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Microsoft Windows 3.1

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Overview

The new Microsoft Windows 3.1 operating system makes using PC's easier for everyone. Designed to make using new applications easy, the graphical interface gives everyone from new users power users access to the most powerful features. And the new Windows online tutorial and Help functions help you get productive faster.

With over five thousand available applications for Windows, there's always a choice of software no matter what job you need to get done.

And there's a wide array of compatible hardware from which to choose - everything from scanners to PC's - so Windows helps you make the most of your hardware investments.

A Best-Seller Made Better

Microsoft Windows version 3.1 makes your PC even easier to use

How do you make a best-seller better? At Microsoft, the mission to improve on the best-selling Microsoft Windows version 3.0 began, not just by examining the product to figure out where to make improvements, but by listening to the comments and suggestions of more than 9 million people worldwide who use the Microsoft Windows operating system.

Little changes make work a whole lot easier

Windows version 3.1 embodies more than a thousand changes that make a PC easier to use. And that adds up to significantly improved user productivity.

For example, a new installation feature, Express Setup, takes over all of the details of setting up and configuring Windows. Furthermore, system administrators and users who want to have more control over installation configuration can specify settings with the Custom Setup option.

Windows version 3.1 is also easier to use with context-sensitive help in dialog boxes and more extensive help files. In fact, Windows Help is almost

always just a keystroke away. And a tutorial is included to teach basic Windows tasks and make new users productive from day one.

Program Manager makes it easier to open applications and organise your work.

In Windows version 3.1, as soon as you turn on your computer, Program Manager goes to work for you with its new StartUp group. To instruct Windows to start up with Microsoft Word for Windows open, for example, simply drop the application icon into the StartUp group. You can specify whether an application will open to the application's default setting (usually full screen) or minimised (as an icon at the bottom of the screen). If the contents or positions of windows or icons change, or any menu settings in Program Manager or File Manager change, Windows preserves the changes for the next Windows session.

Users also asked for the ability to have Windows assign working directories for data files created by application for MS-DOS and Windows. With Windows 3.1 you can choose the File Properties command in Program Manager to instruct a word processing application, for example, to automatically store all documents in a different directory than the directory where the program files are located. And you can assign a shortcut key for any application from within the Program Manager File Properties dialog box and then use that keystroke combination to quickly launch or switch to the application.

Windows version 3.1 is also more eye-catching with icon titles that word-wrap under the icon, a library of icons for MS-DOS-based applications, new wallpaper and built-in screen saver images. If you use a laptop computer you will appreciate a new mouse cursor tracking control designed specifically for LCD displays.

An improved and faster File Manager is exciting news in Windows version 3.1. For example, to open a large directory tree (of 64 directories with 5 subdirectories each) in the new Windows File Manager takes less than 8 seconds, compared to 16 seconds in version 3.0. And to copy 64 files to a floppy disc takes 2 seconds (compared to 30 seconds in version 3.0). Says Windows version 3.1 beta tester Bob Quick of Northern Life

Insurance, "File Manager - and all of Windows - is definitely faster. There's no question about that."

As for other speed improvements, File Manager reformats disks faster and more easily with File Manager's new Quick Format command. And File Manager can quit a time-consuming process before it has completed if you wish to change your mind. All you have to do is press the ESC key.

The new File Manager also makes it easier to view what's on your disc. For example, File Manager can display the contents of more than one drive or directory at the same time in the same window. File Manager's new split window displays a directory on the right, and lets you easily browse through directories - without opening separate windows. And you can customise the size and style of type in a File Manager window to make file names easier to read.

File manipulation is made easier using "drag and drop". To create a new program item to represent an application, simply drag the application's file icon from File Manager and drop it onto a group in Program Manager icon. You'll also find it easier to move or copy files from one directory by dragging files across File Manager's new split screen.

#### Better Faster Type

Windows version 3.1 with TrueType\* delivers better, faster output on screen and paper with the addition of these type and printing enhancements:

TrueType\* scalable font technology creates high-quality fonts "on-the-fly", improving WYSIWYG (what-you-see-is-what-you-get) output by making the same fonts available for both displays and printers.

A faster Print Manager lets users return to work on an application much more quickly after starting a printing task.

