

Microsoft Windows FAQ

Frequently Asked Questions

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Note: *Revision dates for each section are shown next to the section names on each index page! To find updated sections for a particular date, click the Search button in WinHelp and enter "Updated:" to see the various update dates available.*

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Credits

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Windows 1.0

Microsoft first began development of the Interface Manager (subsequently renamed Microsoft Windows) in September 1981. Although the first prototypes used Multiplan and Word-like menus at the bottom of the screen, the interface was changed in 1982 to use pull-down menus and dialogs, as used on the Xerox Star.

Microsoft finally announced Windows in November 1983, with pressure from just-released VisiOn and impending TopView. This was after the release of the Apple Lisa (but prior to the Macintosh), and before Digital Research announced GEM, another competing graphical environment. Windows promised an easy-to-use graphical interface, device-independent graphics and multitasking support. The development was delayed several times, however, and the first version hit the store shelves (after 55 programmer-years of development!) in November 1985. The selection of applications was sparse, however, and Windows sales were modest,

The following were the major features of Windows 1.0:

- Graphical user interface with drop-down menus, tiled windows and mouse support
- Device-independent screen and printer graphics
- Co-operative multitasking of Windows applications

Windows 2.0

Windows 2.0, introduced in the fall of 1987, provided significant useability improvements to Windows. With the addition of icons and overlapping windows, Windows became a viable environment for development of major applications (such as Excel, Word for Windows, Corel Draw!, Ami, PageMaker and Micrografx Designer), and the sales were spurred by the runtime (Single Application Environment) versions supplied by the independent software vendors. When Windows/386 (see next section) was released, Microsoft renamed Windows to Windows/286 for consistency.

The following are the major changes from earlier versions of Windows:

- Overlapping windows
- PIF files for DOS applications

Windows/386

In late 1987 Microsoft released Windows/386. While it was functionally equivalent to its sibling, Windows/286, in running Windows applications, it provided the capability to run multiple DOS applications simultaneously in the extended memory.

The following are the major changes from earlier versions of Windows:

- Multiple DOS virtual machines with pre-emptive multitasking

Windows 3.0

Microsoft Windows 3.0, released in May, 1990, was a complete overhaul of the Windows environment. With the capability to address memory beyond 640K and a much more powerful user interface, independent software vendors started developing Windows applications with vigour. The powerful new applications helped Microsoft sell more than 10 million copies of Windows, making it the best-selling graphical user interface in the history of computing.

The following are the major changes from earlier versions of Windows:

- Standard (286) mode, with large memory support
- 386 Enhanced mode, with large memory and multiple pre-emptive DOS session support
- No runtime versions available
- Program Manager and File Manager added
- Network support
- Support for more than 16 colors
- API support for combo boxes, hierarchical menus and private .ini files

Windows 3.1

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Microsoft Windows 3.1, released in April, 1992 provides significant improvements to Windows 3.0. In its first two months on the market, it sold over 3 million copies, including upgrades from Windows 3.0.

The following are the major changes from Windows 3.0:

- No Real (8086) mode support
- TrueType scalable font support
- Multimedia capability
- Object Linking and Embedding (OLE)
- Application reboot capability
- "Mouse Trails" for easier mouse use with LCD display devices
- Better inter-application protection and better error diagnostics
- API multimedia and networking support
- Source-level API compatibility with Windows NT

Windows for Workgroups 3.1**92-11-09**

The Windows for Workgroup package is the first integrated Windows and networking package offered by Microsoft. It provides peer-to-peer file and printer sharing capabilities (on a level comparable to LANtastic or Netware Lite) highly integrated into the Windows environment. The simple-to-use-and-install networking allows the user to specify which files on the user's machine should be made accessible to others. The files can then be accessed from other machines running either Windows or DOS.

Windows for Workgroups also includes two additional applications: Microsoft Mail, a network mail package, and Schedule+, a workgroup scheduler.

Windows NT 3.1

Microsoft Windows NT, scheduled for release at the end of 1992, is Microsoft's platform of choice for high-end systems. It is intended for use in network servers, workstations and software development machines; it will *not* replace Windows for DOS. While Windows NT's user interface is very similar to that of Windows 3.1, it is based on an entirely new operating system kernel.

The following are the major changes from Windows 3.1:

- Based on a new microkernel design
- Portable architecture for Intel x86, MIPS R4000 and DEC Alpha processors
- 32-bit addressing for access to up to 4 GB of memory
- Fully protected applications with virtualized hardware access
- Installable APIs for Win32, Win16, MS-DOS, POSIX and OS/2
- Installable file systems, including FAT, HPFS and NTFS
- Built-in networking (LAN Manager and TCP/IP) with remote procedure calls (RPCs)
- Symmetric multiprocessor support
- Security designed in from start, to be initially C2 certified, with a B-level kernel design
- API support for unsynchronized message queues, advanced interprocess communication, registration databases, Bezier curves and graphics transformations.

Although Windows NT has not yet been released, the following is generally accepted as the minimum platform for use with the retail release of Windows NT:

- 33 MHz 386 processor
- 8 MB memory
- 100 MB hard disk
- VGA graphics

As of July 1992, Windows NT is available as a pre-release SDK (Software Development Kit) from Microsoft at the cost of \$69 (or \$399 for the pre-release SDK plus full printed documentation). This release is supplied on CD-ROM only, and contains the Windows NT operating system as well as all the necessary 32-bit development tools (including a 32-bit C++ compiler and all documentation online on the CD-ROM). The purchasers of this SDK will also receive free updates to Windows NT up to and including final release.

The pre-release Windows NT SDK requires 12 MB of RAM and is **not** suitable for evaluating the Windows NT environment. It is intended strictly for software development! Contact your national Microsoft subsidiary (or Microsoft itself in Redmond, WA) for ordering information.

Win32s for Windows 3.1**92-11-09**

Win32s is a set of libraries for Windows 3.1, which enable users to run most Windows NT 32-bit applications on Windows 3.1, without the extensive hardware requirements of Windows NT. The Win32s interface will likely replace the older Windows-32 interface used by current 32-bit Windows applications such as Mathematica.

The Win32s development tools are currently in beta release, but Microsoft has not announced minimum system requirements for using Win32s applications.

Windows for Pen Computing 3.1

Microsoft developed Windows for Pen Computing for use on pen-based systems. In most aspects, it is basically equivalent to Windows 3.1 with extensions for pen support. These extensions include the use of a pen as a pointing device as well as handwriting recognition and conversion. Pen Windows first shipped in April, 1992.

Multimedia Windows

The term Multimedia Windows describes a package with Windows 3.0 and the Multimedia Extensions. These extensions are included in Windows 3.1, and thus Multimedia Windows is no longer sold as a separate product.

Modular Windows

Modular Windows is the operating system for Tandy Corp.'s Video Information System (VIS) multimedia player.

WinOS2

WinOS2 is the Windows component of IBM's OS/2 2.0. It is based partially on Windows 3.0 and partially on 3.1. While it runs a majority of the commercial Windows applications, it is not covered by this document.

Internet and Usenet

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Usenet

If you received this FAQ from somewhere other than Usenet or Internet, you may not be familiar with Usenet. Basically, Usenet is a loose collection of over 100,000 computers which exchange mail and news. The network is unstructured and highly distributed; most communication is either by TCP/IP over high-speed connections, or UUCP over public telephone lines. Internet is a (almost proper) subset of Usenet, consisting of somewhere between 50,000 and 100,000 computers connected by high-speed TCP/IP network connections.

Usenet *news* is a software system where a person can post an article to a selected newsgroup, and have every other news reader be able to read it. There are over 1000 newsgroups (including the *alt* groups), and daily volume of news is approaching 40 MB.

While most Usenet systems are Unix-based, it is not a requirement. If you have an Internet or UUCP connection, ask your system administrator whether you have Usenet news available. Some of the most common newsreading software packages are *readnews*, *rn*, *trn*, *nn* and *notes*.

Usenet Windows newsgroups

There are a total of eight Usenet newsgroups dealing with Microsoft Windows:

- **comp.os.ms-windows.advocacy**
This group is intended for adversarial discussions, arguments and comparisons to other computers and operating systems.
- **comp.os.ms-windows.announce**
This is a low-volume moderated group with only Windows-related announcements and with no discussion. Moderated by Todd Derr (*infidel@pitt.edu*).
- **comp.os.ms-windows.apps**
This group contains discussions, questions, and comments about the selection and use of Windows applications.
- **comp.os.ms-windows.setup**
This group is meant for questions and discussions about Windows setup process, driver availability and selection, and hardware compatibility and selection.
- **comp.os.ms-windows.misc**
All other discussions about Windows should be in this group.
- **comp.os.ms-windows.programmer.tools**
This group is intended for discussions about the selection and use of tools for Windows software development.
- **comp.os.ms-windows.programmer.win32**
All discussions about the Win32 applications programming interface (used in Windows NT and Win32s) and the Windows NT SDK belong in this group..
- **comp.os.ms-windows.programmer.misc**
This group is for all other discussions about Windows software development.

The following groups have been replaced by those shown above:

- **comp.windows.ms**
This group was for discussions about Microsoft Windows.
- **comp.windows.ms.programmer**
This group was for discussions about programming for Microsoft Windows.

The following groups may also be of interest:

- **comp.os.msdos.programmer**
This groups contains general MS-DOS programming questions. Some, especially those concerning compiler selection, may be of interest to Windows programmers.
- **bit.listserv.win3-l**
This group is a two-way gateway of the BITNET WIN3-L mailing list.

The following groups are **not** for Microsoft Windows!

- **comp.windows.misc**
This group is for miscellaneous discussions about windowing systems in general.
- **comp.windows.news**
This group is for dicussions about the Sun Microsystems NeWS windowing system.

In general, these newsgroups are only available to computers connected to Usenet or Internet; they are not gatewayed into BITNET, CompuServe, Prodigy or other services. Some FidoNet BBS systems, however, do carry selected Usenet newsgroups.

Alternatives to Usenet

If you are unable to find a connection to the *Internet* (that procedure can not be easily defined, as the *Internet* does not have any sort of a formal structure), there are several alternatives available for finding more information about Windows, and for locating Windows software and drivers.

BITNET users (as well as any other with an electronic mail connection to Internet) can subscribe to **WIN3-L** (*win3-l@uicvm.bitnet*), a mailing list dedicated to Windows discussions. This mailing list is similar in content to the **comp.os.ms-windows.misc** newsgroup; no programmer mailing list exists on *BITNET*.

If you live in North America (or in one of selected Western European countries), you can subscribe to *CompuServe*, a commercial service. *CompuServe* has extensive Windows-oriented discussions and a fairly good selection of free software. Although the level of discussion is often less technical, it is much more structured than the *Internet*. *CompuServe* also has numerous vendor-supported forums, including ones organized by Microsoft for Windows and Windows NT.

Many *FidoNet*-based BBS systems also carry the *Internet* Windows newsgroups. Consult a local BBS listing to find your nearest *FidoNet* BBS.

Freeware and shareware by ftp

While CompuServe (which has a lot of software) and your local BBS may have large selections, the Internet provides an immense resource for all PC users. The key program to access this software is called ftp (File Transfer Protocol), and it's useable from most Internet system, but is not usable through UUCP links.

If you do have ftp available to you, follow the example below to connect to ftp.cica.indiana.edu (do not type in the // comments):

```
$ ftp ftp.cica.indiana.edu           // make connection
Connected to ...                     // cica responds
Userid (user@cica): ftp              // enter "ftp" as userid
Password: real_userid@site           // enter your own userid
ftp> tenex                            // for binary transfers
ftp> cd /pub/pc/win3                  // where the goodies are
ftp> ls -l                             // list the directory
ftp> get ls-ltR                        // get the current index
ftp> quit                             // we're done!
$ _
```

Of course, you can get multiple files at a time read the ftp manual page for more information.

Remember that **shareware is not free**: register the software you use to encourage the development of more low-cost software.

Popular Internet ftp sites

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The following ftp sites provide significant amounts of software of interest to Windows users:

- **ftp.cica.indiana.edu (129.79.20.84)**
Directory */pub/pc/win3* contains one of the largest selections of Windows software and device drivers anywhere. Mirrored by *wuarchive*. *Please do not access ftp.cica.indiana.edu between 8am and 6pm EST to prevent overloading the system.*
- **simtel10.army.mil (26.2.0.74)**
Directories */msdos1*, */msdos2* and */msdos3* contains a very large selection of MS-DOS (and some Windows) software. Mirrored by *wuarchive*.
- **wuarchive.wustl.edu (128.242.135.4)**
Directory */mirrors/win3* contains a copy of the *cica* Windows archives, and directory */mirrors/msdos* contains a copy of the *simtel10* MS-DOS archive.
- **ftp.uu.net (137.39.1.9)**
Directory */vendors/microsoft* contains a lot of the Microsoft developer support materials available on CompuServe, including tech notes, sample sources and WinHelp documentation for SDKs.
- **garbo.uwasa.fi (128.214.12.3)**
Directories */win3* and */win31* contain a majority of the *cica* Windows archives, and a fair amount of non-*cica* material. *Note that garbo.uwasa.fi is located in Finland, and North American users should avoid congesting transatlantic Internet links by ftping from this site.* Mirrored by *wuarchive*.

If your ftp program complains about an unknown site, you can substitute the numeric Internet address (shown after each site name above) for the name in the ftp command.

Using *archie*

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If you know the program you're looking for, but don't know where to find it, you might try using a utility called *archie*. This program allows you to search for a filename in all the available ftp sites.

There are numerous *archie* servers available; to use one of them, *telnet* to the system, and sign on as *archie*. Follow instructions to search for a file. The following lists some of the know *archie* servers currently available for use; pick one in your geographical area:

- *archie.rutgers.edu* United States (Northeast)
- *archie.sura.net* United States (Southeast)
- *archie.unl.edu* United States (West)

- *archie.mcgill.ca* Canada
- *archie.au* Australia and New Zealand
- *archie.funet.fi* Europe
- *archie.doc.ic.ac.uk* United Kingdom

Ftp by email

There are several sites that will perform general FTP retrievals for you in response to a similar mail query, although it appears that the *info-server@cs.net* server is permanently out of order.

In general, please be considerate, and don't over-use these services. If people start using them to retrieve megabytes and megabytes of GIF or WAV files, they will probably disappear. Also, keep in mind that your system may be linked to the net using a long-distance UUCP connection, and your sysadmin may not be happy about large mail files using up modem time and filling overloaded spool directories.

- **bitftp@pucc.bitnet**

For information on this one (available only to BITNET sites) send it the message:

```
help
```

- **ftpmail@decwrl.dec.com**

For information on this server, available to all Internet sites, send it a mail message with a body containing simply:

```
help
```

- **mailserv@garbo.uwasa.fi**

One final choice is to use the *garbo.uwasa.fi* server, which lets you access the *garbo.uwasa.fi* archive (which contains most of the *cica* files). For instructions, send it a mail message with "*Subject: garbo-request*" and a single line of text "send help" to

```
send help
```

Please do not use this service if you are located in North America!

More about Internet and Usenet**92-09-25**

To learn more about Internet and Usenet, I strongly recommend you purchase or borrow a copy of Ed Krol's *The Whole Internet User's Guide and Catalog* (ISBN 1-56592-025-2, \$24.95), which covers email, news, ftp, archie and much more. This 400-page handbook is a thorough guide to getting around on the Net, clear enough for neophytes but with new information even for true Internet veterans.

