods for installing third-party drivers into a shared copy of Windows. The first is to use multiple OEMxxxxx.INF files:

- **1** Copy all the files into the shared WINDOWS directory
- 2 Rename OEMSETUP.INF to OEMxxxxx.INF (substitute any 5 digits for the x's). When Windows Setup runs, it will automatically read in these files and list the options they contain along with its built-in options.

The second option involves manually editing the SETUP.INF file to incorporate the options for the driver. You may select this option if you are already editing the SETUP file to customize it for your users:

- 1 Copy all the files except OEMSETUP.INF into the shared WINDOWS directory.
- 2 Edit SETUP.INF and incorporate the information from the OEMSETUP.INF file that the vendor provided.

Edit SETUP.INF to remove nonexistent hardware options

Selecting an incorrect hardware option from the Setup program can render Windows unable to start. To prevent your users from inadvertently selecting an incorrect hardware option, you can edit the SETUP.INF file to remove the options that don't exist on your network. If the option doesn't exist, no one can select it. You may also be able to remove the files that those options use from your shared directory, minimizing Windows' footprint.

Customize Setup so it requires little or no user interaction

This option is useful if you want to limit the choices users can make to the options that are available in your configurations, or if you want to set up several machines using a certain set of options. You can create several Setup configuration files, then run any one of them using the /H switch:

SETUP /H:setfile.shh [/N]

Note that the /N switch is still available to perform a workstation node setup.

Windows' default setup file is called SETUP.SHH. It contains the following sections:

[sysinfo]

showsysinfo=no will suppress display of the System Information screen during Setup. This prevents the user from modifying the system settings that Windows detects.

[configuration]

You can specify a setting for each of these entries using the appropriate string from the SETUP.INF file. Precede the value after the equals sign with an exclamation point if you want to force Windows to override the existing setting when updating a previous installation. If you don't specify a setting, Windows will use the value that Setup automatically detects.

[windir]

Specify the directory into which you want Windows installed. If Setup finds an existing Windows install in that directory it will update it. If you don't specify a directory Windows will prompt for one during Setup.

[userinfo]

This section contains entries for the username and company name. It is required in single-user installations and ignored in network installations. Enclose the strings in double-quotes if they contain spaces.

[dontinstall]

Specify which components you want Setup to bypass installing. Valid keywords include READMES, ACCESSORIES, GAMES, SCREENSAVERS, and BITMAPS.

[options]

Specifies whether Setup will set up applications on the hard disk and offer to run the tutorial. [printers]

Specify a printer name and port using the settings in the CONTROL.INF file under the [io.device] and [ports] sections. Enclose the printer name in double quotes if it contains spaces, and separate the entries with a comma.

[endinstall]

Tells Windows how to conclude Setup. You can select to modify the startup files, and whether to exit to DOS, restart Windows, or reboot.

Configure defaults for new users' SYSTEM.INI and WIN.INI

When you run SETUP /A to create the shared Windows directory, it creates files called SYSTEM.SRC and WIN.SRC. These files contain information for setting up the <u>SYSTEM.INI</u> and <u>WIN.INI</u> files when users run SETUP /N. To standardize what will appear in everyone's SYSTEM.INI and WIN.INI, edit the .SRC files before running SETUP /N.

Standardizing the LaserJet soft-font information across workstations

The Windows LaserJet driver offers an undocumented way to set up the soft <u>font</u> information without reinstalling the font files into Windows:

- 1 Install the fonts into one copy of Windows using the normal procedure, but placing the font files in a shared directory.
- 2 Run Control Panel and select the LaserJet driver.
- 3 Click Setup, Fonts. This will open a <u>dialog box</u> titled Font Installer.
- 4 Hold down the Shift and Ctrl keys while clicking the Exit button, and Windows will display a <u>dialog</u> <u>box</u> prompting you to "Create installer directory file".
- **5** Enter the directory where the fonts are installed. This will create a file called FINSTALL.DIR containing the font setup information.

When you install Windows onto another machine:

- 1 Open Control Panel, select the LaserJet driver, and click Setup, Fonts.
- 2 Hold down the Shift and Ctrl keys while clicking the Add Fonts button. In the resulting <u>dialog box</u>, enter the drive and directory where you created the FINSTALL.DIR file. Click OK.
- 3 Select the fonts you want and choose Move. When prompted for a target enter the directory where the fonts are already stored. This will update the <u>WIN.INI</u> file and install the fonts into Windows without having to recopy the files.

Auto-configure PROGMAN.INI to see your shared groups

If you have created any <u>shared groups</u>, you will probably want to add them to new users' installations automatically. To do this, make the following changes to the SETUP.INF file in the shared WINDOWS directory on the network:

- 1 In both the [progman.groups] section and [new.groups] sections, add a line for the group: <u>groupn=GroupTitle</u>
 - where grouptitle is the name of the group and n is an unused group number
- 2 Next, create a [group*n*] section with an entry for each program item: "Application Title",n:\path\filename.exe,n:\path\iconfile.ico,icon#,,

The *icon*# entry specifies the location of the <u>icon</u> within the icon file if that file contains multiple icons (such as MORICONS.DLL). Enter a number equal to the location minus 1, or leave the entry set to null if there is only one icon in the file.

If an item is unnecessary you may skip it, as long as you include the comma as a separator to indicate the missing entry. (This was done with the last entry in the example above, called the profile entry. The profile entry groups applications to determine whether they should be installed as part of a custom install.)

Set default options for the NetWare options in Control Panel

The Control Panel's Network <u>icon</u> lets you configure many of Windows' network settings on a NetWare workstation. These settings are saved in the NETWARE.INI file. You can set up defaults for these options, then force Windows to copy the appropriate NETWARE.INI file during Windows' workstation installation. Put the configured NETWARE.INI in the shared Windows network directory and place the following line in the [win.copy.net] section of SETUP.INF:

1:NETWARE.INI,0:

Make the NetWare drive mappings you perform in DOS boxes global By default, changes that you make to NetWare's drive mappings from within a DOS session are kept local to that session. To make the mappings visible to all of your DOS sessions, add the following line to the [NetWare] section of your <u>SYSTEM.INI</u> file: NWShareHandles=TRUE

Alternately, you can activate the NWShareHandles option in the Network icon of Control Panel.

Make the NetWare drive mappings you perform in Windows stick after you exit

By default, NetWare will restore your drive mappings when you exit Windows to what they were when you started the program. To make the changes in Windows stick when you exit, add the following line to the [NetWare] section of your <u>SYSTEM.INI:</u>

RestoreDrives=FALSE

Alternately, you can activate the Restore Drives option in the Network icon of Control Panel.

Using the SHELL.CFG file with Novell NetWare

The SHELL.CFG file specifies settings for the shell portion of NetWare's drivers. This file should be stored in the same directory as your shell driver (usually NETX.EXE). There are two settings you should place in all users' SHELL.CFG:

ShowDots=on	Enables the display of double-dot entries in the file panes of File		
	Manager and standard file dialogs. These provide an easy way to		
	access the parent of the current directory.		
File Handles=60	Determines the number of files that can be open at one time. You		

should set this option to match the FILES= statement in your <u>CONFIG.SYS</u> (which should be set to at least 60).

Set OverlappedIO=Off If You are Running in Enhanced Mode and Using NETX

The <u>OverlappedIO=</u> setting goes in the [386Enh] section of <u>SYSTEM.INI</u> and prevents two applications from accessing your disk at the same time. Without this setting, you may experience data corruption problems when switching between applications quickly.

Logging into a Preferred Server

Novell NetWare can be configured to select a preferred server when you log into the network. On the shell line (usually NETX.EXE) use the switch /PS=servername. If your preferred server is available you will be logged into it; if not, your login will fail with a message that the server is not available.

Use MAP ROOT to shorten your paths

The MAP ROOT command assigns a drive letter to a subdirectory on a network volume, and treats that subdirectory as if it were the root. Judicious use of the MAP ROOT command will allow you to shorten the directory paths that users must remember.

Assume you have installed two Windows applications into the network volumes SYS:\APPS\WINDOWS\ APP1 and SYS:\APPS\WINDOWS\APP2. Rather than requiring users to remember those paths, MAP ROOT M:=SYS:\APPS\WINDOWS\APP1 and MAP ROOT N:=SYS:\APPS\WINDOWS\APP2. Then the user can simply access drives M: and N: to get to the applications.

Uninstalling Windows Applications

In addition to copying their files, most Windows applications make modifications to your configuration files, registration database, and other Windows components. In particular, many add their own drivers to your SYSTEM directory, or substitute their drivers for those included with Windows. This can cause you problems later on, even if you thought you uninstalled the application by deleting its directory. For example, most remote-communications packages substitute their own drivers in place of the Windows communications and keyboard drivers. Since most applications don't have an uninstall feature, you must know what the applications modified so that you can reverse the changes.

Norton Utilities includes a module called INI Tracker, which will monitor the modifications that an application makes to your system. This can be a tremendous help in troubleshooting problems, because you can see what changed to narrow down the cause of a problem. You can use Tracker to roll back to your previous INI settings, and determine which files were added to or deleted from the Windows directories.

To make it easier to uninstall, use the following procedure whenever you install a new application:

- 1 Before installing the application, launch the Tracker program included with Norton Utilities. This automatically takes a snapshot with the description, Activation Snapshot. To change the description, select File, New Snapshot and enter a description. This is your "before" snapshot. (Note: If you instruct Tracker to load at Windows startup, it automatically takes a snapshot whenever SETUP.* or INSTALL.* is run.)
- 2 Install the application.
- 3 After installation, launch Tracker again and select File, New Snapshot once more. Enter a description for your "after" snapshot. Comparing these two snapshots will allow you to determine what the application modified during its installation. (Note: If Tracker is configured to run at "Activation and Exit", clicking on the Tracker window or restoring it from running minimized automatically generates this "after" snapshot.)

If you want to uninstall an application immediately (that is, you have not installed other programs since, or made other changes to your configuration files):

- 1 Run Tracker again.
- 2 Click the Quick Fix button.
- 3 Click OK.
- 4 Select the Windows directory from the "before" snapshot and click the Compare button.
- 5 Select Current from the Compare dialog box and click OK.
- 6 The File Compare program will open, displaying the files that were changed (you can click the Diffs Only button if File Compare is showing you all the files). The files that were modified will need to be restored from a backup if you cannot reverse the changes.
- 7 Repeat steps 4 through 6 for the Windows system directory, and any other directories you track which show changes in the after snapshot.

If you want to uninstall an application that you installed some time ago:

- **1** Run Tracker again.
- 2 Select View, by Snapshot.
- **3** Select the first modified configuration file in the "before" snapshot you created and click the Compare button.
- 4 Select Current from the Compare dialog box and click OK.
- 5 File Compare displays the current file on the left and the older version on the right. There may be changes made subsequently to the changes made by the installation you want to undo. Select on the left side any changes you want to undo, and choose "Undo Selected Changes" from the Options menu. If you aren't sure which changes to undo, you may want to Compare the "after" snapshot with its previous snapshot, the "before" snapshot, for reference.
- 6 Repeat steps 3 through 5 for all other modified configuration files.
- 7 Select the Windows directory from the "after" snapshot and click the Compare button.
- 8 Select Previous from the Compare dialog box and click OK.
- 9 The File Compare program will open, displaying the files that were changed (you can click the Diffs

Only button if File Compare is showing you all the files). The files that were modified will need to be restored from a backup if you cannot reverse the changes.

10 Repeat steps 8 through 10 for the Windows system directory, and any other directories you track which show changes in the "after" snapshot.
 NOTE: Use the Restore button to give an intermediate level of control between the "Quick Fix" procedure above and the "Undo Selected Changes" procedure above. The Restore dialog lets you select files to restore from a selected snapshot.

<u>Removing File Manager and Control Panel add-ins</u> <u>Remove Unnecessary Entries from your .INI files</u>

Removing File Manager and Control Panel add-ins

Many applications add menu items to File Manager or <u>icons</u> to Control Panel. To remove an item that has been added to File Manager (such as the DOS 6 Tools menu), edit the <u>WINFILE.INI</u> file located in your WINDOWS directory. Delete the line from the [Addons] section which contains the item you want to remove from your menus (or comment it out by placing a semi-colon in front of the first character on the line).

To remove an item from the Control Panel you must delete its .CPL file from your WINDOWS\SYSTEM directory. The easiest way to do this is to open File Manager, select the SYSTEM directory, then choose View, by File Type. In the Name box, enter *****.CPL and press OK. From the list of .CPL files, you should be able to determine which file was added and delete it.

Display the "gang screens" in your favorite applications

Many developers hide secret credits screen within the Help menus of their applications. By using the proper "secret" keystroke, you can display these credits screens, many of which are fun to watch. Some common applications that include gang screens are the following:

Windows itself Microsoft Word for Windows 2.0 Microsoft Excel 4.0 Microsoft Excel 3.0 Lotus Ami Pro 2.0 Corel Draw 3.0

Windows itself

- 1 In Program Manager, select Help, About Program Manager. Hold down the Ctrl and Shift keys, and click on one of the sections of the Windows flag. Click OK.
- 2 Select Help, About Program Manager again and repeat the process: this time a waving flag will appear with a congratulatory message. Click OK again.
- 3 Select Help, About Program Manager a third time, and one of four characters will appear and present you with a scrolling list of the people who developed Windows 3.1. Depending upon which color within the Windows flag you double-clicked, you'll see one of the following Microsoft executives:
 - Red: Steve Ballmer
 - Green: Bill Gates
 - Blue: Brad Silverberg
 - Yellow: The Bear (an inside joke at Microsoft)

Microsoft Word for Windows 2.0

- 1 Select Tools, Record Macro. Name the macro SPIFF and press OK
- 2 Immediately select Tools, Stop Recording.
- 3 Select Tools, Macro. Highlight the SPIFF macro and select Edit.
- 4 Delete the Sub MAIN and End Main commands so that the macro is now empty. Press Ctrl+F4 to close the document window and click Yes when prompted to save the changes.
- **5** Select Help, About and click on the Word <u>icon</u>.

Microsoft Excel 4.0

- 1 Click your right mouse button on the Standard toolbar and select Customize.
- **2** Select the Custom category.

- Drag the Solitaire icon (a deck of cards) into an empty position on the toolbar.
 Under Assign to Tool, click OK and then Close.
 Hold down the Shift, Alt, and Ctrl keys and click on the deck of cards button you created.

Microsoft Excel 3.0

- Move to the last cell in the worksheet, in the far lower right corner. Click your mouse in the horizontal and vertical scroll bars until only that cell is visible.
 Change the both the height and width of the cell to zero.
 Click on the Select All Cells button.

Lotus Ami Pro 2.0

- 1 Select Help, About.
- 2 Hold down the Shift, Ctrl, and Alt keys and press F7.
- **3** Keeping the keys down, type in SPAM.
- 4 Still keeping the keys down, type the last digit of the Available Memory display and the third from the last digit.
- **5** Release the Shift, Ctrl, and Alt keys.
- 6 Click on the flying pictures of the developers to make them disappear. As you do, the remaining pictures will move faster. You can eliminate every picture except T. King, who has an amazing similarity to Elvis, assumedly because The King will never die.

Corel Draw 3.0

- Select Help, About.
 Hold down the Shift and Ctrl keys and double-click on the balloon <u>icon.</u>
 Hold down the left and right mouse buttons to make the balloon rise and fall, respectively.

Tips for Solitaire, Minesweeper, and Hearts <u>How to cheat at Solitaire</u> <u>Cheating at Minesweeper</u> <u>Changing the names of the computer's players in Hearts</u>

How to cheat at Solitaire

If you've gone all the way through the deck of cards and run out of plays, try holding down Ctrl+Alt+Shift while flipping cards. This will cycle through the cards one at a time instead of three at a time, which may allow you to get at the card you need to break the game open.

Cheating at Minesweeper

- 1 In Control Panel, set your background to black with no wallpaper.
- 2 Launch Minesweeper.
- 3 Minimize Program Manager and any running applications.
- 4 Type XYZZY (nothing will appear on the screen).
- 5 Press Enter.
- 6 Press Shift.
- 7 Move the pointer on the Minesweeper board. If you see a tiny white dot in the upper left hand corner of your screen, you are on a safe square. If the dot disappears, you are on a mine--mark it with the right mouse button.

NOTE: It is important that you have no backround pattern, wallpaper, or color (other than black) to use this "tip."

Changing the names of the computer's players in Hearts

Windows for Workgroups includes a Hearts game that can be played by up to four players over a network. If there are less than 4 players, the computer will simulate the other players and give them the names Player 1, etc. To change these names, edit the [Hearts] section of your <u>WIN.INI</u> file and add the following entries:

plname=name plname=name plname=name

Using the Windows Calculator to perform common financial calculations

The Scientific view in Windows' calculator enables you to perform many common financial calculations. Open the Calculator in the Accessories group and select View, Scientific to access the extra functions you will require. Try the following:

Calculate a loan payment Calculate the outstanding balance on a loan Calculate the interest rate on an investment Calculate the value of a one-time investment Calculate the value of a series of equal investments Calculate how long it will take for a series of monthly investments to reach a specified future value

To calculate a loan payment

To calculate a loan payment:

Payment=Loan balance * interest rate / (1-(1+interest rate) ^ (- number of payments))

For example, assume you want to take out a \$20,000 car loan at 6% for 4 years. Use the following keystroke/mouse clicks. (Note that the interest rate must be expressed in the same terms as the payment amount, i.e., 6% annually divided by 12 months is .005% per month):

20000 💌 .005 \square 1 Ō 1 + .005 \Box (х^у) 48 •/-) \Box \Box (=)

The calculator should show a result of 469.70 (when rounded to the nearest cent).

To calculate the outstanding balance on a loan

To calculate the outstanding balance on a loan:

Balance=(1 - (1 + interest rate) ^ (- number of payments remaining)) / interest rate * payment amount

Once again, be sure that the interest rate is expressed in the same terms as the payment amount (monthly, yearly, etc.), the number of payments is expressed as a negative number, and use the x⁴y key to perform the exponential operation.

For example, assume you are considering refinancing your mortgage, which is currently at 12%, and has 180 payments of \$800 left to make:

1
1
.01
180
.01
800

The calculator should show a result of 66657.33 (rounded to the nearest cent).

To calculate the interest rate on an investment

To calculate the interest rate on an investment:

Interest rate = (Future value / Present value) ^ (1 / number of periods) - 1

The number of periods will correspond to the period of the interest rate (in other words, if you enter a number of years you will receive the annual interest rate). For example, assume that your son asks to borrow \$5,000 to borrow a car, and agrees to pay you back

\$6,000 two years later. The interest rate can be calculated as follows:

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	5000	
\bigcirc		
(x^y)		
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	2	
\Box		
-	1	
=		
TI	- I - · · I - 4 - · · · - I - · ·	

The calculator should show an interest rate of 0.09544511501033, or roughly 9.5%.

To calculate the value of a one-time investment:

To calculate the value of a one-time investment:

Future value = Present value * (1 + interest rate) ^ number of periods

Again, be sure to use the same period for the interest rate and the number of periods (years, months, etc).

For example, assume that you deposit \$10,000 into a savings account at 6% for 4 years:

10000 ★ 1 1 + .06 ↓ x'y 4 = The calculator

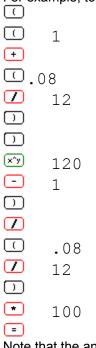
The calculator should show a future value of \$12,624.77.

To calculate the value of a series of equal investments:

To calculate the value of a series of equal investments:

Future value = ((1 + interest rate) ^ number of payments - 1 / interest rate * periodic investment amount

For example, to calculate the value of a 8% college fund if you deposit \$100 a month for 10 years, enter:



Note that the annual interest rate was divided by twelve to determine a monthly rate. This ensures that the interest rate coincides with the payment period--months in this example. The calculator should show a future value of \$18,294.60 (hardly enough to pay for four years of college!)

Calculate how long it will take for a series of monthly investments to reach a specified future value:

Calculate how long it will take for a series of monthly investments to reach a specified future value:

Term = Natural logarithm (1 + (interest rate * future value) / periodic investment amount) / Natural logarithm (1 + interest rate)

The Natural logarithm can be determined by entering the values in parentheses and pressing the ln key on the calculator. For example, assume that you need to save \$10,000 to buy a boat and that you can afford to deposit \$225 a month into a 6% savings account. To determine how long it will take to get that boat, enter:

	1
+	
	.06
	12
\Box	
•	10000
\Box	
	225
\Box	
In	
	1
+	
	.06
	12
\Box	
\Box	
ln	
=	
Once ag	gain the a

Once again the annual interest rate was divided by twelve to convert it to a monthly rate. The calculator should show a term of 40.23439103574 or 41 months.

Playing DOS games under Windows

DOS games may act erratically under a multitasking environment such as Windows because they work directly with the hardware. If you are having trouble running DOS games, try the following modifications:

- 1 Modify the following lines in the [386Enh] section of your <u>SYSTEM.INI</u> file: <u>WindowUpdateTime=</u>200 (the default is 50) <u>TrapTimerPorts=off</u> (unless you are also using a DOS communications program)
- 2 In addition, be sure that you have as much available <u>conventional memory</u> as possible.
- 3 If you are using a sound card, you will probably have to play the games in Windows' <u>Standard</u> <u>mode</u> to receive sound. In <u>Enhanced mode</u>, the sound hardware is being controlled by Windows and is being shared among DOS sessions.

Use the speaker driver if you don't have a sound card

Although sound cards are an increasingly common accessory in a PC, not everyone is fortunate enough to have one. If not, you may be able to use Microsoft's speaker driver to get sound from the built-in speaker in your computer. The speaker driver was originally going to be included in Windows 3.1, but Microsoft decided not to ship it because it had problems on a small percentage of machines. You can obtain the speaker driver free of charge from Microsoft's BBS or contact the company about receiving it on disk.

If the speaker driver does not work on your particular machine, contact the manufacturer to see if they have a driver that will work.

Adjust the volume of your system sounds

If the sound on your PC is too loud, you may need to adjust the volume control on your sound card if you have one. If you are using Microsoft's driver with your built-in speaker, or only have trouble with the sounds associated with system events (errors, starting and exiting Windows, etc.) try loading the .WAV file into Sound Recorder, adjusting the volume, and saving the file. When Windows plays the sound it will honor the new volume setting.

Keeping Norton Desktop Drive Icons in Place If you do not want your drive <u>icons</u> to move each time you update a drive window listing (by pressing F5 or by choosing Refresh from the View menu), set <u>AlignDrives=</u> in NDW.INI's [Defaults] section.

Use the latest version of OS/2

If you aren't using it already, upgrade to OS/2 2.1. The Windows support has been improved dramatically, including the ability to run Windows in <u>Enhanced mode</u> under OS/2.

Getting Enhanced mode under OS/2 2.1

By default, OS/2 run Windows applications in <u>Standard mode</u>. However, OS/2 2.1 offers the ability to use <u>Enhanced mode</u>. Select the program <u>icon</u> with the right mouse-button and choose Open, Settings. Select the Session tab and click on the WIN-OS2 Settings button. Select the Enhanced mode radio button.

To make this option the default for all Windows sessions, modify the icon in the System Setup folder.

Use the WIN-OS/2 Session settings to tailor your Windows sessions

OS/2 allows you to configure various settings for each DOS or WIN-OS/2 session that you run. You can use these settings to configure options that you only want in a particular session.

To access these options, click your right mouse button on the program's <u>icon</u> or the system menu of a folder or program running in a window. Then select Open, Settings and select the Session tab. Click on the DOS Settings or WIN-OS2 Settings button that appears. Select the following options from the list:

DOS_AUTOEXEC	Allows you to specify a batch file that will run when the session is launched. Use this file to load <u>TSRs</u> or SET
	environment variables specific to that session. For example,
	set your <u>DOS Prompt under</u>
	Windows.JAS_PROC_DOSAPPS_PROMPT
DOS_DEVICE	Allows you to specify device drivers that you want to be
	specific to this session. Do not enter DEVICE=; simply
	specify the path and filename along with any parameters.
DOS_FILES	Specifies the number of file handles for the session. OS/2
—	defaults to providing 20 file handles to each DOS session
	and 48 to each WIN-OS2 session.

To make any of these options the default for all DOS/Windows sessions, modify the icon in the System Setup folder.

Improve the performance of Windows sessions under OS/2

OS/2 allows you to configure various settings for each DOS or WIN-OS/2 session that you run. Changing some of the default settings can improve the performance of your Windows sessions.

To access these options, click your right mouse button on the program's <u>icon</u> or the system menu of a folder or program running in a window. Then select Open, Settings and select the Session tab. Click on the DOS Settings or WIN-OS2 Settings button that appears. Select the following options from the list:

DOS_BACKGROUND_EXECUTION	Specifies whether the program requires CPU attention while it is in the
	background. If the application is idle
	when it's not in the foreground, turn this
	option Off to improve overall system
	performance.
HW_ROM_TO_RAM	Copies the machine's
VIDEO_ROM_EMULATION	BIOS code or video BIOS, respectively,
	to RAM to improve system
	performance.
VIDEO_FASTPASTE	Try turning this On to make pasting into
	DOS or WIN-OS2 sessions faster.
WIN_CLIPBOARD	Turn this Off unless you are using the
_	Clipboard to paste information between
	DOS/Windows sessions and OS/2.
WIN_DDE	Turn this Off unless you are performing
_	DDE operations between
	DOS/Windows sessions and OS/2.
To make any of these ontions the def	ault for all DOCAN indours accessors, modify the icon in the Custom

To make any of these options the default for all DOS/Windows sessions, modify the icon in the System Setup folder.

Use a separate Windows session to prevent a Windows application from crashing the whole system

OS/2 2.1 allows you to run each Windows application in a separate virtual machine, where its memory protection features can prevent one application from crashing an entire Windows session. The disadvantage to this approach is that a separate session requires more memory and takes longer to load.

To load a Windows program in its own session, click your right mouse button on the program's <u>icon</u> and select Open, Settings. Select the Session tab and check the Separate session check box.

To make this option the default for all Windows sessions, modify the icon in the System Setup folder.

Upgrade your video drivers if you have trouble running Windows applications directly on the OS/2 Workplace shell

If you are having trouble running an application seamlessly on the OS/2 Workplace shell, the culprit is most likely your video driver. Contact the manufacturer of your video board to ensure that you are using the latest drivers.

Use the Restrictions settings to prevent someone from modifying your configuration or exiting Windows

Program Manager supports a series of restrictions on users' behavior while Windows is running. You may want to use these settings if you are running Windows on a kiosk or other publicly accessible system, or sharing a Windows system among several users.

In the PROGMAN.INI file, create a section called [Restrictions] and use any of the following switches:

<u>NoRun=</u> 1	Removes the File, Run command to prevent users from running a program directly from a command line.
NoClose=1	Prevents a user from exiting Windows using either Flle,
<u>NoFileMenu=</u> 1	Exit, the <u>Control menu's</u> Close command, or Alt+F4. Removes the File menu altogether. You should still use NoClose=1 if you don't want users to be able to exit Windows.
<u>NoSaveSettings=</u> 1	Prevents users from permanently changing the location of items and groups in Program Manager.
<u>EditLevel=</u> n	Controls the user's ability to modify an <u>icon</u> or group's properties, where <i>n</i> equals one of the following: n=1: User cannot create, delete, or modify groups n=2: Same as n=1, but in addition the user cannot create or delete icons n=3: Same as n=2, but in addition the user cannot modify the Command Line of an icon n=4: Same as n=3, but in addition the user cannot modify any properties of an icon.
NOTE: A savvv user v	vith write-access to the PROGMAN.INI file can change these settings I

NOTE: A savvy user with write-access to the PROGMAN.INI file can change these settings back and circumvent the security of the system.

NOTE: Norton Desktop for Windows does not support the [Restrictions] settings in PROGMAN.INI. You can prevent a user from exiting Windows by including the NoClose=1 setting in the [Restrictions] section of the <u>NDW.INI</u> file.

Other programs you will want to restrict access to if you are using the [Restrictions] settings

- 1 File Manager (so they cannot run COMMAND.COM directly)
- 2 Windows Setup
- 3 DOS Prompt icon in the Main Group
- 4 Control Panel
- 5 Any text editors that could be used to modify <u>PROGMAN.INI</u> and remove the restrictions.
- 6 Make the configuration files (<u>CONFIG.SYS</u>, <u>AUTOEXEC.BAT</u>, *.INI) read-only.

Preventing someone from exiting Windows even if they reboot the system

If the Restrictions settings are not sufficient, you can take some further steps to prevent someone from accessing a DOS prompt. This involves several steps:

- 1 If the machine is running DOS 6, put the line SWITCHES=/F /N in the <u>CONFIG.SYS</u> file to disable the F5 Clean-Boot and F8 Interactive Boot options.
- 2 Put the line CTTY NUL as the first line in the <u>AUTOEXEC.BAT</u> file. This prevents the user from breaking out of the bootup using Ctrl+C or Ctrl+Break.
- 3 Make the last four lines in the <u>AUTOEXEC.BAT</u> the following:

```
CTTY CON
:runwin
win
goto runwin
```

This should make it very difficult to circumvent the process of loading Windows.

NOTE: The only way to prevent the system from trying to load Windows will be to boot the machine from a diskette. Either disconnect the floppy drive from the controller, or implement some form of physical security on the floppy drive to prevent access via a bootable diskette. Also, be sure that you can access the floppy drive so that you can fix the machine if it is somehow rendered unable to run Windows.

Removing Items from the Control Panel

To keep others from changing your Windows setup, you can remove items from your Control Panel by adding a section called [don't load] to <u>CONTROL.INI.</u> Settings under this section follow a *item-name*=0 | 1 format, where item-name is the name of the <u>icon</u> as it appears in the Control Panel.

For example, to remove the Date/Time, Ports, and Printers icons from the Control Panel, add these settings to <u>CONTROL.INI</u>:

```
[don't load]
date/time=0
ports=0
printers=0
```

NOTE: It does not matter whether the keyword is followed by a 0 or a 1; both values accomplish the same thing.

Using high-speed communications under Windows

The multitasking nature of Windows can cause problems when running high-speed communications. Native Windows communications programs are capable of communicating at speeds of 19.2K/sec without the use of third-party enhancements. DOS applications, however, are limited to a speed of 9.6K/sec. If you are having trouble running your DOS communications applications at this speed, try the following modifications:

Add the following lines to the [386Enh] section of your SYSTEM.INI:

<u>COMxBUFFER=</u>256 (where *x* equals the COM port you are using; increase in multiples of 128)

<u>COMBoostTime=</u>4 (increase by multiples of 2

Also try the following modifications in the Advanced section of the program's PIF:

- 1 Check the Don't Detect Idle Time check box
- 2 Check the Lock Application Memory (especially if you're using 32-bit disk-access and a <u>permanent</u> <u>swap file</u>)

Using a Screen Saver as a Screen-Blanker

A screen saver can add an extra measure of security when you leave your machine unattended. However, you don't have to wait for the timeout period specified in Control Panel to pass before the screen saver kicks in.

