

WELCOME TO SYMANTEC'S NORTON UTILITIES VERSION 8.0!
Norton Utilities 8.0 Read Me

Thank you for purchasing Symantec's Norton Utilities 8.0. Please read this file for important information including:

- * Hardware and Software Compatibility
- * Additional Material and Tips

To print this file, change to your \NU directory and type:

LP READ.ME /HEADER0 /L5 <ENTER>

Please read the following before installation and review the Table of Contents for information on specific utilities.

EMERGENCY STARTUP

If your system is damaged and you can't restart your computer from your hard disk, place the EMERGENCY DISK in drive A: and reboot.

EMERGENCY UNERASE

Do not install Norton Utilities on a drive that needs repair or requires data recovery. To unerase an accidentally deleted file, insert the EMERGENCY DISK, change to the floppy drive, and type:

UNERASE <ENTER>

EMERGENCY REPAIR

If you can't access part of your hard drive or suspect damage, insert the EMERGENCY DISK, change to the floppy drive and type:

NDD <ENTER>

INSTALL REQUIREMENTS

Install requires at least 450K free conventional memory. If your normal configuration does not generate this amount, restart your computer loading only essential TSRs and device drivers.

INSTALLATION ON COMPRESSED VOLUMES

Before installing Norton Utilities on a compressed drive, run Norton Disk Doctor /COMPLETE on both the host (non-compressed) and compressed volumes. If C: is your compressed volume, insert the EMERGENCY DISK, change to the floppy drive and type:

NDD C: /C <ENTER>

STARTUP PROGRAM OPTIONS

During installation, Norton Utilities allows you to configure your system to automatically load or run certain programs every time you start your system.

PROBLEM INSTALLATION

If you have problems installing Norton Utilities, edit your AUTOEXEC.BAT and CONFIG.SYS files to temporarily remove non-essential TSRs and device drivers. If you are using MS-DOS 6.0, you can simply reboot and tap the F5 function key to bypass your startup files.

MANUAL INSTALLATION

Manual installation requires the use of PKUNZIP.EXE 2.00 or later, a shareware utility available on most bulletin board services. Below are step-by-step instructions for manual installation from your A: drive (replace A: with an alternate drive letter if necessary):

1. Check your drive for errors. Insert disk #2 (the EMERGENCY disk and type:
A:NDD C: /C <ENTER>
2. Create a directory for Norton Utilities:
MD C:\NU <ENTER>
3. Change into that directory
CD C:\NU <ENTER>
4. Copy all the files from the four diskettes:
COPY A:*. * <ENTER>
5. Place your diskette with PKUNZIP.EXE in drive A:. Use it to uncompress the zipped files as follows:
A:PKUNZIP *.*?! <ENTER>
6. Automatically configure the Norton Windows Utilities programs by entering:
NUCONFIG /\$PR <ENTER>
NUCONFIG /\$WI <ENTER>
NUCONFIG /\$WD <ENTER>
NUCONFIG /\$INSTALL <ENTER>
7. Customize Norton Utilities for your system. Run the configuration program and exit to DOS:
NUCONFIG <ENTER>
<PRESS> X
8. Create a rescue diskette by typing:
RESCUE <ENTER>

9. Remove the RESCUE diskette from drive A:.
10. Delete the *.* and install files from the C:\NU directory:
DEL *.* <ENTER>
DEL INSTALL*.* <ENTER>
11. Delete the files that help boot the emergency diskette:
DEL CONFIG.SYS <ENTER>
DEL STARTUP.EXE <ENTER>
DEL EMERGENCY.COM <ENTER>

GENERAL ADVICE

Reboot your computer after installing Norton Utilities. Doing so sets necessary environment variables correctly.

Take a few moments to peruse the READ.ME file. It contains detailed information not covered in your Users Guide.

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COMPATIBILITY

SUPPORTED COMPRESSION UTILITIES

Norton Utilities 8.0 fully supports compressed volumes created with Stacker 2.0, Stacker 3.0, Stacker 3.1, SuperStor 2.0x, SuperStor Pro 1.0x, DR-DOS 6 SuperStor, Novell DOS 7 Stacker, IBM DOS 6.1 SuperStor/DS, and MS-DOS 6.x DriveSpace (DoubleSpace). Do not attempt to run either Speed Disk or Norton Disk Doctor on volumes created with other disk compression utilities.

Norton Utilities 8.0 does not fully support Stacker 4.0, and will not attempt to test or optimize a Stacker 4.0 volume. With NDD, you can disable testing of the compression structures. This will allow testing and repair of the DOS disk structures on the Stacker 4.0 volume. Running the surface test on a Stacker 4.0 volume is not recommended. (As always, you should first test the host drive). Note also that NDD will be unable to repair a directory problem caused by a decompression error in the directory itself.

Norton Disk Doctor and Speed Disk identify compressed volumes specifically (i.e., DriveSpace, Stacker) in drive selection boxes. All other programs classify these volumes as Device Driven.

WINDOWS FOR WORKGROUPS 32-BIT FILE ACCESS

Windows for Workgroups 3.11 provides 32-bit File Access to increase performance on certain systems. This feature reads disk information directly, bypassing DOS. Norton Disk Doctor for Windows (NDDW) and Speed Disk for Windows (SDW) support 32-bit File Access. Testing and optimization of compressed drives is limited to the DOS structures. NDDW will bypass the compression structure test and SDW will optimize directories and the FAT only, without physically defragmenting the drive (pass 1 optimization only).

Note that 32-bit Disk Access is a separate feature that SDW and NDDW fully support.

NOVELL DOS 7

Norton Utilities 8.0 fully supports Novell DOS 7, its compression, and networking. If the peer-to-peer network feature is in use, the server's drive letter is not available in SDW, SD, NDD and NDDW. It is unwise to run any low-level Norton Utilities program on a Novell DOS 7 server.

Novell DOS 7 (NWDOS 7) deletes the command processor during install, but does not change the SHELL= line in CONFIG.SYS. If

you use NDOS, backup NDOS.COM and create a RESCUE disk before installing NWDOS 7.