To purchase *The Whole Internet User's Guide and Catalog*, check your local bookstore or contact the publisher, O'Reilly and Associates at 1-800-998-9938 (103 Morris St., Sebastopol, CA 95472).

FTP archives on CD-ROM

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Walnut Creek offers copies of the *cica*, *wuarchive* and *simtel* FTP archives on CD-ROM, at prices ranging from \$25 to \$50, with annual subscriptions available. Call (800) 786-9907 or (510) 947-5996 for more information.

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System Configuration

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Minimum Windows 3.1 configurations

The *minimum* system configurations to run Windows 3.1 are as follows:

- **Standard Mode**
286 processor, 640KB base memory, 256KB extended memory, EGA graphics
- **386 Enhanced Mode**
386 processor, 640KB base memory, 1MB extended memory, EGA graphics

The following are *recommended* minimum configurations (based on the experiences of many net Windows users) for good performance.

- **Standard Mode**
286/12 processor, 2MB total memory, VGA graphics, mouse
- **386 Enhanced Mode**
386SX/16 processor, 4MB total memory, VGA graphics, mouse

Minimum Windows 3.0 configurations

The *minimum* system configurations to run Windows 3.0 are as follows:

- **Real Mode**
8088 processor, 640KB base memory, CGA/Hercules graphics
- **Standard Mode**
286 processor, 640KB base memory, 256KB extended memory, CGA/Hercules graphics
- **386 Enhanced Mode**
386 processor, 640KB base memory, 1MB extended memory, CGA/Hercules graphics

The following are *recommended* minimum configurations (based on the experiences of many net Windows users) for good performance. (Real Mode is not configurable for good performance, and many applications will not run in it due to a lack of memory.)

- **Standard Mode**
286/12 processor, 2MB total memory, VGA graphics, mouse
- **386 Enhanced Mode**
386SX/16 processor, 4MB total memory, VGA graphics, mouse

Minimum Windows NT pre-release configuration

The *minimum recommended* system configurations to run the Windows NT pre-release Software Development Kit is as follows:

- 33 MHz 386 processor
- 12 MB memory
- 100 MB hard disk
- VGA graphics

Standard mode vs. 386 Enhanced mode

If you own a 386- or 486-based system, you have the choice of running in either Standard or Enhanced mode. The following lists the advantages of each:

Standard mode

- Speed. Many aspects of Windows run substantially faster in Standard mode than in 386 Enhanced mode.

386 Enhanced mode

- Virtual memory capability.
- Multiple DOS sessions are pre-emptively multitasked.
- DOS sessions may be run in a window.
- Able to run 386-specific applications such as Mathematica, FrameMaker and wdeb386.

System BIOS compatability

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A number of different computers have BIOS incompatibilities with Windows 3.1. The following list contains BIOSes with such problems. Contact your manufacturer for an update if you have one of these systems.

Manufacturer	Version	Problem
ALR	MPS	Incompatible with Seagate IDE disks
AMI	1987	Floppy access causes reboot
AMI	1989	Intermittent crashes
AMI	1991	Serial port problems
AST	Premium/286	Crashes, keyboard lockups and network errors
Award BIOS	- 3.04	Floppy read errors before version 3.05
DTK BIOS	- 34	No IDE drive support
DTK BIOS	36	Setup utilities must be disabled
Peak BIOS	1.10	1.30 or newer is required
Phoenix BIOS	- 1987	1988 or newer is required
Quadtel BIOS	- 3.04	3.05 or newer is required
Tandon	All	Old BIOSes cause keyboard failures
Toshiba	T3100/20	BIOS 4.2 is required
Toshiba	T3100e	BIOS 1.7 is required
Wyse	All	Setup detects 101 keyboard as 84
Zenith	286	Keyboard problems
Zenith	386/16	BIOS 2.6E or newer is required
Zenith	TurboSport	BIOS 2.4D or newer is required

The BIOS name and version number (or date) are usually displayed when the system boots. As an alternative, you can use **msd.exe**, a DOS-based diagnostic utility included with Windows 3.1, to determine the BIOS your system is using. Also, there are several diagnostic utilities available in *wuarchive's* /mirrors/msdos/info directory: **sysch233**, **sysid602** and **ifp1p155**.

Video drivers

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Identifying Your Video Card

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The first step in finding the correct Windows drivers for your video card is to determine the type of card you have. First, you may have a "brand-name" card; if so, your box and/or documentation will identify the type of card. Second, you can look at the BIOS message (if any) displayed when you boot your system. Third, you can open up your system, and look for identification on the card itself usually either printed on the card itself or on some of the integrated circuits.

As an alternative, you can use **msd.exe**, a DOS-based diagnostic utility included with Windows 3.1, to determine the manufacturer and type of video card in your system. Also, two utilities available from *wuarchive*, **atmem10** and **vgautils** (in directory */mirrors/msdos/vga*) may help you identify your video card.

See the following section on locating a video card driver for a listing of possible names to look for.

Locating a driver

Once you have identified your card, you are ready to begin searching for the right driver. First, check whether Windows includes the driver you are searching for (Windows 3.1 includes generic VGA (640x480x16) and SuperVGA (800x600x16) drivers, as well as numerous specific drivers). Second, look at the diskettes you received in the video card package. These may contain the appropriate driver, saving you from a further search.

If neither Windows nor the diskettes have the drivers, or they are out of date, you may wish to check *ftp.cica.indiana.edu* for the latest one. If there are none at *cica*, you can try one of the following:

- Contact your dealer
- Call the video card manufacturer
- Download the latest driver from the manufacturer's BBS
- Download the latest driver from the Microsoft BBS (206-936-6735)

Note that Windows 3.1 drivers are normally dated after the release date of Windows 3.1 itself (April 6, 1992).

Video card manufacturers

The following is a partial list of video display hardware vendors who support using Windows with their products. *CAUTION:* The numbers listed may not, by the time you read this, be up to date!

Ahead Systems		510-623-0961
Appian Technology		206-649-5363
ATI Technologies		416-756-4591
Boca Research		407-241-1601
Diamond Computer		408-730-1100
Everex Systems		510-226-9694
Focus Information		510-657-9451
Headland Technology	Video Seven	510-656-0503
Matrox Electronic		514-685-6008
Micro-Labs		312-648-6008
Micron Technology		208-368-2130
National Design		512-343-5054
NEC	NEC	512-832-1962
Nth Graphics	Nth Graphics	512-832-1962
Number Nine Computer	Number Nine	617-862-7502
Orchid Technology	Orchid	510-683-0327
Panacea	WinSpeed	603-432-5193
Sigma Designs	Sigma	510-770-0111
STB Systems	STB	214-437-9615
Tecmar	Tecmar	216-349-0853
Trident Microsystems	Trident	415-691-1016
ViewSonic	ViewSonic	213-944-2195

The following vendors do not provide BBS access, but do make updates available on *CompuServe*, in the forum indicated.

Tseng Laboratories	ET3000, ET4000	WINADV
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Using 256 (or more) colors in Windows

In order to use more than 16 colors in Windows, your display card and its driver must first support 256 colors. Second, your application must know about 256 colors in order to take advantage of this feature, as this requires palette switching and some additional programming. Many applications currently on the market only support 16 colors.

In order to get 256 colors, your video card will need at least 320K (for 640x480), 512K (for 800x600) or 768K (for 1024x768) of RAM. For most video cards, 256-color drivers are also much slower than 16-color drivers. Some video cards support 15-bit (32,768 colors) or 24-bit (16,777,216 colors) video; these can also be used in Windows given the appropriate display driver and sufficient video memory.

Panacea Winspeed

One alternative to the specific manufacturer-supplied drivers is to use Panacea's Winspeed drivers. These drivers often provide a substantial speed improvement over vendor-supplied drivers, although some vendors have highly optimized drivers which can meet or exceed Winspeed's performance.

CGA drivers**92-09-19**

Windows 3.1 does not include CGA drivers, as the recommended minimum for running Windows 3.1 is EGA. If you need to run Windows on a CGA system, you can download the CGA drivers from the Microsoft BBS (206-936-6735).

Printer drivers

The following is a partial list of printer manufacturers who support using Windows with their products.

CAUTION: The numbers listed may not, by the time you read this, be up to date!

Canon	Canon	516-488-6528
Lexmark	IBM laser printers	606-232-5653
NEC	NEC	508-635-6328
Okidata	Okidata	800-654-3282
Panasonic	Panasonic, Roland	201-863-7487

The following vendors do not provide BBS access, but do make updates available on *CompuServe*, in the forum indicated.

DEC	DEC	DECPCI
Varityper	Varityper	Desktop Publishing

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Selecting a PostScript printer driver**92-10-31**

If your PostScript printer model is not listed in the available printers listing, you should not choose the generic PostScript printer. Microsoft advises that "if you select PostScript Printer, you may encounter problems when printing". Instead, you may wish to try Apple LaserWriter as your first possibility.

Eliminating the Ctrl-D in PostScript output**92-10-31**

To prevent Windows from placing a Ctrl-D (printer reset) at the beginning of your PostScript output files, specify

```
CtrlD=0
```

in the *[ModelName,Port]* section of your win.ini file.

Note that this method does not appear to work with the generic PostScript Printer driver.

Math coprocessors and WIN87EM.DLL

Windows 3.x itself does not take advantage of a math coprocessor. Windows applications, on the other hand, may or may not, depending on the application: for example, Excel will, while Word for Windows won't. In general, an 80x87 chip gives the greatest speedup for trigonometric/log type of calculations, and does not significantly improve graphics speed in most cases.

The WIN87EM.DLL is a dynamic link library which provides floating-point emulation for Windows applications. Any application which is capable of using an 80x87 will need this library on a machine without an 80x87.

Multimedia

AdLib cards and .wav files

92-09-14

SoundBlaster Pro and Windows 3.1

Using the PC's built-in speaker

92-09-14

AdLib cards and .wav files**92-09-14**

The standard AdLib driver supplied with Windows 3.1 is a MIDI-only driver and is not capable of playing .wav files. You can add this capability, however, by installing the driver contained in *adlibw.zip*, available at *ftp.cica.indiana.edu* and other sites.

SoundBlaster Pro and Windows 3.1

One of the most common symptoms of SoundBlaster Pro problems in Windows 3.1 is a complete hang of the system on exit from Windows. You need to use the SoundBlaster Pro drivers, *not* the SoundBlaster 1.5 drivers included with Windows 3.1. The drivers shipped with SB Pro are currently out of date, as are those on Microsoft's BBS and on CompuServe (this may, however, have changed by the time you read this). In any case, *ftp.cica.indiana.edu* has the set of updated drivers available as *sounds/sbpw31.zip*. You can also get them from Creative Labs' BBS at (408) 428-6660.

Using the PC's built-in speaker**92-09-14**

Windows 3.1 does not contain a driver for playing sounds over the PC's built-in speaker, as the speaker is not quite standardized and not all machines would work as intended. If you would like to try, however, you should get a copy of the speaker driver, contained in the self-extracting archive *speaker.exe*, available at Microsoft's BBS, <ftp.cica.indiana.edu> and other sites.

System Resources

Free system resources are things such as window handles and global memory block handles (*handle* is a Windows programming term, but it is basically an identifier for a window or any other global item. Each window (dialog, icon, memory block, or whatever) requires a handle.

Windows 3.0 has a limit of 64K of resources (32,768 handles), and Windows 3.1 has a limit of 128K of resources (65,536 handles). Windows NT does not have a global resource limit.

You can't increase system resources by just adding more memory; the only real solution is to close some applications if you are running low. Windows 3.0 Program Manager was a resource hog, but the 3.1 version is much better.

Some poorly-written applications will also not release all the resources they have grabbed when they exit. You can check for this by checking the Free System Resources figure, starting up the application, working in it for some time, and then exiting. If the Free System Resources figure is not the same as before you started, your application is not properly freeing its resources and it's time for you to call the vendor and complain!

Communications

Networks

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Using COM3 and COM4

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Using a high-performance 16550 serial port

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DOS boxes and 16550 serial ports

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SmartDrive and 16550 high-speed transfers

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Networks

92-09-15

The following networks have either been tested by Microsoft, or reported by Usenet users to be functional with Windows 3.x:

Network	earliest version	
3Com 3 Plus	1.0	
3Com 3+Open	1.0	
Banyan Vines	4.0	
BW NFS	??	
DEC PathWorks	4.0	
IBM PC LAN	1.1	<i>[except server]</i>
LAN Manager	1.0	
LAN Server	1.0	
LANtastic	4.0	
Novell Netware	2.15	<i>[shell & utilities must be version 3.01]</i>
Sun PC-NFS	3.5	<i>[must use interrupt 3 instead of 5]</i>
Wollongong NFS	2.0	<i>[includes Windows telnet application]</i>

Using COM3 and COM4

92-11-09

This is generally a problem only in 386 enhanced mode. To use these ports, you will need to tell Windows where they are located.

For Windows 3.1, you should run the MSD.EXE utility while outside Windows. This utility will allow you to determine your COM port configuration. After running MSD, use the Control Panel's Ports utility to tell Windows how your ports are configured.

For Windows 3.0, the instructions for doing this can be found in the Windows readme file **sysini2.txt**, which should be located in your Windows directory. In summary, what you need to do is tell Windows what memory addresses and interrupts (IRQs) your COM3 and COM4 ports use. This should work, but is not guaranteed to: COM3 and COM4 are not standardized, and this is one of the most difficult things to get working with Windows. If possible, move your devices to COM1 or COM2.

If the port still does not work after specifying the correct IRQ and memory address for the port, there is another possible solution: Assuming the ports work OK from plain DOS, try setting up COM3.OS2 (or COM4.OS2) instead of the usual COM3 or COM4. The Windows 3.0 manual says this is just for OS/2 machines, but it seems to work for many clones.

Also note that due to interrupt conflicts, machines without an EISA or Microchannel bus are generally not able to use both COM1 and COM3, or COM2 and COM4 simultaneously.

Finally, some video accelerator cards, such as the ATI Vantage and Ultra series, and the S3 89C911-based cards, use the address normally assigned to COM4, preventing you from using this port number.

Using a high-performance 16550 serial port

92-09-15

You can use a 16550-based serial card, or upgrade your serial card to use a 16550 chip instead of an 8250 or 16450 (get the 16550AFN if you're buying a chip only) to improve Windows serial communication performance. This is most noticeable at 9600+ baud rates using advanced protocols such as Zmodem.

If you use a Windows-base communications package, the 16550 is automatically enabled. You can disable it, however, by setting

```
COMxFIFO=off
```

in the *[386Enh]* section of your **system.ini** file, where x is your serial port number (1 to 4).

DOS boxes and 16550 serial ports

92-09-28

For DOS-based applications, the use of the 16550 serial port chip (and its built-in FIFO buffers) is not enabled by default. What you need to do is set

```
COMxBuff=off
```

in the *[386Enh]* section of your **system.ini** file, where *x* is your serial port number (1 to 4). This will disable Windows' buffering of that serial port, and allow the DOS app to access it directly. This is **not** recommended for use with Windows-based communication packages!

Another alternative is to use *chcomb.386* (replace the *device=*combuff* line in the **system.ini** file with *device=chcomb.386*), a shareware device driver which allows you to use a 16550 for both Windows and DOS applications.

SmartDrive and 16550 high-speed transfers**92-09-27**

If you use **SmartDrive** with Windows 3.1, disk writes are cached by default. While this is generally a good idea, this causes a problem with high-speed downloads, since **SmartDrive** turns off all interrupts when it is performing the delayed disk write. Since the interrupts are turned off, you may lose a packet whenever the disk light goes on!