TrueType fonts will work with all applications for Windows and with the broad range of displays and printers supported by the Windows operating system. No charges or upgrades are required. And because TrueType will always work right out of the box. Furthermore, as truetype is fully integrated with Windows version 3.1

and with Apple Macintosh System 7.0, it is easier to share documents between the two platforms.

TrueType fonts are scalable, which means you can choose any font size you need without storing separate bitmap files for every size of every font. With TrueType you get true WYSIWYG because the Windows operating system, TrueType, and updated printer drivers work together to ensure that TrueType fonts are sent to any device exactly in the way the device requires. So when you print TrueType fonts, the page will look exactly the same on paper as it does on the screen.

Better type, on all types of printers

With TrueType, a dot-matrix, ink-jet, or PCL or Postscript laser printer will produce better quality type from the first day you work with Windows 3.1. In some cases, printing with TrueType fonts is even faster than with printer-resident fonts!

- \* Dot-matrix and ink-jet printer output looks better because TrueType now allows the Windows system to create font bitmaps that match the exact resolution of the device rather than adjusting a presized bitmap up or down to match the printer resolution.
- \* PCL laser printers (such as Hewlett-Packard LaserJet compatible printers) usually perform faster because TrueType downloads only the characters needed to print the document rather than downloading the entire set of characters in a bitmap font.
- \* PostScript laser printers usually print TrueType documents faster if the document does not contain all of the characters in the font and if the computer has a faster CPU than the printer. Windows 3.1 can map a TrueType font to a PostScript font so you avoid font downloading altogether.

More quality font choices at lower cost

Virtually every major font vendor has committed to developing substantial TrueType font libraries. While you are getting familiar with the TrueType fonts provided with Windows 3.1, you can still use the fonts and type managers you're using with Windows version 3.0. For users who have installed Adobe Type Manager, Microsoft has worked closely with Adobe Systems

Incorporated to ensure that Adobe Type Manager will be compatible with Windows 3.1.

In addition to the 13 TrueType Font Pack provides over 44 superior quality fonts to help create professional looking documents. The Windows TrueType Font pack provides a total printing solution, giving you equivalent fonts to all of the 35 standard PostScript fonts plus additional fonts not available in PostScript.

A faster, smarter Print Manager

In all areas of the system, Windows version 3.1 has been redesigned to make printing faster. In addition to faster printing speeds, Windows version 3.1 automatically resumes stalled print jobs. For example, if the printer runs out of paper, Windows automatically resumes the job when the paper tray is filled.

\* Refer to back cover for ordering details.

Control and Performance

Windows version 3.1 adds powerful operating system features to increase reliability and speed

The first time you use the new Windows operating system, you'll notice many improvements that you asked for. For example, problems with UAEs (Unrecoverable Application Errors) have been addressed. Now, the Windows operating system is bullet-proofed to reduce crashes due to application errors, and the Windows system can detect and handle errors gracefully.

Bullet-proofing Windows with Applications Reboot

Applications can't always be perfect. Occasionally you will encounter situations where an application error makes your system freeze up. Before, your only choice was to reboot the entire system, possibly losing work you hadn't yet saved in another application.

With Windows 3.1, if one of your applications is not responding, you will usually have the option, through the Application Reboot feature, to close only the offending application - and not necessarily restart Windows.

## Sheet1

All you do is press CTRL+ALT+DELETE when an application is locked and you'll see a screen providing further instructions.

Fewer application errors and more choices and information when they do occur.

You may be wondering how Windows version 3.1 reduces application errors and system crashes. One of the most powerful additions to Windows 3.1 is "parameter validation". This means that when information is passed from an application to the Windows operating system, Windows checks the information to make sure it is valid. If the information is not valid, Windows communicates with the application to request the correct parameter. If the application does not respond with a valid parameter, Windows displays a detailed message explaining what caused the problem that it couldn't fix in the background. The net effect is that the number of application errors you encounter goes way down.

The message you'll see after many application errors gives you the option to either close the application or ignore the error and continue to try to save your work. Although a far fewer application errors will occur with Windows 3.1, the Ignore button gives you more control when they do happen. If you choose to continue you may be able to save your work before restarting Windows. If you choose to close the application, Windows will present you with more detailed information about what application caused the error, what type of error occurred, and where in the system the error occurred.

This information is especially useful for developers, who can use it to correct errors in their code long before they ship their products. That translates into great benefit to users - the availability of more reliable new applications for use with Windows 3.1.