To run a screen-saver on demand:

- 1 Edit your <u>WIN.INI</u> file and add SCR to the Programs= line in the [windows] section: <u>Programs=</u>com exe bat pif scr
- 2 Exit and restart Windows so the changes take effect.
- 3 Open File Manager and go to your \WINDOWS directory.
- 4 Select View, by File Type and enter * . SCR in the Name box. Click OK.
- 5 Select one or more .SCR files, drag them into one of your Program Manager groups, and drop them there.
- 6 Double-click on one of the <u>icons</u> to open its Setup screen. Enter a password (this password will be shared by all the screen savers you use). Click OK Make any other configuration changes you want to this and the other screen savers.
- 7 Hold down Alt and double-click each screen saver icon to bring up its Properties. Add the parameter /s to the end of the Command Line for each icon. This will make the screen saver execute when you double-click the icon rather than bringing up the Setup screen.

NOTE: The SCRNSAVE.SCR screen saver does not allow you to use a password. While this reduces its usefulness as a screen saver, you can use it to quickly blank your screen when someone nosey looks over your shoulder and you don't want them to see what you're working on.

Put a calculator into a document using the Object Packager

You can embed a calculator directly into a document using the Object Packager in your Accessories group. The calculator <u>icon</u> will appear, and the calculator program will run when you double-click the icon. Note that you can use this procedure to embed a link to any program from within a data file.

- 1 Open the Object Packager. Select Edit, Command Line and enter CALC.EXE.
- 2 Click the Insert Icon button on the Appearance side of the screen Enter CALC.EXE to use the Calculator icon.
- **3** Select Edit, Label and enter a label for the package.
- 4 Select Edit, Copy Package to put the package into the Clipboard.
- 5 Open the target document and use the application's commands to paste the Package Object into your document. In most applications you use the Edit, Paste Special command (you may need to hold down Shift while clicking Edit for the Paste Special command to appear).
- 6 The icon and label you selected will appear in the document. If you double-click the icon, the Calculator program will run.

Put a phone-list into a document

You can also embed a cardfile containing a phone-list (such as your company phone-list) directly into a document using the Object Packager in your Accessories group. The Cardfile <u>icon</u> will appear and the phone-list will load whenever you double-click the icon. Note that you can use this procedure to embed a link to any program from within a data file.

- 1 Open the Object Packager. Select Edit, Command Line and enter CARDFILE.EXE filename.crd
- 2 Click the Insert Icon button on the Appearance side of the screen Enter CARDFILE.EXE or another filename and select an icon.
- **3** Select Edit, Label and enter a label for the package.
- 4 Select Edit, Copy Package to put the package into the Clipboard.
- 5 Open the target document and use the application's commands to paste the Package Object into your document. In most applications you use the Edit, Paste Special command (you may need to hold down Shift while clicking Edit for the Paste Special command to appear).
- 6 The icon and label you selected will appear in the document. If you double-click the icon, the phone-list will be displayed.

Keep the Clock Visible

If you're running the Windows 3.1 clock, you can keep it visible at all times by using the Always On Top feature hidden away in the <u>Control menu</u>. This keeps the clock on top of any other window on your desktop, even if that window is maximized.

To set up your clock on the desktop:

- 1 Choose Always On Top from the Clock's <u>Control menu.</u>
- 2 Choose Digital from the Settings menu.
- **3** Choose No Title from the Settings menu.
- 4 Size the clock as small as possible and tuck it away in a corner of your screen, where it will not interfere with the menus and tool bar of any maximized application.

To regain access to the title and menu bars, double-click anywhere within the Clock's window.

Adding Comments to a Help Topic

You can add your own notes about a subject anywhere in a Windows Help file by choosing Annotate from the Help file's Edit menu. Type your comments, then click the Save button. Windows places a small paper clip <u>icon</u> next to the help topic's title to indicate an associated note. Click on the paper clip to read, change, or remove the annotation.

Marking Your Place in a Help File

If you think you might want to return to a particular help topic but don't want to wade through layers of help to get there, create a bookmark. Choose Define from the Help file's Bookmark menu, type the bookmark subject or accept the one that's provided for you, and click OK. To quickly return to the topic later, just choose it from the list of bookmarks in the Bookmark menu.

Bookmarks provide a handy way to keep track of the notes you've added to help topics along the way. Each time you <u>annotate a help file</u>, create a bookmark for the topic.

Using PrintScrn to capture a screen

Windows uses the PrintScreen key to perform a screen capture. This function has several uses, such as creating manuals with illustrative screens or capturing an unusual message to show to a support person. To use this function:

- 1 Press PrintScreen to save an image of the entire screen to the Clipboard, or use Alt-PrintScreen to save just the active window.
- 2 Open the document you want to put the image into and select Edit, Paste to place the image in the document.
- **3** If you want to save the image in its own file, open the Clipboard Viewer application in your Main group and select File, Save As.

Reducing the amount of disk space used by Windows

The easiest way to reduce the amount of disk space that Windows consumes is to use the Windows Setup <u>icon</u> to remove components that you don't use. The advantage of using this method to remove an application is that it removes any associated .DLLs and .HLP files as well as the program file itself:

- 1 Open your Main group and double-click the Setup icon
- 2 Select Options, Add/Remove Windows Components
- 3 Select the items you want to remove and click OK.

Next remove any unnecessary <u>fonts</u> from Control Panel, enabling the Delete Font File From Disk check box from the confirmation dialog.

Remove any unnecessary drivers from Control Panel, then delete their associated .DRV files using File Manager (contact the manufacturer to find out which files are associated with a given driver).

Exit Windows completely before deleting any of the following files:

CLIPBRD.*	Clipboard Viewer application
MSD.*	Microsoft System Diagnostics - displays hardware
	and software information about your machine. You
	have a newer version in your DOS directory if you
	are using DOS 6.
PRINTMAN.*	Print Manager print-spooler.
SYSEDIT.*	System Editor that allows you to edit your 4 startup
	files quickly.
TASKMAN.*	Windows' Task Manager
WRITE.*	Windows Write
LMOUSE.COM	Logitech mouse driver
RAMDRV.SYS	Creates RAM drives
*.WRI	Write files containing setup and configuration
	information
*.HLP	Help files for various applications
MORICONS.DLL	Additional <u>icons</u>
HIMEM.SYS and	Memory management programsonly delete these
<u>EMM386.EXE</u>	if you are using newer versions that came with
	your version of DOS or a third-party memory
	manager!
	Any files in your TEMP directory

Getting a 256-character PATH

Among NDOS' many enhancements over COMMAND.COM is the ability to have a PATH up to 256 characters long. Because this functionality is integrated into the command processor, you will not be subject to most of the limitations listed in the NOTE: below.

If you're using DOS 6's COMMAND.COM, you can take advantage of its ability to place SET statements in the <u>CONFIG.SYS</u> file to accomplish the same thing. This removes the previous 127-character limit on a PATH statement, since that limitation was based on the longest command line DOS could handle. To use an extra-long path, simply add a SET PATH=path line in your CONFIG.SYS file.

Be aware of the following limitations if you are *not* using NDOS:

- Many programs assume the PATH is less than 127 characters long and may crash with an extralong PATH.Windows Setup has been known to exhibit this behavior.
- Once the PATH exceeds 127 characters, you can no longer manipulate it from a DOS command line. This also means that you cannot have any PATH statements in your <u>AUTOEXEC.BAT</u>, network login script, or other batch files (This includes lines such as SET PATH=%PATH%;C:\APP that add a directory to the existing PATH).
- Typing PATH at a DOS prompt will only display the first 122 characters in your PATH, although DOS will search the entire PATH when running a program.

- Many installation programs search your AUTOEXEC.BAT file for a PATH statement into which they
 add themselves. This feature will no longer be available, and you will have to modify the PATH
 yourself.
- yourself.
 You must have specified enough environment space on the SHELL= line in your CONFIG.SYS file to handle the long PATH.
- You'll need an editor which can create long lines. The DOS EDIT command will create a line up to 256 characters long.
- A longer path takes longer to search.

Modifying the keyboard speed and repeat rate

You can modify the amount of time that elapses before a held-down key starts to repeat in Control Panel or by specifying a number of milliseconds in the following line in the [windows] section of your <u>WIN.INI</u> file: <u>KeyboardDelay=</u>milliseconds

You can also modify the rate at which repeated characters appear by specifying a value in this entry: <u>KeyboardSpeed=milliseconds</u>

Prevent the Cursor from Blinking If a blinking Windows cursor bothers you--regardless of it blinking rate--you can turn the blinking off by setting <u>CursorBlinkRate=</u> in <u>WIN.INI's</u> [windows] section.

Running Standard Mode on a 286 If you cannot run Windows in <u>Standard mode</u> on a 286 system, try setting <u>PadCodeSegments=</u>1 in <u>SYSTEM.INI's</u> [Standard] section.

Look up by Statement

286grabber= 32BitDiskAccess= 386grabber= A_WindowPosition= A20EnableCount= ActiveBorder= ActiveTitle= alias= AlignDrives= AllEMSLocked= AllOWExit= AllVMSExclusive= AlIVMSExclusive= AlIXMSLocked= AltCPUTest= AltKeyDelay=

Section

[boot] [386Enh] [boot] [Windows Help] [386Enh] [Colors] [Colors] [drivers] [Defaults] [386Enh] [Configuration] [386Enh] [386Enh] [System Information] [386Enh]

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[boot] [Calculators] [Windows] [windows] [386Enh] [386Enh] [386Enh] [NonWindowsApp] [Settings] [ports] [ports] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [Windows Help] [Windows Help] [Configuration] [Quick Access] [Quick Access] [Control Center] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [Defaults] [386Enh] [Configuration] [Colors] [windows] [Control Center] [windows] [Colors] [386Enh] [386Enh] [Settings] [386Enh] [386Enh] [386Enh]

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[386Enh] [Sounds] [Boot] [Windows] [386Enh] [System Information] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [Boot] [TapeCalc] [Zip] [Desktop] [386Enh] [Colors] [386Enh] [Control Center] [Control Center] [NortonDesktop] [Windows] [386Enh] [386Enh] [TrueType] [TrueType] [TrueType] [Keyboard] [Settings] [386Enh] [386Enh] [SymKrnl] [Defaults] [386Enh] [386Enh] [386Enh] [386Enh] [386Enh] [Viewer-Parsers] [386Enh] [Desktop] [Desktop] [Desktop] [NHookSettings]

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Window Left=	[NBackup]	NDW.INI
WindowMemSize=	[386Enh]	SYSTEM.INI
<u>WindowText=</u>	[Colors]	WIN.INI
<u>Window Top=</u>	[NBackup]	NDW.INI
WindowUpdateTime=	[386Enh]	SYSTEM.INI
WinExclusive=	[386Enh]	SYSTEM.INI
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<u>winproj.exe=</u>	[Print Start]	NDW.INI
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WOAFont=	[386Enh]	SYSTEM.INI
<u>XlatBufferSize=</u>	[386Enh]	SYSTEM.INI
XMSUMBInitCalls=	[386Enh]	SYSTEM.INI

286grabber=filename

Specifies the filename of the <u>grabber</u>, which is the device driver used for displaying DOS applications running in Windows Standard mode.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

32BitDiskAccess=Off | On

Specifies whether Windows uses <u>EastDisk</u>, which interfaces directly with the hard disk controller and intercepts all system requests to the ROM BIOS, including disk requests.

FastDisk may speed up disk access and let you run more DOS applications simultaneously in Enhanced mode. When you install Windows, it checks to see whether your hardware supports 32-bit disk access and can benefit from FastDisk. If so, the Use 32-Bit Disk Access check box appears in the Control Panel's Virtual Memory dialog box.

To turn this feature on or off:

- 1 Click Set.
- 2 Click Virtual Memory.
- 3 Click Change.
- 4 Check or uncheck Use 32-Bit Disk Access.
- 5 Click OK.
 - A prompt appears to confirm your action.
- 6 Click Yes. A prompt appears asking you to restart Windows.
- 7 Click Restart Windows.

Default: Off. (This statement is not present if your hard disk cannot support 32-bit disk access.)

Section: [386Enh]

File: SYSTEM.INI

386grabber=filename

Specifies the filename of the grabber, which is the device driver used for displaying DOS applications running in Windows Enhanced mode.

Default: none Section: [boot] File: SYSTEM.INI

A_WindowPosition=[*left, top, width, height, maximized*]

NOTE: The brackets ([]) around the values above are part of this statement; they do not indicate that the values within them are optional.

Specifies the default position and size of the Annotate dialog box that appears when you choose Annotate from the Edit menu in Windows Help.

The position and size of the dialog box are determined by the first four values respectively. The last value, *maximized*, is not used since the Annotate dialog cannot be maximized.

All values, except the last value, are in pixel units.

Default: This statement does not appear by default.

Section: [Windows Help]

File: WIN.INI

A20EnableCount=number

Specifies the <u>A20 enable count</u> that, in turn, indicates the <u>A20 handler</u> HIMEM.SYS uses to access extended memory.

NOTE: You should never need to change this statement.

Default:Determined by WIN386.EXE.Section:[386Enh]File:SYSTEM.INI

ActiveBorder=r g b

Specifies the border color of the active window using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [Colors]

 File:
 WIN.INI

ActiveTitle=r g b

Specifies the title bar color of the active window using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [Colors]

 File:
 WIN.INI

alias=driver [parameter [, ...]]

Specifies a driver filename and any optional parameters. The *alias*= statement is associated with the <u>drivers=</u> statement in the [boot] section.

This statement is typically used when a driver requires parameters.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default: none Section: [drivers] File: SYSTEM.INI

AlignDrives=1 | 0

Specifies the alignment of the Norton Desktop drive icons.

A value of 1 aligns the <u>drive icons</u> whenever the Norton Desktop drive window is refreshed or when the desktop is arranged with the Arrange Desktop command on the Window menu. A value of 0 does not align the drive icons.

Default:1Section:[Defaults]File:NDW.INI

AllEMSLocked=Off | On

Specifies whether Windows allows the contents of expanded memory used by Windows and non-Windows applications to be locked into memory, disabling swapping to disk.

When this statement is set to On, all contents of expanded memory are locked and PIF settings for EMS Memory Locked are overriden. This is typically used for disk cache programs that use expanded memory. When this statement is set to Off, Windows enables swapping to disk.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

AllowExit=True | False

Specifies whether Norton Desktop allows you to exit with or without confirmation. True disables confirmation and False enables confirmation.

Default: False Section: [Configuration] File: NDW.INI

AllVMsExclusive=Off | On

Specifies whether non-Windows applications are forced to run full screen. When On, this entry forces all non-Windows applications to run full screen, overriding their PIF settings.

You should set AllVMsExclusive=On when you encounter problems running memory-resident or network software that is not Windows compatible.

Default: Off Section: [386Enh] File: SYSTEM.INI

AllXMSLocked=Off | On

Specifies whether Windows allows the contents of extended memory used by Windows and non-Windows applications to be locked into memory, disabling swapping to disk.

When this statement is set to On, all contents of extended memory are locked and PIF settings for XMS Memory Locked are overriden. When this statement is set to Off, Windows enables swapping to disk.

NOTE: You should never need to change this statement.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

AltCPUTest=0 | 1

Indicates the type of coprocessor detection scheme to use.

A value of 0 uses the improved CPU and FPU (coprocessor) detection scheme. A value of 1 overrides this scheme and uses the detection method used in Norton Desktop 2.2 and earlier.

Default:0Section:[System Information]File:NDW.INI

AltKeyDelay=seconds

Specifies the amount of time Windows waits to process a keyboard interrupt after processing an *Alt* interrupt. You can increase this value if any of your applications do not handle the *Alt* key correctly.

Default:	.005
Section:	[386Enh]
File:	SYSTEM.INI

AltPasteDelay=seconds

Specifies how long Windows waits to paste characters after the Alt key has been pressed. You may need to give some applications more time to recognize the Alt keystroke.

Default:	.025
Section:	[386Enh]
File:	SYSTEM.INI

AlwaysSave=Yes | No

Specifies whether you are asked to save transactions or not. Yes always saves transactions without prompting, and No does not.

Yes overrides the <u>PromptWhenTapeChanged=</u> statement.

Default:	No
Section:	[TapeCalc]
File:	NDW.INI

application-name=extension

The *extension* is the file extension that is to be associated with the application identified with *applicationname*, like this:

```
ExcelWorksheet=.xls
ExcelChart=.xlc
```

Each OLE object carries with it the name of the application that created it (*application-name*). Generally, Norton Viewer queries the Windows Registration Database to find an associated extension for *application-name* to determine an appropriate parser with which to view the file.

However, if an application is not installed, then none of that application's entries have been stored in the Registration Database. In this case, you should place the information in the [Viewer-Default Extensions] section and Norton Viewer finds it there.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default:Varies with each system.Section:[Viewer-Default Extensions]File:NDW.INI

AppWorkspace=r g b

Specifies the color of the application workspace for Windows applications using the <u>rgb palette</u> <u>specification</u>.

Default:This statement does not appear by default. However, Windows assumes the color
defined by the Windows Default color scheme.Section:[Colors]

AutoArrange=0 | 1

Specifies whether icons in each group are automatically arranged while using Program Manager. A value of 0 disables automatic arranging of icons and 1 enables it.

This value is typically toggled by choosing Auto Arrange from the Options menu.

Default:None. However, Windows assumes a value of 0.Section:[Settings]File:PROGMAN.INI

AutoDetect=1 | 0

Specifies whether Norton Desktop attempts to determine which network you are using based on how Windows is configured and the currently running software. A value of 1 allows Norton Desktop to attempt to determine the network you are using and 0 does not.

Default:	1
Section:	[Network]
File:	NDW.INI

AutoRestoreScreen=Off | On

Specifies whether Windows restores the screen when returning to a non-Windows application. When set to On, Windows restores the screen. When set to Off, this statement tells Windows to let the non-Windows application restore its own screen, which saves memory. However, this only applies to VGA displays, and to applications that tell Windows they can restore their own screens.

Normally, this statement should be On to let Windows restore the screen.

Default:	On
Section:	[386Enh]
File:	SYSTEM.INI

AutoSave=1 | 0

Specifies whether the configuration of all groups is saved or not. A value of 1 saves the configuration and 0 does not.

Default:	1
Section:	[QuickAccess]
File:	NDW.INI

Background=r g b

Specifies the desktop color using the <u>rgb palette specification</u>. If wallpaper is tiled on the desktop this statement has no affect.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [Colors]

Beep=Yes | No

Specifies whether Windows makes a beeping sound when there is an user error.

Default:YesSection:[windows]File:WIN.INI

BkGndNotifyatPFault=Off | On

Specifies whether Windows controls a non-Windows application's access to the display or not. This setting prevents the corrupting of the display from non-Windows applications that are in the Background or being switched from (using Alt+Tab).

A value of On allows Windows to control access to the display by non-Windows applications. A value of Off disables Windows from controlling access.

On is typically used for VGA displays and Off for special hardware (such as TIGA or 8514).

Default: On Section: [386Enh] File: SYSTEM.INI

BorderWidth=positive-number

Specifies the width of the borders that appear around all windows with sizable borders. This value can range from the narrowest width of 1 to the widest width of 49.

Default: 3 Section: [Windows] File: WIN.INI

Buried=0 | 1

Specifies whether the Norton Desktop Treasure Chest buttons appear, making the tips accessible. A value of 1 disables or "buries" the Treasure Chest buttons and tips, and 0 makes them accessible. **NOTE:** To edit this statement, be sure to use the SYMCFG.INI in your Windows directory.

 Defaults:
 This statement does not appear by default. However, Norton Desktop assumes a value of 0.

 Section:
 [Treasure]

 File:
 SYMCFG.INI

BusType=0 | 1 | 2

Indicates the bus type; use this switch if System Information is unable to detect the bus type.

A value of 0 indicates an ISA bus type, 1 indicates MCA, and 2 indicates EISA.

Default:There is no default for this setting.Section:[System Information]File:NDW.INI

ButtonFace=r g b

Specifies the color of the face of all buttons in Windows applications using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [Colors]

 File:
 WIN.INI

ButtonHilight=*r g b*

Specifies the color of the top and left edges (or the highlight) of all buttons in Windows applications using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [Colors]

ButtonShadow=r g b

Specifies the color of the bottom and right edges (or shadow) of all buttons in Windows applications using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [Colors]

ButtonText=r g b

Specifies the text color used for text inside buttons in Windows applications using the <u>rgb palette</u> <u>specification</u>.

Default:This statement does not appear by default. However, Windows assumes the color
defined by the Windows Default color scheme.Section:[Colors]

C_WindowPosition=[left, top, width, height, maximized]

NOTE: The brackets ([]) around the values above are part of this statement; they do not indicate that the values within them are optional.

Specifies the default position and size of the Copy dialog box that appears when you choose Copy from the Edit menu in Windows Help.

The position and size of the dialog box are determined by the first four values respectively. The last value, *maximized*, is not used since the Copy dialog cannot be maximized.

All values, except the last, are in pixel units.

Default: This statement does not appear by default.

Section: [WindowsHelp]

CachedFileHandles=positive-number

Specifies the number of the most recently used executable files (.EXE) and dynamic-link library files (.DLL) that can remain open.

This statement is used to optimize Windows performance by keeping files open for fast access. However, if you are having problems running Windows from a network server you should decrease the value. The valid range for values is 2 through 12.

Default:	12
Section:	[boot]
File:	SYSTEM.INI

Calculatornumber=menu item, module, caption, filename

Specifies information about different calculators, as indicated below:

number is an integer between 1 and the <u>NumCalculator=</u> value (default is 3). Each calculator must have a unique number.

menu item is the name of the Calculator menu item.

module is the module name that appears in the header.

caption is the title that appears in the calculator title bar.

filename is the name of the calculator file.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Defaults:	Calculator1=&Financial, NFIN_CALC, Financial Calculator, FinCalc
	Calculator2=&Scientific, NSCI_CALC, Scientific Calculator, SiCalc
	Calculator3=&Tape, NTAPE_CALC, Tape Calculator, TapeCalc
Section: File:	[Calculators] NDW.INI

Catalog Path=path

The *path* is the location to look for catalog files.

Default:	C:\NDW
Section:	[NBackup]
File:	NDW.INI

CGA40WOA.FON=filename

Specifies the filename of a fixed-pitch font used for non-Windows applications with a display of 40 columns by 25 or fewer lines. The font specified is only used when non-Windows applications are displayed in a window and not in full screen.

Default:CGA40WOA.FON in the United StatesSection:[386Enh]EliterOVOTEM INIT

File: SYSTEM.INI

CGA80WOA.FON=filename

Specifies the filename of a fixed-pitch font used for non-Windows applications with a display of 80 columns by 25 or fewer lines. The font specified is only used when non-Windows applications are displayed in a window and not in full screen.

Default: CGA80WOA.FON in the United States Section: [386Enh] File: SYSTEM.INI

CGANoSnow=On | Off

Specifies whether Windows does special handling to avoid snow appearing on an IBM \underline{CGA} display device. On enables Windows to perform the snow handling, Off disables.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

CmdExtDLL=filename

Specifies the *filename* used by Batch Runner as the batch command extension DLL.

Default:COMMEXT.DLLSection:[BatchRunner]File:NDW.INI

CMOSFloppyType=0 | 1

Specifies whether to access floppy drives when Norton Desktop starts, while running under DOS 6.2 or greater. It also specifies whether to get the drive types from CMOS instead.

A value of 1 gets the drive types from CMOS, and 0 accesses the drives at startup to determine their type.

Default:	1
Section:	[Defaults]
File:	NDW.INI

Colorletter=hexadecimal-number

Specifies a color placed in the Custom Colors section of the Color dialog box in Control Panel. The value *letter* is one of the first 16 letters of the alphabet, from A to P. (Control Panel has 16 custom colors.) *hexadecimal-number* is a <u>hexadecimal</u> number that identifies the color. If the value is FFFFF, the color is white, indicating that the custom color has not been defined.

```
Default:
         ColorA=FFFFFF
         ColorB=FFFFFF
         ColorC=FFFFFF
         ColorD=FFFFFF
         ColorE=FFFFFF
         ColorF=FFFFFF
         ColorG=FFFFFF
         ColorH=FFFFFF
         ColorI=FFFFFF
         ColorJ=FFFFFF
         ColorK=FFFFFF
         ColorL=FFFFFF
         ColorM=FFFFFF
         ColorN=FFFFF
         ColorO=FFFFFF
         ColorP=FFFFFF
Section:
         [Custom Colors]
File:
         CONTROL.INI
```

color schemes=color-scheme-name

Specifies the name of the color scheme currently in use, such as Windows Default, or Ocean.

 Default:
 This statement does appear by default. However, Windows uses the Windows Default color scheme by default.

 Section:
 [Current]

File: CONTROL.INI

color-scheme-name=hexadecimal-numbers

Specifies the name and characteristics of a specific color scheme. *color-scheme-name* identifies a color scheme (for example Black Leather Jacket, Hotdog Stand or Ocean). *hexadecimal-numbers* are a series of <u>hexadecimal</u> values that define the color scheme.

NOTE: You should not need to make any changes to any of the settings in the [color schemes] section. If you do, clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Defaults: (Note that the hexadecimal values should appear on the same line as their associated color-scheme name--no intervening carriage return character.) Arizona=804000, FFFFFF, FFFFFF, 0, FFFFFF, 0, 808040, COCOCO, FFFFFF, 4080FF, C0C0CO, 0, C0C0CO, C0C0CO, 808080, 0, 808080, 808000, FFFFFF, 0, FFFFFF Black Leather Jacket=0, C0C0C0, FFFFFF, 0, C0C0C0, 0, 800040, 808080, FFFFFF, 808080, 808080, 0, 10E0E0E0, C0C0C0, 808080, 0, 808080, 0, FFFFFF, 0, FFFFFF Bordeaux=400080, C0C0C0, FFFFFF, 0, FFFFFF, 0, 800080, C0C0C0, FFFFFF, FF0080, C0C0C0, 0, C0C0C0, C0C0C0, 808080, 0, 808080, 800080, FFFFFF, 0, FFFFFF Cinnamon=404080, C0C0C0, FFFFFF, 0, FFFFFF, 0, 80, C0C0C0, FFFFFF, 80, COCOCO, 0, COCOCO, COCOCO, 808080, 0, 808080, 80, FFFFFF, 0, FFFFFF Designer=7C7C3F, C0C0C0, FFFFFF, 0, FFFFFF, 0, 808000, C0C0C0, FFFFFF, COCOCO, COCOCO, O, COCOCO, COCOCO, 808080, O, COCOCO, 808000, O, O, FFFFFF Emerald City=404000, C0C0C0, FFFFFF, 0, C0C0C0, 0, 408000, 808040, FFFFFF, 408000, 808040, 0, C0C0C0, C0C0C0, 808080, 0, 808080, 8000, FFFFFF, 0, FFFFFF Fluorescent=0, FFFFFF, FFFFFFF, 0, FF00, 0, FF00FF, C0C0C0, 0, FF80, COCOCO, 0, COCOCO, COCOCO, 808080, 0, 808080, 0, FFFFFF, 0, FFFFFF COCOCO, COCOCO, 808080, 0, 808080, 0, FFFFFF, FFFFFF, FFFFFF LCD Default Screen Settings=808080, COCOCO, COCOCO, 0, COCOCO, 0, 800000, COCOCO, FFFFFF, 800000, COCOCO, 0, COCOCO, COCOCO, 7F8080, 0, 808080, 800000, FFFFFF, 0, FFFFFF LCD Reversed - Dark=0, 80, 80, FFFFFF, 8080, 0, 8080, 800000, 0, 8080, 800000, 0, 8080, C0C0C0, 7F8080, 0, C0C0C0, 800000, FFFFFF, 828282, FFFFFF LCD Reversed - Light=800000, FFFFFF, FFFFFF, 0, FFFFFF, 0, 808040, FFFFFF, 0, C0C0C0, C0C0C0, 800000, C0C0C0, C0C0C0, 7F8080, 0, 808040, 800000, FFFFFF, 0, FFFFFF Mahogany=404040, C0C0C0, FFFFFF, 0, FFFFFF, 0, 40, C0C0C0, FFFFFF, COCOCO, COCOCO, O, COCOCO, COCOCO, 808080, O, COCOCO, 80, FFFFFF, O, ਸਤਸਤਸ Monochrome=C0C0C0, FFFFFF, FFFFFFF, 0, FFFFFFF, 0, 0, C0C0C0, FFFFFFF, COCOCO, COCOCO, 0, 808080, COCOCO, 808080, 0, 808080, 0, FFFFFF, 0, FFFFFF Ocean=808000, 408000, FFFFFF, 0, FFFFFF, 0, 804000, C0C0C0, FFFFFF, COCOCO, COCOCO, O, COCOCO, COCOCO, 808080, O, O, 808000, O, O, FFFFFF Pastel=COFF82, 80FFFF, FFFFFF, 0, FFFFFF, 0, FFFF80, FFFFFF, 0, C080FF, FFFFFF, 808080, C0C0C0, C0C0C0, 808080, 0, C0C0C0, FFFF00, 0, 0, FFFFFF Patchwork=9544BB, C1FBFA, FFFFFF, 0, FFFFFF, 0, FFFF80, FFFFFF, 0, 64B14E, FFFFFF, 0, C0C0C0, C0C0C0, 808080, 0, 808080, FFFF00, 0, 0, FFFFFF Plasma Power Saver=0, FF0000, 0, FFFFFF, FF00FF, 0, 800000, C0C0C0, 0,

80, FFFFFF, C0C0C0, FF0000, C0C0C0, 808080, 0, C0C0C0, FFFFFF, 0, 0, FFFFFF Rugby=COCOCO, 80FFFF, FFFFFFF, 0, FFFFFF, 0, 800000, FFFFFFF, FFFFFFF, 80, FFFFFF, 0, C0C0C0, C0C0C0, 808080, 0, 808080, 800000, FFFFFF, 0, FFFFFF The Blues=804000, COCOCO, FFFFFF, 0, FFFFFF, 0, 800000, COCOCO, FFFFFF, COCOCO, COCOCO, O, COCOCO, COCOCO, 808080, O, COCOCO, 800000, FFFFFF, O, FFFFFF Tweed=6A619E, C0C0C0, FFFFFF, 0, FFFFFF, 0, 408080, C0C0C0, FFFFFF, 404080, C0C0C0, 0, 10E0E0E0, C0C0C0, 808080, 0, C0C0C0, 8080, 0, 0, FFFFFF Valentine=C080FF, FFFFFF, FFFFFFF, 0, FFFFFFF, 0, 8000FF, 400080, FFFFFF, C080FF, C080FF, 0, C0C0C0, C0C0C0, 808080, 0, 808080, FF00FF, 0, FFFFFF, FFFFFF Wingtips=408080, COCOCO, FFFFFF, 0, FFFFFF, 0, 808080, FFFFFF, FFFFFF, 4080, FFFFFF, 0, 808080, C0C0C0, 808080, 0, C0C0C0, 808080, FFFFFF, 0, FFFFFF Section: [color schemes]

File: CONTROL.INI

COMport-number=port-number, baud-rate, parity, word-length, stop-bits [, handshaking]

Specifies communication information for the communications port identified as follows: *port-number* is the communications port number (1 through 4).

baud-rate is the port's <u>baud rate</u>.

parity is the parity setting.

word-length is the length of a word in bits.

stop-bits is the number of stops bits for the port.

handshaking is optional and specifies if hardware handshaking is in effect.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: 9600, n, 8, 1, x Section: [ports] File: WIN.INI

COMport-numberAutoAssign=-1 | 0 | seconds

Specifies how Windows handles arbitration of communications port requests by more than one application. *port-number* specifies the communications port (1 through 4).