The easiest workaround is to disable write caching for your download drive.

Disk drives and virtual memory

Virtual memory and swapfiles

92-09-19

Maximum swapfile size

92-09-28

Windows 3.x and Stacker

92-11-09

SCSI controllers

Windows 3.x and large hard disks

Virtual memory and swapfiles**92-09-19**

The type of swapfile you select for running in 386 Enhanced mode can have a significant impact on your performance within Windows.

If you have 12 MB or more of memory, you should likely disable swapping completely; this provides substantially better performance than either permanent or temporary swapfiles. You may also be able to do this with 8 MB, depending on the size of your disk cache and the number of applications (especially DOS applications) you run simultaneously.

If you determine that you do need a swapfile, you should usually use a permanent one. Permanent swapfiles allow Windows to start up much faster than temporary ones, which must be recreated every time you start Windows. Permanent swapfiles, however, require contiguous (unfragmented) disk space; you may need to compress your disk, using a tool such as Norton SpeedDisk or PC Tools first.

Maximum swapfile size

92-09-28

Windows 3.1 determines your virtual memory limit by rounding the amount of RAM on your system to the nearest 4 MB, multiplying by 4, and then subtracting the amount of the system RAM from the total. This is then the maximum amount of virtual memory (swapfile size) you can use, provided you have sufficient unfragmented hard disk space (see previous section).

The multiplier of 4 is a default that can be changed by using a

```
PageOverCommit=
```

setting in the *[386Enh]* section of the **system.ini** file. The multiplier can be from 1 to 20.

Windows 3.x and Stacker

92-11-09

Stacker 2.0 works well with Windows 3.0 and 3.1. You should, however, follow the guidelines below for using Stacker with Windows:

- Never place a permanent swapfile on a stacked disk.
- Never place a temporary swapfile on a stacked disk.
- Never use SmartDrive to cache the stacked volume
- Do use SmartDrive to cache the unstacked volume containing the stacked volume
- Place SmartDrive before Stacker in your **autoexec.bat**

To enhance your memory usage, you may wish to stack your RAMdrive to provide additional room for temporary files (such as the Print Manager's spool files).

Note: Beware that although Stacker will assume that it can compress your data to provide 2x the physical storage capacity, it cannot guarantee that, and placing your temporary files on a stacked drive (whether a disk drive or a RAMdrive) may cause the stacked drive to run out of room unexpectedly if the compression ratio does not reach 2x (you may wish to read up on this in your Stacker documentation). If this happens, Windows will experience a catastrophic disk error and I think we can all agree that that's not a pleasant experience!

SCSI controllers

If you have a bus-mastering SCSI adapter such as the Adaptec 1542, you should be installing the **aspi4dos.sys** ASPI driver (provided with your controller, or available from Adaptec's BBS at (408) 945-7727) as the first device in your **config.sys**. Using the ASPI driver drops the requirement for SmartDrive described below.

Normally, in 386 enhanced mode, Windows 3.x supports only ST-506, ESDI and IDE disk controllers. If you have a SCSI controller, you need to load SmartDrive in order to allow Windows to recognize your hard disk and with Windows 3.1, you should use the /double_buffer option. Do not disable double buffering in a bus-mastering SCSI drive unless you're using the ASPI driver described above.

As a third alternative, you may insert the following line in your **system.ini** file, in the *[386enh]* section:

```
VirtualHDIRQ=off
```

Finally, some people report having problems with permanent swapfiles on SCSI drives using Windows 3.0.

Windows 3.x and large hard disks

In rare cases, there are problems with using Windows 3.0 on large hard disks. Your system may be at risk **if**:

- You are using third-party partitioning software, such as:
 - Disk Manager (dmdrv.bin)
 - InnerSpace (edvr.sys)
 - SpeedStor (sstor.sys or hardrive.sys)
 - Vfeatures Deluxe (fixt_drv.sys)
- **and** you are using SmartDrive (smartdrv.sys) as your disk cache
- **and** your hard disk has more than 1023 cylinders

If your hard disk has fewer than 1024 cylinders, you may still be at risk if the first two conditions hold true, you are using DOS 3.30 or later, **and** your hard disk is not supported by your BIOS. To avoid problems, you can either stop using SmartDrive, or reformat your disk using the DOS FDISK utility.

There are no problems with large partitions created by the FDISK program included with MS-DOS 4.0 and some versions of MS-DOS 3.3.

If you are still having problems, call Microsoft Technical Support at (206) 454-2030.

Troubleshooting

One essential tool for troubleshooting Windows 3.x problems is Microsoft's *Windows Resource Toolkit*. This combination of a comprehensive reference and some utility tools is priced at around \$30, and can't be beat for value. If you are responsible for keeping a number of Windows systems running, run, don't walk, to the nearest phone and order it now!

The toolkit is also freely available in Word for Windows format from [ftp.cica.indiana.edu](ftp:cica.indiana.edu) (and its mirror sites); while this version is complete, it is large, and will take significant time to ftp and download (not to mention print!).

[BMP wallpaper won't display correctly](#)

[Frequent GPFs \(General Protection Faults\)](#)

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BMP wallpaper won't display correctly

Some of the possible reasons are:

- Your **.bmp** file is corrupted. Try reading it into Paintbrush to verify that it is readable.
- You are trying to display a bitmap with more colors than your video driver supports for example, 256 colors with a 16-color driver, or 16M colors with a 256-color driver).
- You have insufficient memory to display the bitmap. A 800x600x16 bitmap requires 256K of memory; 1024x768x256 would require 768K!

For 256-to-16 color dithering, you may try using a utility such as PaintShop Pro.

Frequent GPFs (General Protection Faults)

If you are experiencing frequent Windows 3.1 crashes, try starting Windows with the command

```
win /d:xsv
```

If the GPFs do not appear, add the line

```
VirtualHDIRQ=off
```

to the *[386Enh]* section of your **system.ini** file. If the GPFs continue, try

```
win /d:xs
```

If the GPFs do not appear, add the line

```
SystemROMBreakPoint=false
```

to the *[386Enh]* section of your **system.ini** file. If the GPFs continue, try

```
win /d:x
```

If the GPFs do not appear, add the line

```
EMMExclude=A000-EFFF
```

to the *[386Enh]* section of your **system.ini** file. While this will get Windows running more reliably, you should probably try to narrow down the range of memory that actually has to be excluded.

File Manager won't format floppies

If you are having trouble formatting floppies from File Manager, try adding one or more

```
DEVICE=DRIVER.SYS /D:# /F:#
```

lines to your **config.sys**; see your DOS manual for details.

Invalid system version; reinstall the 386 enhanced version fo Windows

If you get the above message when starting a DOS session, you are likely using a display driver written for Windows 3.0. Updating it to a 3.1 compatible version should make the problem disappear.

Mouse hangs when using communications software

This problem is usually caused by a mouse and a modem being on the same serial port pair (either COM1/COM3, or COM2/COM4). Each pair shares a common interrupt due to restrictions of the original IBM PC architecture, and so can not be used simultaneously.

If you are experiencing this problem, you should move either your modem or mouse a different serial port.

Parity errors with Windows 3.1

92-09-19

Parity errors are real, and detected reliably by Windows 3.1 (Windows 3.0 ignored them for the most part). Unfortunately most memory test programs do not properly test 32-bit memory accesses, and thus do not detect all possible memory problems. Environments such as Windows 3.1, Windows NT, Unix, Xenix and OS/2 2.0, however, do exercise this aspect and, as a result, report memory problems where the memory testers don't catch them.

Below are some of the possible causes for parity errors, in approximate order of likelihood:

- Defective memory module
- 80ns memory where 70ns is required
- Two different speeds of memory modules
- DMA or memory conflicts
- Outdated BIOS
- Defective DMA on the CPU chip

If you're willing to play with fire and gasoline (if, for example, you have 8-bit memory with no parity bit), you can disable parity checking by removing or commenting out the following line in the *[386Enh]* section of your **system.ini** file:

```
device=*parity
```

Note that this will disable your parity checking completely and may cause unexpected crashes or errors if your memory has parity errors!

Performance deterioration in a 386 Enhanced mode DOS session

The most likely cause of this type of a problem is slow memory. If your onboard memory is accessed with basically no wait states, but you have a slower memory expansion card, your machine will run slower whenever it is using those higher memory addresses. This will generally happen when you start a DOS session, and often result in 30-50% performance reductions using various benchmarks. The performance is actually also reduced within Windows, but it's difficult to notice this due to the lack of a suitable benchmark. The proper cure for this problem is to either upgrade your memory expansion card, or to correct whatever problem is causing your machine to access extended memory with such poor problem.

DOS application performance is also degraded by using a *.PIF* file (such as the default *.PIF*) with the **Monitor Ports** option enabled, but to a much smaller degree. With **Monitor Ports** disabled, DOS session performance should be within 5-10% of the performance under bare DOS.

Problems creating a permanent swapfile in Windows 3.0

First of all, you must be running in real mode to be able to create a permanent swapfile. Second, You must not have any SUBSTed drives or Windows won't create the swapfile. Once the swapfile has been created, you can re-SUBST your drives (although the use of SUBST is not recommended in general). You also can't create a permanent swapfile on a drive partitioned with third-party software such as SpeedStor.

If you are installing on a Novell client, you must first disable the *receive network messages* feature (using the network icon in the Control Panel) and reboot. Once you have installed the swapfile, turn messages back on again.

Using a slow expansion memory board with Windows**92-11-11**

If some of your memory is on a slower memory expansion board (such as a standard ISA bus memory board, operating at 8 MHz in a 33 MHz system, you may experience serious performance deterioration as soon as Windows starts using the slower memory on the expansion board. (For example, see section *Performance deterioration in a 386 Enhanced mode DOS session.*)

Unfortunately Windows 3.1 does not allow you to specify memory ranges to be used for a RAMdisk or disk cache, and thus you can't control which memory gets used first. In this case, the best solution is to use QEMM-386, which allows you to do just that. Place your RAMdisk and disk cache in the slow memory (they will not suffer a significant performance drop), and leave the fast memory on the motherboard available for Windows' use.

Windows 3.0 refuses to run without a file called WINA20.386

Quoting from the MS-DOS 5.0 **readme.txt** file:

4.3 WINA20.386 File

Setup installs a read-only file named WINA20.386 in your root directory. If you move the WINA20.386 file to a different directory, do the following:

- Add a SWITCHES=/W command to your CONFIG.SYS file.
- Add a DEVICE=[drive:][path]WINA20.386 command to the *[386Enh]* section of your Windows **system.ini** file.

Windows 3.1 does not require this file to be present.

Windows 3.1 hangs or crashes during startup

Try starting Windows with the command line

```
win /b
```

If it repeats the same crash or hang, take a look at the file **bootlog.txt** in your Windows directory. It will have two lines such as

```
LoadStart = SYSTEM.DRV
```

and

```
LoadSuccess = SYSTEM.DRV
```

for every driver successfully loaded; the culprit driver will show a line such as

```
LoadFail = WIN3-64S.DRV Failure code is 05
```

If it's a standard Windows driver, try reloading it from diskettes; otherwise, for a third-party driver, try to locate an updated driver either from *cica*, your supplier or direct from the manufacturer.

Windows 3.1 hangs or waits a long time on exit

Windows 3.1 tries to reset the mouse driver on exit, and some IBM PS/2 models have great difficulty with this procedure, timing out only after an extended wait. In order to avoid the problem, add the line

```
InitPS2MouseAtExit=False
```

to the *[386Enh]* section of your **system.ini** file.

Windows 3.1 Resource Kit installation

The most common WRK installation problem is an excessively long path. If you have problems, try reducing the length of your path for the installation, and you should be OK.

Windows 3.x waits a long time on startup

One possible reason is the use of a serial mouse on COM2 instead of COM1. If you have a serial mouse, Windows will first attempt to find it (with great persistence) on COM1, before it looks on COM2. If your mouse is on COM2, move it to COM1.

Using a temporary swapfile instead of a permanent one for 386 enhanced mode also slows down the startup process, but not to even nearly the same extent as the serial mouse problem.

With Windows 3.0, it has also been reported that adding too many fonts through the Control Panel will drastically slow down the startup, and with both Windows 3.0 and 3.1, a very large number of ATM fonts will also slow down the startup process.

Windows and DOS

Configuring DOS sessions

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Troubleshooting DOS applications

DOS shells and extenders

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Configuring DOS sessions

DOS in a window

Lotus 1-2-3 in Windows

Reducing the amount of "jerkiness" in DOS window updating

Extended memory in DOS sessions

Changing the font size for a DOS window

Changing the number of lines in a DOS window

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Mouse in a DOS window

TSRs in DOS sessions

VGA graphics in a windowed DOS session

DOS in a window

You can run a both the standard DOS command interpreter (*command.com*) and other DOS applications from within Windows. In Real mode, you are limited to a single session. In Standard mode, you can have multiple sessions, but they must still run full-screen. In 386 Enhanced mode, you can have multiple sessions, and they can run in a window.

You can control the starting up in a window vs. full-screen by setting up a *.pif* file for the program (*command.com* or any other DOS program). You can also switch the state by pressing Alt-Enter.

Lotus 1-2-3 in Windows

Lotus 1-2-3, versions 1.x, 2.x and 3.1 run in all modes, but do not support any of the features of the Windows environment. For all intents and purposes, version 3.0 doesn't run under Windows.

If you want to use a spreadsheet in the Windows environment, however, you will be best off buying a real Windows spreadsheet such as Excel, WingZ, CA-Compete! or 1-2-3 for Windows.

Reducing the amount of "jerkiness" in DOS window updating

Windows 3.1 updates the DOS windows by default every 50 ms. To increase the update frequency, specify another update interval (such as 20 ms) by adding a line to the *[386Enh]* section of **system.ini**:

```
WindowUpdateTime=20
```

A smaller interval will provide smoother updates but impose a higher load on the system.

Extended memory in DOS sessions

After you run Windows, a utility such as Norton SI will often report that you don't have any extended memory. This is not a bug, but rather a result of the Windows memory management system.. Windows requires applications to access extended memory using one of two mechanisms, known as "XMS" and "DPMI". These mechanism are implemented in **himem.sys** and **emm386.exe**. If you have *device=himem.sys* in your **config.sys**, the first XMS call (by Windows or SmartDrive, for example) will transfer control of the extended memory to **himem.sys**, and thus make it inaccessible to non-XMS/non-DPMI applications.

Changing the font size for a DOS window

All video drivers updated for Windows 3.1 allow on-the-fly font changes; to get the same functionality using older 3.0 drivers (in Windows 3.1), add the line

```
FontChangeEnable=1
```

to the *[NonWindowsApp]* section of the **system.ini** file. If you experience strange cursor behaviour or missing characters, remove the line from **system.ini**.

There are also alternate Windows 3.0 DOS fonts available at [ftp.cica.indiana.edu](ftp:cica.indiana.edu).

Changing the number of lines in a DOS window

92-11-15

To use more than 25 lines in a DOS window, add the line

```
ScreenLines=50
```

to the *[NonWindowsApp]* section of the **system.ini** file.

If your screen doesn't quite fit 50 lines in a DOS window with a decent font, you may want to follow this procedure:

- Use a VGA font editor (such as VFONT) to create a DOS VGA screen font with more than 25 lines.
- Start up a DOS session (in a window)
- In that window, change the font (and thus screen size) to your new font/size. Voila!

