16-bit

Usually refers to an application (MS-DOS or Windows 3.1) that works with information in groups of 16-bits at a time. 16-bit applications that run under Windows and that share a single memory space cannot be preemptively multitasked.

16550 UART (Universal Asynchronous Receiver Transmitter)

A chip in PC computers that is used for serial communications. It replaces the older 8250A and 16450 UART chips found on many PCs.

The 16550 UART overcomes limitations of the older chips. It can buffer up to 16 characters before generating an interrupt (the older chips generate interrupts after every character). It also recovers more quickly from interrupts in order to continue processing.

This chip is a must addition for computers using external communications devices (usually a modem) that transmit data in excess of 9600 bits-per-second (bps) within Windows.

32-bit

Usually refers to an application that works with information in groups of 32-bits at a time. 32-bit applications generally provide better performance and memory management than 16-bit applications.

accelerator key

A key that may be pressed when a menu is displayed in order to execute one of the menu options.

The accelerator key is represented as an underlined character in the menu item name. If the menu item is on the menu bar, you must press the Alt key before pressing the accelerator key. Once a drop-down menu is displayed from the menu bar, you need only press the accelerator key to execute the menu option. For example, pressing Alt+F displays the **F**ile menu, and once that menu is displayed, simply pressing the "O" key corresponds to selecting the **O**pen option with the mouse.

active window

The currently selected window, which appears on top of any other window. The active window can usually be distinguished from inactive windows by the distinctive color (blue, by default) or intensity of its title bar.

API (application programming interface)

A set of common functions and/or subroutines used to implement a particular feature. Microsoft has several APIs including the Windows API, Win32 API, OLE API, MAPI, and Telephony API.

application programming interface

application window
A [window](#) that provides a work area for an application.

arrow keys

Keyboard keys used to navigate around your screen. Each key is marked with an arrow that indicates the direction the cursor moves when the key is pressed. The four standard arrow keys are UpArrow ⬆, DownArrow ⬇, LeftArrow ⬅ and RightArrow ➡.

assembly language

A low-level computer programming language in which each instruction corresponds to a single machine code instruction. Programs written in assembly language tend to run faster than those written in higher-level languages like C or BASIC. Because different types of CPUs recognize different sets of machine code instructions, assembly language programs written for one type of computer must be rewritten in order to run on a different type of computer.

asynchronous

Refers to an operation that proceeds independently of a timer. In asynchronous communications via modem, for example, the modems rely on each sending start and stop signals ("start bits" and "stop bits") in order to know how to pace the exchange of data.

auto mount

When a disk is compressed, the files that it contains are condensed together and stored as a special hidden file called the "compressed volume". If the compressed volume is not mounted, it simply appears as a large hidden file on the host drive. When the compressed volume is mounted, it is recognized by the operating system as a compressed disk, and treated as a separate disk, independent of its host drive.

When the system is set to automatically mount compressed volumes, floppy disks that have been compressed will be automatically recognized and mounted when they are inserted to the disk drive.

AUTOEXEC.BAT

A batch file containing commands that are executed automatically when your computer starts up. The commands in AUTOEXEC.BAT usually set the path environment variable, determine the look of the DOS prompt, start TSRs, and execute other programs that should be run when the computer starts.

background

A process "running in the background" receives a lower proportion of the CPU's processing time than a process "running in the foreground". When a process runs in the background, it receives attention from the CPU during lulls in the processing of the foreground task.

background

Any running applications that are not the foreground application.

By default, an application running in the foreground is the primary task of the computer and receives a higher proportion of the CPU's processing time than other running applications. The background applications receive attention from the CPU mostly during lulls in the foreground task processing.

You can change the relative processing attention given to foreground and background tasks by clicking System in the Windows NT Control Panel and adjusting the Application Performance slider control on the Performance tab.

basic input/output system

baud rate

Term used to describe the speed of data transmission, usually referring to a modem. It specifies the number of signal variations per second. Baud rate is commonly used as a synonym for bits-per-second, but this can be inaccurate. While one signal change can represent one bit of data, in today's high-speed communications one signal change usually encodes more than a single bit.

BBS (bulletin board system)

Any online service that allows messaging, electronic mail, and file transfer between computer users who usually connect to the system via modem.

benchmark

A test used to measure software or hardware performance.