If the value is -1, Windows asks you which application should be given control of the port (equivalent to the Always Warn option button in the 386 Enhanced Control Panel Applet). If the value is 0, any application can use the port at any time (equivalent to the Never Warn option button in the 386 Enhanced Control Panel Applet).

Otherwise, the value specifies the time (in seconds) after an application stops using the port before another application can use the same port (equivalent to the Idle option button in the 386 Enhanced Control Panel Applet).

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: 2 Section: [386Enh] File: SYSTEM.INI

COMport-numberBase=address

Specifies the base address for the serial port adapter you are using for 386 Enhanced mode and Standard mode. The value *port-number* is the port (1 through 4) and *address* is the base address for this port.

To set a COM port's base address:

- 1 Click Set.
 - The Ports dialog appears.
- 2 Click Settings.

The Settings dialog appears.

3 Click Advanced...

The Advanced Settings For COM dialog appears.

- 4 Select a new address from the Base I/O Port Address drop-down list box.
- **5** Click OK in each dialog.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: none (Uses port address value in the <u>BIOS data area</u> and 3E8h for COM3.)

Section: [386Enh]

File: SYSTEM.INI

COMport-numberBuffer=buffer-size

Specifies the number of characters that are be buffered from the communications port. The value *port-number* (1 through 4) is the communications port, and *buffer-size* is the number of characters to buffer.

Buffering can slow down communications but may be required for high baud rates. The actual value you use depends on the machine and the application you are using. Refer to <u>COMport-numberIrq=</u> before changing this statement.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default:	128
Section:	[386Enh]
File:	SYSTEM.INI

COMport-numberFIFO=Off | On

Specifies whether the FIFO (First-in First-out) buffer is used, if it exists. If the communication port is using other than a <u>16550 Universal Asynchronous Receiver Transmitter (UART)</u>, this statement is ignored. Otherwise, Windows enables the FIFO buffer if On or disables if Off for the port that corresponds to *portnumber* (1 through 4).

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: On Section: [386Enh] File: SYSTEM.INI

COMport-numberIrq=interrupt-line

Specifies which interrupt request line (IRQ) is used by the communications port.

The value *port-number* is the port (1 through 4). The value *interrupt-line* is the IRQ line. The correct IRQ value depends on the hardware (check your hardware documentation). If a conflict arises between ports, set one or more ports to -1 to disable input.

To set a COM port's IRQ line:

- 1 Click Set.
- 2 Click Settings.
- 3 Click Advanced...
- 4 Select a new IRQ from the Interrupt Request Line (IRQ) drop-down list box.
- **5** Click OK for each dialog box.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default:(for ISA and EISA machines)
COM1Irq=4
COM2Irq=3
COM3Irq=4
COM4Irq=3
(for MCA machines)
COM1Irq=4
COM2Irq=3
COM3Irq=3
COM4Irq=3Section:[386Enh]
SYSTEM.INI

COMport-numberProtocol=xoff | blank | characters

Specifies whether Windows 386 Enhanced mode should simulate characters in a <u>virtual machine</u> after the virtual machine sends an <u>XOFF</u> to the communications port indicated by *port-number* (1 through 4).

Set this statement to XOFF if applications using high baud rates lose characters during text transfers. This causes Windows to stop simulating characters when a virtual machine sends an XOFF and resume when the virtual machine sends another character after the XOFF.

If a value other then XOFF is encountered (the statement is left blank or any other character string appears), then Windows doesn't check for XOFF characters.

Refer to <u>COMport-numberBuffer=</u> if you are losing characters.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: blank Section: [386Enh] File: SYSTEM.INI

COMBoostTime=*milliseconds*

Specifies the time to allow a <u>virtual machine</u> to process a COM interrupt. The value *milliseconds* should be increased if a communications application is losing keyboard characters on the display.

Default: 2 Section: [386Enh] File: SYSTEM.INI

COMdrv30=Off | On

Specifies whether the <u>Virtual COM Driver (VCD)</u> uses its own copy of the serial communication driver's interrupt handler. Setting to On improves performance of COM ports and must be done if applications require the Windows 3.0 serial communications driver. Set to Off if you are using the Windows 3.1 serial communications driver (standard).

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

COMIrqSharing=Off | On

Specifies whether Windows allows COM interrupt request lines (IRQ) to be sharable between multiple communication ports or devices. Set to On if COM3 or COM4 use the same IRQ as COM1 or COM2.

Default:	On (for <u>MCA</u> machines) Off (for all others)
Section:	[386Enh]
File:	SYSTEM.INI

comm.drv=filename

Specifies the filename of the serial communications driver to use.

Default:	Off
Section:	[boot]
File:	SYSTEM.INI

CommandEnvSize=bytes

Specifies the size of the environment used for COMMAND.COM. This statement applies to a DOS shell and running any batch (.BAT) files. The value *bytes* can be either 0 or between 160 and 32768. Invalid values for *bytes* are rounded up to 160 or down to 32768.

If the value is less than the current environment size or 0, this statement is ignored. This is also ignored statement if you are running a DOS shell using a PIF file and have specified a different environment size.

Default: 0 with MS-DOS up to version 3.2; otherwise it is the value following the /e: parameter in the shell= line in CONFIG.SYS.

Section: [non-WindowsApp] File: SYSTEM.INI

Compression=0 | 1

Specifies whether to enable or disable the Compression category in the Norton Desktop Control Center. A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

ComputeMethod=INFIX | RPN

Specifies whether to use INFIX or Reverse Polish Notation (RPN) for calculations. INFIX means you enter 3 - 2 = 1 and RPN (Reverse Polish Notation) means you enter 3 + 2 - = 1.

You can also set the compute method by choosing Setup from the Tape calculator File menu and choosing the appropriate option button in the Computation group box.

Default:	INFIX
Section:	[TapeCalc]
File:	NDW.INI

Confirmations=0 | 1

Specifies whether to enable or disable the Confirmations category in the Norton Desktop Control Center. A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

ConfirmDelete=0 | 1

Specifies whether File Manager confirms a request to delete a file. A value of 1 enables confirmation, 0 disables confirmation.

ConfirmFormat=0 | 1

Specifies whether File Manager confirms a request to format a diskette. A value of 1 enables confirmation, 0 disables confirmation.

ConfirmMouse=0 | 1

Specifies whether File Manager confirms drag-and-drop requests. A value of 1 enables confirmation, 0 disables confirmation.

ConfirmReplace=0 |1

Specifies whether File Manager confirms a request to replace a file. A value of 1 enables confirmation, 0 disables confirmation.

ConfirmSubDel=0 | 1

Specifies whether File Manager confirms a request to delete a subdirectory. A value of 1 enables confirmation, 0 disables confirmation.

CoolSwitch=0 | 1

Specifies whether Windows performs fast task switching (or fast "Alt+Tab" switching).

When set to 1, Windows displays the icon and application name that will be switched to when the Alt key is released. If set to 1, Windows switches to each application as you press and release Tab while holding Alt.

Default:none (1 is assumed)Section:[windows]File:WIN.INI

CtrlAltDel=0 | 1

Specifies if the user is allowed to reboot out of the Norton Desktops Sleeper screen saver. Ctrl+Alt+Del protection keeps intruders from rebooting your computer when you have enabled password protection. A value of 0 disables Ctrl+Alt+Del protection and 1 enables it.

Default:	0
Section:	[sleeper]
File:	NDW.INI

CursorBlinkRate=milliseconds

Specifies how much time elapses between each blink of the selection cursor.

Default:530Section:[windows]File:WIN.INI

DDEInitiateDelay=milliseconds

Specifies how long Norton Desktop must wait before initiating another DDE conversation. *milliseconds* is the number of milliseconds to wait.

Default: 750 Section: [Quick Access] File: NDW.INI

DecimalDigits=number

Specifies the number of decimal digits to display. The value *number* is the number of digits. There are only five valid numbers:

- -1 floating
- 0 0 digits
- 1 1 digits
- 2 2 digits
- 3 3 digits
- 4 4 digits
 - Default: 2

Section: [TapeCalc] File: NDW.INI

DefaultIconLib=filename

Specifies the name of a file containing icons. *filename* is the name of the file.

This file is used by the Change Icon dialog box whenever the item you have selected has no associated icon file.

Default:NDW.NIL (in your Norton Desktop directory)Section:[Defaults]File:NDW.INI

DefaultQueueSize=number

Specifies the number of messages that an application's message queue can hold.

Default:8Section:[windows]File:WIN.INI

Defaults=0 | 1

Specifies whether to enable or disable the Defaults category in the Norton Desktop Control Center. A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

DefaultViewer=.PRS-filename

Specifies the default viewer (.PRS-filename) that Norton Viewer uses if it does not recognize the extension of the file to be viewed.

Default: SYMPROG.PRS Section: [Defaults] File: NDW.INI

deskedit.exe=blank | string

Specifies how to print documents within Desktop Editor if the sequence to print is other than File/Print/OK (!FP~). If left blank then the print sequence is assumed to be File/Print/OK. Otherwise, *string* contains a string that specifies the actual print sequence.

Default:	none
Section:	[PrintStart]
File:	NDW.INI

Desktop Layout=0 | 1

Specifies whether to enable or disable the Desktop Layout category in the Norton Desktop Control Center.

A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

DesktopConfigArrange=0 | 1

Specifies whether to automatically move all desktop icons up or down to account for the size of the main Norton Desktop title bar, menu bar, and toolbar (which changes, for example, when you use a text-only toolbar rather than an icon-and-text toolbar).

A value of 1 makes automatic adjustments, and 0 does not.

Default:	1
Section:	[Defaults]
File:	NDW.INI

Device=output-device-name, device-driver, port-connection

Specifies the default printer. The *output-device-name* is the name of a device listed in the [devices] section. The device must have an explicit port and driver assigned to it. The *device-driver* is the filename of the device driver file and *port-connection* is a port from the [ports] section.

Default:	none
Section:	[windows]
File:	WIN.INI

device=filename | *device-name

Specifies which <u>virtual devices</u> are being used with Windows 386 Enhanced mode. *filename* is a virtual device file (usually these files have a .386 extension). If an asterisk (*) appears then the *device-name* that follows refers to a built-in virtual device (these are contained in WIN386.EXE).

The following synonyms exist for device=: <u>display=</u>, <u>EBIOS=</u>, <u>keyboard=</u>, <u>Network=</u>, and <u>mouse=</u>. Windows Setup assigns values based on your system configuration. If Setup detects Protected mode devices for Western Digital-compatible hard disk drive controllers, the statements device=*int13 and device=*wdctrl are added to [386Enh].

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

device=driver, port, device-timeout, retry-timeout [, other-ports ...]

CAUTION: Be sure that changing a statement here does not conflict with a corresponding entry in the <u>[devices]</u> section (see <u>device=</u> for more information).

Specifies information about an active or inactive printer.

device is the name of the device.

driver is the driver filename.

port is the port the device is connected to or the value of <u>NullPort=</u> from the <u>[windows]</u> section.

device-timeout is the number of seconds Print Manager waits for a device to respond to Windows' requests.

retry-timeout is the number of seconds Windows waits before retrying a transmission.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default:	none
Section:	[PrinterPorts]
File:	WIN.INI

device=driver, port [, other-ports...]

CAUTION: Be sure that changing a statement here does not conflict with a corresponding entry in the [PrinterPorts] section (see <u>device=</u> for more information).

Specifies information about an active printer and is provided to be compatible with Windows 2.x applications.

device is the name of the device.

driver is the driver filename.

port is the port the device is connected to or the value of <u>NullPort=</u> from the <u>[windows]</u> section.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default: none Section: [devices] File: WIN.INI

DeviceNotSelectedTimeout=seconds

Specifies how long Windows waits for a device to respond to requests from Windows. This is a system default value.

To change the value for a particular printer, you must choose the <u>device=</u> statement in the [printerPorts] section that corresponds to that printer.

If a device does not respond to requests from Windows within the specified time, Windows does not print to the device.

To set a device's timeout period:

- 1 Click Set.
- 2 Click Connect...
- 3 Enter the new timeout period in the Device Not Selected text box.
- 4 Click OK.
- 5 Click Close.

Default: 15 Section: [windows] File: WIN.INI

dir1=number, number, ..., number, string

Specifies information about the current directory. The values *number, number, ..., number* are 11 numerical values containing information about the current directory. The value *string* is the current directory.

Default:	none
Section:	[Settings]
File:	WINFILE.INI

DisablePositionSave=1 | 0

Specifies when Windows saves the position and font used in a non-Windows application. This information is normally saved in DOSAPP.INI after quitting the application. Setting to 1 causes Windows to save the position and font to DOSAPP.INI only if the Save Settings On Exit checkbox is selected in the Fonts dialog box. Setting to 0 saves the position and font when you exit the application.

Default:	none (0 is assumed)
Section:	[NonWindowsApp]
File:	SYSTEM.INI

Disk Read Strategy=0 | 1

Specifies the strategy Norton Backup uses to read the disk.

A value of 1 causes Norton Backup to use the fastest strategy, and 0 causes Norton Backup to use the most compatible strategy.

Default:1Section:[NBackup]File:NDW.INI

display.drv=filename

Specifies the name of your system's display driver.

NOTE: The display driver is also specified in the <u>display.drv=</u> statement in SYSTEM.INI.

Default: none Section: [Settings] File: PROGMAN.INI

display.drv=filename

Specifies the name of your system's display driver.

NOTE: The display driver is also specified in the <u>display.drv=</u> statement under [<u>Settings]</u> in PROGMAN.INI.

Default: none Section: [boot] File: SYSTEM.INI

display=filename | *device-name

Specifies which display device is being used with Windows 386 Enhanced mode. The *filename* is a virtual device file (usually this file has a .386 extension). If an asterisk (*) appears, the *device-name* that follows refers to a built-in virtual device (which resides in WIN386.EXE). Windows Setup assigns a value based on your system configuration.

This is a synonym for the <u>device=</u> statement.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

DMABufferIn1MB=Off | On

Specifies whether Windows should place the Direct Memory Access (DMA) buffer memory in the first megabyte of memory (if possible, above 640K). This provides compatibility with 8-bit bus master cards. A value of On forces Windows to place the buffer in the first megabyte, Off does not.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

DMABufferSize=kilobytes

Specifies the Direct Memory Access (DMA) buffer memory size. Windows 386 Enhanced mode defaults to a DMA buffer size that can handle disk access.

Default: 16 Section: [386Enh] File: SYSTEM.INI

Documents=extensions

Specifies the files that Windows considers "documents". This statement is used for document file extensions not listed in the <u>[extensions]</u> section, since files listed there are automatically considered documents.

The extensions listed here are not associated with any application. Each extension listed should be separated by a space and should <u>not</u> include the preceding period.

Default:	none
Section:	[windows]
File:	WIN.INI

DosPrint=Yes | No

Specifies whether Windows should use DOS interrupt (<u>INT 21h</u>) services to print, where Yes uses DOS interrupts. If set to No Windows attempts to print directly to the parallel printer port. If you are using a non-standard parallel port or network printer port, this option should be set to Yes.

Default:	No
Section:	[windows]
File:	WIN.INI

DOSPromptExitInstruc=Off | On

Specifies whether Windows displays a message box when entering a DOS Prompt. This message box contains information on how to exit and switch away from the DOS Prompt and how to place the DOS Prompt in a Window.

Default:none (On assumed)Section:[386Enh]File:SYSTEM.INI

DoubleClickHeight=pixels

Specifies twice the vertical distance (in pixels) that the mouse can move between clicks in a double-click. Anything outside this distance is treated as two single clicks. For example, a value of 8 allows the mouse to move 4 pixels up or down between clicks and still be recognized as a double-click. If you enter an odd number, it is rounded to the nearest even number.

Default: This statement does not exist by default; Windows assumes a value of 4.

Section: [windows]

File: WIN.INI

DoubleClickSpeed=milliseconds

Specifies the maximum time allowed between clicks in a double-click.

Default:452Section:[windows]File:WIN.INI

DoubleClickWidth=pixels

Specifies twice the horizontal distance (in pixels) that the mouse can move between clicks in a doubleclick. Anything outside this distance is treated as two single clicks. For example, a value of 8 allows the mouse to move 4 pixels left or right between clicks and still be recognized as a double-click. If you enter an odd number, it is rounded to the nearest even number.

Default: This statement does not exist by default; Windows assumes a value of 4.

Section: [windows]

File: WIN.INI

drive=network-server-and-share

Specifies network connections that are restored each time Windows is started.

Default: none Section: [network] File: WIN.INI

Drive Icons=0 | 1

Specifies whether to enable or disable the Drive Icons category in the Norton Desktop Control Center. A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

Drive Windows=0 | 1

Specifies whether to enable or disable the Drive Windows category in the Norton Desktop Control Center. A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

drivers=filename | alias-name

Specifies the filenames or aliases of installable drivers. These drivers are loaded when Windows is started.

An installable driver is a <u>dynamic-link library (DLL</u>) that is treated like a device driver by Windows. If a driver requires a parameter, the driver must be specified using the <u>alias=</u> statement in the <u>[drivers]</u> section. Then the alias created can be used here.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

DualDisplay=Off | On

Specifies whether Windows 386 Enhanced mode uses the memory between B000:0000 and B7FF:0000 or not. If set to Off, this address range is available on EGA systems but not on VGA systems (because they support monochrome modes which use this address range).

If this statement is to On, the address range remains unused and can be used by a secondary display or a memory manager.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

EBIOS=filename | *device-name

Specifies the <u>extended BIOS device</u> being used with Windows 386 Enhanced mode.

This statement is a synonym for <u>device=</u>.

Default: Assigned by Windows Setup

Section: [386Enh]

File: SYSTEM.INI

EditLevel=number

Specifies different actions that can or cannot be performed in Program Manager. The value of *number* specifies one of the four following conditions:

Valu	e Actio	ns	
0	Lets y	Lets you make any changes.	
1	Disab	Disables the New, Move, Copy, and Delete commands in the File menu when a group is selected.	
2	The N	The New, Move, Copy, and Delete commands in the File menu are completely disabled.	
3	Same as the previous plus the text in the Command Line box in the Properties dialog box cannot be changed.		
4	Same as previous plus none of the areas in the Properties dialog box can be changed.		
I	Default:	The EditLevel= statement and the [restrictions] section do not appear by default. However, EditLevel=0 is assumed.	
:	Section:	[restrictions]	
I	File:	PROGMAN.INI	

EditStartupFiles=1 | 0

Specifies whether System Information allows you to edit the startup files listed when Startup Files Summary is chosen from the Summary menu (or by clicking Sysfiles). 1 lets you edit the system startup files, and 0 does not.

Default:	1
Section:	[System Information]
File:	NDW.INI

EGA40WOA.FON=filename

Specifies the filename of a fixed-pitch font used for non-Windows applications, with a display of 40 columns by 25 or fewer lines. The font specified is only used when non-Windows applications are displayed in a window and not in full screen.

Default:EGA40WOA.FON in the United StatesSection:[386Enh]

File: SYSTEM.INI

EGA80WOA.FON=filename

Specifies the filename of a fixed-pitch font used for non-Windows applications, with a display of 80 columns by 25 or fewer lines. The font specified is only used when non-Windows applications are displayed in a window and not in full screen.

Default: EGA80WOA.FON in the United States Section: [386Enh]

File: SYSTEM.INI

EISADMA=Off | channel, size [; ...]

Specifies the operation mode of an extended Direct Memory Access (DMA) channel. Extended DMA channels are used on Extended Industry Standard Architecture (EISA) machines only.

Set this statement to Off if you are using an EISA machine and Windows does not run in 386 Enhanced mode. If you are using a non-EISA machine Windows ignores any value this statement has and assumes Off.

Use the *channel, size* pairs to specify the transfer sizes for one or more DMA channels. A valid transfer *size* can be:

Value	Meanii	ng
8	8-bit	
16w	16-bit s	specified in words
16b	16-bit s	specified in bytes
32	32-bit	
	efault: ection: le:	0,8; 1,8; 2,8; 3,8; 5,16w; 6,16w; 7,16w [386Enh] SYSTEM.INI

EMMExclude=paragraph-range

Specifies a memory address range that Windows does *not* scan to find unused address space. The range, *paragraph-range*, must be two paragraph values separated by a hyphen between A000 and EFFF. The first value is rounded down and the second rounded up to the nearest multiple of 16K. To exclude more than one address range add another EMMExclude= statement to SYSTEM.INI under the [<u>386Enh</u>] section.

NOTE: The memory that is scanned is used as additional UMBs in virtual machines.

By excluding an address range, Windows turns off the RAM and ROM <u>search code</u> for that range. The scanning that would normally occur when not excluding an address range can interfere with certain adapters.

Use <u>ReservedHighArea=</u> if you need granularity of less than 16K.

NOTE: The <u>EMMInclude=</u> statement takes precedence over any range specified in any EMMExclude= statement.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

EMMInclude=paragraph-range

Specifies a memory address range that Windows scans to find unused address space. The range, *paragraph-range*, must be two paragraph values separated by a hyphen between A000 and EFFF. The first value is rounded down and the second rounded up to the nearest multiple of 16K. To include more than one address range add another EMMInclude= statement to SYSTEM.INI under the [<u>386Enh]</u> section.

By including an address range, Windows turns on the RAM and ROM search code for that range.

Use <u>ReservedHighArea=</u> if you need granularity of less than 16K.

NOTE: The EMMInclude= statement takes precedence over any range specified in any <u>EMMExclude=</u> statement.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

EMMPageFrame=*paragraph*

Specifies the paragraph where the 64K page frame begins if Windows cannot find a suitable page frame.

Default:	This statement does not appear by default in the [<u>386Enh]</u> section. However, Windows
	assumes none.
Section:	[386Enh]

File: SYSTEM.INI

EMMSize=kilobytes

Specifies the total memory to be made available for expanded memory mapping. Change the value for this statement if you run an application and can never create another <u>virtual machine</u>.

A value of 65,536 allocates the maximum possible amount of system memory as expanded memory. A value of 0 causes no system memory to be allocated as expanded memory but does not prevent the <u>EMS</u> driver from being loaded (see the <u>NoEMMDriver=</u> statement).

Default:	65,536
Section:	[386Enh]
File:	SYSTEM.INI

EPT:=

Specifies an IBM specific printer. Windows sends output to this device as if it were a file. **NOTE:** This statement does not take any parameters.

Default: none Section: [ports] File: WIN.INI

extension=viewers

Specifies what viewer Norton Desktop uses for a particular file extension.

extension is the file extension.

viewers is the name of the viewer or viewers (.PRS files) assigned to that extension, in order of priority.

For example, the SYS=DOC.PRS HEX.PRS statement indicates that a .SYS file is passed first to the Documents & Text viewer (DOC.PRS). If that viewer cannot view the file, the Hex Dump viewer (HEX.PRS) is used to view it.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Defaults: SE=DOC.PRS HEX.PRS ARC=ZIP.PRS BAT=DOC.PRS BMP=BMP.PRS HEX.PRS CDR=CDR.PRS HEX.PRS COM=PROG.PRS HEX.PRS DB=PDX.PRS DBF=SYMDBASE.PRS HEX.PRS DLL=PROG.PRS DOC=DOC.PRS JWQAPRS.DLL DRW=DRW.PRS HEX.PRS DSP=PROG.PRS EXE=PROG.PRS GIF=GIF.PRS HEX.PRS IC=ICO.PRS ICL=ICO.PRS ICO=ICO.PRS INI=DOC.PRS JW=JWQAPRS.DLL LZH=ZIP.PRS NIL=ICO.PRS NSS=PROG.PRS OV1=PROG.PRS OV2=PROG.PRS OV3=PROG.PRS OV4=PROG.PRS OVL=PROG.PRS OVR=PROG.PRS PAK=ZIP.PRS PCX=PCX.PRS HEX.PRS PIC=DRAW.PRS HEX.PRS PRS=PROG.PRS SAM=DOC.PRS SYS=DOC.PRS HEX.PRS TIF=TIF.PRS TXT=DOC.PRS

WK1=L123.PRS HEX.PRS WK3=L123.PRS HEX.PRS WKQ=L123.PRS HEX.PRS WKS=L123.PRS HEX.PRS WKT=L123.PRS HEX.PRS WMF=WMF.PRS HEX.PRS WPG=WPV.PRS WPGI.PRS HEX.PRS WPS=DOC.PRS WQ1=L123.PRS HEX.PRS XLA=MSEXCEL.PRS HEX.PRS XLC=MSEXCEL.PRS HEX.PRS XLM=MSEXCEL.PRS HEX.PRS XLS=MSEXCEL.PRS HEX.PRS XLW=MSEXCEL.PRS HEX.PRS ZIP=ZIP.PRS ZOO=ZIP.PRS [Viewer-Filemap] Section: NDW.INI

File:

extension=command-line

Specifies a command line to be associated with a file extension. The value *extension* is the file extension without the preceding period.

command-line is a command line associated with the file extension, beginning with the application filename (including the extension) and followed by any applicable command-line parameters. The caret (^) can be used to specify the original document filename; it is replaced by the filename without an extension.

NOTE: Associations for many of the Windows applications and applets are created automatically by the application (when it is properly installed) and the Windows Setup program. In addition, some applications may let you change default settings so that you can use particular components of that application. For example, Norton Desktop lets you change extensions so they are associated with Desktop Editor rather than Notepad.

A typical entry might be:

cal=calendar.exe ^.cal

If, in this example, you launch a file called MYFILE.CAL, the Calendar <u>applet</u> starts and automatically loads MYFILE.CAL.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Defaults:	<pre>bmp=pbrush.exe ^.bmp</pre>
	<pre>cal=calendar.exe ^.cal</pre>
	<pre>crd=cardfile.exe ^.crd</pre>
	hlp=winhelp.exe ^.hlp
	ini=notepad.exe ^.ini
	pcx=pbrush.exe ^.pcx
	rec=recorder.exe ^.rec
	<pre>trm=terminal.exe ^.trm</pre>
	<pre>txt=notepad.exe ^.txt</pre>
	wri=write.exe ^.wri
Section:	[Extensions]
File:	WIN.INI

extension=mcidevice-type

Specifies the media-file extension to be associated with a <u>Media Control Interface</u> driver.

Defaults:	wav=waveaudio
	mid=sequencer
	rmi=sequencer
Section:	[mci extensions]
File:	WIN.INI

extensions=[extension[[,] [...]]

Specifies the file extensions (with or without a leading period) that are to be treated as zip (compressed) files. A list of extensions is valid as long as each is separated by commas or spaces.

Defaults:	.ZIP
Section:	[Zip]
File:	NDW.INI

Face=font-name

Specifies the font used to display a desktop item in File Manager.

Default:MS Sans SerifSection:[Settings]File:WINFILE.INI

FakeProgman=1 | 0

Specifies whether Norton Desktop creates a fake Program Manager window or not.

A value of 1 creates a fake Program Manager window when Program Manager termination is detected or if Program Manager is not initially running. A value of 0 does not fake Program Manager.

This setting only works if <u>Int21hHook=</u>1 (VXD is installed and on). The fake Program Manager window is designed to assist Windows installation programs that are hard-coded to find a Program Manager window (classname is "Progman"). This does not help ill-behaved installation programs that check the <u>shell=</u> line in SYSTEM.INI or check to see if the "PROGMAN" module is resident in memory.

Default: 1 Section: [Quick Access] File: NDW.INI

FasterModeSwitch=0 | 1

Specifies whether Windows Standard mode can use a faster Real-to-Protected mode switching method.

When set to 1 this statement allows 80286-based systems to respond more quickly to hardware interrupts. This increases throughput for interrupt intensive applications.

If you are using a Zenith Z-248 system and lose characters, or an Olivetti M-250-E and lose control of the mouse, try setting this statement to 1.

NOTE: This statement has no effect on 80386-based computers. Additionally, some early IBM-AT and compatible computers do not have BIOS support for this feature and may hang.

Default: 0 Section: [standard] File: SYSTEM.INI

FILE:=

When this option is selected as the current port for printing, Windows prints information to a file. If a value is specified for FILE:=, Windows prompts you for an output file each time you print.

Default:	none
Section:	[ports]
File:	WIN.INI

FileAssist=0 | 1

Specifies whether to enable or disable the FileAssist category in the Norton Desktop Control Center.

A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

File Size Extension=drive:path/filename

This statement is added by Norton Desktop when it is installed.

Default:windows-path\filesize.dll.Section:[AddOns]File:WINFILE.INI

filename=

When this option is selected as the current port for printing, Windows prints information to the file specified by *filename*.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default: This statement does not appear by default.

Section: [ports]

File: WIN.INI

filename=window horiz vert window-size ...

Specifies how to display a DOS program. If the value of *window* is 1 the DOS program is windowed, if 0 then it is full screen. The horizontal and vertical size of the font for the DOS program (in pixels) is determined by *horiz* and *vert* respectively.

The rest of the information that follows specifies the size and position of the window. This information should only be changed by positioning and sizing the window.

To set:

1 Launch the DOS program you want that you want in a sized window.

The program starts in full screen or a window. If in full screen mode press Alt + Enter.

- 2 Position and size the window as desired.
- **3** Choose Fonts from the window's System menu. The Font Selection dialog appears.
- 4 Check Save Settings on Exit.
- 5 Click OK.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default:noneSection:[DOS Applications]File:DOSAPP.INI

FileSysChange=Off | On

Specifies whether File Manager automatically receives messages any time a non-Windows application deletes, renames, or creates a file.

NOTE: Setting this statement to On can slow down system performance.

Default:	On
Section:	[386Enh]
File:	SYSTEM.INI

fixedfon.fon=filename

Specifies the filename of the fixed system font for Windows 2.x applications.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

font-name=font-filename

Specifies the filename to be associated with a particular font name, where *font-name* is the descriptive name of the font, and *font-filename* is the file that contains the font resources.

NOTE: You cannot install a font by adding statements to the [fonts] section. You must use the Fonts applet in the Control Panel to install new fonts.

Typical entries might include:

Arial (TrueType)=ARIAL.FOT

Arial Bold Italic (TrueType)=ARIALBI.FOT

MS Serif 8,10,12,14,18,24 (VGA res)=SERIFE.FON

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default:	none
Section:	[fonts]
File:	WIN.INI

font-name1=font-name2

Specifies a font to be substituted for another.

font-name1 is the name of the font that Windows replaces if it is not installed on your system.

font-name2 is the name of the font that is used in place of the first (unavailable) font.