Mouse in a DOS window

In Windows 3.0, if you are running a DOS application in a window, Windows will retain control of the mouse for cutting and pasting. You can use a mouse in a full-screen DOS session if you install a mouse driver by running `mouse.com` (either before starting Windows, or inside the DOS session), or by including

```
device=mouse.sys
```

in your **config.sys** file. If you're running WordPerfect 5.1 inside Windows, WordPerfect must be *started* full-screen in order to detect the mouse. Once it has started, you can use *Alt-Enter* to run in a window, if you wish.

In Windows 3.1, the mouse will automatically work in a DOS window if you have a video driver which has been updated for 3.1. Old 3.0 drivers do work, but they do not by default provide mouse functionality inside DOS windows, although you can force them to do so by adding the line

```
MouseinDosBox=1
```

to the *[NonWindowsApp]* section of the **system.ini** file.

If you have a Microsoft mouse, you should use the mouse driver version 8.20, included on the Windows 3.1 disks, named **mouse.co_** and **mouse.sy_**. Expand these files using *expand.exe* (also included on the disks) before using them.

TSRs in DOS sessions

Some TSR (Terminate and Stay Resident) programs will not work if you install them before running Windows. Some of them will not work if you install them inside a DOS session. Generally the best idea is to avoid TSRs completely unless you absolutely have to have them.

See also the description of **winstart.bat** in the Windows ***.txt** files.

VGA graphics in a windowed DOS session

Windows 3.1 will support VGA graphics in a windows DOS session *if* you have the correct display driver. True Windows 3.1 display drivers (such as the standard SuperVGA driver) will do this, but some partial implementations may not.

Troubleshooting DOS applications

Out of Environment Space

Protected-mode software

Corrupted diskettes when copying files in a DOS session

Out of Environment Space

When Windows starts up a DOS session, it by default gives it an environment of 224 bytes, or the space required to hold your current environment, whichever is larger. If you need more space, there are two methods of circumventing this. In order of desirability:

- **Use a .pif file for each DOS application you run.**

In this you can specify the environment size by using the `/e:nnn` option (see your DOS manual). You will need a separate `.pif` file for each program (although in Windows 3.1 you can create a `_default.pif`, which is used by all DOS applications which do not have their own `.pif` files). You can just create a `command.pif` with a suitable `/e:nnn`, and then specify in the **win.ini** a line such as

```
[Extensions]
bat=command.pif ^.bat           // for DOS users
ksh=sh.exe ^.ksh                // for MKS users
```

With this, you can create batch file icons freely, and still get the options specified in `command.pif` or `sh.pif`.

- **Use a dummy variable**

By specifying a dummy variable (such as `DUMMY1=xxxxx...`) before starting Windows, you can reserve some space in the environment. Then, as the first thing in each `command.com` session, do

```
set DUMMY1=
```

to reclaim the space used by DUMMY1 for use by other environment variables.

Protected-mode software

Many protected-mode applications currently on the market use an extended-memory interface called VCPI (Virtual Control Program Interface), which is incompatible with Windows' DPMI (DOS Protected Mode Interface). Microsoft went against an established standard in choosing DPMI, but there are valid technical reasons why VCPI was not chosen for Windows.

At this point, you have three choices:

- **Run your protected-mode software under DOS**
This means that you must NOT use Windows or SmartDrive before running your VCPI software, and may require you to have two different *config.sys* files.
- **Plead with your software developer**
Call up the software vendor and ask them whether they are developing either a Windows-based version, or, at the minimum, one which uses DPMI instead of VCPI. They should already be working on it anyway, given the momentum that Windows 3.x has.
- **Buy QEMM/386 or 386Max**
Both of these packages provide VCPI. You'll be able to run your protected-mode software as well as Windows 3.0 and 3.1.

Corrupted diskettes when copying files in a DOS session

If you are getting corrupted diskettes with a **0xff** as every other byte when copying files to a floppy within a DOS session, the most likely cause is an expansion board using the same memory area also used by Windows for EMM. You should check that you *EMMExclude* all areas used by your cards.

The Video-7 1024 SVGA board needs a more radical measure: you need to change a jumper to do all ROM decoding in **c000 - c7ff**, and change a DIP switch to force 8-bit ROM access.

DOS shells and extenders

QEMM/386 and DesqView/386

MKS Toolkit: setting up

MKS Toolkit: maximizing DOS session memory

MS-SH

92-10-05

QEMM/386 and DesqView/386

You can use versions 5.0 of QEMM/386 and below with real-mode Windows 3.0 only. However, QEMM/386, versions 5.1 and higher, provides XMS services for Windows, thus allowing Windows to run in all modes under QEMM/386, plus providing compatibility with VCPI applications.

Windows will run in Standard (Windows 3.0 and 3.1) and Real (3.0 only) modes as a DesqView/386 task.

MKS Toolkit: setting up

There are two possible problems with running Windows from the MKS Toolkit. First, with versions up to and including 3.1c of the Toolkit, the use of *login.exe* precludes the use of Windows 3.0 in any but the real mode. To avoid this, have your machine boot directly into the Korn shell or *command.com* (you may use *init.exe* if you wish).

Second, somebody at Microsoft had a brain fade, and Windows gets confused if it is started with a forward slash path. Thus, if you simply type "win" in Korn shell, the shell invokes Windows with something like

```
c:/usr/windows/win.com
```

and Windows doesn't know where to find itself! To cure this, specify a shell alias for Windows: I use

```
alias -x win='c:\\usr\\windows\\win.com'
```

Note that the double backslashes are necessary for the Korn shell, even inside the single quotes.

The newer versions of MKS Toolkit allow (standard and 386 enhanced mode) Windows to run directly from the *login:* prompt; but they still won't let you run standard/386 enhanced Windows from the shell (if you used *login*). An updated version of *init.exe* is available from MKS for users of older versions of the MKS Toolkit.

MKS Toolkit: maximizing DOS session memory

92-10-05

If you run MKS Toolkit by starting up *init.exe* from **config.sys**, and then starting the shell from **/etc/inittab**, you will likely find that there isn't much memory available in the DOS (shell) sessions you start from inside Windows.

One way to address this is to start up Windows immediately upon booting, avoiding loading the shell into the valuable DOS low memory. There are at least two ways of doing this cleanly:

As the last line in your **profile.ksh**, add the command

```
exec c:\\windows\\win.com
```

(or whatever the path is to your Windows directory). Using the `exec` command retains the environment you have set up in your **profile.ksh** and **environ.ksh** files, but overlays the shell memory with Windows, avoiding memory loss.

Since the startup script executes Windows at the end, make sure that you so *not* run `sh -L` from Windows, as this would attempt to restart Windows.

Given that *command.com* uses much less memory than the shell, you can specify (as the last line in **/etc/inittab**, instead of starting up the shell) the following:

```
ms;35;respawn;c:/dos/command.com /c c:\etc\init.bat
```

Then, in **/etc/init.bat**, specify all your essential environment variables, and as the last line start up Windows. This method wastest a few kilobytes of low memory compared to hte first one, but allows you run `sh -L` without risk.

MS-SH

The basic problem is the MS-SH *swap* setting. In Real mode, you will need to use *swap disk*. In Standard mode, you can also use *swap extend*, but you will have to specify at least 200K of XMS memory in the MS-SH *.pif* file. Alternatively, if you are using Standard or 386 Enhanced mode, you can use *swap ems*, but again you will need to specify at least 200K of EMS memory in your *.pif* file. A bug in the current (as of this writing) version of MS-SH prevents *swap extend* from working in 386 enhanced mode; MS-SH will always crash with a panic error.

With Windows 3.1, *swap xms* works as intended, and is the appropriate setting.

Windows Tips, Tricks and Secrets

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Changing or bypassing the startup logo

To bypass the logo, you can start Windows with the command line such as

```
win :
```

Be warned, however, that some people have had problems with this. Also, skipping the startup logo does *not* speed up the Windows startup process.

To change the logo to something else, you need to first create a *.RLE* file (using a graphics utility package), with no more than 16 colours, *and* not exceeding the VGA 640x480 screen resolution, *and* no more than 64K in size. Once you have this file, say *mylogo.rle*, enter the following command in your system subdirectory:

```
copy win.cnf/B+vgalogo.lgo/B+mylogo.rle/B win.com
```

If you use CGA or EGA, limit the *.RLE* file to the appropriate resolution, and replace the *vgalogo* above with *cgalogo* or *egalogo*.

Automatically opening applications on startup, with predefined window positions

You can load applications automatically in two ways:

- By adding them to the *Startup* group in Windows 3.1 Program Manager. To run start them as icons, check the **Run iconized** checkbox in the **File » Properties** dialog for the program.
- By specifying them on the *load=* or *run=* line in **win.ini**. This will load the specified applications, respectively, either with their default window sizes, or as icons.

If you need specific window sizes or positions, you will need to use another utility, either shareware package (such as *Layout*, *Command Post* or *Aporia*) or a commercial one (such as *Batchworks*, *Bridge* or *NewWave*).

Changing the font used for the icon labels

92-09-19

To use 10-point Arial (substitute your own favorite below), add the following two lines to your *[Desktop]* section of your **win.ini** file:

```
Icontitlefacename=Arial  
Icontitlesize=10
```

A shareware Control Panel utility, *More Control* also gives you control over the icon fonts.

Limiting the size of the temporary swap file

In Windows 3.1, you can add a line such as

```
MinUserDiskSpace=4096
```

to the *[386Enh]* section of the **system.ini** file to limit the temporary swap file's size. The above line doesn't actually set the size of the swap file, but rather limits its growth to always retain at least 4096 KB (4 MB) of available disk space for your and your applications' own use.

Making Windows 3.x act like 2.x runtime

The Windows 2.x runtime version would start Windows from the DOS prompt, and exit back to DOS when you exit the application.

You can do this as follows (the example is for Excel; others are similar):

- Create a new directory called **c:\excel** (it doesn't have to be distinct; it could be your normal Excel directory, as long as it's not the main Windows 3.x directory).
- Copy the following to the new directory from the Windows directory:
 - win.com**
 - win.ini**
 - system.ini**
- In the new directory modify the *[boot]* section of **system.ini** by changing the shell= line to point to the one and only program you want to run. The original line should read:
`shell=progman.exe`
and the modified line should be something like:
`shell=c:\excel\excel.exe.`
Remember to type the complete fileid of the program to be executed, including the .exe suffix.
- To execute the dedicated Windows session just put the new directory ahead of the normal Windows directory in your path and issue the 'win' command, or start Windows with the command 'c:\excel\win'. What we're doing here is making Windows think it's running on a network where the actual executable files etc. are on a network server, and only the basic control files (and win.com) are on the user's local disk.

Note that this technique isolates any changes in **win.ini** and **system.ini** made in the dedicated task from any changes made in normal Windows; this may or may not be desirable. If you need to keep the two flavors of Windows in sync you'll have to provide an outboard copy function to refresh the files.

Swapping the Ctrl and CapsLock Keys

You need to use a different keyboard driver. A good one comes with the distribution of Kermit for Windows, available either from *cica* or from the official Kermit archive at watsun.cc.columbia.edu.

Program Manager

<u>Saving Program Manager settings without exiting Windows</u>	
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Saving Program Manager settings without exiting Windows

In Windows 3.0, the trick is to try to select **File » Exit** with a DOS session active; Windows will save the settings, and then refuse to exit.

In Windows 3.1, you can press **Alt+Shift+F4** at any time (while you are in Program Manager) to save the settings.

Starting Windows without activating the applications in the Startup group

You can do this by holding down the Shift key when the Windows startup screen appears, and then releasing it once Program Manager is active.

Starting an application in a different directory

To start up a Windows application in a default directory other than the Windows directory (or application executable directory), you have a number of choices:

- In Windows 3.1, set the *Working Directory* under File Properties for the application.
- Create a auto-execute macro for that application, which will change your directory upon startup.
- Specify your application's path in Program Manager as something such as *d:\u\persona\letters\winword.exe*. As long as the application is on your path, it will be started as usual, but with the default directory being the one you specified in Program Manager. Note that Program Manager will complain of this when you enter the path (and may require you to manually select an icon), but it will work.
- Create a dummy document for your application in the desired directory. As long as you have your application listed under *[Extensions]* in your **win.ini** file, starting that document from Program Manager (either with **File » Run** or by adding it as an icon to a group) will then start the application with that document loaded, and in the correct directory.
- For Word for Windows 2.0, add the line
`Doc-Path=pathname`
into the *[Microsoft Word 2.0]* section of your **win.ini** file. This will cause Word to start up in the specified directory every time.

Changing the title of the Program Manager window

92-09-28

In Windows 3.1, you can specify the title of the Program Manager window by adding a Program Manager icon to your Startup group. Windows will not start up a second copy of Program Manager, but will use the title you specify in **File » Properties** for the icon.

Changing the program icon

Choose the item in Program Manager, and then select File Properties. Click on **Icon...**, and then enter the name of the file containing the new icon.

If the icon file is a *.DLL* or *.EXE* containing multiple icons, you can either scroll through the available icons (in Windows 3.1) or cycle through them by clicking **Next Icon** (Windows 3.0). After selecting the correct icon, click **OK**, and then **OK** again. You can also use icons from other programs by the same method: just specify the name of the *.exe* file instead of an *.ICO* or *.DLL* file.

The icon that is displayed by the application when it is minimized is controlled by the application. It is not normally possible to change that; however, several workarounds exist for changing the icons of running DOS applications.

- Windows 3.1 will display the selected Program Manager icon for each running DOS application.
- In Windows 3.0 you can use the *iinject* or *puticon* utility to replace the standard DOS icon, which is contained in **winoa286.mod** and/or **winoa386.mod**.
- The *IconFixer* utility monitors your DOS applications in Windows 3.0, and updates their icons as you minimize them, allowing you to have different icons for different DOS applications.

All three utilities are available from *ftp.cica.indiana.edu*.

Creating your own icons

92-09-28

You can create your own custom icons with either *IconDraw* (shareware), *Icon12* (shareware), *Tamr11* (shareware), *SDKPaint* (a part of the Windows SDK) or *Resource Workshop* (a part of Borland C++). Simply draw your icon, and save it as an *.ICO* file.

Changing the font used for the icon labels

92-09-19

To use 10-point Arial (substitute your own favorite below), add the following two lines to your *[Desktop]* section of your **win.ini** file:

```
Icontitlefacename=Arial  
Icontitlesize=10
```

A shareware Control Panel utility, *More Control* also gives you control over the icon fonts.

Changing the WinHelp keyword colors

92-09-27

To change the keyword colors in your Windows help files, you can add some or all of the following lines to the *[Windows Help]* section of your **win.ini** file:

```
JumpColor=255 0 0
PopupColor=0 0 255
IFJumpColor=128 0 0
MacroColor=0 128 0
IFPopupColor=0 0 128
```

The arguments are the intensities of *Red*, *Green* and *Blue*, respectively, with legal values between 0 and 255. This means that *JumpColor* (above) would be an intense red.

Creating your own wallpaper

You can save a **.msp** file as a **.bmp** from Windows Paintbrush. You can convert a **.gif** file to a **.bmp** using the gif2bmp utility from *cica*. *wingif* will also do a good conversion, including dithering 256-color images to 16 colors (rescale before dithering!). A third, and the most flexible, conversion program is PaintShop Pro, which will do color conversions (16M, 32K, 256 and 16 colors), many format conversions, scaling and clipping. Both *wingif* and PaintShop Pro are shareware, and available at *ftp.cica.indiana.edu*.