BIOS (Basic Input/Output System)

Predefined procedures that support the transfer of information between the computer's hardware, such as memory, hard disks and the monitor. On personal computers the BIOS ("ROM BIOS") is built into the machine's read-only memory.

block

A group of consecutive bytes of data that is read from or written to a disk as a unit.

boot record

The first physical [sector](#) on a floppy disk or the first logical sector of a hard disk [partition](#). It identifies the disk's architecture ([sector](#) size, [cluster](#) size, etc.). For [bootable disks](#), it also contains the boot record program that loads the operating system. Also referred to as [boot sector](#).

boot sector

A sector at the beginning of each disk that identifies the disk's architecture (sector size, cluster size, etc.). For [bootable disks](#), it also contains a program that loads the operating system.

bootable disk

Any disk that contains the system files necessary to start your computer. While today's computers include a bootable <u>hard disk</u> that is normally used to start the machine, "bootable disk" usually refers to a <u>floppy disk</u> that can be used to start the machine in an emergency.

bulletin board system

bus

The set of hardware lines that connects different parts of the computer (such as the microprocessor, input/output ports, and memory) and over which data is transferred.

button bar

A row of buttons immediately below an application's menu bar that lets you perform specific tasks, such as copying, moving, and deleting items, or displaying certain information.

cascading menu
A menu that extends out from a menu item when that item is selected. Cascading menu items are identified by a right-pointing arrowhead following the menu item name.

central processing unit

CGA (color graphics adapter)

A type of video adapter board used in personal computers. In the evolution of PC video display standards, CGA was developed after the monochrome display adapter (MDA). CGA cards are capable of several video modes but have a limit of 4 colors for graphics and 16 colors for text.

chain

When parts of a single file are stored in non-contiguous clusters on a disk, the file allocation table (FAT) entries for each cluster (except the last) in the file point to the next sequential cluster storing the file's data. The file is said to be stored in a chain of clusters, and the FAT entries are said to form a FAT chain.

check box

A graphical interface component that looks like this: ☑

It acts like a switch, representing an option that can be [toggled](#) on and off. When the option is on, a check mark appears in the box. Some check boxes may have three options, and represent the third state by coloring the box gray. Clicking on the box cycles through the different states. **See also** [three-state check box](#).

cluster

The basic allocation unit of disk storage. Clusters consist of one or more disk sectors. Only whole clusters are allocated to files, so even if a file (or part of a file) physically occupies only a portion of a cluster, that entire cluster will be allocated to the file, and will be considered used disk space.

CMOS (complimentary metal oxide semiconductor)

A battery-powered chip in 80286 (and more advanced) computers that preserves basic data about the system's hardware. Information such as the number and types of disks, amount of RAM, and keyboard type is stored in a CMOS chip. This information appears on your computer's "setup screen" which can be displayed during startup.

color graphics adapter

combination box

A graphical interface component that combines the capabilities of a <u>text box</u> and a <u>list box</u>. It provides an entry field into which a user can type, like a text box, and a list of options from which to choose, like a list box.

command button

A rectangular button that carries out the action described by the text on the button. The two most common command buttons are OK (performs an action or acknowledges a warning or message) and Cancel (closes a dialog box without performing any action). Command buttons are sometimes referred to as "push buttons."

COMMAND.COM

The default command interpreter program for MS-DOS. It accepts commands typed from the keyboard and performs tasks such as loading other programs and directing the flow of information between programs and the CPU.

commit memory

Windows NT allocates memory for processes in two stages. In the first stage, a contiguous series of virtual memory addresses is reserved for a process. The process may reserve more memory than it actually needs or uses at one time, just to maintain ownership of a <u>contiguous</u> block of virtual addresses. At any one time, reserved virtual memory addresses do not necessarily represent real space in either the <u>physical memory (RAM)</u> or on disk.

Before a virtual memory address can be used by a process, it must have a corresponding data storage location in the system's RAM. Windows NT requires that processes "commit" memory before they can use it. When memory is committed, real space must be set aside for it. Memory must be allocated from RAM, and there must be ample space set aside in the paging file so that NT's <u>virtual memory (VM) manager</u> can page the process data from RAM to disk when necessary.

complimentary metal-oxide semiconductor

compressed volume

Also called a "compressed volume file." The hidden file constituting a <u>compressed</u> disk. When a disk is compressed, its files are reduced in size and consolidated to a single compressed volume. The compressed volume is stored on the <u>host drive</u>.

compression

Processing a file's or disk's data using a mathematical algorithm, such that the resulting data occupies less physical space on the disk. Individual files or entire disks may be compressed by various types of utility software.

compression

Processing a file's or disk's data using a mathematical algorithm, such that the resulting data occupies less physical space on the disk. Individual files or entire disks may be compressed by various types of utility software.