New tools for programmers are also helping make applications more dependable. Windows version 3.1 includes a utility called Dr.Watson, a tool for diagnosing application errors. Dr.Watson prompts the user for details about what was being done when an application error occurred. It then records detailed information about the state of the Windows operating system in a file called DRWATSON.LOG in the directory where Windows is located.

Technical support personnel can instruct Windows users to install Dr.Watson to help them track down a problem with an application.

Fine-tuned and turbocharged to boost speed and performance

As well as faster window and dialog box responsiveness and more efficient use of memory - you'll find more display drivers and printed drivers than ever before, as well as major speed enhancers like 32-bit disc access and SmartDrive 4.0.

Windows 3.1 boosts performance for all file input and output operations with 32-bit disc access to disc drives with Western Digital compatible controllers. This capability is implemented through a 32-bit virtual device driver that communicates directly with the disc drive controllers, bypassing both MS-DOS and PC BIOS. By using the 32-bit disc access provided by Windows 3.1, programs never have to leave protected mode - which translates to increased speed. If you use MS-DOS applications, and you set up a virtual memory paging file, 32-bit disc access also enables you to run a larger number of applications in the background and to switch between them more quickly.

With SmartDrive 4.0 you'll find that opening, saving and manipulating files is much smoother and faster. SmartDrive works by saving frequently accessed information from your hard disc in a "disc cache" in your computer's extended memory.

#### Running MS-DOS Applications

Windows 3.1 makes your MS-DOS\* applications easier and faster to use

Windows 3.1 makes your MS-DOS applications easier to set up and use, and much more responsive. And you can do things you couldn't do before - like use your mouse to control your MS-DOS application while it is displayed in a window.

#### Smooth migration to applications for Windows

As you upgrade your MS-DOS-based applications to their Windows-based equivalents, you don't have to worry

about losing any productivity. Programs developed for MS-DOS work well under Windows 3.1 and it's easy to use them alongside your applications for Windows.

Because Windows 3.1 runs MS-DOS applications that use VGA graphics - such as AutoCAD - in a window, it's easier than ever to use the Clipboard to copy and paste text and graphics between applications. If you have a system with an 80386 or higher microprocessor, you can run multiple MS-DOS applications simultaneously. And to switch back and forth from full-screen to windowed display in an instant, just press ALT+ENTER.

Easier to install, configure and use

The simpler and smarter Setup program in Windows 3.1 makes installing and configuring your MS-DOS applications much easier. When Setup installs your MS-DOS applications, it automatically grabs the right icons and program information files (PIFs). PIFs contain the settings the Windows system needs to run applications for MS-DOS.

Before, if several MS-DOS applications were minimised you wouldn't know which was which. They all had the same generic icon. Now the icon that resides with the application in the Program Manager "sticks" to the program even when it's minimised.

You'll also appreciate these new capabilities that make your MS-DOS application easier to use:

- \* Better mouse support. Now the mouse can do everything in a window that it can do in full-screen display and more.
- \* Font control. When you run an MS-DOS application in a window, you can choose the font size you want.
- \* Windows 3.1 prevents you from running another copy of itself while you're working in an MS-DOS window.
- \* All messages are more helpful. Instead of cryptic "Out of Memory" messages, you'll see messages that tell you what steps to take to resolve the problem.
- \* Smart switching in standard mode. An MS-DOS application can tell Windows 3.1 to prevent the user from switching to another application until a task is done, such as while a network application makes a request over the network.

You can run more MS-DOS applications faster



You'll notice many speeds enhancements like faster screen updates and scrolling, and quicker display of dialog boxes. And when you press ALT+TAB to switch between applications, you'll be amazed how much more quickly the next application pops into view.

#### Designed for Networks

Windows 3.1 makes Windows on a networks easier to administer and use

Windows version 3.1 has improved compatibility with a wide range of local area network (LAN) operating systems, has simplified setup and trouble shooting for system administrators, and has made accessing information on networks easier for users.

#### Easier to administer and control

Windows version 3.1 makes setup easy for administrators by including new options. The setup/a option takes over the formerly complex steps of installing Windows on the network file server. This option automatically expands the Windows files, makes them read-only, and copies the files to the file server. With the setup/a option, an administrator can write a text file specifying how the Windows system should be set up on a specific workstation. Windows can then be installed quickly and easily at the workstation, with little or no user interaction.