SYSINFO and NDOS report NWDOS 7 as version 6. Novell DOS 7 masquerades as DOS 6.0 for compatibility.

WINDOWS 3.1

Norton Utilities 8.0 TSRs and device drivers are compatible with Windows 3.1 in both Standard and Enhanced mode. The Windows 3.1 SETUP program warning that certain Norton Utilities TSRs and device drivers are incompatible with Windows 3.1 relates to earlier Norton Utilities versions.

OS/2 2.x

OS/2 2.x is different from DOS and employs a distinct file system. Some Norton programs function normally in this operating environment; however, utilities that perform direct disk access are not compatible. These programs include Norton Disk Doctor, Calibrate, UnErase, Speed Disk, Norton Cache, Directory Sort, WipeInfo (file wiping works, but you cannot wipe disks), and NCD (Prune/Graft and Copy Tree don't function properly).

It is possible to UNERASE files deleted on OS/2 FAT (not HPFS) partitions. Shut down the machine and boot using DOS, either from a floppy disk or by using the dual boot option.

To detect network drives when running SYSINFO from within an OS/2 DOS box, be sure to set a preferred server. SYSINFO only reports detailed network information when executed from a mapped drive.

Norton Disk Doctor for Windows, Speed Disk for Windows, Syswatch, and the INI utilities do not run in OS/2.

PROGRAMS

CALIBRATE

In some instances, long delays occur when CALIBRATE encounters bad blocks. Certain controller BIOSes execute several retry cycles while attempting to read bad blocks. This delay is more pronounced on large drives with many sectors per track because CALIBRATE reads and saves each sector on the track before it attempts media repair. When CALIBRATE tries to repair the bad block, the BIOS again enters a retry cycle. Aborting CALIBRATE at this point may take several minutes because CALIBRATE waits for the BIOS to finish its retry cycle and then restores the data to disk before exiting.

DISKREET

When using DISKREET and compressed drive technology, be aware of these guidelines:

DriveSpace (DoubleSpace) and SuperStor/DS users:

1. NDISKS should reside only on the uncompressed host drive. If necessary, create more space for NDISKS on the host by shrinking your compressed volume.
2. DRVSPACE.SYS (DBLSPACE.SYS) must load before DISKREET.SYS in your CONFIG.SYS file as follows:
 DEVICE=C:\DOS\DRVSPACE.SYS /MOVE
 DEVICE=C:\NU\DISKREET.SYS

Stacker 3.1 users:

Run STACHIGH.SYS in the CONFIG.SYS file before the DISKREET driver as follows:
 DEVICE=C:\STACKER\STACHIGH.SYS
 DEVICE=C:\NU\DISKREET.SYS

When you create an NDISK on a Stacker or SuperStor compressed volume, Diskreet requires extra time to wipe the entire NDISK file. NDISKS do not compress, and this process confirms that your compressed volume has enough free space to accommodate your NDISK.

Use caution when mapping your network drives to ensure that you do not reassign Diskreet volume drive letters. Doing so renders your Diskreet volumes inaccessible.

If you run EMM386.EXE and use DOS=UMB to access upper memory blocks, DISKREET.SYS cannot automatically load itself into UMB regions. In this case, a DEVICEHIGH statement is the only way to load DISKREET into upper memory. If you use DEVICEHIGH, you must also specify the /SKIPHIGH switch. /SKIPHIGH prevents DISKREET from loading itself high and transfers full upper memory block control to EMM386.EXE. Your CONFIG.SYS file should be similar to this sample:

```
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE RAM
DOS=HIGH,UMB
DEVICEHIGH=C:\NU\DISKREET.SYS /SKIPHIGH
```

DISKREET automatically informs SmartDrive 4.x and higher that it should not cache NDISK drives. Do not override this safeguard by forcing SmartDrive to cache an NDISK or you may lose data.

DISKREET is incompatible with certain disk partitioning systems and some OEM versions of DOS, such as Zenith DOS 3.3 and Wyse DOS 3.21.

If you use an alternative partitioning software, such as Disk Manager or SpeedStor, DISKREET may not function properly. Test DISKREET on these partitions before storing valuable data on NDISKs.

If you use an alternate keyboard driver with DISKREET, specify "Prompt at First Access" with auto prompting NDISKs. Doing so allows the keyboard driver to load before you enter the password.

Drive letters reserved by DISKREET.SYS may generate the DOS "Drive not Ready" critical error message when certain programs poll all currently assigned drives, such as Central Point's Anti Virus. To avoid this problem, configure your NDISK to mount automatically at boot.

DISKEDIT

After launching DISKEDIT, you can abort the directory scan by pressing any key or clicking the mouse. Doing so saves time if you restrict your DISKEDIT activities to the system area or the current directory. However, if you want dynamic links through directories and to the FATs, you must allow DISKEDIT to complete the directory scan.

The DISKEDIT calculator handles positive integers with 32-bit precision up to approximately 4 billion and does not display an error when overflow occurs. Use this calculator for simple decimal, hexadecimal, and binary conversions and arithmetic.

Disk Edit's Advanced Recovery Mode (ARM) is a powerful tool that virtualizes, tests, and recommends settings to provide access to badly damaged disks. ARM's flexibility allows you to redefine a disk's physical settings and does not prevent you from saving improper information. Use caution before writing settings to disk because invalid settings can render disks inaccessible.

DISKTOOL

It is inappropriate to use DISKTOOL to mark clusters on compressed volumes. There should never be any physically bad clusters within a Stacker, SuperStor, or DriveSpace (DoubleSpace) Compressed Volume File (CVF). Repair all bad clusters on the host drive using Norton Disk Doctor.

DISKTOOL provides a new switch, /DEVICEDRIVEN, which gives "Revive a Defective Diskette" access to device driven floppy drives. Use /DEVICEDRIVEN only if your external floppy drive does not appear in the Revive a Defective Diskette drive list.