The NTFS file system includes its own built-in file compression utility. You can compress files, folders, or entire NTFS partitions.

CONFIG.SYS

A file containing commands that configure a system's hardware and load device drivers. It is automatically executed by MS-DOS when your system starts up.

context click

To click the secondary mouse button. Context clicking while the mouse cursor is over an object can display a context menu containing options specific to that object. By default, context-clicking is synonymous with right-clicking, however the mouse key assignments can be switched for left-handed computer users.

context menu
A menu that appears when you right-click an interface object, and that provides options and information specific to that object.

contiguous
Being physically adjacent to something; touching along one boundary.

Control menu

The menu that allows you to manipulate a window, dialog box, or icon. The Control menu is displayed when you click the Control-menu box or when you right-click on a minimized application's icon in the taskbar. Also called the "System menu."

Control-menu box

Located in the upper-left corner of each window or dialog box. When you click this box, the Control menu drops down. Also called the "System box."

conventional memory

The first 640K of RAM in a computer.

cooperative multitasking

A type of multitasking that relies on applications periodically surrendering (or "yielding") the CPU back to the operating system. At that time, the operating system determines which other running application will be allowed access to the CPU next. Because an application maintains access to the CPU until that application yields, this multitasking technique requires that applications be designed carefully to prevent their monopolizing the CPU. Such monopolization would defeat the purpose of multitasking. Contrast this to preemptive multitasking where CPU access is controlled entirely by the operating system.

Windows 3.x used cooperative multitasking for its 16-bit applications. Consequently, later versions of Windows also use this model to multitask 16-bit applications maintaining compatibility with these older programs. Versions of Windows that support 32-bit applications use preemptive multitasking for those applications.

counter

Attributes of certain Windows NT object types that store variable values which can provide statistical information about an object. For example, the Memory object type includes a Cache Bytes counter that indicates the amount of memory currently reserved for the system's disk cache.

CPU (central processing unit)

The portion of a computer that performs computations, executes instructions and transfers information between all parts of the computer. Microcomputers contain single-chip central processing units, or microprocessors.

CPUID instruction

An assembly language instruction that provides information about the system CPU. The CPUID instruction causes the CPU to return information such as the CPU type, manufacturer, and special features that are present. Not all CPUs support this instruction.

cross-linked files

When the <u>file allocation table</u> of a FAT <u>partition</u> or disk indicates that a single cluster on the disk holds data identified as part of two files, the files are said to be "cross linked." This condition results in an error, since a cluster can only belong to a single file at any one time.

daisy chain

default button

In a dialog box, the command button that is selected by default. It has a thicker border than the other command buttons. Pressing the Enter key while a dialog box is displayed is the same as clicking the default button.

defragment

To rearrange the way that files are organized on a disk such that the data comprising each file is stored to contiguous disk clusters.

device driver

A program that allows a computer to communicate with a device, such as a printer or modem. There are three types of device drivers that can be used while in Windows. The first are MS-DOS device drivers loaded from CONFIG.SYS and AUTOEXEC.BAT. The second are virtual device drivers loaded and managed by Windows (but only available in enhanced mode). The last are installable drivers which are DLLs that are used as device drivers.

device driver
A program that allows a computer to communicate with a device, such as a printer or modem.

dialog box
A special kind of window that either requests or provides information.

directory

directory tree

disk cache

A portion of [RAM](#) reserved for temporarily holding data read from a local or network disk (or data that is to be written to a disk). If a program needs the data again while the information is still in memory, access time will be greatly enhanced, since reading data from RAM is considerably faster than reading data from a disk. The disk cache is sometimes referred to as the "system cache."

disk volume

display adapter

DLL (dynamic link library)

A Windows file containing program routines that may be shared by many different applications.

document window

A window that displays an application document, such as a spreadsheet or text file.

drop-down combination box

A special type of [combination box](#) that "drops-down" its list of choices when you click its [prompt button](#).

drop-down list box

A type of [list box](#) that "drops-down" its list of options when you click its [prompt button](#). When an item is selected, the list closes back up.

DRVSPACE.BIN
MS-DOS driver used to support drives compressed using DriveSpace.

dynamic link library

email

Abbreviation for "electronic mail." Sending correspondence and information (including files) to another person who shares or has access to a common computer network.