Along with an improved setup program, version 3.1 has new, detailed documentation in the Windows Resource Kit\* to take the guesswork out of setting up the Windows operating system on a LAN. This documentation will explain how to customise the Windows setup program and how to modify the Program Manager initialisation file (PROGMAN.INI) to control how users can modify their program groups and what applications they can run.

Easier on users with persistent connections and a faster File Manager.

Windows 3.1 also makes connecting to the network easier. If the user exits Windows while attached to a network, Windows 3.1 remembers what network connections were established. When the user restarts Windows,

those connections will be re-established automatically (if the network requires a password, the user will be prompted to type in the password).

Improvements to File Manager are some of the most evident benefits of version 3.1 for network users. File Manager displays the directories of network drives in a fraction of the time required by Windows 3.0. Network drives are easier to identify because File Manager lists the network name for each network connection and provides the Select Drive command in the File Manager Disc menu which displays a list of the drive letters and path names of all network connections.

Microsoft has made Windows version 3.1 much easier to use on networks by eliminating the crucial stumbling blocks identified by system administrators and users.

#### More Application Choices

Windows version 3.1 provides a great foundation for current and future Windows applications

The range of application choices available today for the Microsoft Windows operating system represents a tremendous success with more than 5,000 applications for Windows 3.0 currently available.

With Microsoft Windows version 3.1, users can take full advantage of that huge base of applications. And the addition of Object Linking and Embedding (OLE) technology in Windows version 3.1 will enable users to optimise and integrate applications for Windows in the future.

#### Making applications work better together

OLE, a new feature in Windows 3.1, will enable you to more closely integrate applications for Windows in the future. OLE will be the foundation for a new generation of applications that work together seamlessly, making the sharing of data easier.

With OLE, data is treated as a collection of types of "objects". A spreadsheet chart, an illustration, a table, a sound file, and even a paragraph of text are all examples of such objects. OLE applications - those that treat data as OLE objects - can share objects

quickly and easily. So OLE applications become the building blocks that allow you to easily combine different types of data in a single document.

A simple example shows how OLE works. The Microsoft Excel 3.1 spreadsheet is equipped with a wide array of graphs, grids, buttons, even some drawing tools. But it doesn't have sound capabilities. It does, however, support OLE.

Windows 3.1 comes with several applications that support OLE, including Sound Recorder. So you can create a voice annotation instructing the user of Microsoft Excel spreadsheet to "Please double check this figure" in a particular cell. An icon in the cell represents the voice annotation. Choosing this icon plays the voice message if your system is equipped with appropriate audio hardware and driver.

#### A new way of thinking

The whole idea behind OLE is to build the links that allow applications to work together. So you'll have more choices from which to select the right tool for the task you need to accomplish.

Several companies have already developed OLE applications. Some key examples are Microsoft Excel 3.0, Word 2.0, Powerpoint 2.0 and Publisher 1.0 for Windows. In addition to Microsoft products, Micrograx Charisma, Ami Professional 2.0 from Samna Corporation, Wordperfect for Windows, Lotus Notes 2.0 and Borland Object Vision 2.0 are OLE applications.

#### Evolving Technologies

##### Multimedia support is now mainstream

With Windows version 3.1, digital audio capabilities are now built in supporting special presentation, education and entertainment applications that add impact with the use of human voice, music and sound effects. Also, Windows 3.1 includes an OLE-compatible digital recording application, giving you the ability to record personal messages and attach them to spreadsheets, documents or electronic mail created by OLE-compatible applications. Windows 3.1 supports two types of audio: MIDI (musical instrument digital interface), which creates synthesized sounds; and

waveform (or digital audio) which records and replays sounds much like a tape recorder, but with digital-quality results.

Media control interface makes it easy to add new multimedia capabilities

Windows 3.1 also includes the "Media Control Interface" (MCI) which is designed to control multimedia devices such as videodisc players and digital video cards (such as DVI). MCI also enables you to add new multimedia applications and peripherals to your PC as they become available. To take advantage of the multimedia capabilities in Windows 3.1, you will need to have an audio board, CD-ROM, or PC that is compatible with the Multimedia PC Specification 1.0. The easiest way to identify hardware that complies with this specification is to look for the distinctive "MPC" trademark.

Is the pen mightier than the mouse?