A JPEG-format file can also be converted to a wallpaper bitmap by first uncompressing it with the *cjpeg/djpeg* utility (free, available at *wuarchive.wustl.edu* and other sites) to a **.gif**, and then using one of the utilities above to convert the **.gif** to a **.bmp**.

Previewing PostScript output**92-11-02**

To preview PostScript output on Windows, you can use GhostScript, a free utility from the GNU project. The current version, 2.52, can be found on *ftp.cica.indiana.edu* and other archive sites as *GS252WIN.ZIP*.

Restricting the Program Manager

92-09-19

If you want to prevent a user from changing the Program Manager configuration, you can insert a combination of the following lines into **progman.ini**:

NoRun=1	<i>Disables the Run command</i>
NoClose=1	<i>Disables the Exit Windows command</i>
NoSaveSettings=1	<i>Disables the Save Settings command</i>
NoFileMenu=1	<i>Removes the File menu</i>
EditLevel=(see below)	<i>Sets the edit restriction level</i>

The following are the *EditLevel* restrictions:

- 1 *Disables creating, deleting and renaming groups*
- 2 *As 1, plus disables creation/deletion of program items*
- 3 *As 2, plus disables changing program item command lines*
- 4 *As 3, plus disables changing program information*

Windows Accessories

Recording more than 60 seconds of sound with Recorder

Converting cardfiles to ASCII text

F5 in Notepad

Keypad in Windows Terminal

Windows 3.1 Clock limitations

Can't open TEMP.WRI (or similar) when starting a desk accessory

92-09-27

Recording more than 60 seconds of sound with Recorder

If you want to record, say, three minutes, follow this procedure:

- Record 60 seconds (Recorder will stop).
- Immediately record *again* for 60 seconds.
- Repeat one more time.
- Drag the scroll bar thumb all the way to the left

With this procedure, you will be able to record 180 seconds of sound. Repeat more times if you need more than 3 minutes of sound.

Converting cardfiles to ASCII text

92-09-27

To convert a cardfile to a text file, use the WinCrd utility, available from *ftp.cica.indiana.edu*.

F5 in Notepad

F5 in Windows 3.0 Notepad inserts only a date and not the time as well it's a known bug. And it's fixed in Windows 3.1.

Keypad in Windows Terminal

Press ScrollLock to toggle the keypad between local and remote mode. The default is local mode.

Windows 3.1 Clock limitations

The Windows 3.1 clock is limited to one instance (simultaneously running copy) by design, as it retains the position and size you last specified for it. You can, however, run any number of Windows 3.0 clocks that you want in 3.1. As an alternative, you may want to take a look at the TimeFrame freeware program from <ftp.cica.indiana.edu>, which places the current time in the title bar of the active window.

Can't open TEMP.WRI (or similar) when starting a desk accessory

A message similar to this one is likely caused by an invalid definition of the `TEMP` environment variable in your **autoexec.bat**. Having a trailing space on the definition line can cause various Windows applications to generate invalid temporary filenames similar to the one noted. Correct the problem by making sure there are no trailing blanks.

Changing default directories

Bitmaps

Fonts

Icons

Bitmaps

You cannot move the bitmaps from the Windows directory unless you use a utility program such a *PaperBoy*.

Fonts

To move your TrueType fonts to a different directory, follow the procedure below:

-

Icons

You may place your fonts in any directory you wish, as long as you update your Program Manager's **File » Properties** dialogs to point to the correct location.

Fonts

[TrueType, ATM and FaceLift](#)

[Converting Font Formats](#)

[Viewing available fonts](#)

[Foreign character sets](#)

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TrueType, ATM and FaceLift

In case you were wondering whether Bitstream FaceLift, Adobe Type Manager (ATM) and TrueType really work yes, they do.

Here are some things to consider:

- TrueType is included free with Windows 3.1 (and Apple System 7.0). It's somewhat more flexible than ATM in its font description capabilities, and renders very fast to LaserJet II-compatible printers.
- ATM uses the ubiquitous Type 1 fonts, which are widely available, both commercially and at FTP sites. It has had some compatibility problems, but version 2.0 is fully compatible with Windows 3.1.
- FaceLift provides the most user control of three, but has the poorest native font support. Version 2.0, however, can use Adobe Type 1 fonts directly. It also lets you generate LaserJet soft fonts for higher printing speeds.

At street prices not much above \$50, ATM and FaceLift were definitely worth their prices, at least before Windows 3.1. Now, with the free TrueType, you may wish to postpone your ATM or FaceLift purchase until you have determined whether TrueType will satisfy your needs.

Converting Font Formats

There are at least two packages available to convert between Type 1 (ATM) and TrueType formats: AllType (\$79) and FontMonger (\$99). AllType, however, imposes its own copyright on any converted fonts, as well as doing a generally unsatisfactory job of converting from ATM to TrueType.

Macintosh TrueType fonts are also directly compatible with Windows (you only need to strip off the resource fork from the Mac file).

Viewing available fonts

At least three shareware/freeware programs claim to be able to do provide a listing of all available fonts: Fonter, FontShow and Compose are all available at <ftp.cica.indiana.edu>.

Foreign character sets

To create Cyrillic documents, you may wish to use the shareware CyrWin package, available from *ftp.cica.indiana.edu* as well as other sources. Cyrillic fonts are also available from Data-Cal (602-545-1234) and East West Trade Consulting (+49-8230-4925 in Germany).

Hebrew fonts are also available from Data-Cal. Also, the WinGreek package at *ftp.cica.indiana.edu* contains Hebrew fonts (for screen and LaserJets; an ATM version is under development).

I am not aware of any Arabic fonts, but Eastern Language Systems in Utah (801-377-2200) has an Arabic word processor called *AlKatiib*, as well as a Persian one called *Vazhe Negar*.

Data-Cal's *WorldFont for Windows* package also includes some Japanese language support, and a Japanese font called *Shorai* is reputed to be available on FTP sites.

Converting Macintosh Type 1 (ATM) fonts to Windows

Thanks for this procedure to Norman Walsh, the maintainer of the *comp.fonts* FAQ.

Converting Macintosh Type1 fonts into PC Type1 fonts can be done using purely free/shareware tools. I've outlined the procedure below. Make sure you read the "readme" files that accompany many fonts. Some font authors specifically deny permission to do cross-platform conversions.

The tools you need:

xbin	<i>xbin23.zip</i>	in /pub/msdos/mac on oak.oakland.edu (or other mirrors)
unsit	<i>unsit30.zip</i>	in /pub/msdos/mac on oak.oakland.edu
uncpt	<i>ext-pc.zip</i>	in /pub/pc/win3/util on ftp.cica.indiana.edu
refont	<i>refont11.zip</i>	in /pub/pc/win3/fonts on ftp.cica.indiana.edu
bmap2afm	<i>bm2af01.zip</i>	in /pub/norm/mac-font-tools on ibis.cs.umass.edu

xbin converts Mac *BinHexed* files back into binary format. *BinHex* is the Mac equivalent of uuencoding: it translates files into hexadecimal digits so that mailers can send them around without difficulty. It also aids in cross-platform copying. *BinHexed* files generally have filenames of the form "xxx.yyy.HQX".

unsit explodes *Stuffit* archives. *Stuffit* archives generally have filenames of the form "xxx.SIT".

uncpt explodes *Compactor* archives. The ext-pc implementation is called *extract* and does not require Windows (even though it's in the Windows section on cica). *Compactor* archives generally have filenames of the form "xxx.CPT".

refont converts Mac type1 fonts into PC type1 fonts.

bmap2afm constructs AFM files from the metric information contained in Mac screen fonts (.bmap files). The screen font files do not have any standard name (although they frequently have the extension .bmap). The screen fonts have file type "FFIL" which, in combination with some common sense, is usually sufficient to identify them.

It's probably a good idea to check with *archie* for closer sites if you're not in North America. These tools run under MS-DOS. **xbin** and **unsit** can also be run under Unix.

How to do it:

Collect the Mac fonts from the archive or BBS of your choice. Most of these files will be in BinHexed format. As a running example, we'll use the imaginary font "Plugh.cpt.hqx". When you download this font to my PC, you would use the name "PLUGH.CPX". The actual name you use is immaterial.

Run **xbin** on PLUGH.CPX. This will produce PLUGH.DAT, PLUGH.INF, and PLUGH.RSR. The data fork of the Mac file (the .DAT file) is the only one of interest to us, you can delete the others.

If the original file had been "Plugh.sit.hqx", we would be using the **unsit** program. Since we chose a .cpt file for this example, I'm going to run **uncpt**. Run **uncpt** on PLUGH.DAT. You'll want to extract the AFM file (if present), the documentation or readme file (if present), and the Type1 outline file. The AFM and README files will be in the data fork of the archive file. The Type1 outline will be in the resource fork. The AFM and README files have Mac "TEXT" type. The Type1 outline file has "LWFN" type. Use the docs for **uncpt** and **unsit** as a guide. If you got this far you probably won't have much difficulty.

If the font does not contain an AFM file, extract the screen font. Screen fonts frequently have the

extension .bmap and are "FFIL" type files. Use *Bmap2AFM* to construct an AFM from the screen font. If the archive *does* contain an AFM file, it's safe to bet that the author's AFM will be better than the one created by *Bmap2AFM*.

Finally, run **refont** on the Type1 outline that you extracted above. The result should be an appropriate PC type1 outline. **refont** will create a PFM file for you from the AFM file, if you desire.

Replacing your System font with a serif font

92-11-05

Thanks to Peter Karrer <pkarrer@bermina.ethz.ch>.

Here's a way to produce your own system font from the MS Serif font (similar to Times Roman) in Windows 3.1. No warranties of course...

If you're using "small" fonts (*fonts.fon=vgasys.fon* in **system.ini**):

Make sure you have VGASYS.FON, 7280 bytes, and SERIFE.FON, 57936 bytes.

Use debug to do the following:

```
C:\WIN\SYSTEM> debug serife.fon
- nmyvgasys.fon
- m15b6 114b3 100
- rcx
CX E250
:14b3
- w
Writing 014B3 bytes
C:\WIN\SYSTEM> debug vgasys.fon
- nmyvgasys.fon
- 16b6
- rcx
CX 14B3
:1C70
- w
Writing 01C70 bytes
- q
```

In your **system.ini** file, replace *fonts.fon=vgasys.fon* with *fonts.fon=myvgasys.fon*.

If you're using "large" fonts (*fonts.fon=8514sys.fon* in **system.ini**):

Make sure you have 8514SYS.FON, 9280 bytes, and SERIFF.FON, 81728 bytes.

Use debug to do the following:

```
C:\WIN\SYSTEM> debug seriff.fon
- nmy8514sy.fon
- m1b36 11c20 100
- rcx
CX 3F40
:1c20
- rbx
BX 0001
:0
- w
Writing 01C20 bytes
C:\WIN\SYSTEM> debug 8514sys.fon
- nmy8514sy.fon
- 1336
- rcx
CX 1C20
:2440
- w
Writing 02440 bytes
- q
```

In your **system.ini** file, replace *fonts.fon=8514sys.fon* with *fonts.fon=my8514sy.fon*.

Zip code bar code fonts**92-11-11**

Word Office Productivity Pack (**wopr-20a.zip** and **wopr-20b.zip** on *ftp.cica.indiana.edu* and its mirror sites) will automatically print bar codes on envelopes. The package does require Word for Windows 2.0, though.

Applications

<u>DayBook: running on Windows 3.1</u>	
<u>Norton Desktop: Wider listbox for Scheduler</u>	92-11-15
<u>Norton Desktop: Using smaller fonts for lists</u>	92-11-15
<u>Word for Windows: custom toolbar icons</u>	92-11-15
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<u>Word for Windows: using a watermark</u>	92-11-15

DayBook: running on Windows 3.1

The Windows 3.0 doesn't work well after upgrading to Windows 3.1. However, you can get it working and even keep your old datafiles using the following steps:

- Install ToolBook again (run tbksetup) after renaming your old daybook.tbk file.
- Start DayBook with the empty daybook.tbk.
- Open the old daybook file (from windows version 3.0)
- Save it as daybook.tal.
- Exit ToolBook.
- Rename daybook.tal to daybook.tbk.
- Now you can use the old information again under Windows 3.1

Norton Desktop: Wider listbox for Scheduler**92-11-15**

You can change the Scheduler's listbox width by using a resource editor (such as Resource Workshop, included with Borland's latest Windows language products) to resize the list box, move the headings and move the buttons.

If you don't have any programming tools, you are basically out of luck.

Norton Desktop: Using smaller fonts for lists

92-11-15

Most of the listboxes in NDW use the font size selected in the menus; make sure you select the correct size.

Word for Windows: custom toolbar icons**92-11-15**

To change the icons in the Word for Windows 2.0 toolbar, add the line

```
LoadToolbarBitmaps=1
```

in the *[WinWord2.0]* section of your **win.ini** file. When Word starts up, it will look for and load four bitmaps called V1TBAR.BMP, V2TBAR.BMP, V3TBAR.BMP and V4TBAR.BMP. Each bitmap holds 26 "icons" which of 18 pixels wide and 16 pixels high.

This technique will not work if you are using the 8514 large fonts. It is also undocumented and thus unsupported by Microsoft.

Word for Windows: drop caps (large 1st characters of paragraphs)

92-09-13

Creating a drop cap is really quite easy in Word, once you know what you are looking for.

Create the paragraph, select the first character, change it to the font and size you want it to be, and then select **Insert » Frame** to create a frame. The frame will automatically size to the character and align with the top of the paragraph. That's all there is to it!

Word for Windows: fonts larger than 127 points

92-11-11

Since Word for Windows will not allow selection of a pointsize beyond 127, for very large pointsizes the best thing to do is enter the text in WordArt, and then scale the WordArt object to desired size in the Word document.

Word for Windows: getting rid of the list of last files edited

To empty the list of last files edited before someone else uses your machine, simply remove the file `winword.ini` from your Word for Windows directory. You may wish to put this in your `autoexec.bat` file.

Word for Windows: inserting today's date

92-11-11

Using Word's built-in **Insert » Date and Time...** command will insert a date, but will update it every time you open the document. There are several ways to insert today's date and forcing it not to be updated:

After using **Insert » Date and Time...**, select the date and hit **Ctrl+F9** to lock the field. This will cause it not to be updated until you unlock it.

After using **Insert » Date and Time...**, select the date and hit **Ctrl+F9** to unlink the field. This replaces the field with its contents; you will not be able to update the field again.

Use **Insert » Field...** and inset a **CREATEDATE** field. This will insert the date the document was created, however, and not necessarily today's date.

Word for Windows: linking in subdocuments**92-11-02**

Word for Windows' Link Document, Include document and Insert Document commands all include the entire text of the subdocument in the main document. If you want to "link" in a document for indexing or a table of contents but not bloat up the main document with all the actual text, use the *RD* (Refer Document) field. It won't print or edit the subdocument from the main document, but it does work for indexing and tables of contents.

Word for Windows: overlining words

92-09-14

To overline a phrase in Word for Windows, insert a `\eq` field and use the `\x\to` option to draw just the top of the box around the "equation". So, for example, to overline "Bar", you might enter

The Foo `{\eq \x\to(Bar)}` and Grille

Word for Windows: setting the find file default directory

92-09-19

Select **Tools » Macro** and edit *FileFind*; it will look something like this:

```
Sub MAIN
ToolsMacro "FileFind", .Run
End Sub
```

Change it to look like this:

```
Sub MAIN
On Error Goto STOPHERE 'Needed if user chooses Close

Dim myfilefind As FileFind 'Define a dialog (same as FileFind dialog)
GetCurValues myfilefind 'Get any values you may have already set

myfilefind.SearchPath = "c:\windows" 'Use this type of line to set all the
myfilefind.Name = "*.*)" 'defaults things your little heart desires

Dialog myfilefind 'Display the dialog box on the screen

STOPHERE: 'Just a label
End Sub
```

For information on the various things you can tag on to "myfilefind", such as .SearchPath, .Name, etc..., check the on-line help under Word Basic Commands -- FileFind.