EGA (enhanced graphics adapter)

A type of video adapter board used in personal computers. In the evolution of PC video display standards, EGA was developed after CGA. EGA cards are capable of several video modes but have a limit of 16 colors for graphics and text.

EISA (extended industry standard architecture)

Pronounced "ee-sa." A style of computer bus based on the ISA bus. It uses a 32-bit data path and has advanced features that are not available on ISA buses. ISA expansion cards can be plugged in to EISA bus connectors, but will not provide the advanced features of the EISA bus.

electronic mail

enhanced graphics adapter

environment variable

Environment variables store various global settings used by the operating system and other applications. These settings can be changed; environment variables store the current settings. Typical environment variables used by DOS include PROMPT (specifies how the DOS prompt will look), TEMP (specifies the folder to use for temporary program file storage), and PATH (specifies a list of folders through which the operating system will search to find an executable program that is entered on the command line).

To see your currently-defined environment variable settings, open a DOS window, and type SET at the command prompt.

EPROM (erasable programmable read-only memory)

Pronounced "ee-prom." A type of PROM chip that can be erased by exposing it to ultraviolet light then reprogrammed.

erasable programmable read-only memory

extended industry standard architecture

file allocation table (FAT)

In the FAT file system, the file allocation table is a table in the system area of the disk that identifies each cluster as free, belonging to a file, or bad. Disks formatted for the FAT file system contain two copies of the file allocation table, in case one should become corrupted.

FAT file system

File system originally designed for floppy disks and adopted by the MS-DOS operating system. The FAT file system is so named because it uses a file allocation table (FAT) to record the allocation status of every allocation unit ("cluster") on the disk. The FAT file system does not support large disks or large files as efficiently as the newer NT file system (NTFS).

Windows NT can format hard disks for either the FAT file system NTFS; floppy disks can only be formatted for the FAT file system.

FAT

file server

A central disk storage device (or devices) connected to a network that provides network users access to shared applications and data files. **See also** [local area network](#).

floppy disk

One of several types of magnetic media used for storing data. Because the magnetic media is bonded to thin, flat disks of Mylar, floppy disks are flexible. This is in contrast to hard disks, which consist of a rigid material with a magnetic coating. The most popular floppy disk formats in use today are 3½ and 5¼-inch in diameter. Floppy disks are also known as "flexible disks" or "diskettes."

folder

A logical container for files and programs, usually represented in graphical interfaces by icon graphics resembling file folders. In addition to files and programs, folders may also contain other folders, allowing for a hierarchical organization of data on a disk. Folders are also known as "directories."

folder tree

A graphical representation of the organization of folders on a disk with respect to the disk's root. The root contains folders, each of which may contain files or other folders. This forms a hierarchical organizational structure that is the folder tree. The folder tree is also known as the "directory tree."

foreground

A process "running in the foreground" receives a higher proportion of the CPU's processing time than a process "running in the background". A process that runs in the foreground is the primary task of the computer, and any background processes receive attention from the CPU mostly during lulls in the foreground task processing.

foreground

An application running in the foreground runs in the active window. This window is usually on top of other windows and has it's title bar highlighted. By default, an application running in the foreground is the primary task of the computer and receives a higher proportion of the CPU's processing time than other running applications. The other running applications, which are considered to be running in the background, receive attention from the CPU mostly during lulls in the foreground task processing.

You can change the relative processing attention given to foreground and background tasks by clicking System in the Windows NT Control Panel and adjusting the Application Performance slider control on the Performance tab.

fragment

When the data that makes up a file is stored to non-contiguous locations across a disk, the file is said to be fragmented; each file fragment is a non-contiguous cluster containing a portion of the file. Fragmented information takes longer to read from the disk than unfragmented information. **See also** defragment.

GDI (Graphics Device Interface)

Interface that supports Windows' graphical capabilities, including fonts, drawing primitives, and color management. Windows includes three main subsystems: the kernel, graphics device interface, and User resources.

GDI resources

Resources allocated to the Windows' graphics device interface. The Windows subsystem is made up of the kernel, GDI, and User components.

graphics card

An expansion card that supports graphical capabilities in a display device (such as a monitor). Graphics cards are also called "display adapters" or "video cards."

graphics device interface

graphics workstation

group box

Graphical element of dialog boxes that groups related components. A group box consists of a border and usually a title. Group boxes frequently contain check boxes and/or option buttons.

hard disk

One of several types of magnetic media used for storing data. Unlike floppy disks, hard disks are non-flexible and non-removable. They hold much more data than floppy disks, and are the principle long-term data storage for most personal computers.

host drive

The host drive of a compressed disk is the uncompressed physical drive that holds it. The compressed disk is stored as a special hidden file (called a "compressed volume") on the host drive. The host drive may contain other, non-compressed files as well as the compressed volume file.