While Microsoft Windows for Pen Computing is a separate product that will be packaged with a variety of new pen-based computers, it is built on Windows 3.1. So you can use the pen with your favourite applications for Windows to point and tap, as you would with the mouse, issue commands using "gestures" (such as scratching out a word to make it disappear), or use the pen to write. With Windows for Pen Computing, your handwriting can be captured as is, or translated into typed text. Ultimately, you'll be able to take advantage of the many exciting new pen-based applications that are appearing on the market.

Together, these operating systems offer solutions to your current computing needs, while providing a smooth migration path to future technologies.

#### Tips & Tricks

Tip: To quickly switch between open applications in Windows 3.1, hold down the ALT key and press the TAB key at the same time. To display the application icon and name for any open applications, repeatedly press the TAB key while holding down the ALT key. To open the displayed application, release the ALT key.

Tip: To quickly switch between full-screen and windowed display while using an MS-DOS application, simply press

ALT+ENTER.

Tip: To open a dialog box listing all the open applications on your system, hold down the CTRL key and press the ESC key. The Task List is handy for closing for switching applications.

Tip: If you use the Print Manager to delete a file currently printing in graphics mode, reset your printer (press the Reset button to turn it off and then on again) to clear the printer buffer.

Tip: To automatically open an application each time you start Windows, simply hold down the CTRL key and drag the application icon, then drop it onto the StartUp group icon or open group window. When you restart Windows, the programs whose icons are displayed in the StartUp group are automatically launched.

Tip: To install a screen-saver for your system, open the Control Panel and choose the Desktop icon. The Desktop dialog box contains a variety of screen-saver options, which can be password protected to ensure that no one accesses your computer without your permission.

Tip: To display the contents of more than one drive or directory at once using the new File Manager, double-click the drive icon to open an additional window for that drive, and select the Tile command from the Window menu.

Tip: To get help for any dialog box option displayed in Program Manager, File Manager, Print Manager, PIF Editor, or Control Panel, simply select the option you need more information about and press the F1 key.

Tip: To run a tutorial that teaches the basics of using a mouse and Windows, choose the Windows Tutorial command from the Help menu in the Program Manager.

Tip: To use your mouse to copy from an MS-DOS application running in a window, from the applications Control menu select the Edit, Mark command. With Windows 3.1 you can then use the mouse to highlight the area of text you want to copy. Return to the Control menu, select Edit, Copy to copy the highlighted area of text to the clipboard. The data can then be pasted into either an MS-DOS or Windows application.

Questions and Answers

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Answers to commonly asked questions about Windows version 3.1

Q: I have a lot of applications I run with Windows 3.0. Microsoft is working closely with application developers to test their applications with Windows 3.1, and in some cases has made changes to Windows to enable an application to run more reliably. Also, many applications vendors have upgrades of their applications which take advantage of new features in Windows 3.1, such as Object Linking and Embedding (OLE). For the most up-to-date information on running your applications with Windows 3.1, refer to the Help file, APPS.HLP, included with Windows 3.1. To view the Help file, from the Help menu in Program Manager, choose Contents. From the File menu in Program Manager Help, choose Open, then select the APPS.HLP file from the File Name box.

Q: Which version of MS-DOS is best to use with Windows version 3.1?

A: MS-DOS version 5.0 is the best version of MS-DOS because it is designed to work optimally with Windows version 3.1. If you are using MS-DOS applications while working in Windows, MS-DOS 5.0 enables you to free up from 45k to over 100k of conventional memory for those applications.

Q: What network operating systems does Windows 3.1 support?

A: Windows version 3.1 automatically detects and directly supports the following networks:

- \* 3Com 3+Open      \* Microsoft LAN
- \* 3Com 3+Share     Manager
- \* Artsoft LANtastic \* Microsoft Network (or 100%
- \* Banyan VINES     compatible)
- \* DEC Pathworks    \* IBM OS/2 LAN Server
- \* Novell NetWare   \* TCS 10Net
- \* IBM PC LAN Program

Q: I'm a Windows user and I want to develop my own Windows applications. What's the best development tool for me?

A: Microsoft Visual Basic is the easiest way to write

applications for Windows. You can create true Windows applications that feature all standard Windows controls (command button, list boxes, scroll bars, etc.), pull-down menus and icons. Visual Basic has a powerful, general purpose programming language and any application that you create can be distributed freely. Extensive learning and reference materials include an on-line Tutorial and context-sensitive Help.