Thanks to Paul Brown for the solution!

Word for Windows: using a watermark**92-11-15**

To place a watermark (usually a large a light gray text at an angle behind your normal text), you will need a PostScript printer. If you have such a printer, you can either use the Watermark macro from **newmacro.doc**. Alternately, insert a Print field into the header, containing the following PostScript code:

```
\p page "/Fn {findfont exch scalefont setfont} bind def
0.98 setgray
50 600 moveto
-45 rotate
180 /Helvetica Fn
(DRAFT) show"
```

This puts the word "DRAFT" at a 45 degree angle across the page in very light grey large letters.

Gang screens

This section describes the ways to display the secret or gang screens, showing the authors of various packages, often with associated fireworks and/or other animation.

[Windows 3.0](#)

[Windows 3.1](#)

[Ami Pro 2.0](#)

[Excel 3.0](#)

[Norton Desktop for Windows 2.0](#)

[Procomm Plus for Windows 1.0](#)

[Word for Windows 1.x](#)

[Word for Windows 2.0](#)

Windows 3.0

- Make Program Manager active
- While holding down **F3**, press **WIN 3**. Release **F3**.

Windows 3.1

- Make Program Manager or any desk accessory active
- Select **Help » About**, hold down Shift+Ctrl+Alt, double-click on icon, press **OK**
- Repeat
- Repeat to get the first "gang screen"
- Repeat to get the second "gang screen"
- Repeat to get the third "gang screen"

Ami Pro 2.0

- Select **Help » About**
- Hold down **Shift, Ctrl** and **Alt**
- Press **F7**. Type **S P A M**.
- Enter the last and third last digits from the *Available memory* display.
- Release **Shift, Ctrl** and **Alt**

Thanks to Avinoam Shmueli.

Excel 3.0

- Select **Formula » Goto**, enter **iv16384**.
- Use the scroll bars to make this the only cell visible.
- Reduce the row and column widths to zero.
- Double-click on the single remaining button at the top left corner.

Thanks to Aaron Wallace.

Norton Desktop for Windows 2.0

- Select **Help » About**
- Hold down **N, D** and **W**
- Double-click on the icon.

Thanks to Mark Scase.

Procomm Plus for Windows 1.0

- Select **Help » About**
- Press **Credits**

Word for Windows 1.x

- Turn **CapsLock** on
- Select **Format » Define » Styles » Options**
- Select *Normal* for **Based On**
- Press **OK**
- Press **Cancel**
- Select **Help » About**
- Move cursor to inside dialog box, then hold down **O, P, U** and **S** at the same time.

Thanks to Todd Lutz.

Word for Windows 2.0

- Select **Tools » Macro**
- Enter *spiff*, press **Edit**
- Delete all lines except for the middle blank line
- Select **File » Close**, press **Yes**
- Select **Help » About**, double-click on icon

Applications

Windows 2.x Applications

Troubleshooting

92-11-09

Available Windows 3.x applications

92-11-11

Windows 2.x Applications

If you run in real mode of Windows 3.0, the old applications behave just like in 2.x, but have somewhat less memory available to them. If the applications are "well-behaved", they may also run in standard and 386 enhanced modes, but Windows will first warn you with a "nag" message that the application wasn't written for Windows 3.x. If you run a ill-behaved application in standard or 386 enhanced mode, the application will likely crash.

If you have a 2.x application that runs well in all modes, you can mark it Windows 3.0-compatible using either the *mark3.exe* or the *nonag.exe* utility. Both are available from *cica*.

Basically, Windows 3.1 will no longer run Windows 2.0 applications.

Troubleshooting

<u>AllType: converted TrueType fonts not in same family</u>	92-09-15
<u>Ami Pro: table of contents</u>	
<u>Ami Pro 2.0: divide by zero error</u>	
<u>Ami Pro 3.0: overlapped screen text</u>	
<u>Ami Pro 3.0: slow printing</u>	
<u>FrameMaker: scrambled dot-matrix output</u>	92-09-14
<u>KA9Q: dropped packets</u>	92-09-14
<u>Norton Desktop for Windows: can't format in the background</u>	
<u>Mathematica 2.0 for Windows: problems with Windows 3.1, other problems</u>	
<u>PageMaker 4.0: font selection box won't scroll</u>	92-09-21
<u>PageMaker 4.0: text color changes to almost invisible</u>	92-09-26
<u>PageMaker 4.0: WordPerfect and Word for Windows import</u>	
<u>Pathway Access 1.x: terminal font</u>	
<u>PC Tools 7.1: restore problems</u>	
<u>Procomm Plus for Windows: Zmodem transfer startup</u>	
<u>Quicken for Windows: conflicts with communications software</u>	
<u>Ventura Publisher 3.0: divide by zero errors</u>	92-09-19
<u>WinFax Pro 2.0</u>	92-09-19
<u>Word for Windows: accessing fonts</u>	
<u>Word for Windows 2.0: can't install additional components</u>	
<u>Word for Windows 2.0: equation editor fonts</u>	
<u>Word for Windows 2.0: equations have too much white space</u>	92-09-27
<u>Word for Windows 2.0: file too big to save</u>	92-11-09
<u>Word for Windows 2.0: headers and graphics</u>	
<u>Word for Windows 2.0b: printing from Print Preview</u>	
<u>WordPerfect for Windows 1.0: floppy access</u>	
<u>WordPerfect for Windows 1.0: button bar won't display</u>	
<u>WordPerfect for Windows 1.0: crashes with 256-color display driver</u>	92-09-21
<u>WordPerfect for Windows 1.0: mixing landscape and portrait pages</u>	
<u>WordPerfect for Windows 1.0: printing with TrueType</u>	

AllType: converted TrueType fonts not in same family

92-09-15

When AllType converts a, say, PostScript Type 1 font into TrueType, it does not maintain the connection between the Regular, Bold, Italic and Bold Italic fonts in the same family. Thus, if you have a font called Franciano and select bold in your word processor, you will get a synthesized bold version, not Franciano Bold.

To correct this, you might try a shareware utility called **renamett**, which allows you to specify the family of the font.

Ami Pro: table of contents

If your page numbers in the Table of Contents are all 1, you have likely generated the TOC twice without making any changes. To work around this bug, make a trivial change to your document, and regenerate the table of contents.

Ami Pro 2.0: divide by zero error

If Ami Pro crashes with a Divide by Zero error in Windows 3.1, check the version number in the About... box. If your version is earlier than 306, contact Lotus for a free upgrade to 306, which is fully compatible with Windows 3.1.

Ami Pro 3.0: overlapped screen text

On some configurations, selecting a block of text and then starting to type over it will not erase the existing text first before placing the new characters on it, resulting in a corrupted screen display.

As a workaround, you may choose to either use draft mode or to turn off full justification.

A fix diskette for this problem is available by calling Lotus technical support.

Ami Pro 3.0: slow printing

If you are suffering from slow printing with Ami Pro 3.0, try the following steps to improve the printing speed:

- Disable Print manager in the Windows Control Panel
- Disable Background Printing in Ami Pro's Tools: User Setup: Options.

FrameMaker: scrambled dot-matrix output**92-09-14**

FrameMaker will produce correct output only if the output device has square pixels; that is, your printer must have the same horizontal and vertical resolution. A 144 horizontal by 192 vertical resolution will produce scrambled output. Unfortunately, the only choices are to use your printer in a "square-pixel" resolution, or to switch to a printer with such a resolution (most laser printers have square pixels).

KA9Q: dropped packets**92-09-14**

In order to run properly within Windows 3.x *and* not drop packets, you need to do two things:

- Start KA9Q with the `-w` option
- After starting KA9Q, start `winpkt`

Norton Desktop for Windows: can't format in the background

While Windows is limited by DOS in some of its multitasking capabilities (such as disk i/o), it can format floppies in the background (File Manager does it!). NDW arbitrarily refuses to let you do anything else while formatting it's a design feature!

Personally, I only buy preformatted diskettes!

Mathematica 2.0 for Windows: problems with Windows 3.1, other problems

Mathematica 2.0 does not work well with Windows 3.1. It also has a host of other problems which exhibit themselves even under Windows 3.0.

The cure is to upgrade to Mathematica 2.1; the upgrade cost is US\$ 50.

PageMaker 4.0: font selection box won't scroll

92-09-21

This is a known problem. The workaround to use, if you have more fonts than will fit in the selection box, is to press **Ctrl+T** to change the text attributes (and thus the font).

PageMaker 4.0: text color changes to almost invisible**92-09-26**

this problems stems from an incompatibility between PageMaker and Windows 3.1 video drivers. Although no fix is currently available, you can work around the problem by switching between PageMaker and the other "color intensive" application (which changes the colors) with **Alt+Tab** instead of minimizing one and then restoring PageMaker. If the colors have already been munged, start up **command.com** full-screen, exit it, and then maximize PageMaker again to restore the colors.

PageMaker 4.0: WordPerfect and Word for Windows import

As shipped, PageMaker 4.0's import filters do not support WordPerfect 5.1 for Windows (although WordPerfect 5.1 for DOS is OK), or Word for Windows 2.0. If you cannot locate the import filters at an ftp site or CompuServe, contact Aldus for free updates.

Pathway Access 1.x: terminal font

If in your 10x16 terminal font the uppercase 'K' and lowercase 'k' appear identical, contact Wollongong for an update to a corrected terminal font.

PC Tools 7.1: restore problems

PC Tools 7.1 does not check backups for data integrity while restoring, thus possibly restoring corrupt data due to media errors on the disks. This is not a bug, but a deficiency in PC Tools, and is unlikely to be corrected prior to the release of the next version.

PC Tools also sometimes corrupts the last disk while doing a restore. Once the last disk has been read, you should immediately remove it from the drive.

Procomm Plus for Windows: Zmodem transfer startup

If you initiate a Zmodem transfer from Procomm, the other end of the link may or may not automatically detect the start of a transfer, depending on the software at that end; it's not dependent on Procomm. Specifically, the sz/rz software on Unix does not start Zmodem transfers automatically.

Quicken for Windows: conflicts with communications software

If Quicken produces a General Protection Fault on startup when you have a communications package already running, it is likely trying to get at the serial port (which is already in use).

To correct this problem, select **Edit » Preferences » Electronic Payment**, and disable all the bank accounts. Click OK, and exit Quicken. If this does not cure the problem, select **Edit » Preferences » Modem Settings**, and set Quicken to use a different serial port than your communications package.

If you actually want to use the electronic payment feature of Quicken, you will not be able to run it at the same time as a communications package.

Ventura Publisher 3.0: divide by zero errors**92-09-19**

Ventura Publisher 3.0 may get frequent divide by zero errors when used with Windows 3.1. These appear to be related to non-Microsoft TrueType fonts, which Ventura is unable to use reliably (the TrueType fonts from CorelDraw also cause problems). You may wish to remove either all or selected non-Microsoft TrueType fonts from your system to prevent the Ventura errors.

Ventura Publisher will also refuse to run with a display driver which uses more than 256 colors.

WinFax Pro 2.0**92-09-19**

If you are having difficulty sending faxes with WinFax Pro, check the date of the file **mod.exe**; if it is 1-16-92 16:51, 62,976 bytes , you should get a replacement from Delrina (call customer support at (800) 268-6082).

Word for Windows: accessing fonts

Word for Windows shows in its font menu the fonts currently available for the selected *output* device, not the *display* device. You can still use, say, vector fonts that you installed, by typing the name of the font in the edit box. Windows will draw vector fonts on the output device without problems you may or may not like the results. Screen fonts are also useable for printing on dot-matrix printers. These problems do not occur with TrueType fonts in Windows 3.1, as they are available both on the printer and on the display.

After you have installed new fonts (TrueType, ATM or any others), you need to force Word for Windows to refresh its output device font list. The easiest way to do this is to do **File » Printer » Setup**, click **Setup**, then click **OK**, and finally **OK** again.

Word for Windows 2.0: can't install additional components

If Word for Windows won't install additional components (such as the thesaurus or spellchecker) because it claims Word is not yet installed, check your **win.ini** file, and make sure that under *[Microsoft Word 2.0]*, you have the line *ProgramDir=C:\WINWORD* (or whatever your Word for Windows directory name is).

Word for Windows 2.0: equation editor fonts

If Word for Windows complains about missing MT Extra or MT Fences fonts, but they are installed in the control panel, you will need to reinstall them (this most commonly happens if you upgrade to Windows 3.1 after installing Word for Windows). This is easiest done by using Word's Setup program to remove Equation Editor, removing the MT Extra and MT Fences fonts with *Control Panel*, and then reinstalling the Equation Editor.

This bug most frequently occurs if your printer port is set to FILE: when installing Word for Windows.

Word for Windows 2.0: equations have too much white space

92-09-27

If you're using superscripts or subscripts in your equation, there will likely be too much whitespace above the equation. If you check the character format, the equation will be subscripted by a *large* number, such as 40 points. You can manually reset the subscript amount; however, the subscript will be set again when you print, if you have *Update Fields* checked under **File » Print » Options**.

You can also use the following macro (written by Harvey Cohen, hsc@honet6.attcom) to correct the spacing of all the equations in your document:

```
Sub MAIN
  StartOfDocument
  ViewFieldCodes 1
  EditFindClearFormatting
  EditReplaceChar .Font = "", .Points = "", .Bold = - 1, .Italic = - 1,
    .Strikeout = - 1, .Hidden = - 1, .SmallCaps = - 1,
    .AllCaps = - 1, .Underline = - 1, .Color = - 1,
    .Position = "0pt", .Spacing = ""
  EditReplace .Find = "^19EMBED EQUATION ", .Replace = "^m",
    .WholeWord = 1, .MatchCase = 1, .Format = 1, .ReplaceAll = 1
  ViewFieldCodes 0
End Sub
```

This problem is corrected in Word for Windows 2.0b.

Word for Windows 2.0: file too big to save**92-11-09**

This appears to be an occasional problem with versions 2.0 and 2.0a, although most users never experience it, even when working with large documents.

Some of the workarounds that have been reported to work for some users are:

- Select the entire document and paste it into another document

- Select a non-PostScript printer and save

- Save the document as RTF

- Turn off Fast Save

Word for Windows 2.0: headers and graphics

If you have problems with disappearing headers or footers, or with displayable graphics not printing, call Microsoft customer support for an upgrade to version 2.0a.

Word for Windows 2.0b: printing from Print Preview

If you install the macros in **pss.doc** (included with Word 2.0b), you will no longer be able to print from the Print Preview window. The following are two workarounds provided by Ron Apland <apland@mala.bc.ca>:

Select **Tools » Macro » Edit *FilePrint***, erase the existing macro and insert the following:

```
Sub MAIN
  Dim dlg As FilePrint
  GetCurValues dlg
  Dialog dlg
  Super FilePrint dlg
EndSub
```

This will get you back to the original print macro.