Consider, for example, this statement:

Helvetica=Arial

If, in this example, you display a document that uses Helvetica as a screen font but Helvetica is not installed on your system, Windows substitutes the Arial font for all occurrences of Helvetica.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

```
Defaults: Helv=MS Sans Serif
Helvetica=Arial
Times=Times New Roman
Tms Rmn=MS Serif
Section: [FontSubstitutes]
File: WIN.INI
```

FontChangeEnable=1 | 0

Specifies that Windows allows fonts to be changed for non-Windows applications. This statement (when set to 1) allows you to change fonts even if Windows 3.0 version video grabbers are in use.

NOTE: If you are using Windows 3.0 version video grabbers, you may lose characters and the cursor may change position and size.

 Default:
 1 for systems using Windows 3.1 grabbers; 0 for Windows 3.0 grabbers

 Section:
 [NonWindowsApp]

 File:
 SYSTEM.INI

fonts.fon=filename

Specifies the filename for the porportionately spaced system font.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

ForegroundPriorityBias=whole-number

Indicates the priority to give to the <u>foreground</u> application when the Sleeper screen saver is enabled.

The higher the value, the greater the priority.

Default:	10
Section:	[Sleeper]
File:	NDW.INI

formbase.exe=blank | string

Specifies how to print documents within FormBase if the sequence to print is other than File/Print/OK (! FP~). If left blank then the print sequence is assumed to be File/Print/OK. Otherwise, *string* contains a string that specifies the actual print sequence.

Default:	!PF~~
Section:	[Print Start]
File:	NDW.INI

Global=device-name

Specifies DOS devices that should be global to the system. Certain <u>virtual devices</u> specify that DOS devices be local (MS\$MOUSE, for example--see <u>LocalTSRs=</u> for more information). To override local devices, enter the device's name exactly as it appears in CONFIG.SYS.

 Default:
 This statement does not appear by default. However, Windows assumes that all devices in CONFIG.SYS are global to the system.

 Section:
 [386Enh]

 File:
 SYSTEM.INI

GlobalHeapSize=kilobytes

Specifies the size of the buffer Windows allocates in conventional memory when running in Standard mode. This buffer can be used to share information among non-Windows applications that are started from Windows.

This statement has no effect in 386 Enhanced mode. **NOTE:** You should never need to change this statement.

Default: 0 Section: [NonWindowsApp] File: SYSTEM.INI

GrayText=r g b

Specifies the color of the grayed text using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

GridGranularity=number

Specifies the grid size Windows uses to position windows on the screen. The *number* can range from 0 to 49 in units of 8 pixels.

For example:

GridGranularity=1

This statement indicates that the grid size is 8 pixels high by 8 pixels wide.

Default: 0 Section: [Desktop] File: WIN.INI

GridOriginX=*number* GridOriginY=*number*

Specifies the grid size for Norton Desktop. The grid size is determined from the upper-left corner of the desktop.

The value of *number* determines the origin of the snap grid in pixels from the upper-left corner of the desktop.

For example,

```
GridOriginX=16
GridOriginY=40
```

indicate that the grid width is 16 pixels and the grid height is 40 pixels.

Default:	GridOriginX=16 GridOriginY=40
Section:	[Defaults]
File:	NDW.INI

Groupnumber=filename

Specifies the filename that a particular group is associated with.

The *number* is a number assigned to a group as it is created by Program Manager. The group numbers may not be in any particular sequence, since various groups are often deleted while others are created.

The value of *filename* is the full path and filename of the .GRP file.

NOTE: The group number is also used in the <u>Order=</u> statement in the [Settings] section.

Sample entries may include:

Group1=C:\WINDOWS\MAIN.GRP

Group2=C:\WINDOWS\ACCESSOR.GRP

Group10=C:\WINDOWS\STARTUP.GRP

Group8=C:\WINDOWS\GAMES.GRP

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

 Default:
 This statement appears repeatedly by default after installing Windows with a Group*number*= statement for each of the default groups Windows Setup installs. This number can very depending on your <u>SETUP.INF</u> file.

 Section:
 [Groups]

File: PROGMAN.INI

H_WindowPosition=[*left, top, width, height, maximized*]

NOTE: The brackets ([]) around the values above are part of this statement; they do not indicate that the values within them are optional.

Specifies the default position and size of the History window that appears when you click History in Windows Help.

The position and size of the window are determined by the first four values respectively. The last value, *maximized*, is not used since the History window cannot be maximized.

All values, except the last, are in pixel units.

Default:This statement does not appear by default.Section:[Windows Help]

File: WIN.INI

HardDiskDMABuffer=kilobytes

Specifies the size of the Direct Memory Access (DMA) buffer. This amount is determined automatically if you are using SMARTDrive and double buffering.

The value for this statement may need to be changed if you are using a hard disk that supports DMA but either you are not using SMARTDrive, or you do not have double buffering enabled.

Default: 0 for ISA and EISA machines (AT architectures), 64 for MCA machines (Micro Channel Architecture) that use DMA channel 3

Section:	[386Enh]
File:	SYSTEM.INI

Hidelcon=0 | 1

Specifies whether the ScriptMaker application icon appears when a script is running. A value of 1 hides the icon, and 0 does not. **NOTE:** To edit this statement, be sure to use the SYMCFG.INI in your Windows directory.

Defaults:	This statement does not appear by default. However, Norton Desktop assumes a value of 0.
Section:	[ScriptMaker]
File:	SYMCFG.INI

Hilight=*r* g b

Specifies the background color of the highlighted text using the <u>rgb palette specification</u>.

Default:	This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.
Section:	[colors]
File:	WIN.INI

HilightText=r g b

Specifies the color of the highlighted text using the rgb palette specification.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

IconSearchLevel=0 | 1

Specifies how to locate the icons for Quick Access and desktop items.

A value of 0 indicates Quick, and 1 indicates Extended.

Quick (0) is faster, but it may not always detect that a new icon is present in an icon source file. Extended (1) always goes out to disk at the beginning of each Norton Desktop session and checks the file date of the icon source to see whether the Quick Access item needs to be refreshed. In addition, if it does not find the requested icon file in the prescribed location, Norton Desktop searches the path to attempt to find a match.

Default:	0
Section:	[Defaults]
File:	NDW.INI

IconSpacing=*pixels*

Specifies the horizontal space (in pixels) that separates icons.

Default:	77
Section:	[Desktop]
File:	WIN.INI

IconSpacingX=*number* IconSpacingY=*number*

Specifies the vertical (X) and horizontal (Y) space, in pixels, between icons in a Quick Access group window.

The value of *number* determines the space between icons.

Default:	75
Section:	[Quick Access]
File:	NDW.INI

IconTitleFaceName=fontname

Specifies the font used to display icon titles.

To set:

- 1 Click Set...
- 2 Click Font...
- **3** Select the new font from the Font combination box.

Default: This statement does not appear by default; Windows assumes MS Sans Serif.

Section: [Desktop]

File: WIN.INI

IconTitleStyle=0 | 1

Specifies the font style used to display text under icons. A value of 0 indicates normal text and 1 is bold. **To set:**

1 Click Set...

- 2 Click Font...
- 3 Select the new style from the Font Style combination box.

Default: This statement does not appear by default. However, Windows assumes a value of 0.

Section: [Desktop] File: WIN.INI

IconTitleSize=point-size

Specifies the font size used to display icon titles.

To set:

- 1 Click Set...
- 2 Click Font...
- **3** Select the new font from the Size combination box.

Default: This statement does not appear by default; Windows assumes a point size of 8.

Section: [Desktop]

File: WIN.INI

IconTitleWrap=1 | 0

Specifies whether Windows wraps icon titles, where 1 enables wrapping and increases the vertical spacing by three lines.

Default: This	statement does not appear by default; Windows assumes the value 1.
Section: [Des	ktop]

File: WIN.INI

IconVerticalSpacing=pixels

Specifies the vertical space (in pixels) between icons.

Default:Based on the icon title font and the display you are using.Section:[Desktop]File:WIN.INI

iCountry=country

Specifies the country code. This code is the same as the international telephone code for the country, except for Canada, which is 2.

Default: 1 Section: [intl] File: WIN.INI

iCurrDigits=number

Specifies the number of digits to place after the decimal separator when displaying currencies.

Default: 2 Section: [intl] File: WIN.INI

iCurrency=number

Specifies the format in which currency values are displayed.

Examples of how one dollar could be displayed include:

Value of number	Display
0	\$1
1	1\$
2	\$ 1
3	1
NOTE: The currer	ncy symbol (\$ in this example) is specified by the <u>sCurrency=</u> statement.

Default:	0
Section:	[intl]
File:	WIN.INI

iDate=number

Specifies numerical date format for Windows 2.x compatibility.

Examples of how April 15, 1994, could be displayed are:

Value of <i>number</i>	Display
0	04/15/94
1	15/04/94
2	94/04/15
NOTE: The actual	date separator (/ in this example) is specified by the <u>sShortDate=</u> statement.

Default: 0 Section: [intl] File: WIN.INI

iDigits=number

Specifies the number of digits to display, after the decimal separator, in values other than currency. **NOTE:** The digits in currency are specified by the <u>iCurrDigits=</u> statement.

Default: 2 Section: [intl] File: WIN.INI

IdleVMWakeUpTime=seconds

Specifies a time interval used to <u>wake up</u> idle <u>virtual machines</u>. This is done by using <u>timer interrupts</u> (INT 8 or INT 1Ch).

Windows does not usually force timer interrupts into virtual machines that do not use them unless the virtual machine is active. This statement forces the timer interrupts to occur.

The value you give this statement is rounded down to the nearest power of two (for example, 1, 2, 4, 8, and so on).

Default:This statement does not appear by default. However, Windows assumes a value of 8.Section:[386Enh]File:SYSTEM.INI

IFJumpColor=*r g b*

Specifies the color used for text in Windows Help that causes a jump to another topic, in another window or file. The color is determined by the <u>rgb palette specification</u>.

Default: none Section: [Windows Help] File: WIN.INI

IFPopupColor=r g b

Specifies the color used for text in Windows Help that displays pop-up panels to another topic, in another window or file. The color is determined by the <u>rgb palette specification</u>.

Default:

Section:	[Windows Help]
File:	WIN.INI

IgnoreInstalledEMM=Off | On

Specifies whether Windows should start up in 386 Enhanced mode even if there is an unknown expanded memory manager (<u>EMM</u>) running.

Using Windows with an unknown EMM can cause system failure. If there is no EMM software running on your machine or there is but it is not active while running Windows, you can set this statement to On. **NOTE:** This statement only applies to EMMs servicing physical EMS hardware. Windows does not disable unrecognized <u>80386 expanded memory emulators</u>.

Default: Off Section: [386Enh] File: SYSTEM.INI

iLzero=1 | 0

Specifies whether to put leading zeros in decimal numbers. A value of 1 displays 0.3 and 0 displays .3. **NOTE:** The actual decimal separator (a period (.) in this example) is specified by the <u>sDecimal=</u> statement.

Default:	0
Section:	[intl]
File:	WIN.INI

iMeasure=1 | 0

Specifies the measurement system to use, where 1 specifies English and 0 uses metric.

Default:1Section:[intl]File:WIN.INI

InactiveBorder=r g b

Specifies the border color of inactive windows using the rgb palette specification.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

InactiveTitle=r g b

Specifies the title color of inactive windows using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

InactiveTitleText=r g b

Specifies the color of the title text of inactive windows using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

InDOSPolling=Off | On

Specifies whether Windows prevents other applications from running when memory-resident software has the InDOS flag set.

This flag is used to determine the status of DOS interrupt calls. Since DOS interrupts are not re-entrant, the status of this flag can affect <u>memory-resident software</u> that uses DOS interrupts.

Setting this statement to On slows down system performance but may be required for critical sections of memory-resident software that use DOS interrupts.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

iNegCurr=*number*

Specifies the format of negative numbers.

Value of <i>number</i>	Display
0	(\$1)
1	-\$1
2	\$-1
3	\$1-
4	(1\$)
5	-1\$
6	1-\$
7	1\$-
8	-1 \$
9	1\$ 1
10	\$ 1-
NOTE: The actual currency symbol is specified by the <u>sCurrency=</u> statement.	

Default:	0
Section:	[intl]
File:	WIN.INI

InRestoreNetConnect=1 | 0

Specifies whether to reconnect to the network servers you were connected to in your previous Windows session.

This statement does not work for all networks. It does work for IBM LAN Server 2.0, IBM LAN Server 3.0, MS-Net, LAN Manager Basic, and LAN Manager 2.0.

Set this statement to 1 if you want to reconnect each time you start Windows, or 0 if you do not want to reconnect.

Default:	1
Section:	[network]
File:	WIN.INI

Int21hHook=1 | 0

Specifies whether Norton Desktop should trap all directory creates and destroys, all file opens, and the termination of applications like Program Manager.

A value of 1 traps the above operations, and 0 does not.

Default:1Section:[NHookSettings]File:NDW.INI

INT28Critical=Off | On

Specifies whether a <u>critical section</u> is needed to handle <u>INT 28h</u> interrupts.

INT 28h is typically used by memory-resident software and some network <u>virtual devices</u> (which may use it for internal task switching). This interrupt may cause the system to hang in such cases and thus Windows needs a critical section which is established by setting this statement to On.

Default:	On
Section:	[386Enh]
File:	SYSTEM.INI

Int28Filter=number

Specifies the number of <u>INT 28h</u> interrupts to make visible to software loaded before Windows. After every *number* INT 28h interrupts occur, Windows makes the interrupt available to any software loaded before Windows. A value of 0 does not allow any interrupts to be received by previously loaded software.

 Default:
 This statement does not appear by default. However, Windows assumes a value of 10.

 Section:
 [standard]

 File:
 SYSTEM.INI

IRQ9Global=Off | On

Specifies whether to convert interrupt request level 9 (IRQ 9) masks to global.

Set this statement to On if your system hangs when attempting to read from a floppy drive. Also set to On if you want Windows to read the floppy drive before starting Windows.

Default:This statement does not appear by default. However, Windows assumes a value of Off.Section:[386Enh]File:SYSTEM.INI

iTime=0 | 1

Specifies whether to use a 12-hour or 24-hour clock when displaying time values, where 0 uses a 12-hour clock (which displays 2:00 P.M. as 2:00) and 1 uses a 24-hour clock (which displays 2:00 P.M. as 14:00).

NOTE: The actual time separator (a colon (:) in this example) is specified by the <u>sTime=</u> statement. You can specify a substitute string for A.M. or P.M. (when using a 12-hour clock) by using the <u>s1159=</u> or <u>s2359=</u> statements, respectively.

Default:	0
Section:	[intl]
File:	WIN.INI

iTLZero=0 | 1

Specifies whether to display leading zeros with time values. A value of 0 does not display a leading zero (as in 9:15) and 1 displays a leading zero (as in 09:15).

NOTE: The actual time separator (a colon (:) in this example) is specified by the <u>sTime=</u> statement.

Default:0Section:[intl]File:WIN.INI

JumpColor=r g b

Specifies the color of text that leads to another panel of Windows Help information. See the <u>rgb palette</u> <u>specification</u> for more information on how to specify colors.

Default: none Section: [Windows Help] File: WIN.INI

keyboard.dll=filename

Specifies the <u>dynamic-link library (DLL</u>) that defines the layout for non-U.S. keyboards and keyboards that are not compatible with IBM systems.

This statement must have a value for *filename* except for the following U.S. keyboards: IBM PC, XT, AT, or enhanced; Olivetti 83-key; and AT&T type 301 or 302.

WARNING: This statement and all others within the [keyboard] section are required. If you modify or delete one of these statements, Windows will not operate properly.

Default: none Section: [keyboard] File: SYSTEM.INI

keyboard.drv=filename

Specifies the keyboard driver you are using.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

keyboard=filename | *device-name

Specifies which keyboard device is being used with Windows 386 Enhanced mode.

The *filename* is a <u>virtual device file</u> (usually with a .386 extension). If an asterisk (*) appears then the *device-name* that follows refers to a built-in virtual device (which resides in WIN386.EXE). Windows Setup assigns a value based on your system configuration.

This is a synonym for <u>device=</u>.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

KeyboardDelay=*milliseconds*

Specifies how long to wait after you hold down a key before repeating the key.

Default:31Section:[windows]File:WIN.INI

KeyboardSpeed=*milliseconds*

Specifies how long to wait between repetitions of a character on the display when you hold down a key.

This statement does not work for all keyboards.

Default:	31
Section:	[windows]
File:	WIN.INI

KeyBoostTime=seconds

Specifies how much time an application has to run (with increased priority) when it receives a keystroke. You may want to increase this value when several applications are running in the background.

Default: .001 Section: [386Enh] File: SYSTEM.INI

KeyBufferDelay=seconds

Specifies the time to delay pasting keyboard input once the keyboard buffer is full. Some applications require more time than the default.

Default: .2 Section: [386Enh] File: SYSTEM.INI

KeyldleDelay=seconds

Specifies how long Windows ignores idle calls after placing a simulated keystroke into a <u>virtual machine</u>. Set this to 0 to speed up keyboard input but note that this may effect some applications' performances.

Default: .5 Section: [386Enh] File: SYSTEM.INI

KeyPasteCRSkipCount=*number*

Specifies how many times an <u>INT 16h</u> call for keyboard status should return "empty" for the keyboard buffer after a carriage return.

This statement is used for pasting Clipboard data to non-Windows applications. It gives these applications more time to process incoming characters before continuing to paste the remainder of the Clipboard.

This statement is used in conjunction with the <u>KeyPasteSkipCount=</u> statement.

Default:	10
Section:	[386Enh]
File:	SYSTEM.INI

KeyPasteDelay=seconds

Specifies how long to wait before pasting a character after a key has been pasted.

This statement gives applications more or less time to process keystrokes.

Note the difference between key and character. A character is what the application reads from the buffer and a key is the actual keyboard button.

Default:This statement does not appear by default. However, Windows assumes a value of .003.Section:[386Enh]File:SYSTEM.INI

KeyPasteSkipCount=number

Specifies how many times an <u>INT16h</u> call for keyboard status should return "empty" for the keyboard buffer after pasting a character.

This statement is used for pasting Clipboard data to non-Windows applications. It gives these applications more time to process incoming characters before continuing to paste the remainder of the Clipboard.

This statement is used in conjunction with the <u>KeyPasteCRSkipCount=</u> statement.

Default:This statement does not appear by default; Windows assumes a value of 2.Section:[386Enh]File:SYSTEM.INI

KeyPasteTimeout=seconds

Specifies the time Windows waits before changing from the fast paste (<u>INT16h</u>) to slow paste (<u>INT9h</u>) mechanism.

If an application does not make the necessary BIOS calls for reading keyboard input, Windows switches to the slow paste mechanism.

 Default:
 This statement does not appear by default. However, Windows assumes a value of 1.

 Section:
 [386Enh]

 Section:
 \$2007514.000

File: SYSTEM.INI

KybdPasswd=Off | On

Specifies whether the Virtual Keyboard Device (VKD) should support PS/2 8042 commands. PS/2 computers use the 8042 keyboard controller, which has commands available for password security.

Default:On for IBM PS/2 computers; Off for all othersSection:[386Enh]File:SYSTEM.INI

KybdReboot=Off | On

Specifies whether Windows attempts to reboot your computer using a keyboard controller command. This method is unreliable on certain computers. If your computer hangs while rebooting, set this statement to Off. Windows then exits and displays a prompt for you to press Ctrl+Alt+Del a second time.

Default:	On
Section:	[386Eng]
File:	SYSTEM.INI

language.dll=library-name

Specifies the <u>dynamic-link library (DLL</u>) with language-specific functions. If no library is supplied, Windows uses the U.S. English DLL.

Default: none Section: [boot] File: SYSTEM.INI

LastCalc=calculator-name

Specifies the last calculator used. The *calculator-name* is the filename of the calculator you last used. This information is saved by the calculator itself, so even if you don't save your Norton Desktop configuration, the last calculator you used appears on the desktop when you choose Calculator from the Tools menu.

Default:TAPECALC.EXESection:[Calculators]File:NDW.INI

load=filename [...]

Specifies one or more files that Norton Desktop loads during idle time.

The difference between this entry and its equivalent in WIN.INI is that Windows loads files on startup and Norton Desktop loads files during idle time--thereby reducing the time it takes to start Windows.

Default:C:\NDW\NAVTSRW.EXE (Norton AntiVirus Windows TSR)Section:[Windows]File:NDW.INI

load=filename [...]

Specifies one or more files that Windows loads at startup as minimized icons. Each filename must be separated by a space.

Be sure to include the full path if the file is not located in your WINDOWS directory.

Default:	none
Section:	[windows]
File:	WIN.INI

Local=device-name

Specifies <u>DOS device drivers</u> that should be local to <u>virtual machines</u>.

Make sure the *device-name* matches the case of the device or this statement does not work.

When you make a device driver local, a different copy is made for each virtual machine. An example of this is the CON device, the DOS console device, which should not be allowed to receive input from multiple virtual machines.

Default: The default is none but Windows Setup adds local=CON.

Section: [386Enh]

File: SYSTEM.INI

LocalLoadHigh=Off | On

Specifies how Windows uses the <u>upper memory blocks (UMB)</u>. If this statement is Off, Windows uses all UMBs and leave no extras for <u>virtual machines</u>.

Default: Off Section: [386Eng] File: SYSTEM.INI

LocalReboot=Off | On

Specifies whether Windows restarts or quits applications that hang when Ctrl+Alt+Del is pressed. If this statement is Off, Windows restarts your system when you press Ctrl+Alt+Del. Otherwise, Windows prompts you to quit the current application or restart.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

LocalTSRs=TSR-application [, ...]

Specifies <u>terminate-and-stay-resident (TSR)</u> programs that can be copied to each instance of a <u>virtual</u> <u>machine</u>.

When Windows is started it detects any TSR programs that are currently running. If any of the detected TSRs match a LocalTSRs= statement, Windows copies the TSR to each virtual machine. Many TSRs do not work properly when using this option.

Default:dosedit, cedSection:[NonWindowsApp]File:SYSTEM.INI

LowerCase=number

Specifies whether file and directory names are displayed in lowercase. A value of 1 displays names in lowercase. Any other value displays names in uppercase.

Default: 0 Section: [Settings] File: WINFILE.INI

LPTport-number:=

NOTE: This statement does not take any parameters.

Specifies a parallel printer port.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: none Section: [ports] File: WIN.INI

LPTport-number.DOS=path

NOTE: This statement does not take any parameters.

Specifies a path to a network printer so you can continue to use direct printing to a port. **NOTE:** When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: none Section: [ports] File: WIN.INI

LPTport-numberAutoAssign=seconds

Specifies information for Windows version 3.0 only. These statements only appear if you have upgraded to Windows 3.1.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default: 60 Section: [386Enh] File: SYSTEM.INI

LRULowRateMult=number

Specifies the value that the <u>LRUSweepFreq=</u> statement is multiplied by to determine the <u>Least Recently</u> <u>Used (LRU)</u> low paging rate, sweep frequency.

The valid range for this statement is between 1 and 65,535.

NOTE: You should never need to change this statement.

Default:This statement does not appear by default. However, Windows assumes a value of 10.Section:[386Enh]File:SYSTEM.INI

LRURateChngTime=milliseconds

Specifies the length of time that the <u>Virtual Memory Manager (VMM)</u> stays at its high rate or low rate before switching to the next state.

The states, in order, are as follows: high rate sweeping, low rate sweeping, and no sweeping. The value *milliseconds* determines the idle time (no paging required) that Windows waits before dropping to the next lower state.

NOTE: You should never need to change this statement.

Default:	This statement does not appear by default. However, Windows assumes a value of 10,000.
Section:	[386Enh]

File: SYSTEM.INI

LRUSweepFreq=milliseconds

Specifies the value used to determine the <u>Least Recently Used (LRU)</u> high <u>paging rate</u>, <u>sweep frequency</u>. See the <u>LRULowRateMult=</u> statement for information on how the LRU low paging rate sweep frequency is determined.

NOTE: You should never need to change this statement.

Default:This statement does not appear by default. However, Windows assumes a value of 250.Section:[386Enh]File:SYSTEM.INI

LRUSweepLen=*length-in-pages*

Specifies the length in pages of the region swept on each pass. **NOTE:** You should never need to change this statement.

Default:This statement does not appear by default. However, Windows assumes a value of 1024.Section:[386Enh]

File: SYSTEM.INI

LRUSweepLowWater=page-size

Specifies when the <u>Least Recently Used (LRU)</u> sweeper should be used. When the number of free pages drops below this value, the sweeper is turned on. **NOTE:** You should never need to change this statement.

Default:This statement does not appear by default. However, Windows assumes a value of 24.Section:[386Enh]File:SYSTEM.INI

LRUSweepReset=milliseconds

Specifies the time desired for an <u>ACC bit</u> reset divided by 4 MB of pages. The time to reset all ACC bits follows this formula: value of LRUSweepReset * (number-of-pages-in-your-system + 1023) / 1024 where 1024 is the number of pages equivalent to 4 MB. <u>NOTE:</u> You should never need to change this statement.

Default:This statement does not appear by default. However, Windows assumes a value of 500.Section:[386Enh]File:SYSTEM.INI

M_WindowPosition=[left, top, width, height, maximized]

NOTE: The brackets ([]) around the values above are part of this statement; they do not indicate that the values within them are optional.

Specifies the default position and size of the Main window in Windows Help.

The position and size of the window are determined by the first four values respectively. The last value, *maximized*, indicates whether the window is maximized.

All values, except the last, are in pixel units.

Default: This statement does not appear by default.

Section: [Windows Help]

File: WIN.INI

MacroColor=*r g b*

Specifies the color of text that runs a help macro when chosen. See the <u>rgb palette specification</u> for more information on how to specify colors.

Default: none Section: [Windows Help] File: WIN.INI

Mailtool=1 | 0

Specifies whether to display the Mail tool icon. A value of 1 displays the icon and 0 does not. To use the Mail tool icon, you must have <u>VIM</u> or <u>MAPI</u> DLLs installed on your system.

Default: 1 Section: [Configuration] File: NDW.INI

MainGroup=caption

The caption is the name that appears in the Quick Access parent group.

The parent group is the top-level group that contains all other Quick Access (.QAG) groups. This is roughly equivalent to the Program Manager window--though Quick Access lets you drag groups out of the parent group and has other advantages.

Default:Quick AccessSection:[Quick Access]File:NDW.INI

MainPath=path

Identifies where your Norton Desktop Quick Access (group) data is located, where *path* is the fullyqualified path and filename.

Default: C:\NDW\QAMAIN.QAG.

Section: [Quick Access]

File: NDW.INI

Map=0 | 1

Specifies whether to enable or disable the Map category in the Norton Desktop Control Center.

A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

MapPhysAddress=range

Specifies the address range (in megabytes) that is preallocated for DOS device drivers.

Use this statement if you are using DOS device drivers that require contiguous memory (such as an older version of RAMDrive that requires <u>extended memory</u>). When this statement is given a range, Windows' <u>memory manager</u> preallocates physical page-table entries and linear address space.

Default: This statement does not appear by default. However, Windows assumes no value.

Section: [386Enh]

File: SYSTEM.INI

MaxBPs=number

Specifies the maximum number of breakpoints that can be used by the <u>virtual memory manager (VMM)</u>. Breakpoints are used to transfer control to Windows 386 Enhanced mode.

You may need to increase this value if you are using an OEM virtual device driver that requires more breakpoints.

Default:This statement does not appear by default. However, Windows assumes a value of 200.Section:[386Enh]File:SYSTEM.INI

MaxCOMPort=number

Specifies the maximum number of COM ports that 386 Enhanced mode supports. Change this value if you have more than four COM ports in your system.

Default:This statement does not appear by default. However, Windows assumes a value of 4.Section:[386Enh]File:SYSTEM.INI

MaxDMAPGAddress=address

Specifies the maximum physical page address that DMA can use. This statement is only used for hard drives that support DMA.

Default:This statement does not appear by default. However, Windows assumes a value of
0FFFh for non-EISA computers; 0FFFFh for EISA computers.Section:[386Enh]File:SYSTEM.INI

MaxPagingFileSize=kilobytes

Specifies the maximum size for a temporary swap file.

Default:This statement does not appear by default. However, Windows assumes a maximum size
equivalent to 50 percent of available disk space.Section:[386Enh]File:SYSTEM.INI

MaxPhysPage=hexadecimal-page-number

Specifies the maximum physical page number that the <u>virtual memory manager (VMM)</u> can manage as a usable <u>page</u>. This allows inclusion of pages beyond what the VMM recognized at startup.

If you specify a value less than what the VMM determines, the VMM ignores several pages it would normally use.

This statement is useful if you are using a hardware device that cannot recognize all of the physical memory on your computer.

Default: This statement does not appear by default. However, Windows assigns a value based on the highest physical page number detected by the VMM during initialization.

Section: [386Enh]

File: SYSTEM.INI

MaxWinFileExtensions=positive-number

The value *positive-number* is the number of extensions (applications) that can hook into the Norton Desktop menu bar.

Default: 10 Section: [Defaults] File: NDW.INI

MCADMA=Off | On

Specifies whether Windows should use the Micro Channel Architecture (MCA) extensions to DMA.

This statement only applies to MCA computers. You should set this statement to Off if you are using an MCA computer and DMA extensions are not implemented.

 Default:
 This statement does not appear by default. However, Windows assigns a value of On for most MCA computers and Off for all others.

 Section:
 [386Enh]

File: SYSTEM.INI

MemCompactBeforeExec=1|0

Specifies whether to compact memory before executing an application.

A value of 1 compacts memory, 0 does not.

Default:	0
Section:	[Configuration]
File:	NDW.INI

Menu=*rgb*

Specifies the background color used for menus in Windows applications using the <u>rgb palette</u> <u>specification</u>.

Default:	This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.
Section:	[colors]
File:	WIN.INI

MenuDropAlignment=1|0

Specifies how menus are aligned when they are opened, where 1 right-aligns the menu with the menu title, and 0 left-aligns them.

A value of 1 aligns menus to the right, 0 aligns to the left.

 Default:
 This statement does not appear by default. However, Windows assumes a value of 0.

 Section:
 [windows]

 File:
 WIN.INI

Menus=0 | 1

Specifies whether to enable or disable the Menus category in the Norton Desktop Control Center. A value of 1 enables this category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

MenuShowDelay=milliseconds

Specifies how long to wait before displaying a cascading menu.

Default:This statement does not appear by default. However, Windows assumes a value of 0 for
386-class computers and 400 for 80286 computers.Section:[windows]File:WIN.INI

MenuText=*r g b*

Specifies the background color used for menus in Windows applications using the <u>rgb palette</u> <u>specification</u>.

Default:	This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.
Section:	[colors]
File:	WIN.INI

MessageBackColor=vga-color-attribute

Specifies the background color used for message screens.

Message screens typically appear when you press Ctrl+Alt+Del.

Default:	1(blue)
Section:	[386Enh]
File:	SYSTEM.INI

MessageTextColor=vga-color-attribute

Specifies the foreground color used for message screens.

Message screens typically appear when you press Ctrl+Alt+Del.

Default:	F(white)
Section:	[386Enh]
File:	SYSTEM.INI

MinOnRun=0|1

Specifies whether Program Manager minimizes itself after it launches an application.