DUPDISK

DUPDISK does not validate TARGET floppy media. If you want to be certain that the TARGET media has no bad sectors, turn the DOS VERIFY command ON. Because VERIFY slows down many procedures, you may want to create a batch file to toggle VERIFY's status. For example:

```
DUP.BAT:
-----
VERIFY ON
DUPDISK
VERIFY OFF
```

FILE COMPARE

FILE COMPARE understands the following DDE execute command verbs:

Note that items in angle-brackets are placeholders for actual text values. Do not use the angle brackets. For example, [compare(c:\windows\win.ini,c:\save\win.ini)] tells File Compare to load the two versions of win.ini.

```
[compare(<left file name>,<right file name>)]
```

```
[captions(<left-panel-caption>,<right-panel-caption>,  
          <main-caption-file-name>)]
```

```
[current(0|1|2)]    //Used to enable "Undo Selected Changes" menu  
                    item and orient "newer" bitmap.
```

```
0 -- neither panel contains the current version of the file  
1 -- left panel contains the current version of the file  
2 -- right panel contains the current version of the file
```

```
[window(<ascii-decimal-window-handle>)] //Tells File Compare  
                                         which window to activate  
                                         when Return button is  
                                         pushed.
```

```
[top()]    //Tells File Compare to bring itself to the top.
```

FILEFIND

Use caution when using FILEFIND to search and replace text in documents that have special formatting codes, such as Word for Windows and most spreadsheet software. These applications contain position-sensitive codes. If the original text is longer or shorter than the replacement text, these codes become skewed and may render documents inaccessible to the original application.

The /BATCH command does not apply to FILEFIND's search and replace feature.

FILEFIX

Occasionally, smooth recovery of badly damaged Excel spreadsheets is not possible. If FILEFIX cannot repair one of your Excel spreadsheets, try the following technique:

1. Load Excel, create an empty spreadsheet, and save it as EMPTY.XLS.
2. Quit Excel and run FILEFIX.
3. Repair your damaged Excel spreadsheet using the "Recover cell data only" feature. Save this file as DATAONLY.XLS and exit FILEFIX.
4. From the DOS prompt type:

COPY /B EMPTY.XLS + DATAONLY.XLS NEWFIX.XLS <ENTER>
5. Launch FILEFIX and repair NEWFIX.XLS using the "Attempt recovery of all data" option. (Expect FILEFIX to discard a section of this file.)
6. Quit FILEFIX and run Excel.
7. Open FIXED.XLS. You may have to try several times.
8. When the spreadsheet appears on screen, IMMEDIATELY save it under a different name. Reload the file and continue with your work.

A badly damaged WordPerfect 6.0 (WP 6) file may not recover flawlessly, causing a GPF while you scroll through it. If you GPF after recovering a WP 6 file, restart your computer, launch WP 6, open the file again, and immediately save it in WordPerfect 5.1 format. You can then open the new WordPerfect 5.1 file and save it back into WP 6 format.

WP 6.0 has a file previewer located in the File/Open dialogue. If you have greater success seeing the recovered text in the view window than in the editing window, highlight all the text in the view window and press CTRL-C. Open a new document and press CTRL-V to paste the viewer's text.

INI Editor

Associations provide a handy way to launch specific applications by file type. Here are directions for configuring INI files to automatically run INI Editor:

Norton Desktop 3.0 Users

1. Open a drive window
2. Select File, Associate
3. In the extension box type: INI
4. In the application box type: C:\NU\INIEDITR.EXE

Program Manager Users

1. Run File Manager (winfile)
2. Select File, Associate
3. In the extension box type: INI
4. In the application box type: C:\NU\INIEDITR.EXE

INITRAKD

The DOS version of INI Tracker occasionally generates numeric error codes. Here is a listing of their definitions:

- 1000 "File Compare: insufficient memory"
- 1001 "File Compare: could not open file 1"
- 1002 "File Compare: could not open file 2"
- 1003 "File Compare: error reading a file"
- 1004 "File Compare: file has no data"
- 1006 "File Compare: processing canceled by callback"
- 1007 "File Compare: line too long, maybe binary file"
- 1008 "File Compare: file too big to process"
- 2001 "Sysmon: insufficient memory"
- 2002 "Sysmon: memory lock failed"
- 2003 "Sysmon: database create failed"
- 2004 "Sysmon: database find failed"
- 2005 "Sysmon: database update failed"
- 2006 "Sysmon: database add failed"
- 2007 "Sysmon: database read failed"
- 2008 "Sysmon: file open failed"
- 2009 "Sysmon: file read failed"
- 2010 "Sysmon: file write failed (out of space?)"
- 2011 "Sysmon: database delete failed"
- 2012 "Sysmon: file is binary (not an error)"
- 2013 "Sysmon: directory is tracked but cannot be restored"
- 2014 "Sysmon: file delete failed (read only?)"
- 2015 "Sysmon: file rename failed"
- 2016 "Insufficient disk space to take snapshot."
- 2017 "File is too big, snapshot not taken."
- 2018 "Cannot track INI Tracker's data files, snapshot not taken."

INI TUNER

You may receive the error "Help file does not exist" when you press F1 on a third-party applet, such as video card applets. Click OK to remove the error message and gain access to the help file.

NCD

To cancel directory scans, press the ESCAPE key.

NCACHE

For detailed information on NCACHE, please refer to the NCACHE.DOC file. This file can be printed by changing to your Norton Utilities subdirectory and entering:

COPY NCACHE.DOC PRN <ENTER>

If you use NCACHE with DR-DOS 6 and want to save your current NCACHE configuration, you must indicate the path of the NCACHE.INI file using the /INI switch. For example, if C:\NU is your Norton Utilities subdirectory, type the following from the command line:

NCACHE2 /SAVE /INI=C:\NU\NCACHE.INI <ENTER>

NORTON DISK DOCTOR (NDD)

Whenever NDD repairs a compressed volume, reboot and run NDD until no further problems are detected. Always perform the decompression test (surface test) on compressed volumes. Many errors on compressed volumes only appear during the decompression test.

NDD and the OEM utility that came with your compression software may report problems and fixes differently. NDD reports all errors it encounters and every repair it makes. The OEM utility may fix some problems silently.