Select **Tools » Macro » Edit *FilePrint***, and insert the following immediately after Sub MAIN:

```
chkpv = FilePrintPreview()
If chkpv <> 0 Then
  Dim dlg As FilePrint
  GetCurValues dlg
  Dialog dlg
  Super FilePrint dlg
  Goto Bye
EndIf
```

This will run the original print macro if and only if you are using Print Preview.

WordPerfect for Windows 1.0: floppy access

If WordPerfect for Windows refuses to access your A: drive, add the line

```
HighFloppyReads=0
```

in the *[386Enhanced]* section of your **system.ini** file.

WordPerfect for Windows 1.0: button bar won't display

If WordPerfect for Windows won't display your button bar despite selecting it from the menus, make sure it is looking in the right directory. Select **Macros » Keyboards » Button Bars**, and make sure the directory is set to your macros subdirectory.

WordPerfect for Windows 1.0: crashes with 256-color display driver **92-09-21**

WordPerfect for Windows may crash (with a UAE or GPF) when used with a display driver capable of using more than 16 colors, or when used with ATI's Crystal Fonts driver. To correct this problem, contact WordPerfect technical support, and request a copy of the interim release. Once you have the interim release, start it with the /f1 option to avoid crashes.

WordPerfect for Windows 1.0: mixing landscape and portrait pages

WordPerfect for Windows will not allow you to mix landscape and portrait pages in a single document if you are using a Windows printer driver. This is a known limitation and not classified as a bug.

WordPerfect for Windows 1.0: printing with TrueType

WordPerfect for Windows will correctly print documents containing TrueType fonts only if one of the following is true:

- You are using a Windows-based printer driver, not a WordPerfect one.
- You are using a TrueImage printer, with a WordPerfect driver which supports TrueType.

Available Windows 3.x applications

The following sections list some of the applications available for Windows 3.x. While it does not attempt to be a comprehensive list, it does attempt to list the most popular commercial software packages and some selected shareware. This is *not* intended to be a review, but, rather, an overview of available titles. You should perform your own evaluation to determine the software best suited to your needs.

All prices listed are U.S. list prices at time of compilation, and cannot guaranteed to be correct.

If the application is available on another platform at better or at least substantially the same level of development, a code indicating that is shown in the header. Windows NT portability is not shown, as Windows NT is not yet available, and while most major vendors have announced NT versions of their software, very little concrete information is available.:

[Mac]	Macintosh
[Sun]	Sun OpenLook
[Motif]	Motif
[PM]	OS/2 Presentation Manager

See the Windows Programming Tools FAQ for a description of available development tools.

<u>Business Applications</u>	92-10-03
<u>Graphics Applications</u>	92-11-11
<u>Communications</u>	92-10-03
<u>Utilities</u>	92-11-11
<u>Multimedia and Entertainment</u>	92-10-05

Business Applications

<u>Databases, non-programmable</u>	
<u>Databases, programmable</u>	92-09-21
<u>Desktop publishing</u>	
<u>Financial Management</u>	
<u>Groupware</u>	92-09-20
<u>Integrated software</u>	92-10-03
<u>Personal Information Management</u>	92-09-20
<u>Project management</u>	
<u>Spreadsheets</u>	
<u>Word processing</u>	

Databases, non-programmable

- **Superbase 2**
SPC. A non-programmable version of Superbase 4. List \$ 345.

- **Claris FilePro [Mac]**
Claris. A Windows port of the Macintosh-based FilePro, List \$?.
- **DB Vista III**
Raima. A network (not relational) database.
- **dBase for Windows**
Borland. Announced, but not shipping. Feature set not well known. List \$?.
- **dBFast for Windows**
Computer Associates. xBase compatible. List \$ 550.
- **FoxPro 2.5 for Windows [Mac]**
Microsoft. Announced, but not shipping. Implements a superset of dBase IV commands. List \$?.
- **Progress [Sun] [Motif]**
Progress Software. A Windows version of Progress 4GL, which runs on DOS VMS, and dozens of different Unix versions. Version 6.2 provides limited access to Windows interface; 7.0 will access a fuller feature set. List \$?. Runtime licences.
- **Superbase 4**
SPC. A midrange graphical database package. List \$ 695.

See also the list of database libraries in the Windows Programmer's FAQ.

Desktop publishing

- **ArcheType Designer**
Archetype. A full-featured package for relatively short commercial material such as ads and brochures. List \$ 795.
- **Express Page**
Carberry Technology. An front end for PageMaker for doing quick layout designs and draft versions. List \$ 195.
- **FrameMaker 3.0 for Windows [Sun] [Motif] [Mac]**
Frame. A high-end integrated word processing and desktop publishing package. List \$ 795.
- **Microsoft Publisher**
Microsoft. An easy-to-use basic package. List \$ 199.
- **PageMaker for Windows [Mac]**
Aldus. A full-featured high-end package. List \$ 795.
- **PagePlus for Windows**
Serif. A low-price packaged with some high-end features. List \$ 149.
- **Ventura Publisher, Windows Edition**
Xerox. A full-featured high-end package, ported from the original GEM-based version. List \$ 795.

Financial Management

- **Microsoft Money**
Microsoft. A personal financial management package, fairly comparable to Quicken. List \$ 69.
- **Quicken for Windows [Mac]**
Intuit. Compatible with the ubiquitous Quicken for DOS. List \$?.

Groupware

92-09-20

- **1Team**
1Soft. A networked PIM aimed at scheduling and to-do lists, with a very similar user interface to Active Life. Evaluation copies are available from *cica* and other sites. List \$ 295 (2-user), \$ 99 (additional users).
- **Network Scheduler 3.0**
PowerCore. Network-based group scheduler. List \$ 395 (5-user), \$ 1,195 (25-user).
- **Lotus Notes**
Lotus. Integrated information sharing using networks. List \$ 62,500 (200-user).
- **NOTE-IT**
Chord. A network-based system of using Post-It notes. List \$ 249 (unlimited).
- **PackRat for Networks**
Polaris. A version of PackRat for networks, with group scheduling, and document and information sharing. List \$ 695 (3 users).
- **Pinboard**
Raindrop Software. Post-It notes for Windows. List \$ 399 (unlimited).

Integrated software

92-10-03

- **CA-Simply Business**
Computer Associates. Accounting, word processing, 3-D spreadsheet, project scheduling and graphics. List \$ 567.
- **Eight-In-One for Windows**
Spinnaker. Word processor, spreadsheet, database, communications and graphics. List \$ 59.
- **PFS: WindowWorks**
Spinnaker. Word processor, spreadsheet, database, communications and graphics. List \$ 149.
- **Microsoft Works for Windows [Mac]**
Microsoft. Word processor, spreadsheet, database, communications and graphics. List \$ 199.
- **Microsoft Works for Windows, Multimedia Edition**
Microsoft. Word processor, spreadsheet, database, communications and graphics. Multimedia tutorial; available on CD-ROM only. List \$ 199.

Two other available packages, Microsoft Office and Lotus SmartSuite, consist of bundled individual applications from the respective vendors, and are not integrated systems in the traditional sense.

- **Active Life**
1Soft. A PIM aimed at scheduling and to-do lists. Evaluation copies are available from *cica* and other sites. List \$ 149.
- **Ascend**
NewQuest technologies. A high-end PIM with to-do lists, dialer, scheduling and information management. List \$ 299.
- **Commence**
Jensen-Jones. A high-end forms-based personal information manager, from the developers of IBM Current. Has a very flexible network-type database, but requires substantial initial effort to set up. Also includes advanced macros and macro trigger events. List \$ 295 (Upgrade from Current \$ 99).
- **Current**
IBM. A high-end forms-based personal information manager. Has a very flexible network-type database, but requires substantial initial effort to set up. *IBM has announced that it plans to discontinue sales (but not support) of Current.* List \$ 395.
- **Desktop Set**
Okna. Calendar, rolodex, dialer, to-do list, etc. List \$ 89.
- **Epoch**
Raindrop Software. Scheduler and to-do list. List \$ 129.
- **PackRat**
Polaris. A high-end PIM with agenda, phonebook, to-do list, financial management, project tracking, etc. Network version available. List \$ 395.
- **Pinboard**
Raindrop Software. Post-It notes for Windows. List \$ 129.
- **ShoeBox for Windows**
R+R Associates. A high-end PIM with group scheduling, project and expense tracking, calendar and to-do lists. List \$ 395.
- **WinPost**
Eastern Mountain Software. An excellent shareware package for managing Post-It notes on the Windows desktop. Registration \$ 30.
- **YourWay**
Prisma Software. Time and contact management. List \$ 199.

Project management

- **CA-SuperProject for Windows**
Computer Associates. A midrange rewrite of the venerable DOS-based package. List \$ 895.
- **CADENCE ProjectMaster**
CADENCE. A low-end with task/responsibility linking. List \$ 295.
- **Milestones, Etc.**
KIDASA. A low-end package oriented toward graphical scheduling. List \$ 189.
- **OnTarget**
Symantec. A low-end package. List \$?.
- **Project Director**
AdRem. List \$?.
- **Project for Windows [Mac]**
Microsoft. A midrange package with excellent user interface but less emphasis on advanced scheduling. \$ 695.
- **Scitor Project Scheduler**
Scitor. List \$?.

Spreadsheets

- **CA-Compete! 2.0**
Computer Associates. A multidimensional spreadsheet, aimed at financial analysis, with an Excel 3.0-based user interface. List \$ 995.
- **Excel for Windows 4.0 [Mac]**
Microsoft. A full-featured high-end spreadsheet. List \$ 495.
- **WingZ**
Informix. A midrange spreadsheet. List \$ 499.
- **Lotus 1-2-3 for Windows 1.0**
Lotus. A high-end spreadsheet with full 1-2-3 Classic compatibility. Suffers from poor performance compared to Excel. List \$ 495.
- **Quattro Pro for Windows**
Borland. A high-end spreadsheet with a notebook 3D idiom. A strong contender. Not yet shipping. List \$ 495.
- **ThinX**
Bell Atlantic. Not really a spreadsheet, but an application allowing you to build data and links between objects. List \$ 495.

Word processing

- **Lotus Write 1.0**
Lotus. A low-end easy-to-use package, previously sold as Samna Ami and then Lotus Ami. List \$?.
- **Ami Pro 3.0**
Lotus. A full-featured high-end package with desktop publishing features. Ami Pro 3.0 matches Word for Windows 2.0 in power and features. List \$ 495.
- **FrameMaker 3.0 for Windows [Mac] [Sun]**
Frame. A high-end integrated word processing and desktop publishing package. List \$ 795.
- **JustWrite**
Symantec. A basic easy-to-use package. List \$ 199.
- **Legacy**
NBI. A frame-oriented high-end package. Does not match Ami Pro or Word for Windows in features or performance. List \$ 495.
- **Professional Write for Windows**
SPC. A mid-range package with an E-mail interface. List \$ 249.
- **Word for Windows 2.0b**
Microsoft. A full-featured high-end package aimed more at writing than at desktop publishing. Includes WordPerfect command emulation. List \$ 495.
- **WordPerfect for Windows [Mac] [Sun]**
WordPerfect. A full-featured high-end package. Includes all WordPerfect printer drivers and a choice of CUA or WordPerfect user interface. Cannot match the speed or features of Ami Pro or Word for Windows. List \$ 495.
- **WordStar for Windows 1.5**
WordStar. A near-high-end package originally based on Ami, with strong graphics and frame manipulation. No macros. List \$ 495 (\$ 119 until the end of 1992).

Graphics Applications

CAD

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Databases, image

Drawing and Illustration

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Graphics conversion

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Image viewers

Painting and image editing

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Presentation graphics

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CAD 92-11-09

- **AutoCAD Rel.12 Windows Extension**

Autodesk. A mid-to-high-end CAD system oriented toward civil and architectural applications, with 3D capabilities. A front end for AutoCAD Rel. 12 (required). Fully integrated Windows version to be available for NT. List \$?.

- **CADvance 5 for Windows 3.1**

IsaCAD. A mid-to-high-end package with full AutoCAD file compatibility and excellent Windows integration. List \$ 1,995 (competitive upgrade \$ 395).

- **Drafix Windows CAD**

Foresight Resources. A midrange 2-D CAD package. List \$ 595.

- **MicroStation 4.03 Nexus**

Intergraph. A mid-to-high end CAD system with a Motif interface and minimal Windows features, but including DDE and OLE. List \$?.

- **Smart Draw for Windows**

The Other Operation. A low-cost low-end 2-D CAD package. List \$ 99.

- **Ultimate CAD Windows**

Automated Methods. A midrange 2-D CAD package, with DDE. List \$ 695.

Databases, image

- **MultimediaBase**
Harley. List \$?.
- **MediaOrganizer**
Lenel. List \$?.
- **ProFile for Windows**
IEV. List \$ 295.
- **ShoeBox for Windows**
Kodak. Announced, due to ship 4Q92. List \$ 295.

Drawing and Illustration

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- **Arts & Letters Graphics Editor**
Computer Support. A fairly easy-to-use high-end package. List \$ 695.
- **Arts & Letters Apprentice**
Computer Support. A stripped-down version of A&L. List \$ 125.
- **Chartist**
Novagraph. A diagramming and flowcharting package. Registration \$?.
- **CorelDRAW!**
Corel. The market leader in high-end drawing and illustration software, with extensive set of graphics and image manipulation tools. Available on CD-ROM. List \$ 595.
- **Freehand**
Aldus. A high-end drawing and illustration package. List \$ 595.
- **Graphics Works**
Micrografx. A semi-integrated package containing Windows Draw, PhotoMagic, OrgChart and clip art and photo collections. List \$ 199 (not yet shipping).
- **Harvard Draw for Windows**
SPC. A high-end drawing package. List \$ 595.
- **Micrografx Designer**
Micrografx. A high-end package oriented towards technical illustration. List \$ 695.
- **Microsoft Draw**
Microsoft. A very basic package with OLE. Included with Word for Windows.
- **Professional Draw**
Gold Disk. A powerful high-end drawing package. List \$ 595.
- **Smart Draw for Windows**
The Other Operation. A 2-D CAD package for Windows. List \$ 99.
- **VentanaDraw**
Micrografx. A low-end drawing package. List \$ 149.
- **Windows Draw**
Micrografx. A low-end package with many high-end features, OLE and TrueType fonts. List \$ 149.
- **XVT Draw [Mac] [Sun] [Motif] [PM]**
XVT. A shareware package with very basic features. Registration \$?.

Graphics conversion

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- **DoDOT**
Halcyon. Extensive file conversions and full-color editing. List \$ 189..
- **Graphics Workshop for Windows**
Alchemy Mindworks. An image conversion and manipulation utility with an extensive feature set.
Registration \$ 40.
- **HiJaak for Windows**
Inset. A screen capture (for Windows and DOS) and conversion utility. List \$ 199.
- **Image-In Paint and Scan**
Image-In. A grayscale painting and image processing package. List \$ 99.
- **PaintShop Pro**
JASC. A shareware package with extensive capture, file conversion and color manipulation features.
Registration \$ 49.

Image viewers

- **ColorView, ColorView/386**
Millenium Technologies. A shareware package with both GIF and JPEG support. Version 0.97 is quite fast but somewhat buggy. Registration \$ 30.
- **GhostScript for Windows**
The GNU Project. EPS (Encapsulated PostScript) viewer. Free.
- **JView, JView/386**
David Holliday. A fairly fast JPEG-only viewer. Free.
- **PaintShop Pro**
JASC. A shareware package with 24-bit color and good dithering but no JPEG support. Registration \$ 49.
- **WinGIF**
A GIF viewer, but with no JPEG support. Registration \$?.
- **WinJPEG**
A Windows JPEG viewer. Registration \$?.