A value of 0 turns off the Minimize On Use command in the Options menu, and 1 turns the command on.

Default: 0 Section: [Settings] File: PROGMAN.INI

MinTimeSlice=*milliseconds*

Specifies the minimum processor time slice a <u>virtual machine</u> is allowed.

Decreasing the value *milliseconds* makes <u>multitasking</u> smoother but decreases system performance.

Default:	20
Section:	[386Enh]
File:	SYSTEM.INI

MinUnlockMem=kilobytes

Specifies the amount of memory that must be available for use when resuming a <u>virtual machine</u> while more than one virtual machine is running.

This statement unlocks memory and makes it available to virtual machines.

NOTE: You should never need to change this statement.

Default: 40 Section: [386Enh] File: SYSTEM.INI

MinUserDiskSpace=kilobytes

Specifies how much disk space to leave free when using a temporary swap file. This statement should be used when the hard drive used for paging has less space available than Windows can use.

This statement is ignored if you are using a permanent swap file.

Default:	2000
Section:	[386Enh]
File:	SYSTEM.INI

mouse.drv=filename

Specifies the mouse driver you are using.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

mouse=filename | *device-name

Specifies which mouse device is being used with Windows 386 Enhanced mode.

The *filename* is a <u>virtual device file</u> (usually with a .386 extension). If an asterisk (*) appears, the *device name* that follows refers to a built-in virtual device (which resides in WIN386.EXE).

Windows Setup assigns a value based on your system configuration.

This is a synonym for <u>device=</u>.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

MouseInDosBox=1|0

Specifies whether the mouse can be used for non-Windows applications in a window.

Mouse support is automatic for the Windows 3.1 version of the video grabbers. However, you need to set this statement to 1 if you are using a Windows 3.0 version of the grabbers.

NOTE: In order for your mouse to work in non-Windows applications for either version of the video grabbers, you need to load a mouse device driver before starting Windows.

Default:1Section:[NonWindowsApp]File:SYSTEM.INI

MouseSoftInit=Off|On

Specifies whether to send a hardware or software initialization to interrupt <u>INT33h</u> when a non-Windows application requests a hardware initialization.

A hardware initialization call is function 0 of INT33h while a software initialization call is function 33 of INT33h.

You should set this statement to On when you want to use non-Windows applications in a window with a mouse. If the cursor and screen information appear distorted, set this statement to Off.

Default:This statement does not appear by default. However, Windows assumes a value of On.Section:[386Enh]File:SYSTEM.INI

MouseSpeed=0|1|2

Specifies how Windows handles the cursor speed in relation to the mouse speed, whenever the value of either <u>MouseThreshold1=</u> or <u>MouseThreshold2=</u> is exceeded.

Here is how the cursor moves in relation to the mouse based on the value of MouseSpeed:

Val	ue	Result
0	TI	ne cursor moves at the same rate as the mouse at all times (no acceleration).
1	TI	ne cursor moves twice the speed of the mouse after exceeding MouseThreshold1=.
2		ne cursor moves twice the speed of the mouse after exceeding MouseThreshold1= and four nes the speed of the mouse after exceeding <u>MouseThreshold2=</u> .
	Default:	This statement does not appear by default; Windows assumes a value of 1.
	Section:	[windows]
	File:	WIN.INI

MouseSyncTime=milliseconds

Specifies the time that elapses between mouse data bytes before Windows Standard mode assumes that a mouse <u>data packet</u> is complete.

This statement only affects computers with IBM PS/2 mouse interfaces running in Standard mode.

Default:This statement does not appear by default. However, Windows assumes a value of 500.Section:[standard]File:SYSTEM.INI

MouseThreshold1=pixels

Specifies a threshold value (in pixels), used in conjunction with the <u>MouseSpeed=</u> and <u>MouseThreshold2=</u> statements, to determine cursor speed.

The threshold value assigned to this statement is compared to the number of pixels the mouse has moved between mouse interrupts. If the mouse movement exceeds the value defined by MouseThreshold1= and if <u>MouseSpeed=</u> is greater than 0, the cursor moves twice the speed of the mouse.

Default:This statement does not appear by default; Windows assumes a value of 5.Section:[windows]File:WIN.INI

MouseThreshold2=pixels

Specifies a threshold value (in pixels), used in conjunction with the <u>MouseSpeed=</u> and <u>MouseThreshold1=</u> statements, to determine cursor speed.

The threshold value assigned to this statement is compared to the number of pixels the mouse has moved between mouse interrupts. If the mouse movement exceeds the value defined by MouseThreshold=2 and if MouseSpeed=2, the cursor moves four times the speed of the mouse.

Default: This statement does not appear by default; Windows assumes a value of 10. Section: [windows]

	[]
File:	WIN.INI

MouseTrails=number

Specifies the number of mouse pointers to place in a trail of pointers when the Mouse Trails check box is checked in Control Panel's Mouse dialog box. The trail created follows the movement of your actual cursor on the display. Valid numbers range from 1 to 7.

This statement is useful when you have a hard time tracking mouse movements on the display (such as liquid crystal displays (LCD)). However, this only works with <u>EGA</u>, <u>VGA</u>, or <u>SuperVGA</u> display drivers.

Default: This statement does not appear by default. However, Windows assumes a value of 1.

Section: [windows]

File: WIN.INI

Name=*text*

The value *Text* is the description of the device identified for use by Norton Backup.

Default:This setting does not appear by default.Section:[NBackup]File:NDW.INI

NDWDIR=path

The value *path* is the fully-qualified path that identifies the directory in which your Norton Desktop data files are located.

Default: C:\NDW Section: [Configuration] File: NDW.INI

NDWErrorCode=0|1

Specifies that error codes be displayed in system message boxes.

A value of 0 does not show a special code, and 1 shows the code.

Symantec Technical Support may, on occasion, ask you to set this setting to 1. In general, however, it is not necessary to display these codes.

Default:0Section:[Configuration]File:NDW.INI

NDWSplashScreen=0 | 1

Specifies whether to suppress the initial display of the Norton Desktop bitmap. A value of 1 shows the bitmap, and 0 suppresses it.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Defaults]
File:	NDW.INI

NDWVersionMajor=number

The value *number* represents the part of the Norton Desktop major version number that precedes the decimal point. A value of 2, for example, could specify version 2.0 or 2.2.

Default: 2 Section: [Configuration] File: NDW.INI

NDWVersionMinor=number

The value *number* represents the part of the Norton Desktop version number that follows the decimal point, which indicates a minor release. For example, a value of 0 could specify version 2.0.

Default:	0 (in Norton Desktop 2.0 and 3.0) 2 (in Norton Desktop 2.2)
Section:	[Configuration]
File:	NDW.INI

NetAsynchFallback=Off|On

Specifies how Windows handles a failed asynchronous <u>NetBIOS</u> request.

Windows attempts to save a failed <u>asynchronous</u> NetBIOS request by allocating space in its global network buffer. If there is insufficient space in the global buffer and this statement is set to On, Windows attempts to save the request in local memory. Windows then prevents any other <u>virtual machines</u> from running until the data is received and the time period specified by the <u>NetAsynchTimeout=</u> statement expires.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

NetAsynchSwitching=1|0

Specifies whether you can switch away from a non-Windows application after it has made an asynchronous <u>NetBIOS</u> call. This statement only affects Windows Standard mode.

When set to 0, Windows does not allow <u>task switching</u>. If an application makes asynchronous NetBIOS calls, a task switch can cause the system to fail.

If you are sure your applications do not receive network messages while you are switched away from them, set this statement to 1.

Default:0Section:[NonWindowsApp]File:SYSTEM.INI

NetAsynchTimeout=seconds

Specifies the timeout period Windows uses when servicing asynchronous <u>NetBIOS</u> requests. This value is only used when the <u>NetAsynchFallback=</u> statement is set to On.

Default:This statement does not appear by default. However, Windows assumes a value of 5.0.Section:[386Enh]File:SYSTEM.INI

NetDMASize=kilobytes

Specifies the <u>DMA</u> buffer size for <u>NetBIOS</u> transport software if a network has been installed. The buffer size used is the larger of this value and the value of <u>DMABufferSize=</u>.

Default:This statement does not appear by default. However, Windows assumes a value of 32 on
Micro Channel machines, 0 on others.Section:[386Enh]File:SYSTEM.INI

NetHeapSize=kilobytes

Specifies the size of data-transfer buffers used for transferring network data.

Windows 386 Enhanced mode allocates buffers in conventional memory for transferring data over a network. The buffer size is the value of *number* rounded up to the nearest 4K.

Default:This statement does not appear by default; Windows assumes a value of 12.Section:[386Enh]File:SYSTEM.INI

NetHeapSize=kilobytes

Specifies the size of data-transfer buffers used for transferring network data.

Windows Standard mode allocates buffers in conventional memory for transferring data over a network. If your network applications are not running correctly, you may need to increase the value *kilobytes*.

This statement is ignored if there is no network software running.

Default:This statement does not appear by default; Windows assumes a value of 8.Section:[Standard]File:SYSTEM.INI

NetInfo=0 | 1 | -1

Specifies whether System Information displays the Network button.

A value of:

-1 automatically detects whether NetWare is installed, and displays the Network button if NetWare is installed.

0 always assumes that NetWare is not present and does not show the Network button.

1 always assumes NetWare is installed and shows the Network button. This may cause problems if, in fact, NetWare is not installed.

Default:-1Section:[System Information]File:NDW.INI

NetWarn=1|0

Specifies whether Windows displays a warning message if your system is configured for a network and the network is not running or the wrong network is running. All Windows network-related options are disabled if the network is not running or is not correct. A value of 1 enables the network warning message and 0 disables it.

Default:	1
Section:	[windows]
File:	WIN.INI

network.drv=filename

Specifies the network driver you are using.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

network=filename |*device-name

Specifies which network device is being used with Windows 386 Enhanced mode.

The *filename* is a <u>virtual device file</u> (usually with a .386 extension). If an asterisk (*) appears, the *devicename* that follows refers to a built-in virtual device (which resides in WIN386.EXE). Windows Setup assigns a value based on your system configuration.

This is a synonym for <u>device=</u>.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

NetworkDLL=network-dll-name

The *network-dll-name* is the name of the network <u>.DLL</u> file you want to load, thus overriding the .DLL that is loaded by default.

Default: none Section: [Network] File: NDW.INI

NMIReboot=Off|On

Specifies whether Windows reboots when a nonmaskable interrupt (NMI) occurs.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

NoClose=0|1

Specifies that Norton Desktop does not allow exiting from Windows.

A value of 0 enables the Exit command in the File menu as well as the Close command in the Control menu, and 1 disables the commands.

Default:The [restrictions] section does not appear by default.Section:[restrictions]File:NDW.INI

NoClose=0|1

A value of 0 enables the Exit command in the File menu as well as the Close command in the Control menu, and 1 disables the commands.

Default: The [restrictions] section does not appear by default.

Section: [restrictions]

File: PROGMAN.INI

NoEMMDriver=Off| On

Specifies whether Windows 386 Enhanced mode can install the <u>expanded memory driver</u>. The <u>EMMSize=</u> statement can prevent <u>UMB</u>s from being allocated but cannot prevent the EMS driver from being loaded.

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

NoFileMenu=0|1

A value of 0 enables the File menu and all of its commands, and 0 does not (making the entire File menu inaccessible).

NOTE: When the File menu is disabled, you can still launch an application or start a program by any alternative method, including double-clicking the program icon.

Default: The [restrictions] section does not appear by default.

Section: [restrictions]

File: PROGMAN.INI

NoRun=0|1

A value of 0 enables the Run command on the File menu, and 1 does not.

Default: The [restrictions] section does not appear by default.

Section: [restrictions]

File: PROGMAN.INI

NortonDesktopDLL=filename

Specifies the <u>dynamic-link library (DLL)</u> used to incorporate Norton Desktop into File Manager.

Default: nfmext.dll Section: [Addons] File: WINFILE.INI

NoSaveSettings=0|1

A value of 0 enables the Save Settings On Exit command in the Options menu, and 1 does not. **NOTE:** NoSaveSettings=1 overrides the <u>SaveSettings=</u> statement in the [Settings] section.

Default:	The [restrictions] section does not appear by default. However, Windows assumes a value of 0.
Section:	[restrictions]
File:	PROGMAN.INI

notepad=blank | string

Specifies how to print documents within Notepad if the sequence to print is other than File/Print/OK (! FP~). If left blank, the print sequence is assumed to be File/Print/OK. Otherwise, *string* contains a string that specifies the actual print sequence.

Default:	none
Section:	[PrintStart]
File:	NDW.INI

NoWaitNetIO=On|Off

Specifies whether Windows converts synchronous <u>NetBIOS</u> commands to <u>asynchronous</u> commands. When set to On, Windows converts NetBIOS commands, which can improve overall system performance.

Default: On Section: [386Enh] File: SYSTEM.INI

NullPort=string

Specifies the name displayed when the null port is selected. The null port is used when a new device is installed but is not connected to any port. This value also appears in the [devices] section of WIN.INI for devices installed to a null port.

Default:	"None"
Section:	[windows]
File:	WIN.INI

NumCalculators=positive-number

The value *positive-number* represents the number of available calculators.

Default: 3 Section: [Calculators] File: NDW.INI

NWRestoreDrives=0 | 1

Specifies whether the drive mappings made in Windows are saved so they can be automatically restored in the next Windows session.

A value of 1 indicates that the mappings are saved, 0 indicates they are not saved.

- Default: This statement does not appear by default. It is added when you setup your system for use with a Novell NetWare network.
- Section: [Restrictions]
- File: SYSTEM.INI

NWShareHandles=0 | 1

Specifies whether changes made to drive mappings in one DOS session are shared among other DOS sessions.

Default: This statement does not appear by default. It is added when you setup your system for use with a Novell NetWare network.

Section: [Restrictions]

File: SYSTEM.INI

object=description, program-file, format

Specifies information about Object Linking and Embedding (OLE) objects. This information appears in the Registration Info Editor and is provided in the [embedding] section to maintain compatibility with Windows 3.0.

Value	Represents
object	Specifies the name of the server object.
description	Gives a description of the object.
program-file	Specifies the executable file of the application that creates the object.
format	Specifies the files format. This is most commonly picture (Windows Metafile format).
	g Edit launchs INI Editor with the correct file and section for this statement. Click Add, once ears, to add the particular version of this statement that you need.
Default:	The default depends on options selected in Setup during Windows installation. The

Default:	The default depends on options selected in Setup during Windows installation. The following can appear:		
	SoundRec=Sound, Sound, SoundRec.exe, picture		
	Package=Package, Package, packager.exe, picture		
	PBrush=Paintbrush Picture, Paintbrush Picture, pbrush.exe, picture		
Section:	[Embedding]		
File:	WIN.INI		

oemansi.bin=filename

Specifies the file that defines <u>OEM/ANSI</u> code-page translation tables for systems not using code page 437 (the U.S. OEM character set).

Default:none (if using U.S. OEM character set)Section:[keyboard]File:SYSTEM.INI

oemfonts.fon=filename

Specifies the font file for the <u>OEM</u> character set.

Default:vgaoem.fonSection:[boot]File:SYSTEM.INI

Order=number [, ...]

Specifies the order in which Program Manager displays groups, as well as the order groups are cycled through when you press Ctrl+Tab.

Each *number* value represents a Group*number*= statement from the [Groups] section. **NOTE:** Group numbers are defined in the <u>Group*number*=</u> statement.

Default:noneSection:[Settings]File:PROGMAN.INI

OutlineThreshold=number

Specifies the number of pels-per-em that Windows switches from outline TrueType fonts to bitmap TrueType fonts.

Bitmap fonts are faster but require more memory. If your system is low on memory, decrease this value. **NOTE:** Do not assign a value greater than 300 to this statement.

Default: This statement does not appear by default. However, Windows assumes a value of 256. Section: [TrueType]

File: WIN.INI

OverlappedIO=Off|On

Specifies whether several <u>virtual machines</u> can make read and write requests before the first request is completed.

Set this statement to On to enable multiple requests, 0 to disable.

Default:Off if InDOSPolling=On; otherwise On.Section:[386Enh]File:SYSTEM.INI

PadCodeSegments=0|1

Specifies whether Windows pads code segments with 16 bytes, making sure that the last instruction in the segment is not too close to the segment limit for your 80286.

Set this statement to 1 if your system hangs in Standard mode.

 Default:
 This statement does not appear by default. However, Windows assumes a value of 0.

 Section:
 [standard]

 File:
 SYSTEM.INI

PageBuffers=number

Specifies the number of 4K page buffers used to store read and write pages.

This statement is used only if you are using 32-Bit Disk Access and a permanent swap file. The value *number* can range from 0 to 32.

Default:	4
Section:	[386Enh]
File:	SYSTEM.INI

PageOverCommit=megabytes

Specifies the multiplier that determines the amount of <u>linear address space</u> the <u>virtual memory manager</u> (<u>VMM</u>) creates for the system. This is computed by rounding the amount of physical memory up to the nearest 4MB and then multiplying by PageOverCommit=.

Increasing this value increases available linear address space and causes paging activity to increase proportionately.

Default: This statement does not appear by default. However, Windows assumes a value of 4.

Section: [386Enh]

File: SYSTEM.INI

Paging=Off|On

Specifies whether to use demand paging.

Set this statement to Off if you need the disk space that a temporary swap file would normally use.

Default:This statement does not appear by default. However, Windows assumes a value of On.Section:[386Enh]File:SYSTEM.INI

PagingDrive=drive-letter

Specifies the disk drive that Windows 386 Enhanced mode uses for a temporary <u>swap file</u>. This statement is ignored when using a permanent swap file.

Windows attempts to place the temporary swap file on the same drive that SYSTEM.INI resides on if you do not have a permanent swap file and no drive is indicated, or the indicated drive does not exist.

Default:This statement does not appear by default. However, Windows assumes a value of none.Section:[386Enh]File:SYSTEM.INI

PagingFile=path-filename

Specifies the path and filename for the temporary <u>swap file</u> that Windows creates when you start Windows in 386 Enhanced mode. The file is deleted when you exit Windows.

Default:WINDOWS\WIN386.SWPSection:[386Enh]File:SYSTEM.INI

Password=encrypted-password

Specifies the password used for screen savers in an encrypted format.

In other words, if a password exists it is placed here after running it through an <u>encryption algorithm</u>. Then, when a password is entered while using the screen saver, it is also encrypted and then compared to the password stored here. If the encrypted passwords match then so do the original passwords.

NOTE: You should only change this setting using INI Tuner or Control Panel since the password placed here is already encrypted.

Default:	None
Section:	[ScreenSaver]
File:	CONTROL.INI

Pattern=byte byte byte byte byte byte byte

Specifies 8 numeric values used to define an 8-pixel wide by 8-pixel high bitmap for the background. Each byte value is base 10, cannot exceed 255, and represents one row of 8 pixels. A bit that is set to 0 displays a pixel in the background color (<u>Background=</u>). A bit that is set to 1 displays a pixel in the foreground color (<u>WindowText=</u>).

Default:	(None)
Section:	[Desktop]
File:	WIN.INI

pattern-name=decimal-number

Specifies a pattern that can be used for the desktop background.

The value *pattern-name* is the name of the desktop pattern specified in Control Panel's Desktop dialog box. The value *decimal-number* is a decimal number that represents the bit values for the eight rows in the editing cell.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default: 50% Gray=170 85 170 85 170 85 170 85 Boxes=127 65 65 65 65 65 127 0 Critters=0 80 114 32 0 5 39 2 Diamonds=32 80 136 80 32 0 0 0 (none) = (none) Paisley=2 7 7 2 32 80 80 32 Pattern=224 128 142 136 234 10 14 0 Quilt=130 68 40 17 40 68 130 1 Scottie=64 192 200 120 120 72 0 0 Spinner=20 12 200 121 158 19 48 40 Thatches=248 116 34 71 143 23 34 113 Tulip=0 0 84 124 124 56 146 124 Waffle=0 0 0 0 128 128 128 240 Weave=136 84 34 69 136 21 34 81 Section: [Patterns] CONTROL.INI File:

PerformBackfill=On | Off

Specifies whether Windows checks for 640K and allocates a full 640K of base conventional memory when less is present.

NOTE: You should never need to change this statement.

Default:This statement does not appear by default. However, Windows assumes a value of On.Section:[386Enh]File:SYSTEM.INI

PermSwapDOSDrive=*drive-letter*

Specifies the disk drive used for a permanent <u>swap file</u>. This is ignored if you are using a temporary swap file.

Default:This statement does not appear by default. However, Windows assumes a value of none.Section:[386Enh]File:SYSTEM.INI

PermSwapSizeK=kilobytes

Specifies the desired size of a permanent swap file.

Default:This statement does not appear by default. However, Windows assumes a value of none.Section:[386Enh]File:SYSTEM.INI

PerVMFILES=number

Specifies the number of <u>file handles</u> allocated to each <u>virtual machine</u>. The handles allocated are local or private to each virtual machine.

The total number of files handles, including the global handles in the files= statement in CONFIG.SYS, cannot exceed 255. If this value is exceeded it is rounded down to 255.

This statement is ignored if the DOS Share utility (SHARE.EXE) is installed.

Default:This statement does not appear by default. However, Windows assumes a value of 10.Section:[386Enh]

File: SYSTEM.INI

PopupColor=r g b

Specifies the color of text that displays a pop-up panel when chosen in Windows Help. See the <u>rgb</u> <u>palette specification</u> for more information on how to specify colors.

Default: none Section: [Windows Help] File: WIN.INI

port=network-printer-path

Specifies the <u>path</u> to a network printer, which is restored each time Windows is started.

 Default:
 This statement does not appear by default. However, Windows assumes a value of none.

 Section:
 [Network]

 File:
 WIN.INI

Program Configured=0 | 1

Specifies whether Norton Backup has been configured. A value of 1 indicates that Norton Backup has been configured, and 0 does not.

Default: 0 Section: [NBackup] File: NDW.INI

Program Level=0 | 1 | 2

Specifies the Norton Backup program level. A value of 0 indicates Preset, 1 is Step-by-Step, and 2 is Advanced.

Default: 1 Section: [NBackup] File: NDW.INI

program-file=drive:directory\programfile

Specifies the location of a program file. This statement is used as an extension to the <u>path</u> specified in <u>AUTOEXEC.BAT</u>.

If Windows cannot find the value, *program-file*, that a document is associated with, you can use this staement to assign it to another program, or the correct program. This can help avoid long DOS path statements or extend it when it is approaching its limit of 255 characters.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

 Default:
 This statement does not appear by default. However, Windows assumes a value of none.

 Section:
 [programs]

 File:
 WIN INIT

File: WIN.INI

Programs=extension [...]

Specifies which files (according to the files' extensions) are regarded as applications. Each filename extension must be separated with a space. Do not include the period that precedes the file extension (for example: EXE, not .EXE).

Default:com exe bat pifSection:[windows]File:WIN.INI

PromptWhenTapeChanged=Yes |No

Specifies whether you want to save transactions to tape if you have entered any transactions and not saved them. Yes asks if you want to save transactions to tape, and No does not.

This setting can be overriden by the <u>AlwaysSave=</u> statement.

You can also set the prompt setting by choosing Setup from the Tape calculator File menu, and checking the Prompt When Tape Has Changed check box.

Default:YesSection:[TapeCalc]File:NDW.INI

ProtectDOSBOX=0 | 1

Specifies whether to briefly blank the DOS box (DOS window) you are in rather than immediately launch a real screen saver, which allows you to return with a mouse move or a keystroke and bypass password entry; once the screen saver launched it would require a password. A value of 1 blanks the DOS box and delays the screen saver launch, and 0 disables this feature so that there is no grace period.

Default:	0
Section:	[Sleeper]
File:	NDW.INI

PSPIncrement=number

Specifies the 4-<u>word</u> increments of additional memory that Windows should reserve in each successive <u>virtual machine</u>. This additional memory is only allocated when the <u>UniqueDOSPSP=</u> statement is set to On.

The best value for *number* depends on your memory configuration and the applications you are running. The valid range of values is 2 through 64.

Default: This statement does not appear by default. However, Windows assumes a value of 2.

Section: [386Enh]

File: SYSTEM.INI

PWProtected=0 | 1

Specifies whether the screen saver, indicated in the title of the section this statement appears in, should require a password to deactivate it.

NOTE: This statement should be set using INI Tuner or Control Panel.

Default:	This statement does not appear by default.
Section:	[ScreenSaver.xxxx]The xxxx denotes the name of the screen saver.
File:	CONTROL.INI

Quick Access=0 | 1

Specifies whether to enable or disable the Quick Access category in the Norton Desktop Control Center.

A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

QuickClose&Min=0 | 1

Specifies whether the right mouse button, when clicked in a Norton Viewer document window, closes all the open windows and minimizes the Norton Viewer application.

A value of 1 enables this feature, and 0 does not.

Default:	0
Section:	[NViewer]
File:	NDW.INI

ReflectDOSInt2A=Off | On

Specifies whether Windows should pass interrupt INT2Ah on to other applications.

If set to Off, Windows does not pass INT2Ah on to other applications which increases performance. However, if you are running <u>memory-resident software</u> that relies on INT2A messages, you need to set this statement to On.

Default:This statement does not appear by default. However, Windows assumes a value of On.Section:[386Enh]File:SYSTEM.INI

ReservedHighArea=paragraph-range

Specifies a memory address range that Windows does not scan to find unused address space.

The range, *paragraph-range*, must be two paragraph values between A000 and EFFF, separated by a hyphen. The first value is rounded down and the second rounded up to the nearest multiple of 4K. To exclude more than one address range add another ReservedHighArea= statement to SYSTEM.INI under the [386Enh] section.

By excluding an address range, Windows turns off the RAM and ROM <u>search code</u> for that range. The scanning that normally occurs when not excluding an address range can interfere with certain adapters.

Default:This statement does not appear by default. However, Windows assumes a value of none.Section:[386Enh]File:SYSTEM.INI

ReservePageFrame=Off | On

Specifies whether EMS page frame space or conventional memory is used for DOS transfer buffers.

This statement is used only when EMS page frame space is the only space available between 640K and 1MB for transfer buffers. When set to On, Windows preserves the page space at the expense of <u>conventional memory</u>.

If you are not going to use non-Windows applications that use expanded memory, this statement can be set to Off.

Default:This statement does not appear by default. However, Windows assumes a value of On.Section:[386Enh]File:SYSTEM.INI

ReserveVideoROM=Off | On

Specifies to Windows that video ROM exists in pages C6 and C7.

Set this statement to On if the text font is scrambled when you use non-Windows applications.

NOTE: You should never need to change this statement (even when set to Off Windows detects video ROM).

Default:This statement does not appear by default. However, Windows assumes a value of Off.Section:[386Enh]File:SYSTEM.INI

ROMScanThreshold=number

Specifies how many memory transitions must occur to determine whether the memory is ROM. This memory is in the <u>adapter area</u>.

The memory scan occurs when the adapter area has no <u>ROM header</u> or the header is incorrect. If the scan results in more than *number* memory transitions, Windows sets the memory aside as ROM. Otherwise, Windows considers the memory as usable.

Default: This statement does not appear by default. However, Windows assumes a value of 20.

Section: [386Enh]

File: SYSTEM.INI

Run=filename [...]

Specifies one or more applications to run when Windows is started. The *filename* can be the application or a document associated with an application. Each filename must be separated by a space.

Default:	none
Section:	[windows]
File:	WIN.INI

s1159=string

Specifies the string that follows times before noon when using the 12-hour time format. **NOTE:** Notice that 1159 (as in s1159) indicates one minute before noon (AM, by default). You can specify a substitute string for PM with the <u>s2359=</u> statement.

Default:AMSection:[intl]File:WIN.INI

s2359=string

Specifies the string that follows times after noon when using the 12-hour time format. **NOTE:** Notice that 2359 (as in s2359) indicates one minute before midnight (PM, by default). You can specify a substitues string for AM with the <u>s1159=</u> statement.

Default: PM Section: [intl] File: WIN.INI

Save=True | False

Specifies whether Norton Desktop saves its configuration on exit.

True saves Norton Desktop's configuration, and False does not.

Default:TrueSection:[Configuration]File:NDW.INI

SaveFileName=filename

Specifies a file to save the tape from Tape Calculator to.

If <u>AlwaysSave=</u>Yes, *filename* is the name of the tape file to which transactions are saved.

You can also specify the tape filename by choosing Setup from the Tape Calculator File menu and entering the filename in the Tape Name text box. (The Always Save Tape check box must be checked which is equivalent to AlwaysSave=Yes.)

Default:TAPE1.TAPSection:[TapeCalc]File:NDW.INI

SaveMethod=Overwrite | Append

Specifies how tapes are saved from Tape Calculator.

If <u>AlwaysSave=</u>Yes, Overwrite saves tapes by writing over previously saved tapes, and Append adds to the previously saved tape.

NOTE: You can avoid large file sizes for saved tapes by setting SaveMethod=Overwrite. Otherwise, your tapes grow very large, very quickly.

You can also set the save method by choosing Setup from the Tape calculator File menu and selecting the appropriate option button.

Default:OverwriteSection:[TapeCalc]File:NDW.INI

SaveSettings=0 | 1

Specifies whether Program Manager saves layout information about its client area.

A value of 0 turns off the Save Settings On Exit command in the Options menu, and 1 turns the command on.

NOTE: The SaveSettings= statement is overridden if <u>NoSaveSettings=</u>1 in the [restrictions] section.

Default:1Section:[Settings]File:PROGMAN.INI

sCountry=*string*

Specifies the name of the country used to determine the standard value you use.

Default:United StatesSection:[intl]File:WIN.INI

ScreenLines=number

Specifies the number of lines displayed on the screen when a non-Windows application runs. Applications that specify a different screen mode overrides this statement.

Default: 25 Section: [NonWindowsApp] File: SYSTEM.INI

ScreenSaveActive=1 | 0

Specifies whether Windows uses a screen saver, where 1 activates a screen saver.

Default:0Section:[windows]File:WIN.INI

ScreenSaveTimeout=seconds

Specifies the idle time that must elapse before the screen saver appears.

Default:120Section:[windows]File:WIN.INI

SCRNSAVE.EXE=

Specifies the name of the current screen-saver.

Default:	(None)
Section:	[boot]
File:	SYSTEM.INI

Scrollbar=r g b

Specifies the scrollbar color of windows using the rgb palette specification.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

ScrollFrequency=number

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

Default:This statement does not appear by default. However, Windows assumes a value of 2.Section:[386Enh]File:SYSTEM.INI

sCurrency=*string*

Specifies the symbol for the currency you use.

Default: \$ Section: [intl] File: WIN.INI

sDecimal=string

Specifies the separator used between the whole number and the fractional portion of a decimal number.

Default: . (period) Section: [intl] File: WIN.INI

SearchDLL=0 | 1

Specifies whether the Norton Desktop searches for mail DLLs (VIM and MAPI).

A value of 1 always searches for mail DLLs, and 0 does not.