NDD's drive selection list box may overestimate the size of some compressed volumes. Before diagnosing the drive, NDD calculates volume size based on the compression ratio. If you override the default 2:1 ratio and/or store a large amount of incompressible data (e.g., *.ZIP files), you may not fully achieve the compression ratio. In this case, less compression actually occurs and NDD'S list box shows a larger number than that which CHKDSK and DIR display. NDD's final report, produced after diagnosis, shows the volume's functional size.

If you have DOS 3.3 with a Disk Manager partition or a compressed volume larger than 32 MB, there are 1,024 bytes per sector rather than the standard 512 bytes per sector. Such volumes cannot be completely diagnosed by NDD.

NDD refuses to diagnose and repair hard disks when LANtastic drivers are resident in memory. If you have a LANtastic network and suspect that your hard drive needs repair, boot from your

RESCUE diskette or restart without loading these drivers before running NDD.

NDD does not support password protected SuperStor volumes because SuperStor alters certain bytes in the system area based on the password you assign to the volume. NDD interprets the resulting structure as a "badly damaged CVF."

Note that Norton Disk Doctor requires the NDD.MSG file to display your drive's status.

NORTON DISK DOCTOR FOR WINDOWS (NDDW)

If you receive an "Out of Memory" error message using NDDW, turn animations off, unload a few TSRs, or exit an application. NDDW needs at least 8K of free DOS memory to begin the diagnosis. The Windows Help About box may show that you have plenty of free memory, but it only displays the total memory available to Windows. Use SYSWATCH to determine the amount of free DOS memory. If this memory lies below 8K, unload an application or TSR before running NDDW again.

If NDDW reports that your Stacker volume "is seriously damaged", exit Windows and run the DOS version. If your volume is fine, restart Windows and use SYSWATCH to determine the amount of free DOS memory. Although NDDW requires only 8K of DOS memory, Stacker requires a small additional amount. If you receive this error and NDD DOS finds no problems, unload an application or TSR before running NDDW again.

NDIAGS

NDIAGS tests the individual components of your computer. To ensure proper diagnosis, each of your computer's sub-systems must adhere to certain standard specifications. One or several of your computer's components may not fully conform to these standards. These components may be functional, yet may fail when NDIAGS tests them against these specifications.

If NDIAGS freezes while starting up or performing the IRQ Status Test, reboot and run NDIAGS again. The Crash Recovery feature reports which component NDIAGS was testing when the machine locked up and asks you if you want to retest, skip, or permanently disable the test on the component.

If you own a 387 math coprocessor, you may need to use Crash Recovery to bypass its test. NDIAGS may freeze while testing the coprocessor during the IRQ Status Test on certain motherboards.

If your system locks up while testing with NDIAGS, restart your computer using your rescue diskette. If you freeze again, test the failing component in another system. For example, if your

computer locks up during the video test, place the video card on another motherboard using a different monitor. This technique helps isolate the problem.

If you consistently experience problems when exiting NDIAGS, launch it using the /NOSEARCH switch. If the /NOSEARCH option remedies your problem, isolate the responsible "search" feature by enabling the search tests (listed under the File-Options menu) one-by-one. If /NOSEARCH does not help, use /RESET to re-enable component identification.

Moving the mouse during the speaker test may produce a "static" sound as the system responds to the mouse interrupts. This side effect is not a problem.

On some systems, such as the TOSHIBA 4400SX, do not disable the internal cache before running NDIAGS normal speaker test. If you need to leave the cache disabled, use the Alternate Speaker Test available from NDIAGS File Options menu.

If you use a sound card attached to external speakers, NDIAGS may route the sound through your sound card instead of the internal speaker. Make sure that your external speakers are turned on before you run NDIAGS. If it is inconvenient, use the Alternate Speaker Test from the File Options menu.

Running a memory manager, such as QEMM or EMM386, can impair the performance of your serial and parallel ports. Specifically, you may see lower numbers on the Parallel Port Data Throughput test and your serial ports may fail the higher speed tests (57K, 115K). Restart your computer without your memory manager to accurately benchmark your serial and parallel port throughput.

Some keyboards, such as the Northgate keyboard, avoid accidental screen prints by requiring two Print Screen key presses before generating its scan code. On these keyboards, you must press the Print Screen key twice to pass the keyboard test.

When NDIAGS tests certain systems, the TURBO mode indicator light may change state. This change does not affect your computer's speed (MHz setting), it simply toggles your TURBO indicator light. To reset the TURBO indicator light, reboot your computer or consult your computer's reference manual.

If your system uses the Cyrix 486 SLC/DLC processor, NDIAGS may fail the Arithmetic section of the System Board/CPU Test. A known anomaly with this processor causes it to return an improper result from a particular integer instruction. Fortunately, the processor's failure should not cause any problems with applications.

If you use a network adapter attached to the parallel port, such as the Xircom adapter, do not enable "Search for Parallel Ports" in the File Options menu or you will lose your network connection.

If you own a PS/2 Model 50Z, you will not be able to perform NDIAGS comprehensive or extended memory tests. This model uses a non-standard method of switching into protected mode and is not supported.

Certain Logitech mouse drivers may cause NDIAGS to see a phantom joystick.

If you own an old PS/2 with a basic VGA card (not XGA or Super VGA), your screen may flicker erratically during the IRQ status test and the system may crash. Disable "Vertical Retrace" on the device list located in the File, Interrupt Configuration menu.

ProAudio Spectrum cards do not emulate the MPU-401 exactly. Therefore, although NDIAGS sees this MIDI device, the IRQ Status Test cannot generate its interrupt.

If a device driver or disk controller caches your hard disk, floppy drive, or CD-ROM, and NDIAGS cannot disable the cache, the IRQ Status Test identifies these devices as "Unknown."

Undocumented NDIAGS Switches

-
- /NODMA If your system locks up after the hard drive test, try using the /NODMA switch.

 - /4PAR If your system has four physical parallel ports and NDIAGS does not recognize them, using the /4PAR switch helps NDIAGS access the fourth parallel port.