Painting and image editing

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- **CA-Cricket Image**
Computer Associates. A 24-bit image processing and conversion package. List \$ 92 until 93-01-31, regularly \$ 295.
- **CA-Cricket Paint**
Computer Associates. A 24-bit painting and image editing package. List \$ 92 until 93-01-31, regularly \$ 595.
- **CoreIDRAW!**
Corel. The market leader in high-end drawing and illustration software, with extensive set of graphics and image manipulation tools. Available on CD-ROM. List \$ 595.
- **DoDOT**
Halcyon. Extensive file conversions and full-color editing. List \$ 189..
- **Fractal Design Painter**
Fractal Design. Fully-featured package oriented towards original image creation. List \$ 399.
- **Graphics Works**
Micrografx. A semi-integrated package containing Windows Draw, PhotoMagic, OrgChart and clip art and photo collections. List \$ 199 (not yet shipping).
- **Image-In Color**
Image-In. A 24-bit image processing and retouching package. List \$ 495.
- **Image-In Paint and Scan**
Image-In. A grayscale painting and image processing package. List \$ 99.
- **Image Pals**
Image-In. A 24-bit image processing and management package, with JPEG support. List \$ 249.
- **PhotoMagic**
Micrografx. A low-end 24-bit color image manipulation package. List \$ 149 (not yet shipping).
- **Picture Publisher**
Micrografx. A powerful image manipulation package. List \$ 795.
- **Publishers' Paintbrush**
Zsoft. Extensive 24-bit painting and image manipulation capabilities. List \$ 495.

Presentation graphics

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- **Arts & Letters Graphic Composer**
Computer Support Corp. A full-featured presentation package with 24-bit support. List \$ 395.
- **DeltaGraphics Professional**
?. A scientific graphics package. List \$?.
- **GNUplot for Windows**
?. A command-line driven plotting package, also available on a wide variety of other platforms. Free.
- **Harvard Graphics for Windows**
SPC. A full-featured Windows-based rewrite of the venerable Harvard Graphics for DOS. List \$?.
- **Hollywood**
Claris. A high-end presentation package previously marketed by IBM. List \$ 499.
- **Persuasion**
Aldus. A high-end package. List \$ 495.
- **Powerpoint [Mac]**
Microsoft. A full-featured presentation software package. List \$ 495.
- **Stanford Graphics for Windows 2.0**
3-D Visions. A presentation software package oriented towards technical users. With extensive 3D graphics and other powerful features, but will make a 486/33 seem slow. List \$ 495.

Communications

Communications

Facsimile

News readers

X Windows servers

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Communications

- **Crosstalk for Windows**
DCA. VT320, Zmodem and LAN support. List \$ 195.
- **Dynacomm**
FutureSoft. VT340 and Zmodem support. List \$ 249.
- **EM320 Windows**
Diversified Computer Systems. VT320 emulation, Kermit. List \$ 229.
- **KEAterm 420**
KEA Systems. VT420 and SuperKermit over TCP/IP, Pathworks, LAT and Int14. List \$ 245.
- **MasterComm**
MicroPlot Systems. VT220, Tek4010, Tek4014, Kermit, XModem support. Connect through modem, DECNET, Novell, 3Com or TCP/IP. List \$ 95.
- **MicroCourier**
Microcom. List \$ 99.
- **MicroPhone II for Windows [Mac]**
Software Ventures. VT102, Zmodem and Novell support. List \$ 195.
- **Procomm Plus for Windows**
Datastorm. Numerous emulations (including VT320) and protocols (including Zmodem) and an advanced (if somewhat non-standard) user interface. List \$ 139.
- **Reflection 1 for Windows**
Walker Richer & Quinn. HP2392A and HP700/92 emulation. List \$ 399.
- **Reflection 2 for Windows**
Walker Richer & Quinn. VT320, Kermit, Xmodem. List \$ 299.
- **Teemtalk 320W**
Pericom Software. VT320, HP2392A, DG200 emulation. Kermit, XModem, YModem protocols. List \$ 195.
- **Terminal Plus**
FutureSoft. An advanced version of Windows Terminal, usign a similar user interface, with VT220 and Zmodem. List \$ 99.
- **Unicom**
Registration \$?.
- **WinQVT**
Registration \$?.
- **WinTerm**
Marketfield Software Development. VT220 over TCP/IP, NetBIOS, LAT, Int14 and others. List \$ 279.

Facsimile

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- **Bitfax for Windows**
Bit Software. List \$ 79.
- **Bitfax/OCR for Windows**
Bit Software. With OCR support for converting faxes into text. List \$ 199.
- **Eclipse FAX**
Eclipse. A fax printer driver with thumbnails and good speed. List \$ 119.
- **FaxView for Windows**
Black Ice Software. With color fax support. List \$ 179.
- **EZ-FAX for Windows**
Calculus. A fax printer driver. List \$ 499.
- **FAXability**
Intel. A fax printer driver. List \$ 119.
- **FAXability/OCR**
Intel. A fax printer driver with character recognition. List \$ 249.
- **FaxFiler/FaxCapture**
Extended Systems. A network fax management system. List \$ 695 / \$ 495.
- **FAXit for Windows**
SofNet. A fax printer driver. List \$ 119.
- **FaxView for Windows**
Black Ice Software. List \$ 129.
- **FaxPress 3.0**
Castelle. Network fax service with a Windows client interface. List \$ 3,495.
- **LanFax Redirector**
Alcom. Client/server based network fax. List \$ 995.
- **ShareFax for Windows**
SofNet. Network fax for any Windows-compatible network. List \$149 (2-user).
- **SuperFax for Windows**
Pacific Image Communications. List \$ 99.
- **WinFax Pro**
Delrina. An advanced version of WinFax (which is supplied with many fax cards); the fax device appears to Windows as a printer. List \$ 119.

News readers

- **Helldiver**
?. A Windows newsreader based on Waffle. Registration \$?.
- **WinQVTnet**
?. NNTP and SLIP support. Uses non-standard .newsrc files. Registration \$?.
- **WinVN**
Available at *ftp.cica.indiana.edu*. NNTP, SLIP and serial support. Free.
- **WRN**
Frank van der Hulst. NNTP-based newsreader, inspired by *xrn*. Free.

X Windows servers

- **eXcursion**
DEC. List \$?.
- **FrameworkX**
IDE. Includes TCP/IP. List \$ 545.
- **HCL-eXceed/W**
Hummingbird Communications. List \$ 545.
- **PC-Xview for Windows**
Spectragraphics. List \$ 445.
- **XVision**
UniPress Software. X11R4 support. List \$ 449.

Utilities

<u>Backup software</u>	
<u>Benchmarking utilities</u>	92-04-10
<u>Desktop enhancers</u>	
<u>Font packages</u>	92-11-09
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<u>Task managers</u>	
<u>Miscellaneous</u>	92-10-04

Backup software

- **Central Point Backup**
Central Point Software. List \$?.
- **Norton Desktop for Windows**
Symantec. Program manager, file manager, file recovery, backup. List \$?.

Benchmarking utilities

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- **WinBench**
PC Magazine. Benchmarks performance with typical application usage. Free.
- **WinTach**
Texas Instruments. Benchmarks performance with typical application usage. Free.

Desktop enhancers

- **BigDesk**
Registration \$?.

Font packages

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- **Agfa Desktop Styles**
Agfa. 39 TrueType text and display faces. List \$ 79.
- **Agfa Type Jamboree**
Agfa. 46 TrueType text and symbol faces. List \$ 99.
- **Bitstream TrueType Font Pack 1**
Bitstream. 40 TrueType text and display faces. List \$ 79.
- **Bitstream TrueType Font Pack 2**
Bitstream. 20 TrueType text and display faces. List \$ 39.
- **Blue Sky Research Outline Fonts**
Y&Y. The full set of Computer Modern fonts in Type 1 format. List \$ 345.
- **Fluent Laser Fonts Library**
Casady & Greene. 120 text and display faces. List \$ 179.
- **Font Value Pack**
QualiType. 150 faces plus 1500 icons. List \$ 99.
- **Microsoft TrueType Font Pack**
Microsoft. Lucida Bright, Lucida Sans (? fonts total). List \$ 49.
- **Monotype PostScript Value Pack**
Monotype. 57 Type 1 text and display faces, including Baskerville, Book Antiqua, Bookman, Calisto, Century Gothic and Century Schoolbook. List \$ 89.
- **Monotype Presentation FontPack**
Monotype. TrueType versions of Albertus, Gill Sans Bold Extra Condensed and Swing Bold. List \$ 19.
- **Monotype TrueType Value Pack**
Monotype. 57 TrueType text and display faces, including Baskerville, Book Antiqua, Bookman, Calisto, Century Gothic and Century Schoolbook. List \$ 89.
- **QualiType Fonts**
QualiType. 135 TrueType fonts plus 1500 icons. List \$ 99.
- **Optifonts**
Castcraft Software. 400 TrueType text and display faces on CD-ROM. List \$ 996.
- **SuperType Master Library**
QualiType. 150 TrueType faces plus 1500 icons. List \$ 99.
- **Top Fonts**
EIQ Engineering. 93 TrueType text and display faces. List \$ 199.
- **TrueType Font Pack for Windows**
Upgrade Systems. 600 TrueType text and display faces. List \$ 129.
- **TypeCase**
SWFTE International. 131 TrueType text and display faces. List \$ 69.

Individual font packages are also available for varying prices from companies such as Adobe, Bitstream, Monotype and Image Club. Some software, such as CorelDRAW! and Windows Draw also include bundled TrueType fonts.

- **Adobe Type Manager 2.0 [Mac]**
Adobe. A scalable font manager; supports Adobe Type 1. List \$ 99.
- **AllType**
Atech. Typeface conversion utility; supports Type 1, Type 3, TrueType and Speedo. Has some problems in conversions, and no hinting List \$ 49.
- **Bitstream FaceLift**
Bitstream. A scalable font manager; supports Speedo, TrueType and Adobe Type 1. List \$ 99.
- **FontMinder**
Ares. Manages fonts by allowing you to activate and deactivate sets of fonts. List \$ 79.
- **FontMonger for Windows [Mac]**
Ares. Typeface editing and conversion utility; supports Type 1, Type 3 and TrueType. Has automatic hinting only. List \$ 129.
- **Fontographer for Windows [Mac]**
Typeface editing utility; supports Type 1 and TrueType. Has automatic hinting only. List \$?.
- **Incubator for Windows**
Type Solutions. A scalable font manager with special effects. List \$ 149.
- **MoreFonts**
MicroLogic. A font manipulation and modification package. List \$ 129.
- **Publisher's Powerpak for Windows**
Atech. A scalable font manager. List \$ 79.
- **TrueType Font Installer**
Kai Kaltenbach. Preview, print samples and install TrueType fonts. Registration: a science fiction book.

Program launchers: Program Manager type

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- **Folders**
Sloop Software. Program Manager add-on providing nested folders. Registration \$ 20.
- **Plug-In**
Plannet Crafters. A Program Manager extension providing group management, custom group icons, QuickRun menu and other enhancements. Registration \$ 20.
- **Program Manager Groups**
Andreas Furrer. A Program Manager add-on utility providing hierarchical groups. Free.
- **SloopMan**
?. A program manager replacement with groups-within-groups. Registration \$?.

- **AppBar**
Geert van Kempen. NeXT-style button bar: with trash can. Free.
- **Dashboard**
Hewlett-Packard. Multiple views of application configurations. List \$ 99.
- **DropDesk**
Scott Bender. Drag files from the File Manager to the desktop to run them. Free.
- **Dropper**
Freely arrangeable buttons on the desktop. Registration \$?.
- **Norton Desktop for Windows**
Symantec. Program manager, file manager, file recovery, backup. List \$ 179.
- **Next**
NeXT-style button bar. Registration \$?.
- **Rooms**
Xerox. organize your applications into multiple desktops ("rooms"), and switch between them while running. List \$?.
- **Route 1**
D.A. Karp. NeXT-style button bar: Visual Basic-based. Registration \$ 14.
- **WinDock**
Brian Capson. NeXT-style button bar: clean and easy to use. Registration \$ 15.
- **XTree for Windows**
XTree. A Windows version of the venerable DOS-based XTree. List \$ 99.

Task schedulers

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- **Clocker**
Greg Reinacker. Registration \$?.
- **ClockMan**
?. Registration \$?.

Task managers

- **Task Manager**
Guenter Schwaninger. Registration \$ 10.

Miscellaneous

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- **Cloak**
Lorry Back Software. Hides undesired icons. Charityware.
- **Print Manager**
Saber. Network printer management tool. List \$ 79 (single-user).
- **TimeFrame**
Places a digital clock on active window's title bar. Free.
- **WizUnzip**
An integrated UnZip utility; does not require PKUNZIP. Registration \$?.

Multimedia and Entertainment

CD Audio players

Games

Multimedia and Sound Editors

Multimedia Playback

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CD Audio players

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- **CD**
John Junod. A fairly basic Windows audio CD player, with source. Free.
- **CD Player**
?. A basic Windows audio CD player. Registration \$ 10.
- **Media Player**
Microsoft. An basic audio CD player. Included with Windows 3.1.
- **WinCD**
?. An audio CD player with shuffle play and programming. Registration \$ 10.

Games

- **ChessNet**
Masque. Chess against computer or via modem or network. List \$ 49.
- **Kaleidokubes**
Artworx. Color domino cubes (1 or 2 player). List \$ 49.
- **New York Times Crossword Puzzle**
SWFTE. 200 daily and 50 Sunday crossword puzzles. List \$ 49.
- **SimCity for Windows**
Maxis. A sophisticated simulation of a city. List \$?.
- **Symantec Game Pack for Windows**
Symantec. Six Windows games. List \$ 39.
- **Windows Entertainment Pack Vol. 1**
Microsoft. Tetris, Minesweeper, Golf solitaire, Cruel solitaire, and more. List \$ 39.
- **Windows Entertainment Pack Vol. 2**
Microsoft. Tut's Tomb solitaire, FreeCell solitaire, Pipe Dream, and more. List \$ 39.
- **Windows Entertainment Pack Vol. 3**
Microsoft. Fuji Golf, TriPeaks solitaire, WordZap, SkiFree and more. List \$ 39.
- **WinGames**
WinSoft. WinCommand, Chopper Attack, Yacht and more. List \$ 39.
- **WinGames II**
WinSoft. MrMind, Lander, Adventure and more. List \$ 49.

Sorry, the shareware and freeware games are just too numerous to mention! Check your favorite FTP site or BBS for availability.

Multimedia and Sound Editors

- **Encore**
Passport Designs. Music publishing package for composing and editing music. List \$ 595.
- **Sound Brush**
MP Technologies. Sound editor and player. List \$ 250.
- **Trax**
Passport Designs. MIDI editor and player. List \$ 595.
- **Wave for Windows**
Turtle Beach. Sound editing package. List \$ 149.
- **X-oR**
Dr. T's Music Software. MIDI editor and librarian. List \$ 129.

Multimedia Playback

- **AmandaStories**
Voyager. Animated stories for children age 3 and up. List \$?.
- **Composer Quest**
Dr. T's Music Software. Various classical composers, with sound, text and pictures. List \$ 99.
- **Multimedia Beethoven**
Microsoft. Experience Beethoven with sound, text and pictures. List \$?.
- **WinTV**
Hauppauge. View NTSC TV in a window. Includes adapter card. List \$ 495.