Use 0 to improve performance on certain operations, such as opening a drive window. If you copy mail DLLs to your system and this switch is set to 0, you can enable the otherwise dimmed Send Mail... commands by exiting Windows and starting Norton Desktop again.

Also see <u>MailTool=</u> for additional information on using mail applications with Norton Desktop for Windows. **NOTE:** To edit this statement, be sure to use the SYMCFG.INI in your Windows directory.

Defaults: This statement does not appear by default. However, Norton Desktop assumes a value of 0.

Section: [SymMail] File: SYMCFG.INI

Setup File pos-number=filename

pos-number is a number between 1 and 5 that corresponds to the Norton Backup File menu commands 1 through 5. The *filename* is the setup file to be associated with that menu command.

NOTE: When you click Edit, INI Editor is launched and adds this statement with the first valid value.

Default:Filenames for these settings do not appear by default.Section:[NBackup]File:NDW.INI

Setup File Name=filename

The *filename* is the setup file that Norton Backup uses on startup.

Default: DEFAULT.SET Section: [NBackup] File: NDW.INI

Setup File Path=path

The *path* is the location to look for Norton Backup setup files.

Default:C:\NDW\Section:[NBackup]File:NDW.INI

SGrabLPT=*port-number*

Specifies the port to route all printer interrupts to in the <u>system virtual machine</u> rather than the current <u>virtual machine</u>.

Default:	none
Section:	[386Enh]
File:	SYSTEM.INI

shell=filename

Specifies the program to use as the \underline{shell} when you start Windows.

Default:None. However Windows Setup initializes this value as progman.exe.Section:[boot]File:SYSTEM.INI

Show Disable Floppies Message=0 | 1

Specifies whether Norton Backup prompts you when a floppy drive cannot be used during a backup, compare, or restore operation.

A value of 1 enables the prompt, and 0 does not.

Default:	There is no default setting.
Section:	[NBackup]
File:	NDW.INI

ShowDateAndTime=Yes | No

Specifies whether the current date and time are displayed on each Tape Calculator transaction. Yes shows the date and time, and No does not.

You can also display the date and time by choosing Setup from the Tape Calculator File menu and checking the Show Date And Time check box.

Default:	No
Section:	[TapeCalc]
File:	NDW.INI

ShowLastSession=Yes | No

Specifies whether to display your last session when you start Tape Calculator.

Yes displays your last session, and No does not.

NOTE: Showing your last transaction is beneficial when you want to pick up where you left off the previous day (or whenever you last used the calculator).

Default: No Section: [TapeCalc] File: NDW.INI

ShowLastTransaction=Yes | No

Specifies whether to show the last transaction when starting Tape Calculator.

Default:	No
Section:	[TapeCalc]
File:	NDW.INI

Shredder=0 | 1

Specifies whether to enable or disable the Shredder category in the Norton Desktop Control Center. A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

Size=point-size

Specifies the point size of the typeface used for desktop items.

 Default:
 This statement does not appear by default. However, Windows assumes a value of 8.

 Section:
 [Settings]

 File:
 WINFILE.INI

SKDFile=filename

Specifies the path and filename of the file that is to receive the parsed keystrokes from the SKDebug function.

Default: C:\@@SKDBUG.TXT Section: [BatchRunner] File: NDW.INI

SkipCMOS=1 | 0

Specifies whether to skip the CMOS summary for System Information. A value of 1 skips the CMOS summary, and 0 does not.

Default: There is no default for this setting.

Section: [System Information]

File: NDW.INI

SkipVideo=1 | 0

Specifies whether to skip video testing.

If you experience lockups when choosing Video Summary from System Information, try adding the following statement:

SkipVideo=1

Default:noneSection:[System Information]File:NDW.INI

sLanguage=string

Specifies the language you want to use.

Windows applications that provide language specific functions (such as sorting) use this option. Valid strings include:

Value	Language
dan	Danish
deu	German
eng	International English
enu	U.S. English
esn	Modern Spanish
esp	Castilian Spanish
fin	Finnish
fra	French
frc	French Canadian
isl	Icelandic
ita	Italian
nld	Dutch
nor	Norwegian
ptg	Portuguese
sve	Swedish

Default:	enu
Section:	[intl]
File:	WIN.INI

sList=character

Specifies the character used to separate items in a list.

Default: , (comma) Section: [intl] File: WIN.INI

sLongDate=format

Specifies the long format used to display the date. It includes abbreviations and separators. You can indicate the format using a combination of the strings listed below and separators (such as a comma):

Value	Language
d	Day (1-31)
dd	Day (01-31)
ddd	Day (Mon-Sun)
dddd	Day (Monday- Sunday)
Μ	Month (1-12)
MM	Month (01-12)
MMM	Month (Jan-Dec)
MMM	Month (January-
Μ	December)
уу	Year (00-99)
уууу	Year (1900-2040)

ddd, MMMM dd, yyyy displays as Friday, January 1, 1980.

Default:ddd, MMMM dd, yyyySection:[intl]File:WIN.INI

SmartCanWarning=1 | 0

Specifies if a message box is displayed if SmartCan is not enabled when you start Norton Destkop. A value of 1 displays a message box if SmartCan is not enabled, and 0 does not.

You can also suppress the message by checking the Disable This Message check box when the message box appears.

Default:	1
Section:	[SmartErase]
File:	NDW.INI

SmartErase=0 | 1

Specifies whether to enable or disable the SmartErase category in the Norton Desktop Control Center.

A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

SnapFactorX=*number* SnapFactorY=*number*

Specifies the grid size used to snap objects.

The value *number* determines the grid to which objects on the desktop are aligned.

These snap factors are used to align the desktop components when you choose Arrange Desktop from the Window menu. They are also applied to the desktop icons if the Automatic Item Alignment check box is checked (in the Desktop Layout - Grid Spacing dialog box--accessible from Control Center). Setting the snap factors to 1 duplicates the snap effect that was used by Norton Desktop version 1.0.

Defaults:SnapFactorX=6
SnapFactorY=7Section:[Defaults]File:NDW.INI

sound.drv=filename

Specifies the system sound driver.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

Spooler=Yes | No

Specifies whether Print Manager is used when output is sent to the printer, where Yes activates Print Manager.

NOTE: If you are printing to a network printer or a printer with a large internal buffer you may want to set this statement to No. This increases your performance.

Default:	Yes
Section:	[windows]
File:	WIN.INI

sShortDate=format

Specifies the short format used to display the date. It includes abbreviations and separators. You can indicate the format using a combination of the strings listed below along with separators (such as a comma or slash):

Value	Date Format	
d	Day (1-31)	
dd	Day (01-31)	
ddd	Day (Mon-Sun)	
dddd	Day (Monday-	
	Sunday)	
Μ	Month (1-12)	
MM	Month (01-12)	
MMM	Month (Jan-Dec)	
MMM	Month (January-	
Μ	December)	
уу	Year (00-99)	
уууу	Year (1900-2040)	

Default: M/d/yy Section: [intl] File: WIN.INI

Stacks=number

Specifies the number of interrupt reflector stacks used by the Standard mode <u>DOS Extender</u> (DOSX) to map DOS or BIOS <u>API</u> from <u>Real mode</u> to <u>Protected mode</u>.

If you receive a "Standard Mode: Stack Overflow" message, try increasing this number. The valid range is between 8 and 64.

See the <u>StackSize=</u> statement for more information on stacks.

Default: This statement does not appear by default. However, Windows assumes a value of 12.

Section: [standard]

File: SYSTEM.INI

StackSize=number

Specifies the size of the <u>interrupt reflector stacks</u> used by the Standard mode <u>DOS Extender</u> (DOSX). See the <u>Stacks=</u> statement for more information on stacks.

Default: 384 Section: [standard] File: SYSTEM.INI

Startup=group-name

Specifies the program group that contains applications that are started when Progman Manager starts.

 Default:
 This statement does not appear by default. However, Windows uses the group that Windows Setup created.

 Section:
 [Settings]

File: PROGMAN.INI

StartupDrive=*drive-letter*

Specifies the drive on which System Information can find <u>AUTOEXEC.BAT</u> and <u>CONFIG.SYS</u> files.

Default:There is no default for this setting.Section:[System Information]File:NDW.INI

sThousand=character

Specifies the character used to separate powers of one-thousand. For example, if a comma (,) is used, 3000 appears as 3,000 and 3000000 as 3,000,000.

Default:, (comma)Section:[intl]File:WIN.INI

sTime=character

Specifies the character used to separate hours, minutes, and seconds in time values.

Default:: (colon)Section:[intl]File:WIN.INI

SubClassProgman=1 | 0

Specifies whether to <u>subclass</u> the Progman Manager whenever it is started.

A value of 1 subclasses Program Manager, and 0 does not.

This setting only works if $\underline{Int21hHook=}1$ (and \underline{VXD} is installed and on). This allows Windows installation programs to create groups and group items in both Norton Desktop and Program Manager if both are running at the same time during an installation.

Default:	1
Section:	[Quick Access]
File:	NDW.INI

subtype=*number*

Specifies special features for keyboards that otherwise have identical layouts.

The following table shows the defined values for **subtype=** in relation to the <u>type=</u> statement:

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
2	1	Olivetti 102-key ICO
D	C	

Default:	none
Section:	[keyboard]
File:	SYSTEM.INI

SwapDisk=drive:directory

Specifies the disk drive and directory to which Windows Standard mode swaps non-Windows applications.

Default: This statement does not appear by default. However, Windows uses one of the following: the drive and directory indicated by the TEMP environment variable if it exists; if TEMP does not exist, the default boot directory of your first hard disk; if there are no hard disks, the root directory on the first floppy drive.

Section: [NonWindowsApp]

File: SYSTEM.INI

SwapMouseButtons=1 | 0

Specifies whether to swap the left and right mouse buttons, where 1 swaps the mouse buttons.

Default:This statement does not appear by default; Windows assumes a value of 0.Section:[windows]File:WIN.INI

SyncTime=Off | On

Specifies that Windows periodically synchronizes its time with the computer's <u>CMOS</u> clock.

Windows can usually maintain the correct time when this statement is set to Off, unless <u>TrapTimerPorts=</u>Off and you run applications that cause the system time to run faster or slower than the actual time (this is usually caused by modifying how often <u>timer interrupts</u> occur).

Default:	On
Section:	[386Enh]
File:	SYSTEM.INI

system-event=filename, description

Specifies the description and sound file assigned to a system event.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Default: none Section: [Sounds] File: WIN.INI

system.drv=filename

Specifies the system hardware driver.

Default:	none
Section:	[boot]
File:	SYSTEM.INI

SystemFont=filename.fon

Specifies the font used in menus and title bars. The value *filename.fon* specifies a font file with the extension .FON. TrueType fonts (.TTF or .FOT) cannot be used.

NOTE: You should use INI Tracker to save your old settings before you make changes to this statement. Otherwise, you could have trouble starting Windows if you specify an invalid font.

Default: This statement does not appear by default.

Section: [windows]

File: WIN.INI

SystemROMBreakPoint=Off | On

Specifies whether Windows should use the ROM address space between F000:0000 and 1 MB for a <u>breakpoint</u>.

Windows 386 Enhanced mode searches this space for an instruction used as a <u>system breakpoint</u>. If there is something other than permanently available ROM, this statement is set to Off.

Default: This statement does not appear by default. However, Windows assumes a value of On if DOS was in Real mode when Windows was started or Off if in Protected mode. The later is usually the case when using memory managers such as <u>QEMM</u> or <u>386Max</u>, or when using Windows from within OS/2).

Section: [386Enh]

File: SYSTEM.INI

SystemSummary=0 | 1 | -1

Specifies whether System Information displays the System summary.

Value Actions

- 0 does not display the System summary when System Information starts, but the user can click the Summary button to display it later.
- 1 displays the System summary when System Information starts as well as when the user clicks the Summary button.
- -1 does not display the System summary when System Information starts, and does not let the user click the Summary button at any time.

NOTE: SystemSummary=-1 is an override of last resort. So that you do not lose all functionality, try the following override switches first:

<u>AltCPUTest=</u> <u>BusType=</u> <u>SkipCMOS=</u> (also affects the CMOS Summary) <u>SkipVideo=</u>

Default: 1 Section: [System Information] File: NDW.INI

SysVMEMSLimit=number | kilobytes

Specifies how many kilobytes of expanded memory to use.

A value of 0 prevents Windows from using any expanded memory. A value of -1 allows Windows to use all the available expanded memory.

Default:This statement does not appear by default. However, Windows assumes a value of 2048.Section:[386Enh]File:SYSTEM.INI

SysVMEMSLocked=Off | On

Specifies whether expanded memory used by non-Windows applications is swapped to disk.

If expanded memory is not swapped, it is considered locked and can improve non-Windows applications' performances. However, locking this memory can slow down the rest of the system.

Default:This statement does not appear by default. However, Windows assumes a value of Off.Section:[386Enh]File:SYSTEM.INI

SysVMEMSRequired=kilobytes

Specifies how much <u>expanded memory</u> must be available to start Windows. Do not change this statement if none of your non-Windows applications requires expanded memory.

Default: 0 Section: [386Enh] File: SYSTEM.INI

SysVMV86Locked=Off | On

Specifies whether to swap virtual-mode memory used by the <u>system virtual machine</u> to disk. When set to On, Windows locks the virtual-mode memory. Off allows it to be swapped to disk. **NOTE:** You should never need to change this statement. Windows automatically handles this process.

Default:This statement does not appear by default. However, Windows assumes a value of Off.Section:[386Enh]File:SYSTEM.INI

SysVMXMSLimit=number | kilobytes

Specifies the maximum amount of memory that <u>DOS device drivers</u> and <u>memory-resident software</u> receive from the extended memory driver in the <u>system virtual machine</u>.

A value of -1 allocates all the available extended memory requested.

Default:This statement does not appear by default. However, Windows assumes a value of 2048.Section:[386Enh]File:SYSTEM.INI

SysVMXMSRequired=kilobytes

Specifies how much extended memory the extended memory (XMS) driver must have reserved before starting Windows.

Do not change this statement if none of your non-Windows applications will require extended memory.

Default:	0
Section:	[386Enh]
File:	SYSTEM.INI

TaskMan.Exe=filename

Specifies the application used for task-switching.

Default:	This statement does not appear by default. However, Windows assumes a value of <u>TASKMAN.EXE</u> .
Section:	[boot]
E 11	OVOTENAINU

File: SYSTEM.INI

TaxRate=number

Specifies the tax rate used by Tape Calculator.

The value *number* represents the tax rate.

You can also set the tax rate by choosing Setup from Tape Calculator and entering the appropriate value in the Tax Rate text box.

Default:6.25Section:[TapeCalc]File:NDW.INI

temppath=path

The *path* is the location used by Norton Desktop for temporary files during compression operations.

Defaults: C:\TEMP\NDWZIP.TMP Section: [Zip] File: NDW.INI

TileWallpaper=0 | 1

Specifies whether the bitmap indicated by the <u>Wallpaper=</u> statement is tiled (repeated) across the screen or is centered.

A value of 1 causes the wallpaper to be tiled, 0 centers it.

Default:	0
Section:	[Desktop]
File:	WIN.INI

TimerCriticalSection=milliseconds

Specifies that a <u>critical section</u> (with a timeout period) be used around all <u>timer interrupt</u> code.

A positive value results in only one <u>virtual machine</u> receiving timer interrupts at a time. Some networks and global <u>memory-resident software</u> can fail if this entry is not used. However, you can cause the system to be sluggish and even stop for short periods of time by using positive values.

Default:This statement does not appear by default. However, Windows assumes a value of 0.Section:[386Enh]File:SYSTEM.INI

TitleText=r g b

Specifies the text color in the title bar using the <u>rgb palette specification</u>.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

TokenRingSearch=Off | On

Specifies whether Windows searches for a token ring network adapter on Industry Standard Architecture (<u>ISA</u>) machines.

If you are not using a token ring card and/or the search interferes with another device, set this statement to Off.

 Default:
 This statement does not appear by default. However, Windows assumes a value of On.

 Section:
 [386Enh]

File: SYSTEM.INI

Tool Icons=0 | 1

Specifies whether to enable or disable the display of the Tool Icons category in the Norton Desktop Control Center.

A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

Toolbars=0 | 1

Specifies whether to enable or disable the Toolbars category in the Norton Desktop Control Center.

A value of 1 enables the category, and 0 does not.

Default:	This statement does not appear by default. However, Norton Desktop assumes a value of 1.
Section:	[Control Center]
File:	NDW.INI

ToolsTitle=string

Specifies the name of the menu used to choose Norton Desktop tools from File Manager. Use the ampersand (&) to indicate the accelerator keystroke.

Default: &Norton Section: [NortonDesktop] File: WINFILE.INI

TransmissionRetryTimeout=seconds

Specifies the default time Windows waits before declaring a transmission failure.

If the timeout period is reached, Print Manager displays a message.

A default value is saved for each printer in the [printerPorts] section. To change the value for a particular printer, you must change the corresponding value in [printerPorts].

Default:90 for PostScript printers; 45 for all othersSection:[windows]File:WIN.INI

TranslateScans=Off | On

Specifies whether Windows translates a keyboard's scan codes to make them compatible with standard IBM scan codes.

This statement is only necessary for keyboards that generate non-standard scan codes. It is used only for the <u>Switcher Screen</u> and full-screen message boxes.

Default:This statement does not appear by default. However, Windows assumes a value of Off.Section:[386Enh]

File: SYSTEM.INI

TrapTimerPorts=Off | On

Specifies whether Windows allows applications to read from and write to the <u>system timer ports</u>. When set to Off, Windows can usually detect when an application has changed the timer interrupt interval and make the proper adjustments. However, sometimes Windows is not be able to keep accurate time. If Windows is not keeping accurate time, you can set this statement to On (which will not allow the timer interrupt interval to be changed) or set the <u>SyncTime=</u> statement to On.

 Default:
 This statement does not appear by default. However, Windows assumes a value of On.

 Section:
 [386Enh]

 File:
 SYSTEM.INI

TTEnable=0 | 1

Specifies whether TrueType fonts are available.

A value of 1 enables TrueType fonts for use in your Windows applications, 0 disables them.

 Default:
 This statement does not appear by default. However, Windows assumes a value of 1.

 Section:
 [TrueType]

 File:
 WIN.INI

TTIfCollisions=0 | 1

Specifies whether to use TrueType fonts in place of another font if both have the same font name. For example, Windows provides both a bitmap and TrueType version of the Symbol font. If this statement is set to 0, Windows uses the TrueType version.

Default:This statement does not appear by default. However, Windows assumes a value of 0.Section:[TrueType]File:WIN.INI

TTOnly=0 | 1

Specifies whether TrueType fonts are the only fonts available on your system for Windows applications.

A value of 1 makes TrueType fonts the only fonts available, 0 makes all fonts available.

Default:0Section:[TrueType]File:WIN.INI

type=number

Specifies the type of keyboard you are using.

The following table shows the defined values for type=:

Value Meaning

- 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)

NOTE: If this statement is left blank or is missing, the keyboard driver selects a default type.

- Default: Determined by the BIOS.
- Section: [keyboard]
- File: SYSTEM.INI

undelete.dll=filename

Specifies the <u>dynamic-link library (DLL)</u>, installed by Norton Desktop, that is used to un-delete files.

Default: nfmext.dll Section: [Settings] File: WINFILE.INI

UniqueDOSPSP=Off | On

Specifies whether to use a unique program starting point (PSP) for each virtual machine.

If set to On, Windows reserves a particular amount of memory below an application running in a new virtual machine. For example, the first application can be loaded at address N, the second at N + i, the third at N + 2i, and so forth.

If set to Off, Windows will use the same PSP for each virtual machine. This can cause problems with some networks that use applications' PSPs to identify them.

Default: On if you are running a Microsoft-based network; Off for all others

Section: [386Enh]

File: SYSTEM.INI

UseableHighArea=paragraph-range

Specifies a memory address range that Windows scans to find unused address space. The range, *paragraph-range*, must be two paragraph values between A000 and EFFF, separated by a hyphen. The first value is rounded down and the second rounded up to the nearest multiple of 4K. To include more than one address range add another UseableHighArea= statement to SYSTEM.INI under the [386Enh] section.

By including an address range, Windows turns on the RAM and ROM <u>search code</u> for that range. **NOTE:** The UseableHighArea= statement takes precedence over any range specified in any <u>ReservedHighArea=</u> statement.

 Default:
 This statement does not appear by default. However, Windows assumes a value of none.

 Section:
 [386Enh]

 File:
 SYSTEM.INI

UseDOSAlloc=0 | 1

Specifies whether Norton Utilities programs for Windows use Windows or DOS to carry out device I/O operations. A value of 0 indicates Windows is used, and 1 indicates DOS is used (requires more DOS memory).

If you are experiencing problems with Norton Disk Doctor for Windows or Speed Disk for Windows, try setting UseDOSAlloc=1.

NOTE: To edit this statement, be sure to use the SYMCFG.INI file in your Symantec (C:\SYMANTEC by default) directory. If this directory does not exist, edit the SYMCFG.INI file in your Norton Utilities (C:\NU by default) directory.

Default: 0 Section: [SymKrnl] File: SYMCFG.INI

UseHistory=0 | 1

Specifies whether to save the history listing from one Norton Desktop session to another. A value of 1 saves the history listing, and 0 does not.

History listings are used in several dialog boxes, including Run and Filter.

Default:	1
Section:	[Defaults]
File:	NDW.INI

UseInstFile=Off | On

Specifies whether Windows should look in the INSTANCE.386 file to determine if <u>DOS data structures</u> need to be local.

This statement is provided for compatibility with Windows/386 version 2.x. Windows now uses two other methods to determine if DOS structures should be local. The first uses internal tables within the device. The second method uses an interrupt <u>INT 2Fh</u> call (documented in the <u>OEM Adaptation Kit</u>).

Default:	Off
Section:	[386Enh]
File:	SYSTEM.INI

UseROMFont=Off | On

Specifies whether Windows uses the video ROM soft font for displaying messages.

The messages that fall into this category are those relating to full screen non-Windows applications, and text displayed when switching away from non-Windows applications.

Set this statement to Off if you see random dots on screen, or if the font used to display messages is different from the font used in the application.

Default:This statement does not appear by default. However, Windows assumes a value of On.Section:[386Enh]File:SYSTEM.INI

VGAMonoText=Off | On

Specifies whether to ignore the video memory address space used for the monochrome mode in the VGA adapter.

When set to Off, Windows can use the address range from B000h through B7FFh in <u>upper memory</u>. However, no hardware device can use this range and no applications can use the monochrome mode of the VGA adapter.

Default: This statement does not appear by default. However, Windows assumes a value of On.

Section: [386Enh]

File: SYSTEM.INI

VideoBackgroundMSG=Off | On

Specifies whether Windows displays a message when background applications are suspended or cannot update their displays properly.

Default:	This statement does not appear by default. However, Windows assumes a value of On.
Section:	[386Enh]
File:	SYSTEM.INI

VideoSuspendDisable=Off | On

Specifies whether to suspend an application running in the background if its display becomes corrupted. When set to Off, the application is suspended and a message appears if <u>VideoBackgroundMsg=</u>On. This statement only applies to VGA displays.

Default:	This statement does not appear by default. However, Windows assumes a value of Off.
Section:	[386Enh]
File:	SYSTEM.INI

viewer=description

Specifies information used by the Default View and Current View dialog boxes.

The value *viewer* is the Viewer (.PRS) file. The value *description* is a brief description of the Viewer file, which appears in the Default View and the Current View dialog boxes.

NOTE: Clicking Edit launchs INI Editor with the correct file and section for this statement. Click Add, once INI Editor appears, to add the particular version of this statement that you need.

Defaults:	BMP.PRS=Windows Bitmaps
	CDR.PRS=Corel Draw
	DBASE.PRS=dBASE
	DOC.PRS=Documents & Text
	DRAW.PRS=Micrografx Draw
	DRW.PRS=Micrografx Designer
	GIF.PRS=CompuServe GIF
	HEX.PRS=Hex Dump
	ICO.PRS=Windows Icons
	JWQAPRS.DLL=JustWrite and Q&A
	L123.PRS=Lotus 1-2-3
	MSEXCEL.PRS=Microsoft Excel
	PCX.PRS=Paintbrush (PCX)
	PDX.PRS=Paradox
	PROG.PRS=Programs
	SYMDBASE.PRS=dBASE
	TIF.PRS=TIFF (Grayscale & Color)
	WMF.PRS=Window Metafile
	WPGI.PRS=WordPerfect Image Graphics
	WPV.PRS=WordPerfect Clipart
	ZIP.PRS=Compressed Archives
Section:	[Viewer-Parsers]
File:	

VirtualHDIrq=Off | On

Specifies whether Windows 386 Enhanced mode can terminate interrupts from the hard disk controller. When set to On, Windows intercepts hard disk interrupts (bypassing the ROM routine). However, some hard drives may need these interrupts which requires this statement to be Off.

Default:This statement does not appear by default. However, Windows assumes a value of On
for AT-compatible computers and Off for all other computers.Section:[386Enh]

File: SYSTEM.INI

Wallpaper=bitmap-filename

Specifies the bitmap file to use as the wallpaper, or screen background.

Default:(None) (Literally, the word "None" enclosed in parentheses)Section:[Desktop]File:WIN.INI

WallpaperOriginX=*number* WallpaperOriginY=*number*

Specifies the horizontal (X) and vertical (Y) offset, in pixels, from the upper left corner of the screen. Windows uses this value (the default 0,0 is the upper left corner) to tile wallpaper images. These lines also affect the postion of centered wallpaper.

Default: This statement does not appear by default; Windows assumes a value of 0 for both X and Y.

Section: [desktop] File: WIN.INI

WatchDirectories=1 | 0

Specifies whether directory creates and destroys are "watched" by Norton Desktop.

A value of 1 watches all directories for creates and destroys (<u>Int21hHook=</u> statement must also be 1), and 0 does not.

Default:	1
Section:	[NHookSettings]
File:	NDW.INI

WatchDrive=1 | 0

Specifies whether drives are "watched" by Norton Desktop.

A value of 1 watches all drives for directory creates and destroys, as well as file opens (<u>Int21hHook=</u> statement must also be 1); 0 does not.

Default:1Section:[NHookSettings]File:NDW.INI

WatchFiles=1 | 0

Specifies whether files are "watched" by Norton Desktop. A value of 1 watches for file opens (<u>Int21hHook=</u> statement must also be 1), and 0 does not.

Default:1Section:[NHookSettings]File:NDW.INI

Window=*r g b*

Specifies the workspace color of windows using the rgb palette specification.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

Window=*number*, *number*, *...*, *number*

Specifies the size and position of the window, as well as whether it is maximized when it's opened.

Default: none Section: [settings] File: WINFILE.INI

Window=number, number, number, number, 0 | 1

Specifies the size and location of the Program Manager window and whether it is maximized.

The *number* values indicate the size and location, respectively, of the Program Manager window. (It is best to change these values by actually moving the Program Manager window.) The last value can be 0, which does not maximize the Program Manager window, and 1 does.

A sample entry may look like this:

Window=64 48 576 384 1

Default: none Section: [Settings] File: PROGMAN.INI

WindowFrame=r g b

Specifies the frame color of a window using the rgb palette specification.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

WindowKBRequired=kilobytes

Specifies how much conventional memory must be free to start Windows.

Default:This statement does not appear by default. However, Windows assumes a value of 256.Section:[386Enh]File:SYSTEM.INI

Window Left=whole-number

The *whole-number* represents, in pixels, where to place the left edge of the Norton Backup window.

Default: 44 Section: [NBackup] File: NDW.INI

WindowMemSize=number | kilobytes

Specifies how much conventional memory Windows can use for itself.

A value of -1 indicates that Windows can use a much memory as it needs. Any other value (must be less than 640) is the amount of memory Windows can use.

Default: -1 Section: [386Enh] File: SYSTEM.INI

WindowText=r g b

Specifies the color of text in windows using the rgb palette specification.

 Default:
 This statement does not appear by default. However, Windows assumes the color defined by the Windows Default color scheme.

 Section:
 [colors]

 File:
 WIN.INI

Window Top=whole-number

The *whole-number* represents, in pixels, where to place the top edge of the Norton Backup window.

Default: 35 Section: [NBackup] File: NDW.INI

WindowUpdateTime=milliseconds

Specifies the time between display updates of non-Windows applications running in a window.

Default:This statement does not appear by default. However, Windows assumes a value of 50.Section:[386Enh]File:SYSTEM.INI

WinExclusive=Off | On

Specifies whether Windows applications get all of the computer's processor time when they are in the <u>foreground</u>.

When set to On, Windows does not allow non-Windows applications to run when in the background.

Default:This statement does not appear by default. However, Windows assumes a value of Off.Section:[386Enh]File:SYSTEM.INI

wingz.exe=print-commands

Specifies how to print documents within Wingz if the sequence to print is other than File/Print/OK (!FP~). If left blank, the print sequence is assumed to be File/Print/OK. Otherwise, *print-commands* contains a string that specifies the actual print sequence.

Default:	!FP~~
Section:	[PrintStart]
File:	NDW.INI

winproj.exe=print-comands

Specifies how to print documents within Microsoft Project if the sequence to print is other than File/Print/OK (!FP~). If left blank then the print sequence is assumed to be File/Print/OK. Otherwise, *print-commands* contains a string that specifies the actual print sequence.

Default:	!FP~~
Section:	[PrintStart]
File:	NDW.INI

winproj.exe=exit-command

Specifies how to exit Microsoft Project after a document has been printed.

Default:!FXNSection:[PrintStop]File:NDW.INI

WinTimeSlice=number, number

Specifies the relative processing time given to <u>foreground</u> and <u>background</u> Windows applications relative to non-Windows applications.

The first *number* is the relative foreground processing time. The second *number* is the relative background processing time.

The valid range for these numbers is between 1 and 10000.

Default: This statement does not appear by default. However, Windows assumes values of 100 and 50 respectively.

Section:	[386Enh]
File:	SYSTEM.INI

woafont=font-filename

Specifies which fonts are loaded into memory when running non-Windows applications.

The fonts are available to Windows applications as long as a non-Windows application is running. These fonts can be made permanently available by adding them to your system using Control Panel.

Default: DOSAPP.FON Section: [386Enh] File: SYSTEM.INI

XlatBufferSize=kilobytes

Specifies the size of the <u>conventional-memory</u> buffer used to map DOS calls from Protected mode to virtual 386 Enhanced mode.

A higher value can improve protected-mode Windows applications' performance at the cost of available memory for non-Windows applications. Additionally, higher values can cause problems with networks that use named pipes (usually a value of 4 works well for this problem).

Default: This statement does not appear by default. However, Windows assumes a value of 8.

Section: [386Enh]

File: SYSTEM.INI

XMSUMBInitCalls=Off | On

Specifies whether Windows uses the extended memory driver's UMB management routines. **NOTE:** You should never need to change this statement.