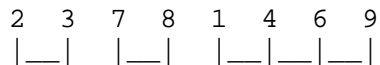
 - /OLDVIDEO If your system's BIOS predates 1987 and you are experiencing video display problems in NDIAGS, try using /OLDVIDEO.

NDIAGS Serial and Parallel Loopbacks

If you wish to make your own set of Serial and Parallel loopbacks, the pinouts are provided below. Loopbacks are also available from Symantec directly at (800) 441-7234.

WIRING LOGIC

9 Pin Serial - DB9S Connector (Female)



25 Pin Serial - DB25S Connector (Female)

```
2  3  4  5  6  8  20 22
|__|  |__|  |__|__|__|
```

25 Pin Parallel - DB25P Connector (Male)

```
2  15 3  13 4  12 5  10 6  11
|__|  |__|  |__|  |__|  |__|
```

NDOS

If your computer locks up when you log on to your network, load the NDOS environment into conventional rather than upper memory. To modify the NDOS environment memory location, use NUCONFIG or edit the NDOS.INI file to specify UMBEnvironment=No.

After installing NDOS, you may receive an error message from your memory manager. This anomaly occurs when NDOS loads itself into upper memory blocks that your memory manager later allocates to other software. To correct this situation, re-run your memory manager's optimizer. If you continue to experience difficulty after optimization, run NUCONFIG to ensure that neither the NDOS command processor nor the environment load into upper memory.

If you want bright background colors, yet end up with blinking foreground characters on a normal background, edit your NDOS.INI as follows:

```
BrightBG=YES    Adds bright background colors and removes
                  blinking characters.
```

After installing NDOS, some of your programs may not display blinking characters. If you prefer blinking characters to bright background colors, edit your NDOS.INI as follows:

```
BrightBG=NO     Adds blinking characters and removes bright
                  background colors.
```

The file NDOS.DOC contains the NDOS reference documentation. A companion file, APPNOTES.DOC, provides detailed compatibility information. To print NDOS.DOC and APPNOTES.DOC, enter:

```
COPY NDOS.DOC PRN <ENTER>
COPY APPNOTES.DOC PRN <ENTER>
```

To purchase a printed copy of the NDOS manual, call Customer Service at (800) 441-7234.

The NDOS Reference Manual lists incorrect date display formats for certain PROMPT command parameters. Use PROMPT \$D for word format ("Wed Oct 6, 1999") and PROMPT \$d for numeric format ("Wed 10/06/99").

NDOS AND NETWARE

The NDOS FREE command returns incorrect information on Novell NetWare volumes greater than 256 MB. Use the CHKVOL command instead.

The NDOS REN command does not rename directories on Novell NetWare servers. Use the RENDIR command instead.

NUCONFIG

If you lose your NUCONFIG settings, set the SYMANTEC and NU environment variables in your AUTOEXEC.BAT file and reboot your computer. Assuming that Norton Utilities resides on drive C:, make sure the \SYMANTEC and \NU directories exist and add the following lines to your AUTOEXEC.BAT:

```
SET SYMANTEC=C:\SYMANTEC
SET NU=C:\NU
```

Both NUCONFIG and INSTALL support MS-DOS 6.x and its MULTI CONFIG feature. NUCONFIG and INSTALL place Norton device drivers and TSRs in the [COMMON] area of your MULTI CONFIG file.

If you use Windows and select short names for the Norton Utilities programs, edit the group item icons to reflect this change. NUCONFIG can not automatically alter these files.

When you install the NDOS command processor, the original SHELL= statement is not REMed. If you try NDOS and decide to restore COMMAND.COM, remove NDOS using NUCONFIG. When you reboot, your original SHELL= statement becomes active.

RESCUE

When creating a rescue diskette, use the highest capacity diskette available to fit as many recovery utilities as possible.

Rescue does not format 360K floppies because they don't have enough space for the DOS system files, the rescue utility, and basic recovery information. If you only have 360K diskettes, copy RESCUE.EXE and the rescue information files onto one floppy and use SFORMAT A:/S on another. With both floppies, you can start your machine and recover vital system information in emergency situations.

If an essential device driver does not appear in RESCUE's "Disk Contents" list, use BROWSE to select it. BROWSE adds these items to the current RESCUE disk. You can configure RESCUE to automatically copy the driver by editing the RESCUE.INI file and adding it to the [INCLUDE] section.

If you use short names for the Norton Utilities programs (i.e., SD instead of SPEEDISK), you can edit the RESCUE.INI file and add these names to the [SETUP] section. RESCUE.INI is a text file.

If you load several large drivers and TSRs, your RESCUE diskette may not have enough free space to hold all these programs, your RESCUE data files, and the default set of Norton Utilities applications. If your RESCUE diskette fills up before copying all essential drivers and TSRs, deselect a Norton Utilities application.

Make sure your RESCUE disk has both Norton Disk Doctor (NDD) and the NDD Message File. NDD needs the message file in order to report your errors.

After creating your RESCUE disk, press CTRL-ALT-DEL to ensure that it restarts your computer in an practical configuration. If you want to add network drivers or upper memory managers, do so before a disaster ensues.

SFORMAT

If you use DriveSpace (DoubleSpace), Stacker 3.1, Novell DOS 7's Stacker, or SuperStor/DS and do not want to transfer the 50K DRVSPACE.BIN (DBLSPACE.BIN or STACKER.BIN) file onto bootable floppies, run SFORMAT with the /NODBL switch.

The /COM: switch formats bootable floppies with an alternative command processor. For example, to create an NDOS system diskette, enter the following:

```
SFORMAT A: /S /COM:C:\NU\NDOS.COM <ENTER>
```

If you run SuperStor and swap the boot drive, SFORMAT and RESCUE cannot find the system files.