Default:This statement does not appear by default. Windows usually assumes a value of On.
However, it can be Off depending on the extended memory manager you are using.Section:[386Enh]File:SYSTEM.INI

INI Advisor

Welcome to INI Advisor. Used in concert with INI Tracker, INI Editor, and INI Tuner, INI Advisor keeps your Windows system in tip-top shape. You'll learn about technical basics related to Windows 3.1, be able to troubleshoot common Windows 3.1 problems, glean valuable information from a compendium of tips, and gain insight into the myriad of statements associated with Windows 3.1 and Norton Desktop 3.0 initialization (.INI) files.

INI Advisor provides many ways to access the information you need. You can:

- Click your right mouse button to access the PowerMenu.
- Use the InfoFinder window.
- Choose an item from the Norton menu.
- Use the buttons at the top of this window.

Once you find the information for which you are looking, the following guidelines will help you make your desired changes to an .INI statement.

Using the Edit Button within INI Statement Topics

Whenever you choose to manually edit an INI file statement from INI Advisor, click Edit. Clicking this button opens INI Editor in the file, section, and statement you were viewing.

The Edit button is available for all statements, including those that can be set using the Set... button. Please note, however, that your .INI files do not contain all of the statements described here. Whenever INI Advisor and INI Editor encounter a statement that you are attempting to edit which does not exist, the statement is added to the .INI file in the most appropriate location available.

You can change many of the entries in these .INI files by using the Set... button or the various customizable options within applications. In fact, if you can change an INI statement by using INI Tuner (either by launching it or clicking Set...), Control Panel, or the application that the statement affects, you should. If, however, you find it necessary (or tempting) to change the .INI files yourself, be sure to observe these guidelines:

- Use INI Editor to modify an .INI file. Using non-ASCII word processors like Write or Word for Windows can result in non-text files that could disable your system.
- Be sure to enable INI Tracker to make backup copies of the INI files you edit. If you make a change to an INI file that causes an application to fail, you'll definitely want to be able to restore the previous (working) INI file.
- If you don't feel comfortable editing INI files, then don't. By using the Set... button you'll be able to
 make changes to INI files through dialog boxes that provide you with the correct values in a more
 understandable method.
- If you encounter an entry that is not documented here and you don't have documentation on it, don't change it. This is especially true for SYSTEM.INI. Incorrect settings in this file can be disastrous (if you do not have INI Tracker monitoring file changes for you)!

Using the Set... Button within INI Statement Topics

For many .INI statement help topics, the Set... button opens a dialog box that lets you change the value for the statement you were viewing.

Occasionally the statement must be changed from within another dialog box accessible only from the initial dialog (like when selecting a printer port for a newly installed printer--see <u>device=</u> from the [PrinterPorts] section of WIN.INI). In this case, INI Advisor provides step-by-step instructions for finding the correct dialog box.

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Using the Tips

The Tips section contains pointers for getting the most out of Windows. These range from one-time settings which will improve your performance, to shortcuts you can use every day.

Topics include launching programs, managing files, and running DOS applications. There are also instructions for restricting access to a system, customizing Windows' appearance, and having fun with Windows.

Entire sections are devoted to improving Windows' performance and running Windows on a network. Read through this section to increase your productivity with Windows and become an instant power-user!

General Troubleshooting Procedures

Windows is a vastly more complicated environment than plain DOS. By its very nature, a multitasking environment raises the possibility of conflicts between various pieces of software and hardware. Memory considerations, device independence, and the graphical interface add to these complexities. The same general procedure is used to troubleshoot all computer problems, Windows or otherwise. The first and most important step is narrowing down the possible causes until you can isolate the source of the problem. Once you have done this, correcting the problem is often a trivial task. This section takes you through the procedures for locating most Windows problems and eliminating them. Topics include initialization file settings, DOS considerations, and common problems and solutions.

RGB Palette

When Windows determines colors internally, it uses a method that can be best equated to the process used by projection television sets. It involves specifying the amount (or more specifically, intensity) of three primary colors: red, green and blue. This is much like a projection television which has three projection tubes that are red, green, and blue in color.

For Windows, the intensity of each color can range from 0 through 255. If you specify 255 for each of the three colors, white is the resulting color. If you specify 0 for each of the three colors, black is the resulting color.

The total number of colors possible using this technique is 16,581,375 colors. Of course, not all display adapters are capable of displaying this many colors. In order to compensate, Windows uses a technique called dithering to simulate the color requested.

Dithering is done by placing several pixels together that are of a different color. When viewed from a distance they appear as one color. The easiest way to see this effect is to open a graphic file (such as a .BMP) in Windows Paintbrush and choose Zoom from the View menu. If the image is using dithering it becomes obvious at this point.

Below is an example of a rgb palette specification using a statement from the [Colors] section of WIN.INI.

NOTE: Ideally, if you can set rgb values from within Windows, you should. The example below can be set in INI Tuner or Control Panel using the Colors applet.

Statement	Resu
<u>Background=</u> 255 255 208	

Resulting Color Closeup of Color

INI Files

See Also

An <u>INI file</u> is an initialization file that determines your Windows environment and preferences. Each INI file contains a <u>list of statements</u> that can be modified, by using INI Editor, or a text editor such as Desktop Editor, Notepad, or System Configuration Editor (SYSEDIT.exe), but most often by using the dialog box controls that configure settings for Windows and Windows applications.

Initialization files have the following format:

[section name] keyword=value

[section name] is the name of a section. Sections are used to break the .INI file into logical groupings. The square brackets are required, and the left bracket must be in the first column. The order of the sections does not matter.

keyword=value defines each setting. When a keyword is not listed in an INI file, Windows assumes it should use the default setting for that option. Likewise, if a value is not associated with a keyword, Windows uses the default value for that keyword. Certain keywords must be in certain sections (if they are listed at all), but otherwise, the order of the keywords does not matter.

Case is another thing that doesn't matter. However, it is useful (and, in fact, standard) to use mixed case (uppercase and lowercase) to enhance the readability of sections and statements.

You can also include comments in an initialization file to increase readability. You will see many comments in the NDW.INI file, for example. Comments are identified by a semicolon (;) in the first column. You may also want to use blank lines to help distinguish sections or groups of statements from one another.

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Conventions and Syntax

<u>See Also</u> italics	Used to indicate a value that can be changed. Sometimes you will actually encounter keywords or parts of keywords in italics. For example, the <u>alias=</u> and various COM port (such as <u>COMport-number:=</u>) statements all have variable keywords.
I	The pipe symbol is used to denote "or". Some statements require you to make a choice between one value or another (such as the <u>InDOSPolling=</u> statement).
0	The square brackets are used to indicate optional variables or values. You can choose to include or exclude certain variables or values for some statements (see the <u>Load=</u>).
	The ellipses are used to indicate values or variables that may be repeated. For an example see the <u>LocalTSRs=</u> statement.
On Off 0 1 ,	Words, numbers and other symbols that appear throughout .INI statements are typed as is unless they are italicized.

INI Files list of statements list of section

Starting Windows

To start Windows:

• Type WIN at the DOS prompt.

Or,

Include the WIN command in your <u>AUTOEXEC.BAT</u> file.

The WIN command executes the WIN.COM file, which checks the type of computer you have, how much available memory it has, and whether to run Windows in <u>Standard</u> or <u>Enhanced mode</u>. (Naturally, it also checks to see whether Windows is already running.) If everything is OK, WIN.COM displays the Windows logo and loads Windows in either Standard mode or Enhanced mode. What you then see on the screen is the default Windows <u>shell</u>, which is typically Program Manager. Of course, you can change the shell to an alternative enhancement such as Norton Desktop.

WIN.COM supports these optional parameters:

WIN [:] [[/s or /2]or[/e or /3]] [/b] [/d:[f][s][v][x]] [filename]

[:] Starts Windows without the startup screen (Windows logo)

NOTE: Many people claim that you can start Windows faster by using the colon (:) option. However, this simply causes WIN.COM to skip over the startup screen. You won't really notice a time savings at all.

[/s or /2]	Forces Windows to start in Standard mode (when it might otherwise start in
	Enhanced mode)

- [/e or /3] Forces Windows to start in Enhanced mode (of course, your computer must be able to support Enhanced mode!)
- [/b] Creates a boot log and maintains <u>BOOTLOG.TXT</u> in your Windows directory

The /d switch is used for debugging Windows. It is useful for determining hardware conflicts. Each of the /d options has a corresponding setting in SYSTEM.INI. (The /d options allow you to test these settings without actually having to make changes to SYSTEM.INI.)

NOTE: Use the /d options only if you cannot get Windows to run on your computer.

[/d:f]	Same as <u>32BitDiskAccess=Off</u>
[/d:s]	Same as SystemROMBreakPoint=Off
[/d:v]	Same as VirtualHDIrq=Off
[/d:x]	Same as EMMExclude=A000-FFFF
[filename]	Starts Windows and immediately launches a Windows
	application (filename is the filename of the
	applicationusually an .EXE file)

Using a Boot Log

If you use the /b option with <u>WIN.COM</u>, Windows maintains the BOOTLOG.TXT file in your Windows directory and adds information to the text file each time Windows starts. BOOTLOG.TXT lists the device drivers and the files that Windows loads as it starts. It also records whether each one was loaded successfully.

BOOTLOG.TXT, however, does not record startup and shutdown times. To determine this information, load the <u>Dr. Watson</u> utility each time you start Windows and keep it running for your entire Windows session.

Booting from a Floppy Disk

One of the best ways to troubleshoot Windows is to boot from a clean diskette.

To start your system from a clean diskette:

- **1** Turn off your computer.
- 2 Insert a clean diskette in drive A:.
- **3** Turn on your computer.

TIP: The easiest, most reliable way to create a clean boot disk is to use the Rescue program. Doubleclick the Rescue Disk icon in the Norton Utilities--DOS Group group window, or type RESCUE at the DOS prompt.

To create a clean boot disk:

- 1 Insert a diskette in drive A:. (You will lose any data currently on the disk, so be sure it is a blank floppy or one that simply contains junk data you don't mind losing.)
- 2 At the DOS prompt, type FORMAT A: /S Or,

From Norton Desktop, choose Format Diskette from the Disk menu then check the Make Disk Bootable check box.

3 Use a text editor to create a clean AUTOEXEC.BAT file on the diskette, like this example:

```
REM AUTOEXEC.BAT
@ECHO OFF
PROMPT $P$G
PATH=C:\;C:\DOS
```

4 Use a text editor to create a clean CONFIG.SYS file on the diskette, like this example:

```
REM CONFIG.SYS
DEVICE=C:\WINDOWS\HIMEM.SYS
BREAK ON
FILES=30
BUFFERS=20
REM Include any other device drivers required by
REM your system at startup, such as those
REM required by Stacker or SpeedStor.
```

5 Remove the diskette, write-protect it, and store it in a safe place.

NOTE: You may also want to include Norton Disk Doctor (NDD.EXE) on your clean boot diskette.

Creating a PIF File

See Also

In order to create a PIF file you must first start PIF Editor. To do this perform one of the following:

- Double-click on the PIF Editor icon
- Use the arrow keys to move the selection cursor to the PIF
- Choose Run from the File menu, type PIFEDIT and select OK

Once the PIF Editor starts you will be in one of two modes automatically determined by PIF Editor. The first is Standard mode options which apply when Windows is running in Standard mode. The second is 386 Enhanced mode options which apply when Windows is running in 386 Enhanced mode. (386 Enhanced mode options adds a button called Advanced that, when clicked on, will bring up additional options.)

NOTE: If you are running Windows in 386 Enhanced mode and want to create a PIF for Standard mode you can do so by selecting Standard from the Mode menu. You can also create a 386 Enhanced mode PIF in Standard mode by selecting 386 Enhanced from the Mode menu.

Fill in the information your application requires (for more information on the options each mode provides see your Microsoft Windows *User's Guide* or select Help from within PIF Editor) and then save the PIF you have created. Now exit PIF Editor and add the PIF file as a new program item.

When to Create a PIF File

See Also

When you run a non-Windows program without creating a PIF file for it Windows actually uses the settings contained in the _DEFAULT.PIF file. If this particular program enters a graphics screen, for example, Windows will actually allow your screen to shift into graphics mode even though _DEFAULT.PIF does not grant permission to that mode.

Windows tries to adjust itself to a non-Windows application even if its behavior does not match the PIF settings associated with it. However, Windows will not always be able to make the right adjustments. This is when you need to create a PIF file for an application.

For example, you may use a DOS communications program to transfer large files from a remote host. Typically you would like to use other applications while the transfers are taking place.

In order to do this you would need to create a PIF file for the communications program. In the PIF file you would place a value in the Background Priority text box (located in the Advanced options of 386 Enhanced) that allows the communications program enough time to process incoming or outgoing information. Once you created the PIF file you would be able to switch away from the communications program to use other applications.

DOSAPP.INI File Creating a PIF File DOSAPP.INI File When to Create a PIF File

Using a Disk Cache

See Also

You can dramatically increase the performance of your computer by using a disk <u>cache</u> program: a memory-resident program or device driver that stores commonly-accessed file information in <u>RAM</u>, often referred to as cache buffers. That is, the cache program monitors disk reads and writes. When the same file information is requested again, the disk cache provides the information from its faster cache buffers rather than from the slower hard drive, increasing overall system performance. It is always advantageous to use a disk cache if sufficient memory is available.

Advanced disk cache programs such as <u>Norton Cache</u> and <u>SMARTDrive</u> also perform <u>write-caching</u>. Write-caching improves your system performance by consolidating many small write operations to one large write operation.

NOTE: If you want CD-ROM caching or are interested in a cache program that is sold as a separate, stand-alone utility, you should consider Norton SpeedDrive.

Generally, the more memory you allocate to the disk cache as cache buffers, the faster Windows runs. Allocating 12.5 percent to 25 percent of total available memory to a disk cache usually provides optimal performance.

For example, if your computer has a total of 8MB of RAM, you should allocate approximately 1MB to 2MB to a disk cache. Computers with 4MB of RAM should allocate 512K to 1MB to a disk cache. Most disk cache performance will not improve much beyond the 2MB mark. The exception is Norton Cache, which employs an advanced caching algorithm that provides better performance with larger cache buffers beyond the 2MB size.

NOTE: Unless you have 16MB to 32MB of extended memory, do not allocate more than 4MB RAM to a cache. The RAM can be better used by Windows to load more applications and data files. If your computer has less than 4MB of RAM, you should seriously consider a RAM upgrade to at least 4 MB and preferably 8MB to run Windows 3.1 effectively in either <u>Standard</u> or <u>Enhanced modes</u>.

Remember that a cache does not become effective until the most commonly used data has been cached, and that takes time. Avoid completely resetting a cache after extensive use. Caches provide better performance as more and more of the most commonly used data gets stored in the cache buffers. Typically, a decent size cache with a good caching algorithm can provide up to an 85-percent cache hit ratio, meaning that 85 percent of all disk read and write requests have been serviced by data in the cache buffers rather than by accessing the hard disk.

TIP: You can easily monitor your cache hits by running System Watch.

Norton Cache SMARTDrive

Norton Cache Basics

See Also

Norton Cache (NCACHE2.EXE) is a disk <u>caching</u> program that is fully compatible with both DOS and Windows 3.1. Independent tests have verified that Norton Cache outperforms SMARTDrive--with Norton Cache consistently attaining higher benchmarks.

Norton Cache also provides advanced features such as IntelliWrites and statistical status screens not provided by SMARTDrive. Norton Cache can utilize all types of memory--including conventional, expanded (EMS), and extended (XMS)--as its cache buffer.

NOTE: If you want CD-ROM caching or are interested in a cache program that is sold as a separate, stand-alone utility, you should consider Norton SpeedDrive.

Use the /MULTI=on switch to make Norton Cache write in the background while applications execute in the foreground. When /MULTI=off, Norton Cache suspends the foreground application while writing data in the background. (This switch is set to Off to maintain maximum compatibility with the widest array of computers and hard drives.)

You can install Norton Cache as either a <u>device driver</u> in your <u>CONFIG.SYS</u> file or as a <u>TSR</u> in <u>AUTOEXEC.BAT</u>. Installed as a device driver, Norton Cache speeds up your computer's startup process, but you cannot remove it without changing CONFIG.SYS and restarting your computer. On the other hand, if you load Norton Cache as a TSR, you can remove it from memory without having to restart your computer as long as it is the last TSR that was loaded. However, it only accelerates part of your system's startup process.

NOTE: The easiest way to install Norton Cache as either a device driver or a TSR is to run NUCONFIG from the DOS prompt. Click the Startup Programs command button, then select Start Norton Cache from the Startup Programs list box. A dialog box lets you choose, among other options, whether you want to load Norton Cache from AUTOEXEC.BAT or from CONFIG.SYS.

To manually install Norton Cache as a device driver:

1 Add this line to your CONFIG.SYS file:

device=C:\NU\NCACHE2.EXE /INSTALL

2 Disable or remove any other command lines in CONFIG.SYS or AUTOEXEC.BAT that activate disk caching programs.

To manually install Norton Cache as a TSR:

Add this line to your AUTOEXEC.BAT file:

C:\NU\NCACHE2 /INSTALL

NOTE: Norton Cache installation requires at least one of the following install switches: /DOS, /EXP, /EXT, or /INSTALL. Otherwise, Norton Cache displays the message, "Norton Cache is NOT Installed."

Norton Cache automatically defines a cache size for the DOS environment and the cache size for Windows. You don't *have* to do anything else to set it up--unless of course, you *want* to.

Like SMARTDrive, the cache size for DOS is greater than the cache size for Windows. Norton Cache allocates approximately half of all available extended or expanded memory as cache buffers when running in DOS and one quarter when running in Windows. For example, if your computer has 10MB of available extended memory, Norton Cache allocates 5MB as the DOS cache size and 2.5MB as the Windows cache size.

When Norton Cache loads, it displays a status screen with default settings. You can, however, customize virtually every aspect of its operation with optional command-line switches.

Using a Disk Cache

SMARTDrive Basics

See Also

SMARTDrive is a disk <u>caching</u> program (a <u>TSR</u>) included with MS-DOS and Windows. SMARTDrive caches both read and write operations, providing optimal cache performance.

When you install Windows with the default installation settings, Setup adds the SMARTDRV command to your AUTOEXEC.BAT file. If this is not what happened, you can install SMARTDrive at any time.

To install SMARTDrive:

1 Add this line to your AUTOEXEC.BAT file:

C:\WINDOWS\SMARTDRV

2 Disable or remove any other command lines in CONFIG.SYS or AUTOEXEC.BAT that activate disk caching programs.

NOTE: You must also add this command to CONFIG.SYS if you use SMARTDrive's <u>double-buffering</u> feature:

DEVICE=C:\WINDOWS\SMARTDRV.EXE /DOUBLE BUFFER

SMARTDrive is actually made up of two device drivers (a disk cache and a double-buffer driver) in one file. The disk cache is installed in AUTOEXEC.BAT; the double-buffer driver is installed in CONFIG.SYS.

The SMARTDRV command tells DOS to create a disk cache, the size of which depends on your system's memory. SMARTDrive is automatically loaded high. To prevent it from being loaded high, use the /L switch.

When SMARTDrive loads, it allocates extended memory (XMS) as for cache buffers. If you do not specify any command-line switches, SMARTDrive uses its default values. Like Norton Cache, the cache size for DOS (InitCacheSize) is greater than the cache size for Windows. (WinCacheSize).

Your System's Extended Memory	DOS Cache Size (InitCacheSize)	Windows Cache Size (WinCacheSize)
1MB	256K	0 (no caching)
2MB	1MB	256K
4MB	1MB	512K
6MB	2MB	1MB
8MB or more	2MB	2MB

NOTE: An extended memory driver such as <u>HIMEM.SYS</u>, must be loaded in CONFIG.SYS before SMARTDrive can load. You cannot use expanded memory (EMS) as cache buffers with SMARTDrive.

<u>Using a Disk Cache</u> <u>Do You Need Double-Buffering?</u>

Do You Need Double-Buffering?

See Also

<u>SMARTDrive</u> is made up of two device drivers (a disk cache and a double-buffer driver) in one file. The disk cache is installed in AUTOEXEC.BAT; the double-buffer driver is installed in CONFIG.SYS.

Do you need to use SMARTDrive's double-buffering feature? Probably not.

Most disk controllers (including IDE, MFM, and RLL controllers, as well as most ESDI and SCSI drivers) do not need double-buffering. When you run Setup, it determines whether it can communicate directly with the hard drive. If not, then it probably requires double-buffering, so Setup adds the DEVICE=SMARTDRV.EXE /DOUBLE BUFFER line to CONFIG.SYS.

If you add a device sometime after you set up Windows, you can use SMARTDrive to check whether you need double-buffering.

To determine whether you need double-buffering:

- 1 If the double-buffer driver is not loaded, load it by adding the DEVICE=SMARTDRV.EXE /DOUBLE_BUFER line to CONFIG.SYS.
- **2** At the DOS prompt, type SMARTDRV.
- 3 Look at the buffering column in the Disk Caching Status table that appears. If a yes appears in the column, you need double-buffering for the associated drive.

NOTE: If you do not first load the double-buffer driver, the buffer column will never contain a yes, even if your system requires double-buffering.

SMARTDrive Basics

FastDisk: 32-Bit Disk Access

See Also

You can increase Windows performance and significantly speed up disk access for DOS applications running under Windows by enabling the FastDisk device driver: a full 32-bit, protected mode driver for hard drives that supports the Western Digital WD1003 standard. You can also run more DOS applications at the same time since FastDisk allows DOS programs to use <u>virtual memory</u> in much the same way as Windows applications.

FastDisk, supported only by Windows 3.1 <u>Enhanced mode</u>, is compatible with most hard drives. If you can run FastDisk on your system, the Use 32-Bit Disk Access check box appears in the Virtual Memory dialog box. If Windows determines that your hard disk is not compatible with the WD1003 standard, you simply won't see the check box.

NOTE: The FastDisk driver either works with your computer and the hard drive in it, or Windows simply hangs during startup or drops inexplicably back to the DOS prompt if it doesn't. Microsoft warns that 32-bit disk access may not work reliably with battery-operated computers or with some laptop's sleep features (which interfere with 32-bit disk access).

To enable FastDisk:

- 1 Double-click the 386 Enhanced icon in Control Panel or INI Tuner.
- 2 Click the Virtual Memory button.
- **3** Click the Change>> button.
- 4 Check the Use 32-Bit Disk Access check box in the Virtual Memory dialog box.
- 5 Click OK.

Windows inserts the following lines to SYSTEM.INI's [386Enh] section to provide FastDisk support:

[386Enh] <u>32BitDiskAccess=</u>off <u>Device=</u>*int13 Device=*wdctrl

The 32BitDiskAccess= statement is off by default; when you check the Use 32-Bit Disk Access check box, Windows writes 32BitDiskAccess=on.

The asterisks (*) indicate that the int13 and wdctrl device drivers are built-in to the Windows Enhanced mode. int13 is the driver that traps and virtualizes <u>Interrupt 13H</u> BIOS calls that most applications, DOS, and Windows uses to request disk access through the ROM BIOS. wdctrl directly communicates with the WD 1003 compatible hard disk controller to perform the necessary disk read and write operations.

How Does FastDisk Work? FastDisk and DOS Programs

How Does FastDisk Work?

See Also

To see how FastDisk can speed up Windows, you must understand how DOS performs disk access. All IBM-compatible computers include a built-in <u>ROM BIOS</u> which contains program code that performs the basic disk read and write operations to a variety of hard and floppy drives at the <u>sector</u> level.

DOS relies on the BIOS to perform the basic read and write operations without knowing the exact physical layout of the hard or floppy drive itself. Basically, DOS deals with sectors on a logical level, where all the sectors on a drive are addressed linearly, from 1 to the total number of sectors on the drive. The BIOS, on the other hand, addresses sectors on a physical level, where each sector is referenced by side, cylinder, and the sector number. Whenever DOS requests a sector read or write operation with a logical sector address, the BIOS translates it to a physical address and performs the requested operation.

Furthermore, a DOS application typically relies completely on DOS to handle most of its disk input/output operations, making its request directly to DOS. In turn, DOS informs the application that the request has been satisfied.

Along comes Windows and its Enhanced mode, which runs in <u>Protected mode</u> on 386-class CPUs. Protected mode allows 32-bit memory addressing that is able to address up to 4GB (gigabytes--232) of data! Unfortunately, DOS and the ROM BIOS operate in <u>Real mode</u>, where only 1MB of memory can be addressed. This is primarily to retain compatibility with the majority of non-Windows Enhanced mode programs (most DOS applications) that only run in Real mode.

So while Windows Enhanced mode in running in Protected mode, it must switch to Real mode whenever a ROM BIOS request is made to perform a disk operation. After the disk operation is performed, Windows switches back to Protected mode. This alternating between Real and Protected modes can occur thousands of times, adding tremendous overhead and slowing overall Windows performance.

FastDisk allows disk operations to be performed in Protected mode rather than Real mode, eliminating the need to switch between the two modes. FastDisk interfaces directly with the hard disk controller and intercepts all system requests to the ROM BIOS, including disk requests. Whenever FastDisk intercepts a disk request from Windows, it performs the disk request by directly interfacing with the hard disk controller, bypassing the BIOS altogether. This saves two mode transitions per disk operation and perhaps more, since multiple disk requests can occur in one sequence.

NOTE: Because FastDisk uses a special driver to bypass the DOS BIOS and directly access your disk, it works only with driver controllers that are compatible with Western Digital (WD) 1003, IDE, and ST506 controller cards.

FastDisk: 32-Bit Access FastDisk and DOS Programs

FastDisk and DOS Programs

See Also

DOS applications must run in physical RAM even in Windows Enhanced mode. Unlike Windows programs that run in <u>Protected mode</u>, most DOS applications must run in <u>Real mode</u>. To run such non-Windows programs, Windows runs them in their own 640K memory space, or virtual XT machine.

Since each application requires the full attention of the virtual machine and the memory allocated to it, it cannot be swapped out to disk to make room for additional virtual machines or Windows applications. If you only have 2MB of physical <u>RAM</u>, though you may have 10MB of <u>virtual memory</u> available, you are limited to about two or three virtual machines--two or three non-Windows applications, since all virtual machines must run in physical RAM.

FastDisk solves this problem by allowing 32-bit disk access in Protected mode. Because disk access can occur bypassing Real mode and the <u>BIOS</u>, virtual machines can be swapped out to disk when not active. Consequently, you can run more DOS applications at the same time since FastDisk allows DOS programs to run in much the same way as Windows applications. With FastDisk, parts of a DOS application can be swapped to disk while other parts remain in RAM. Thus, you can switch between DOS applications more quickly.

FastDisk: 32-Bit Access How Does FastDisk Work?

RAM Disks

See Also

You may be able to slightly improve Windows performance by creating a RAM disk to store temporary files. That is, you can use a RAM disk as a swap disk.

NOTE: The <u>RAM</u> allocated to the RAM disk may be better used by Windows for applications and data. You should consider creating a 512K or 1MB RAM disk only if you have at least 6MB of extended memory or if you are setting up a diskless workstation.

Systems that must run Windows in <u>Standard mode</u> will benefit most from a RAM disk, as long as a sizable RAM disk can be created after enough RAM has been reserved for applications and a cache (like <u>Norton Cache</u> or <u>SMARTDrive</u>). Creating a RAM disk can speed up switching from a Windows Real or Standard mode application to and a DOS application and back again. This is possible since Windows swaps Real or Standard mode applications to disk when a DOS application is started. (Performance is gained by swapping to a RAM disk rather than to a hard disk.)

To create a RAM disk:

 Add this line to your <u>CONFIG.SYS</u> file, following the line that installs <u>HIMEM.SYS</u> or another extended memory driver such as <u>QEMM/386</u> or <u>386MAX</u>:

device=C:\WINDOWS\RAMDRIVE.SYS 512 /e

If you have set up a memory manager, you can load RAMDRIVE.SYS into high memory:

devicehigh=C:\WINDOWS\RAMDRIVE.SYS 1024 /e

In this example, a 1MB RAM disk is created.

NOTE: You should allocate a RAM disk that can hold all the temporary swap files that Real and Standard modes would create when switching from DOS and Windows applications. If you point TEMP to a RAM disk, it must be large enough to hold entire print jobs--which are often 1 to 2MBs.

Be sure to specify the /e switch, which puts the RAM drive in extended memory. Without it, the RAM drive would be created in <u>conventional memory</u> and Windows would not have enough memory to run. (For a complete syntax explanation, refer to <u>RAMDrive Settings</u>.)

NOTE: The RAMDRIVE.SYS device driver comes with both Windows and DOS. Be sure to use the most recent version.

To configure Windows to swap to a RAM disk:

Add this line to SYSTEM.INI's [NonWindowsApp] section

[NonWindowsApp] <u>SwapDisk=</u>x:\

x:\ is the letter of the RAM disk. Windows defaults to the drive specified by the SET TEMP=x:\path statement in the <u>AUTOEXEC.BAT</u> file or to the WINDOWS directory itself as the default swap disk.

RAMDrive Settings

RAMDrive Settings

See Also

RAMDRIVE.SYS is a <u>device driver</u> that converts <u>RAM</u> into a device that behaves just like a hard drive: a RAM disk. The RAMDrive driver can create a RAM disk in either <u>conventional</u>, <u>expanded</u>, or <u>extended</u> <u>memory</u>. For Windows, you will want to create a RAM disk in extended memory, and then only if you have RAM to spare (at least 6MB).

NOTE: The RAMDRIVE.SYS device driver comes with both Windows and DOS. Be sure to use the most recent version.

RAMDrive is loaded from CONFIG.SYS, with this syntax:

device=x:\path\RAMDRIVE.SYS [disksize] [sectorsize] [files] [/e | /a]

You can use the devicehigh= command (rather than device=) to load RAMDrive high if you have set up a memory manager.

x:\path\ is the location of the RAMDRIVE.SYS device driver, such as C:\DOS\ or C:\WINDOWS\.

disksize defines the size of the RAM disk in kilobytes. If *disksize* is omitted, RAMDRIVE.SYS creates a 64K RAM disk. Valid sizes range from 4K to 32767K (the latter defining a 32MB RAM drive), assuming you have enough RAM.

NOTE: You should allocate a RAM disk that can hold all the temporary swap files that Real and Standard modes would create when switching from DOS and Windows applications. Typically, a RAM disk size of 256K to 1024K is sufficient. If you have more than 1024K to spare to a RAM disk, allocate it to a disk cache instead.

sectorsize defines the number of bytes each <u>sector</u> will be composed of. Typically, *sectorsize* should be set to 512, although 128 and 256 bytes are also valid.

files defines the number of files and subdirectories the RAM drive's root directory can hold. The default value is 64 total entries, but can be anywhere from 2 to 1024.

/e uses <u>extended (XMS) memory</u> for the RAM disk. In general, extended memory provides faster performance than expanded (EMS) memory.

NOTE: The /e switch is required for Windows. You should not use the /a switch if you are running Windows.

/a uses <u>expanded memory</u> for the RAM disk. Note that the only time you need expanded memory under Windows is when the DOS programs you're running need it. Even then Windows can simulate expanded memory for them in Enhanced mode.

If neither the /e switch nor the /a switch is specified, the RAM disk is created in conventional memory.

The following entry in the CONFIG.SYS file creates a 1MB (1024K) RAM disk in extended memory with 512 byte sectors and a root directory that can hold up to 128 files or subdirectories:

device=C:\WINDOWS\RAMDRIVE.SYS 1024 512 128 /e

RAM Disks

TEMP Environment Variable

The TEMP environment variable specifies the directory used by Windows for temporary files (including the temporary swap file--see <u>Using Temporary Swap Files</u>--if you are using one). Temporary files are used by various applications who request them (such as Microsoft Word) to increase performance and protect your original documents from damage should Windows fail unexpectedly.

If you have additional RAM available (more than 6 MB total system memory, depending on the applications you use), you may want to consider creating a RAM drive (see <u>RAM Disks</u>). A RAM drive can significantly increase Windows' performance when you assign the TEMP variable to it in your AUTOEXEC.BAT file.

If you do not assign a drive and path to the TEMP variable, Windows will use your root directory on your boot drive.

Optimizing Performance with Swap Files

See Also

In Enhanced mode, a swap file lets you use hard disk space to create virtual memory. If you have ample disk space, you should create a permanent swap file, which requires less overhead than a temporary swap file.

Permanent swap files can be accessed directly by Windows (when using 32-bit disk access) and are composed of contiguous sectors on the disk. This allows for faster swapping between RAM and the hard disk when applications are opened and closed, improving overall Enhanced mode performance.

Temporary swap files are typically scattered over non-contiguous sectors, slowing down disk access. Furthermore, temporary files must be accessed through DOS rather than directly by Windows, further decreasing performance.

NOTE: When you install Windows, the Express Setup option creates a temporary swap file. Custom Setup, on the other hand, lets you decide whether you want a temporary or a permanent swap file.

Create a swap file that is at least 512K. (Microsoft technical support recommends a minimum of 1024K.) This allows Windows to work with 4K page segments rather than 64K page segments, making it manage memory much more efficiently.

For example, if an application requires 70K to run, Windows must allocate two 64K segments to accommodate 64K of the application on one segment and 6K on the other, leaving 60K of RAM wasted as slack space. As Windows and DOS applications are opened and closed, more memory is wasted as slack space, causing Windows to run out of memory though hundreds of K may be available in the slack spaces of the 64K memory segments.

NOTE: Creating swap files in excess of 4MB is usually unnecessary. Extremely large swap files degrade overall Windows performance. In general, your swap file size should be 20 percent to 25 percent of the extended memory installed in your computer. (If you have 16MB of RAM or more, you should have enough physical RAM to run most of your applications efficiently.)

How Does a Swap File Work? Configuring a Swap File Using a Temporary Swap File Swap Files in Standard Mode Swap Files in Enhanced Mode

Using a Temporary Swap File

See Also

If you plan to use a temporary swap file, speed up the temporary swap file creation process by specifying the maximum size and location for the swap file. You can do this by creating the temporary swap file using the Control Panel 386 Enhanced icon or by inserting these statements in SYSTEM.INI's [386Enh] section:

[386Enh] <u>PagingDrive=</u>x <u>MaxPagingFileSize=</u>n

With the PagingDrive and MaxPagingFileSize parameters defined, Windows no longer needs to search for a suitable location on your hard disks for a temporary swap file. Nor does it have to calculate a valid size for the temporary swap file once a suitable drive has been located.

How Does a Swap File Work? Configuring a Swap File Swap Files in Enhanced Mode

Configuring a Swap File

See Also

The maximum size of the permanent swap file is determined by the largest contiguous disk space available. If your hard disk is badly fragmented, you should run a disk optimizer such as the Norton Utilities Speed Disk or DOS 6.0 DEFRAG. These utilities defragment fragmented files and compact all used clusters toward the front of the disk, maximizing contiguous unused disk space.

To configure a swap file:

- 1 Double-click the 386 Enhanced icon in the Control Panel.
- 2 Click the Virtual Memory button.
- 3 Click the Change>> button.
- 4 Specify the host drive for the swap file to reside on from the Drive drop-down list box. All physical hard drive partitions are listed.
- 5 Specify the type of swap file from the Type drop-down list box: Permanent, Temporary, and None. Windows automatically calculates the Recommended Maximum Size for either the Temporary or Permanent swap file sizes according to the available space and disk fragmentation on the selected drive.
- 6 If you want to change the size despite what Windows recommends, enter a different size into the New Size text box. (Windows will not use more than the recommended size for virtual memory. In general, your swap file should be 20 percent to 25 percent of the extended memory installed in your computer.)
- 7 Check the Use <u>32-Bit Disk Access</u> check box, if available, to speed up disk access.
- 8 Click OK.

If you specified a swap file size larger than what Windows recommends, the Virtual Memory message dialog box appears to inform you that Windows will not use more than the virtual memory specified by the Recommended Size. If you are you sure you want to create a larger swap file, click Yes.

9 When Windows prompts you to restart Windows to effect the changes to the swap file, click Restart Windows.

NOTE: When you create a permanent swap file, Windows creates two files: <u>SPART.PAR</u>, and <u>386SPART.PAR</u>.

How Does a Swap File Work? Using a Temporary Swap File Swap Files in Standard Mode Swap Files in Enhanced Mode

How Does a Swap File Work?

See Also

One of the most important resources in a computer is the available <u>RAM</u>. The amount of memory you have critically effects how Windows runs. Generally, the more memory you have, the more applications you can work with at any one time.

When running in Enhanced mode, Windows can use available space on the hard disk as an extension of RAM. If you start or switch to a new application and Windows does not have enough physical memory, it moves some or all of the existing applications and data in RAM to the hard disk. This technique is referred to as swapping to disk.

Programs and data swapped to disk are saved as files, commonly called swap files. Windows supports both temporary and permanent swap files. A temporary swap file is created each time you start Windows and is deleted when you exit. A permanent swap file remains in the same location on disk until you delete it.

Swapping applications from RAM to disk allows you to run more applications than the available RAM can accommodate. For example, if you have 4MB of RAM and a 2MB swap file, you can run 6MB of applications as though you had 6MB of physical RAM. This combined total memory is referred to as virtual memory."

Applications that are swapped out become inactive and remain so until they are reactivated. If you open an application while a currently active application is still processing and not enough physical RAM is available, the active application is swapped out temporarily to make room for the new application, then swapped back into RAM after the new application has loaded.

Naturally, extremely large swap files will degrade overall Windows performance. In general, your swap file should be 20 percent to 25 percent of the extended memory installed in your computer.

Optimizing Performance with Swap Files Configuring a Swap File Using a Temporary Swap File Swap Files in Standard Mode Swap Files in Enhanced Mode

Swap Files in Standard Mode

See Also

The only time Windows uses a swap file in Standard mode is to swap out a DOS application to make room for Windows applications. Each time you start a DOS application in Standard mode, Windows crates an application swap file that represents the application on disk. These temporary files are named ~WOAxxxx.TMP, where WOA represents Windows Old App (DOS) file, and xxxx a set of random characters.

The next time you switch back to an opened Windows application or start a new one, Windows swaps part or all of the DOS application to the application swap file, providing more RAM for Windows applications now running in the foreground. Windows erases the DOS application swap file when it is no longer needed.

In Standard mode, Windows applications cannot be swapped out to the hard disk. The number of applications you can run simultaneously is limited by the amount of physical RAM. However, because all opened Windows applications are loaded into RAM, performance is generally more constant in Standard mode than in 386 Enhanced mode, where applications are swapped to disk.

Optimizing Performance with Swap Files How Does a Swap File Work? Using a Temporary Swap File Swap Files in Enhanced Mode

Swap Files in Enhanced Mode

See Also

When running in Enhanced Mode, Windows creates a single, large file into which it can swap both Windows and DOS applications. This single swap file can be temporary or permanent.

A temporary swap file, WIN386.SWP, is created when Windows starts and is destroyed when you exit. It shrinks and grows as necessary. A permanent swap file is made up of two files: SPART.PAR and 386SPART.PAR. It is permanently stored on the hard disk until you manually delete it. (Do not delete or move SPART.PAR or 386SPART.PAR manually.)

The maximum size of the temporary swap file is determined by the available disk space. You can actually create a temporary swap file that is as large as the total available disk space, although you should always leave at least 1 MB to 2 MB free space for print spooling and temporary files for other applications.

The maximum size of the permanent swap file is determined by the largest contiguous disk space available. If your hard disk is badly fragmented, you should run a disk optimizer such as the Norton Utilities Speed Disk or the DOS 6.0 DEFRAG. These utilities defragment fragmented files and compact all used clusters toward the front of the disk, maximizing contiguous unused disk space.

Optimizing Performance with Swap Files Configuring a Swap File How Does a Swap File Work? Using a Temporary Swap File Swap Files in Standard Mode

NDW.INI Sections

NDW.INI file settings control the behavior of Norton Desktop 3.0 for Windows.

[BatchRunner] [Calculators] [Configuration] [Control Center] [Defaults] [DLLInfo] [NBackup] [NBWin_Device_pos-number] [Network] [NHookSettings] [NViewer] [Print Start] [Print Stop] [Quick Access] [Restrictions] [Sleeper] [SmartErase] [System Information] [TapeCalc] [Viewer-Default Extensions] [Viewer-Filemap] [Viewer-Parsers] [Windows] [Zip]

SYMCFG.INI Sections

SYMCFG.INI file settings control the behavior of Norton Utilities, Norton Desktop, and other Symantec products.

[<u>ScriptMaker]</u> [<u>SymKrnl]</u> [<u>SymMail]</u> [<u>Treasure]</u>

CONTROL.INI Sections

CONTROL.INI file settings control the behavior of the Windows Control Panel.

[Color Schemes] [Current] [Custom Colors] [Drivers.Desc] [Installed] [MMCPL] [Patterns] [ScreenSaver.*] [Userinstallable.drivers]

DOSAPP.INI Sections

DOSAPP.INI file settings keep track of the state of non-Windows applications (386 Enhanced mode only). These settings are kept in the [DOS Applications] section.

Many of the settings relate to items in the program's <u>PIF</u> or settings you choose from the program's Control menu. The complete format of each entry is undocumented, but it starts with these parameters:

filename=window horz vert ...

filename is the name of the DOS program.

window has a value of 1 or 0, where 1 indicates that the program appears in a window and 0 indicates that it appears as a full-screen application.

horz is the number of horizontal pixels that make up the font size.

vert is the number of vertical pixels that make up the font size.

NOTE: It is best to leave all of these settings as they are; make any desired changes by modifying the program's PIF.

Sample statements include:

[DOS Applications] C:\NDOS.COM=1 8 12 648 328 22 0 2 65535 65535 65532 65532 28 22 636 366 C:\COMMAND.COM=1 8 12 648 328 22 0 1 65535 65535 65535 65535 116 110 636 408 C:\NC\NC.EXE=1 C:\WIN31HLP\HCP.EXE=1

PROGMAN.INI Sections

PROGMAN.INI file settings control the behavior of Windows Program Manager.

NOTE: Norton Desktop for Windows is an alternative Windows shell, and thus a potential replacement for Program Manager.

[<u>Groups]</u> [<u>restrictions]</u> [<u>Settings]</u>

WINFILE.INI Sections

WINFILE.INI file settings control the behavior of Windows File Manager. (Note that Norton Desktop for Windows is an alternative Windows shell, and thus a potential replacement for Windows File Manager.)

[AddOns] [NortonDesktop] [Settings]

SYSTEM.INI Sections

SYSTEM.INI file settings record the state of hardware and device drivers, as well as some user preferences--including the Windows shell to be used.

WARNING: Always make a backup of SYSTEM.INI before you edit it. You can disable your system if you edit the file incorrectly. Double-check for typos!

[<u>386Enh]</u> [<u>boot]</u> [<u>Netware]</u> [<u>boot.description]</u> [<u>drivers]</u> [<u>keyboard]</u> [<u>mci]</u> [<u>NonWindowsApp]</u> [<u>standard]</u>

WIN.INI Sections

The WIN.INI file sections contain the settings that specify your preferences for the appearance and behavior of Windows. Your WIN.INI file may not include all sections. Some Windows applications may also add entries to WIN.INI.

[colors] [Compatibility] [Desktop] [devices] [embedding] [extensions] [fonts] [FontSubstitutes] [intl] [mci extensions] [network] [ports] [PrinterPorts] [programs] [Sounds] [TrueType] [windows] [Windows Help]

Look up by Section

INI File Sections	
[386Enh]	SYSTEM.INI
[AddOns]	WINFILE.INI
[BatchRunner]	NDW.INI
[boot]	SYSTEM, INI
[boot.description]	SYSTEM.INI
[Calculators]	NDW.INI
[colors]	WIN.INI
[Color Schemes]	CONTROL.INI
[Compatibility]	WIN.INI
[Configuration]	NDW.INI
[Control Center]	NDW.INI
[Current]	CONTROL.INI
[Custom Colors]	CONTROL.INI
[Defaults]	NDW.INI
[Desktop]	WIN.INI
	WIN.INI
[Devices]	
[DLLInfo]	NDW.INI
[DOS Applications]	DOSAPP.INI
[drivers]	SYSTEM.INI
[Drivers.Desc]	CONTROL.INI
[Embedding]	WIN.INI
[Extensions]	WIN.INI
[Fonts]	WIN.INI
[FontSubstitutes]	WIN.INI
[Groups]	PROGMAN.INI
[Installed]	CONTROL.INI
[Intl]	WIN.INI
[Keyboard]	SYSTEM.INI
[mci]	SYSTEM.INI
[mci extensions]	WIN.INI
	CONTROL.INI
[NBackup]	NDW.INI
[NBWin Device pos-number]	NDW.INI
• • •	SYSTEM.INI
[Network]	NDW.INI
[Network]	
[network]	WIN.INI
[NHookSettings]	NDW.INI
[NonWindowsApp]	SYSTEM.INI
[NortonDesktop]	WINFILE.INI
[NViewer]	NDW.INI
[Patterns]	CONTROL.INI
[Print Start]	NDW.INI
[Print Stop]	NDW.INI
[PrinterPorts]	WIN.INI
[programs]	WIN.INI
[ports]	WIN.INI
[QuickAccess]	NDW.INI
[restrictions]	PROGMAN.INI
[ScreenSaver]	CONTROL.INI
[ScriptMaker]	SYMCFG.INI
[Settings]	PROGMAN.INI
[Settings]	WINFILE.INI
[Sleeper]	NDW.INI
[SmartErase]	NDW.INI
<u>temantindooj</u>	

[Sounds]	WIN.INI
[standard]	SYSTEM.INI
[System Information]	NDW.INI
[SymKrnl]	SYMCFG.INI
[SymMail]	SYMCFG.INI
[TapeCalc]	NDW.INI
[Treasure]	SYMCFG.INI
[TrueType]	WIN.INI
[Userinstallable.drivers]	CONTROL.INI
[Viewer-Default Extensions]	NDW.INI
[Viewer-Filemap]	NDW.INI
[Viewer-Parsers]	NDW.INI
[Windows]	NDW.INI
[windows]	WIN.INI
[Windows Help]	WIN.INI
[Zip]	NDW.INI

[386Enh] Section

NE<CHARDER THRIER CONFORMERS

Affects the way Windows runs in 386 Enhanced mode.

32BitDiskAccess= A20EnableCount= AllEMSLocked= AllVMsExclusive= AllXMSLocked= AltKeyDelay= AltPasteDelay= AutoRestoreScreen= BkGndNotifyAtPFault= CGA40WOA.FON= CGA80WOA.FON= CGANoSnow= COMxAutoAssign= COMxBase= COMxBuffer= COMxFIFO= COMxIrg= COMIrqSharing= COMxProtocol= COMBoostTime= COMdrv30= Device= Display= DMABufferIn1MB= DMABufferSize= DOSPromptExitInstruc= DualDisplay= EBIOS= EISADMA= EMMExclude EMMInclude= EMMPageFrame= EMMSize= FileSysChange= Global= HardDiskDMABuffer= IdleVMWakeUpTime= IgnoreInstalledEMM= InDOSPolling= INT28Critical= IRQ9Global= Keyboard= KeyBoostTime= KeyBufferDelay= KeyldleDelay= KeyPasteCRSkipCount= KeyPasteDelay= KeyPasteSkipCount= KeyPasteTimeout= KybdPasswd= KybdReboot= Local= LocalLoadHigh= LocalReboot= LPTxAutoAssign= LRULowRateMult= LRURateChngTime= LRUSweepFreq= LRUSweepLen= LRUSweepLowWater= LRUSweepReset= MaxBPs=

MapPhysAddress= MaxCOMPort= MaxDMAPGAddress= MaxPagingFileSize= MaxPhysPage= MCADMA= MessageBackColor= MessageTextColor= MinTimeSlice= MinUnlockMem= MinUserDiskSpace= Mouse= MouseSoftInit= NetAsynchFallback= NetAsynchTimeout= NetDMASize= NetHeapSize= Network= NMIReboot= NoEMMDriver= NoWaitNetIO= OverlappedIO= PageBuffers= PageOverCommit= Paging= PagingDrive= PagingFile= PerformBackfill= PermSwapDOSDrive= PermSwapSizeK= PerVMFILES= PSPIncrement= ReflectDOSInt2A= ReservedHighArea= ReservePageFrame= ReserveVideoROM= ROMScanThreshold= ScrollFrequency= SGrabLPT= SyncTime= SystemROMBreakPoint= SysVMEMSLimit= SysVMEMSLocked= SysVMEMSRequired= SysVMV86Locked= SysVMXMSLimit= SysVMXMSRequired= TimerCriticalSection= TokenRingSearch= TranslateScans= TrapTimerPorts= UniqueDOSPSP= UseableHighArea= UseInstFile= UseROMFont= VGAMonoText=

VideoBackgroundMsg= VideoSuspendDisable= VirtualHDIrq= WindowKBRequired= WindowMemSize= WindowUpdateTime= WinExclusive= WinExclusive= WinTimeSlice= WOAFont= XlatBufferSize= XMSUMBInitCalls=

[AddOns] Section Affects the File Manager program.

FileSizeExtension= NortonDesktopDLL=

[BatchRunner] Section Affects the Batch Runner batch language that shipped with Norton Desktop 2.x for Windows.

<u>CmdExtDLL=</u> <u>SKDFile=</u>

[boot] Section

Specifies the drivers, fonts, startup modules, shell, and files Windows needs when it starts. WARNING: All entries in this section are required. If you edit or remove one of these entries, Windows might not start or operate as it should.

286grabber= 386grabber= CachedFileHandles= comm.drv= <u>display.drv=</u> drivers= fixedfon.fon= fonts.fon= keyboard.drv= language.dll= mouse.drv= network.drv= oemfonts.fon= <u>Scrnsave</u> shell= sound.drv= system.drv= TaskMan.Exe=

[boot.description] Section This section defines the devices you can change by running the Windows Setup program. You should not need to change the entries in this section. If you do, you will not be able to use Setup to update drivers.

[Calculators] Section Affects the 10-Key Tape, Financial, and Scientific calculators.

<u>Calculatorpos-number=</u> <u>LastCalc=</u> <u>NumCalculators=</u>

[Color Schemes] Section Defines the colors for each element used in a specific color scheme.

<u>color-scheme-name=</u>

[colors] Section Specifies the color values for elements of the Windows desktop.

ActiveBorder= ActiveTitle= AppWorkspace= Background= ButtonFace= ButtonHilight= ButtonShadow= ButtonText= GrayText= Hilight= HilightText= InactiveBorder= InactiveTitle= InactiveTitleText= Menu= MenuText= Scrollbar= <u>TitleText=</u> Window= WindowFrame= WindowText=

[Compatibility] Section This section resolves compatibility issues between Windows 3.1 and Windows 3.0, providing information to Windows 3.0 programs that relied on bugs which were fixed in Windows 3.1. You should not need to make changes to any of the settings in this section.

Configuration] Section Controls general Norton Desktop configuration.

<u>AllowExit=</u> Mailtool= MemCompactBeforeExec= NDWDIR= NDWErrorCode= NDWVersionMajor= NDWVersionMinor= Save=

[Control Center] Section Affects configuration categories used in Control Center.

Compression= Confirmations= Defaults= Desktop Layout= Drive Icons= Drive Windows= FileAssist= Map= <u>Menus=</u> Quick Access= <u>Shredder=</u> <u>SmartErase=</u> Tool Icons= Toolbars=

[Current] Section Indicates the current color scheme.

<u>color schemes=</u>

Custom Colors] Section Defines the custom colors in the color palette.

<u>ColorX=</u>

[Defaults] Section Affects Norton Desktop default settings.

<u>AlignDrives=</u> <u>CMOSFloppyType=</u> DefaultIconLib= DefaultViewer= DesktopConfigArrange= <u>GridOriginX=</u> <u>GridOriginY=</u> IconSearchLevel= MaxWinFileExtensions= NDWSplashScreen= SnapFactorX= SnapFactorY= UseHistory=

[Desktop] Section Affects the appearance of the desktop, including icons and wallpaper.

GridGranularity= IconSpacing= IconTitleFaceName= IconTitleSize= IconTitleStyle IconTitleWrap= IconVerticalSpacing= Pattern <u>TileWallpaper=</u> Wallpaper=

[devices] Section Provides for compatibility with Windows 2.x versions. This section is essentially the same as the [PrinterPorts] section, without the timeout values.

<u>device=</u>

[DLLInfo] Section Handles compatibility issues with Norton Backup for Windows.

The [DLLInfo] section contains entries that are designed to handle compatibility issues with Norton Backup. The entries in this section are set up by the installation program and should not be changed.

[drivers] Section Lists the names (aliases) for the installable device drivers.

<u>alias=</u>

[Drivers.Desc] Section This section associates the different multimedia driver files with the names that appear in the Drivers dialog box. For example:

mciwave.drv=[MCI] Sound midimap.drv=MIDI Mapper

Embedding] Section Specifies information for Object Linking and Embedding (OLE) support.

<u>object=</u>

Extensions] Section Associates file extensions with specific applications.

<u>extension=</u>

[Fonts] Section Specifies the font names and font filenames that Windows loads at startup.

<u>font-name=</u>

FontSubstitutes] Section Specifies the fonts Windows substitutes when the specified fonts are not available. This section is often used to specify replacements for Helv, Helvetical, Times, and Tms Rmn, which were replaced with other fonts in Windows 3.1.

<u>font-name1=</u>

Groups] Section Identifies the groups that appear in the Program Manager window.

<u>Group*integer*=</u>

[Installed] Section This section indicates the current version of Microsoft Windows and contains information about the installed printers.

[intl] Section Specifies the dates, times and numbers for international support.

<u>iCountry=</u> iCurrDigits= iCurrency= iDate= iDigits= iLZero= iMeasure= iNegCurr= iTime= iTLZero= <u>s1159=</u> <u>s2359=</u> sCountry= sCurrency= sDecimal= sLanguage= <u>sList=</u> <u>sLongDate=</u> sShortDate= sThousand= <u>sTime=</u>

[keyboard] Section Specifies the keyboard layout, type, and special features.

keyboard.dll= oemansi.bin= subtype= type=

[mci] Section This section lists the Media Control Interface (MCI) drivers used to to play media files. The Windows Setup program automatically installs these drivers. To change them, use the Drivers icon in the Control Panel.

[mci extensions] Section Associates media filename extensions with Media Control Interface (MCI) drivers.

[MMCPL] Section This Multimedia Control Panel (MMCPL) section specifies values associated with the multimedia items in the Control Panel.

[NBackup] Section Affects Norton Backup for Windows general setup.

Catalog Path= <u>Disk Read Strategy=</u> <u>Program Configured=</u> <u>Program Level=</u> Setup File pos-number= Setup File Name= Setup File Path= Show Disable Floppies Message= Window Left= Window Top=

[NBWin_Device_*pos-number*] Section Identifies devices used by Norton Backup.

The [NBWIN_Device_pos-number] section statements are used to identify devices used by Norton Backup. All entries in this section, except for Name=, should be changed only by the Norton Backup program.

Name=

[Network] Section--NDW.INI Affects how Norton Desktop detects and works with different networks.

<u>AutoDetect=</u> <u>NetworkDLL=</u>

Inetwork] Section--WIN.INI Affects how Windows handles network connnections and ports.

<u>drive=</u> InRestoreNetConnect= port=

[NHookSettings] Section Watches for and traps all directory creates and destroys, and all file opens.

Int21hHook= WatchDirectories= WatchDrive= WatchFiles=

[NonWindowsApp] Section Affects the performance and behavior of non-Windows applications.

CommandEnvSize= DisablePositionSave= FontChangeEnable= GlobalHeapSize= LocalTSRs= MouseInDosBox= NetAsynchSwitching= ScreenLines= <u>SwapDisk=</u>

Affects the File Manager menu bar.

ToolsTitle=

Affects Norton Viewer document windows.

QuickClose&Min=

[Patterns] Section Specifies the color values for bitmap patterns.

<u>pattern-name=</u>

[Print Start] Section Lets you print files which use print commands other than Alt+F, P, Enter.

<u>deskedit=</u> formbase.exe= <u>notepad=</u> wingz.exe= winproj.exe=

[Print Stop] Section
Lets you control the commands to automatically exit an application once Norton Desktop has printed a document.

winproj.exe=

[PrinterPorts] Section
Affects printer port connections and timeout settings.

<u>device=</u>

[programs] Section Identifies the pathnames of those programs Windows needs in order to run (which are not on the search path identified in the AUTOEXEC.BAT file).

program-file=

[ports] Section Defines the system serial and parallel ports.

<u>COMport-number:=</u> <u>EPT:=</u> <u>FILE:=</u> <u>filename=</u> <u>LPTport-number:=</u> LPTport-number.DOS=

[Quick Access] Section Affects Quick Access behavior.

AutoSave= DDEInitiateDelay= FakeProgman= IconSpacingX= IconSpacingY= MainGroup= MainPath= SubClassProgman=

[restrictions] Section Restricts access to certain Program Manager commands. This section is typically used only by System Administrators.

EditLevel= NoClose= NoFileMenu= NoCure NoSaveSettings=

[ScreenSaver.*] Section This section specifies the settings associated with a particular Windows 3.1 screen saver. Values may include settings for density, warp speed and password-protection.

<u>Password=</u> <u>PWProtected=</u>

[ScriptMaker] Section Affects the ScriptMaker application icon.

<u>Hidelcon=</u>

[Settings] Section--PROGMAN.INI Specifies the appearance of Program Manager as well as the options available in the Options menu.

AutoArrange= display.drv= MinOnRun= Order= SaveSettings= <u>Startup=</u> Window=

[Settings] Section--WINFILE.INI Specifies options you can set by choosing File Manager menu commands.

ConfirmDelete= ConfirmFormat= ConfirmMouse= ConfirmReplace= ConfirmSubDel= <u>dir1=</u> Face= LowerCase= <u>Size=</u> undelete.dll= Window=

[Sleeper] Section Affects the Norton Desktop Screen Saver.

<u>CtrlAltDel=</u> <u>ForegroundPriorityBias=</u> <u>ProtectDOSBox=</u>

[SmartErase] Section Affects SmartErase and SmartCan.

SmartCanWarning=

[Sounds] Section Associates system events with sound files.

<u>system-event=</u>

[standard] Section Affects the way Windows runs in Standard mode.

FasterModeSwitch= Int28Filter= MouseSyncTime= NetHeapSize= PadCodeSegments= <u>Stacks=</u> StackSize=

[System Information] Section Determines whether to allow editing of system startup files.

AltCPUTest= BusType= EditStartupFiles= NetInfo= SkipCMOS= SkipVideo= StartupDrive= SystemSummary=

[SymKrnl] Section Affects I/O operations.

UseDOSAlloc=

[SymMail] Section Affects menu items that send mail.

SearchDLL=

[TapeCalc] Section Affects the 10-Key Tape calculator.

AlwaysSave= ComputeMethod= DecimalDigits= PromptWhenTapeChanged= SaveFileName= SaveMethod= SaveMethod= ShowDateAndTime= ShowLastSession= TaxRate=

[Treasure] Section Affects the appearance of Treasure Chest buttons.

<u>Buried=</u>

Affects the use and display of TrueType fonts in applications.

OutlineThreshold= TTEnable= TTIfCollisions= TTOnly=

[Userinstallable.drivers] Section This section specifies the values associated with drivers installed for multimedia.

[Viewer-Default Extensions] Section
 The [Viewer-Default Extensions] section lists extensions that are automatically associated with a particular type of file. This section may contain entries that match the following format:

application-name=

[Viewer-Filemap] Section
The [Viewer-Filemap] section contains entries that assign a viewer or "parser" to a file extension. This section may contain entries that match the following format:

file-extension=

[Viewer-Parsers] Section Identifies available Norton Desktop viewers.

<u>viewer=</u>

[windows] Section--WIN.INI

Affects various aspects of Windows appearance and behavior, including startup programs, printer control, and window appearance.

Beep= BorderWidth= CoolSwitch= CursorBlinkRate= DefaultQueueSize= Device= DeviceNotSelectedTimeout= Documents= DosPrint= DoubleClickHeight= DoubleClickSpeed= DoubleClickWidth= KeyboardDelay= KeyboardSpeed= Load= MenuDropAlignment= MenuShowDelay= MouseSpeed= MouseThreshold1= MouseThreshold2= MouseTrails= NetWarn= NullPort= Programs= Run= ScreenSaveActive= ScreenSaveTimeOut= Spooler= SystemFont= SwapMouseButtons= TransmissionRetryTimeout=

[Windows Help] Section Affects the size and placement of help windows and the text colors associated with help functions.

A_WindowPosition= C_WindowPosition= H_WindowPosition= IFJumpColor= IFPopupColor= JumpColor= MacroColor= M_WindowPosition= PopupColor=

[Windows] Section--NDW.INI Lists programs to be loaded during idle time.

Load=

[Zip] Section Affects file compression.

<u>extensions=</u> <u>temppath=</u>

[Restrictions] Section Affects Quick Access behavior.

NoClose=

[Netware] Section Affects the state of Novell Netware network connections.

NWRestoreDrives= NWShareHandles=

Conflicting Virtual Device Drivers (VxDs) The comm.drv entry in SYSTEM.INI Conflicting Virtual Device Drivers (VxDs) The comm.drv entry in SYSTEM.INI <u>Copying Text from DOS Applications</u> <u>Using a mouse with a DOS application in a window</u> <u>Configure Windows to run .BTM files if you are using NDOS</u> <u>Using a Screen Saver as a Screen-Blanker</u> Removing Adobe Type Manager Conflicting Virtual Device Drivers (VxDs) Using /D:SFVX to pinpoint Enhanced mode problems The VirtualHDIRQ Setting Using /D:SFVX to pinpoint Enhanced mode problems Look for UMB conflicts Interrupt/UMB problems Suppressing the Startup group Clear the LOAD= and RUN= lines and skip the Startup group "Application Execution Error. Cannot find file..." Suppressing the Startup group Clear the LOAD= and RUN= lines and skip the Startup group "Application Execution Error. Cannot find file..." NetWare's NWPOPUP doesn't work Changing Windows' shell Check for an invalid SHELL= entry "Error loading PROGMAN.EXE"