SMARTCAN

When you upgrade from Norton Utilities 5.0, the \TRASHCAN subdirectory created by FILESAVE is obsolete and should be deleted from your drive. The \TRASHCAN directory is hidden. To remove it, type the following from the root directory:

```
SMARTCAN /OFF <ENTER>  
FA C:\TRASHCAN /dir /hid- <ENTER>  
DEL C:\TRASHCAN <ENTER>
```

```
RD C:\TRASHCAN <ENTER>
SMARTCAN /ON <ENTER>
```

If you accidentally ZAP a dBase file and SMARTCAN is on, use UNERASE to recover your data. dBase copies the header of the zapped file to a new file, then deletes the original file. With SMARTCAN on, UNERASE provides the most reliable method for file recovery.

Turn SMARTCAN off before you run AUTOCAD release 12. AUTOCAD 12 reports a damaged configuration file when SMARTCAN is in memory.

If you receive a sharing violation while running SMARTCAN, load SHARE before SMARTCAN in your AUTOEXEC.BAT file as follows:

```
C:\DOS\SHARE /L:200 /F:4096
C:\NU\SMARTCAN /ON
```

SPEEDISK

Back up your disk before running SPEEDISK for the first time. You should also run NDD /C before you optimize, especially on compressed volumes.

If you receive an "Out of Memory" message running SPEEDISK, try running SPEEDISK for Windows (SDW). If SDW also runs out of memory, try the following techniques:

1. If you have a directory with many files (including deleted entries), try running SPEEDISK with the /BIGDIR switch. SPEEDISK requires significantly more time to execute when using the /BIGDIR switch. However, you may need to use this switch only one time because SPEEDISK trims deleted file entries and directories when it optimizes. After using SPEEDISK /BIGDIR successfully, run SPEEDISK without the /BIGDIR switch. Running SPEEDISK frequently may help you avoid the need to use the /BIGDIR switch.
2. Boot with an optimal configuration to give SPEEDISK as much free memory as possible. For example:

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

```
AUTOEXEC.BAT:
-----
PROMPT $P$G
PATH C:\DOS\;C:\NU
```

```
SET NU=C:\NU
SET SYMANTEC=C:\SYMANTEC
```

3. If neither the /BIGDIR switch or the optimal configuration alone eliminate the "Out of Memory" error, use the two techniques together. Boot as shown in step 2 and use the /BIGDIR switch.

SPEEDISK performs two passes on compressed volumes. The first pass optimizes the FAT and the second optimizes the compression structures. These two areas are distinct, and SPEEDISK displays a unique layout for each. SPEEDISK must complete both passes to guarantee full defragmentation.

The fragmentation levels reported by SPEEDISK and your OEM defragmentation utility may differ because they use different algorithms to calculate fragmentation. Note that this calculation has been improved since NU 7 and provides a more accurate measure. Therefore, NU 7 fragmentation reports may also be different.

SPEEDISK FOR WINDOWS (SDW)

If SDW reports "error writing cluster" and NDD finds no error, exit Windows and run the DOS version of SPEEDISK. If you still have difficulty, delete some files from the drive.

SYSINFO

The CPU, hard disk, and overall benchmarks vary widely when run within a DOS box under Windows because Windows time-slices CPU activity.

When run with network drivers loaded, SYSINFO may find more parallel or serial ports than actually exist. For a more accurate report, run SYSINFO with the /IDPORT switch.

When using the /SPEC parameter for generating reports in SYSINFO, the SPEC file must reside in the directory indicated by the NU environment variable.

SYSWATCH

SYSWATCH's memory sensors may not match the amount reported by other third party vendors. SYSWATCH's "Windows Memory" sensor includes the amount used by DOS boxes and applications; other utilities often ignore memory used by DOS programs.

Make sure that you compare equivalently. 1 kilobyte (KB) equals 1,024 bytes. 1 megabyte (MB) equals 1,024 KB or 1,048,576 bytes. SYSWATCH offers the flexibility to display any sensor in MB, KB, or bytes. Other utilities may not have this versatility.

If the memory sensors seem inaccurate, use INI Editor to add "PageOverCommit=8" to the [386Enh] section of the SYSTEM.INI. This statement improves information given to SYSWATCH via the Windows Virtual Machine Manager (VMM).

Check to see whether your permanent swap exceeds the amount recommended by Windows. Swap files that surpass the recommendation translate into wasted disk space because Windows does not use it.

If you use Windows for Workgroups 3.11's 32-bit File Access and its cache, VCACHE, SYSWATCH may not provide you with a cache sensor. This sensor detects DOS caches such as SMARTDRV, NCACHE2, and SPEEDRV. If a DOS cache is installed with VCACHE, SYSWATCH displays only the DOS cache hit rate.

SYSWATCH has a "reset" command located in the control menu that sets the high and low history at their current values.

UNFORMAT

Exercise caution when using UNFORMAT on the host drive of a compressed volume. If your drive contains IMAGE or MIRROR information, UNFORMAT can restore your data without difficulty. However, if IMAGE or MIRROR information is not found, do not automatically search for and restore directories. Most compression utilities pack data but not directory entries. When performing automatic directory search in this situation, UNFORMAT finds and restores both the uncompressed directory entries (that actually belong to the compressed volume) and those located on the host drive. Since both sets of directories end up on one volume, this operation creates havoc. Keep your image files current by running IMAGE every time you boot. If IMAGE is not in your AUTOEXEC.BAT file, add it with NUCONFIG.

WIPEINFO

WIPEINFO handles subdirectories differently in Norton Utilities 8.0 than it did in version 6.0. WIPEINFO from Norton Utilities 6.0 removed subdirectory entries by default. If you choose to Include Subdirectories, WIPEINFO now leaves the directory structure intact, removing only the files.

GENERAL INFORMATION

STARTUP PROGRAMS DO NOT LOAD

If you run Windows or a menu program from your AUTOEXEC.BAT file, you may need to reposition the commands to run IMAGE, NDD, DISKMON, and SMARTCAN. You can use NUCONFIG or a text editor to reorder the lines in your AUTOEXEC.BAT as follows:

```
SMARTCAN /ON
DISKMON /LIGHT+
NDD C: /Q
IMAGE C:
WIN
```

SWAPPED STACKER VOLUMES

If you use Stacker version 2.0 or 3.0 and swap your drives (i.e., the compressed volume is C: and the host is D:), make sure to use the /SYNC switch on the SSWAP.COM driver. Below is a sample CONFIG.SYS:

```
DEVICE=C:\STACKER\STACKER.COM C:\STACVOL.DSK
DEVICE=C:\STACKER\SSWAP.COM C:\STACVOL.DSK /SYNC
```

DRIVE CHATTER

When a compression utility's driver (e.g., Drvspace, Stacker) is configured to automount floppies, the floppy drives "chatter" when accessed by some of the Norton Utilities programs. To eliminate the chatter, disable the automount feature of your driver. Doing so also frees up extra memory and quickens program execution.

- IBM DOS 6.1: Create an ADDSTOR.INI in the HOST DRIVE's root directory. Enter "NOAUTO" on its own line, save the file, and reboot.
- SuperStor: Add the /NOAUTO switch to the SSTORDRV.SYS device in your CONFIG.SYS file.
- MS-DOS 6.x: Run DRVSPACE (DBLSPACE), select Tools, Options, and uncheck "Enable automounting."
- Stacker 3.1 Edit the STACKER.INI file and remove the line referring to the floppy, i.e., A:STACVOL.DSK /RP

AUTOMOUNTING

SFORMAT and RESCUE provide support for automounted DriveSpace (DoubleSpace), Stacker, and SuperStor/DS compressed disks. When you enter SFORMAT or RESCUE, the program detects the compression and indicates "Compressed" in the Size field.

Because compressed volumes cannot be directly formatted, SFORMAT also lists the host drive letter, which you can format. If you format the host drive, the diskette returns to its original uncompressed size. (If you want the diskette to remain compressed, use the OEM format utility.)

RESCUE copies files to the compressed diskette without reformatting, however it cannot make the disk bootable. To create a bootable RESCUE diskette, select the host drive letter.

NOTE: If you swap the type of diskette (compressed vs. non-compressed) while running SFORMAT or RESCUE, you must exit and restart the utility to refresh the drive information.

USING NORTON UTILITIES WITH PCANYWHERE

When pcANYWHERE is active, Norton Utilities automatically uses standard display mode. However, if Norton Utilities is already running when a session is established, it remains in graphical display mode, which causes garbage on the remote computer's screen. If you use pcANYWHERE often, run NUCONFIG and set the video mode to standard, or create an NDOS alias that starts the Norton Utilities programs with the /GO switch.

USING NORTON UTILITIES WITH NORTON DESKTOP 3.0

Installing Norton Desktop 3.0 for Windows (NDW 3) after Norton Utilities 8.0 (NU 8) overwrites critical system files that are more up-to-date in NU 8. Because NU 8's files work properly for NDW 3, and restore the NU 8 system files SYMEVNT.386 and SYMEVNT1.DLL as follows:

```
COPY A:SYMEVNT*.* C:\WINDOWS\SYSTEM <ENTER>
```

NU 8's SDW and NDDW include backgrounding and many other enhancements to those found in NDW 3.0. To save one megabyte of disk space, delete NDW 3's SDW and NDDW files as follows:

```
CD C:\NDW <ENTER>
DEL SDW.* <ENTER>
DEL NDDW.* <ENTER>
DEL SDENGINE.DLL <ENTER>
```

Remove NDDW and SDW from your "Norton Desktop Applications" group by highlighting their icons and pressing DEL.

USING NORTON UTILITIES WITH NORTON ANTIVIRUS 3.0

Installing Norton AntiVirus 3.0 (NAV 3) after Norton Utilities 8.0 (NU 8) overwrites critical system files that are more up-to-date in NU 8. Because NU 8's files work properly for NAV 3, it is important to restore the NU 8 system files SYMEVNT.386 and SYMEVNT1.DLL as follows:

```
COPY A:SYMEVNT*.* C:\WINDOWS\SYSTEM <ENTER>
CD C:\NAV <ENTER>
DEL SYMEVNT*.* <ENTER>
```

BACKGROUNDING

Norton Disk Doctor for Windows (NDDW) and Speed Disk for Windows (SDW) provide "backgrounding" capability, which allows users to optimize and diagnose their drives while going about their daily work.

When running in the background, SDW and NDDW do not hinder your computer's performance because they become active only when the system is idle for a predetermined time. (You can adjust this timeout through the program's Customize features.)

Backgrounding pauses whenever you move your mouse or type on the keyboard. If you save a file to SDW's or NDDW's selected drive, the programs must restart because the file structure changed. If one of your applications saves temporary files to the disk (for example, word processors and screen savers), you may never complete the optimization process. To avoid this situation, turn off applications that automatically write to the disk and use permanent swap files whenever possible.

Do not run NDDW or SDW concurrently with another manufacturer's defragmentation or diagnostic utility. Doing so could cause data loss.

To avoid interrupting printer, modem, or FAX activity while running in the background, SDW and NDDW provide startup options in "Preferences" that configure these programs to watch for activity on COM1:, COM2:, LPT1:, and LPT2:. Be careful to only select ports that have a printer, FAX board, or modem attached. If you designate a port assigned to a mouse or network card, SDW and NDDW may never run.

MULTITASKING ENVIRONMENTS

In general, applications or commands that modify the File Allocation Table (FAT) can cause unpredictable results when run under multitasking environments.

Norton Utilities detects and disables use of the EMS page frame in the following multitasking environments run in Windows, DESQview, DOSSHELL from MS-DOS 5.0 or 6.x, PC-MOS, OS/2 2.x. For this reason, you may run out of memory when performing certain functions. In such situations, exit the environment and run the utility in DOS. In addition, please be aware of the following issues when running multitasking environments:

DISKEDIT: run in read-only mode.

DISKMON: disables protection when running Windows.

DISKREET: disables the Auto Open and Quick Close features under Windows. Use the DISKREET.EXE program to manually open and close NDISKs in Windows. Any NDISKs opened before starting Windows remain open and available.

SMARTCAN: As a general rule, turn SMARTCAN on before loading Windows.

NCC: affects only the active DOS window.

NCD: affects only the active DOS window.

IMAGE: Run before loading Windows or DESQview, not within DOS boxes.

QEMM AND STEALTH MODE

When QEMM Stealth Mode is active, some programs may experience errors when writing to the disk via the EMS Page Frame. To avoid this problem, Norton Utilities automatically disables its use of the EMS page frame whenever Stealth Mode is active. As a result, Norton Utilities loses the use of the 64K page frame. If you run into a low memory situation, you can access this additional memory without disabling Stealth. QEMM provides a switch that sets aside a disk buffer in conventional memory. Add the parameter "DBF=2" to your QEMM command line in the CONFIG.SYS file (see your QEMM manual for more information on this switch). Running any of the Norton Utilities followed by the switch "/FRAME" enables it to use the EMS Page Frame despite the presence of Stealth Mode.

THE DOS "FASTOPEN" PROGRAM

NCACHE is a more effective and safe way to optimize your computer's performance than FASTOPEN. FASTOPEN causes data loss in certain circumstances. Some computer vendors automatically install FASTOPEN when they configure machines. You may have FASTOPEN on your computer even if you didn't put it there. Use an editor to remove the line that reads "INSTALL=FASTOPEN" from your CONFIG.SYS file or "FASTOPEN" from AUTOEXEC.BAT.

VIDEO DISPLAY AND MOUSE PROBLEMS

Some EGA and VGA adapters produce small dots that trail mouse movement when you use the graphical (arrow-shaped) mouse cursor. If you experience this degradation, try using the standard mouse pointer. Quickly test whether bypassing the graphical mouse solves your problem by executing "NORTON /M0". If successful, reset the mouse in NUCONFIG. Run NUCONFIG, select "Video and Mouse Options," and deselect Graphical Mouse. If you continue to

have difficulty, try changing the display mode to either "Some Graphical Controls" or "Standard" through NUCONFIG.

LAPTOP COMPUTERS

To improve the viewing quality of an LCD laptop screen, try using the utilities with the /LCD switch. To permanently use these colors, run NUCONFIG, select "Video and Mouse Options," and set the Screen Colors to Greyscale.

Some monochrome laptop screens do not fully support remapping of graphical characters. Norton Utilities may not display the graphical mouse cursor or other graphic font enhancements on non-standard LCD displays. If you see unusual characters on your screen, use NUCONFIG to set the "Standard" display mode.

HARD DISKS WITH MORE THAN 1024 CYLINDERS

Norton Utilities Version 8.0 provides limited support for hard disks with more than 1024 cylinders. Accessing more than 1024 cylinders is usually managed through hard drive controller sector translation. However, Ontrack's Disk Manager or Storage Dimension's SpeedStor can create partitions past the 1024th cylinder without translation. If your drive is configured in this manner, the following limitations apply:

1. CALIBRATE does not run on partitions which span past the 1024th cylinder.
2. SFORMAT does not access or format these areas.

DRIVE NOT READY

If SPEEDISK or NDD report the error "Drive not ready, close the drive door" while analyzing your hard drive, it may indicate that your hardware can't keep pace with the large reads these programs perform. Call your vendor's technical support for more information.

DRIVE OR DEVICE NOT READY ERROR CYCLES

Many Norton Utilities programs poll your drives when launching or accessing low level information. If a device-driven drive bay is empty, the programs execute several retry cycles and post the message "Drive or Device Not Ready." You can avoid this cycle by keeping a disk in your CD-ROM, Bernoulli, and Syquest drives.

SPECIAL NETWORK NOTES

You can install Norton Utilities Version 8.0 on a network server. In order to use the utilities effectively in a networking environment, create a \SYMANTEC directory on local hard disks and

set two environment variables in each AUTOEXEC.BAT file as follows:

```
SET NU=C:\SYMANTEC
SET SYMANTEC=C:\SYMANTEC
```

OPTIMIZING PERFORMANCE

ALL PROGRAMS: The Norton Utilities use both conventional and virtual memory (Extended or Expanded memory). The more free conventional memory you have, the less Norton Utilities relies upon slower virtual memory. If your system has little free conventional memory, temporarily unload any non-essential TSRs and device drivers.

On a very large disk, or a disk with many files and directories, make sure that you have at least one or two megabytes of EMS/XMS memory free (use SYSINFO to find out how much memory is available). If a TSR, such as a disk cache or RAM drive, is consuming most of your extended memory, temporarily unload it or reduce its allocated memory. See the OPTIMIZING MEMORY section below for additional tips.

SPEEDISK: When SPEEDISK defragments a disk, it shuffles large amounts of data. If your disk is very full, SPEEDISK can only move data in small chunks and must relocate it frequently. Confirm that your disk has at least one or two free megabytes before you optimize so SPEEDISK can run as quickly as possible. On very large compressed drives, you might need even more free space due to the complex nature of these disks. Archive files that you don't use regularly.

OPTIMIZING MEMORY

If your system uses an advanced memory manager such as QEMM, 386Max, or MS-DOS 6.x EMM386, proper configuration can eliminate many problems.

Fortunately, these memory managers provide utilities that automatically optimize the memory manager's configuration. Use this optimization program to configure your memory manager for efficient and trouble-free use.

The optimizers for each of these memory managers are:

- QEMM - OPTIMIZE
- MS-DOS 6.x EMM386 - MEMMAKER
- 386Max - MAXIMIZE

Please refer to the memory managers' documentation for more information.

RUNNING THE UTILITIES FROM DISKETTE

If you want to run the Norton Utilities programs from diskette,
you may need to include the NLIB200.RTL file.

Programs that require the NLIB200.RTL:

calibrat.exe	diskedit.exe	diskmon.exe	diskreet.exe
disktool.exe	ds.exe	dupdisk.exe	filefind.exe
filefix.exe	initrakd.exe	ncc.exe	ncd.exe
ndoshelp.exe	norton.exe	rescue.exe	sformat.exe
smartcan.exe	sysinfo.exe	unerase.exe	unformat.exe

Note that Norton Disk Doctor requires the NDD.MSG file.