When a disk is compressed, its host drive is assigned a separate drive letter. You can elect to have the host drive hidden from view when you create a compressed drive using DriveSpace. If hidden, the host drive will not appear in My Computer, Windows Explorer, and Open and Save As dialog boxes. The compressed disk will appear regardless of whether the host is hidden.

image

To save a copy of a disk's critical file information (<u>boot record</u>, <u>file allocation tables</u>, and <u>root</u> information) to a special file. This information, called the disk's image, is stored in the file IMAGE.DAT.

instance

When more than one example of a specific object type exists at one time, the object type is said to have multiple instances. For example, to allow more than one thread to run concurrently under Windows NT, the object manager creates and manages multiple thread objects. Each thread object is an independent instance of the thread object type.

INT 13h

A common BIOS interrupt that handles most sector level disk read and write operations to floppy and hard disks.

INT 16h

This [interrupt](#) interfaces the keyboard and its queue with applications. When an application wants to check whether a key has been pressed, or otherwise communicate with the keyboard, this interrupt is usually used.

INT 21h

This is the most widely used interrupt in a PC. It is used for a multitude of input and output operations, both to and from the display, keyboard, and other devices.

INT 28h

This interrupt is typically used by TSRs to take advantage of idle time in DOS. When DOS is polling for console input or output (such as keystrokes or waiting for file information from a disk drive) this interrupt is invoked.

INT 2Ah

This interrupt is used as the critical error handler by DOS. A typical example of when this interrupt is used is when trying to obtain a directory listing from an empty floppy drive, say for example drive A. INT 2Ah would cause DOS to display:

`"Not ready error read drive A, Abort Retry, Ignore?"`

INT 2Fh

Provides a general mechanism to verify the presence of a TSR and communicates with it. Known as the multiplex interrupt, this interrupt allows for several TSRs to use it by requiring a unique identification value for each TSR. If this interrupt is invoked, each TSR checks the identification value and, if it matches the TSR's, executes the desired function.

INT 33h

This is the [interrupt](#) used to communicate with the pointing device (usually a mouse). When a mouse driver or Windows, is loaded this interrupt becomes active.

INT 9h

This interrupt is triggered whenever a keyboard key is pressed or released. The handler for this interrupt reads the key information and places it into the keyboard queue.

interrupt

A signal sent by a hardware device or by software that causes the CPU to stop what it is doing and execute special instructions determined by the signal.

IO.SYS

A system file that contains device drivers for the MS-DOS operating system. **See also** MSDOS.SYS.

IRQ (interrupt request line)

Hardware line over which devices such as input/output ports, the keyboard, and disk drives send requests for service (interrupts) to the CPU.

interrupt request line

ISA (Industry Standard Architecture)

Pronounced "eye-sa." A style of computer bus design that allows various devices to be added by plugging in an 8-bit or 16-bit card into an expansion slot. **See also** EISA.

industry standard architecture

key

LFN

list box

A graphical interface component that displays a list of options from which to choose. Unlike a <u>drop-down list box</u>, the items within a list box are always displayed. If the options extend beyond the visible portions of the list, <u>scroll bars</u> appear alongside the list and can be used to move the options up and down or side to side relative to the visible list window.

local area network (LAN)

A group of computers and other devices dispersed over a relatively limited area, and connected to one another over a communications link. Any device on the LAN can interact with any other connected device.

LANs usually include one computer known as the file server (or just "the server") that is specialized to store commonly needed programs and data and respond quickly to requests from network users for this information.

LAN

logical disk

logical disk organization

How the operating system organizes the data stored on a disk. Because the data can be anywhere on the surface of the disk, the operating system must construct a bookkeeping system that allows it to keep track of where the data is. The operating system constructs directories and indexes describing what's occupied, what's free, and what parts should never be used due to physical damage. This type of disk information is called the logical format. The file allocation table used to organize the FAT file system and the master file table used to organize the NTFS file system are part of the logical disk organization. Compare to physical disk organization.

long filename (LFN)

A file system feature that allows you to name a file using up to 255 alphanumeric characters. Long filenames may contain both upper and lowercase letters, spaces, commas, semicolons, left and right square brackets, plus and equals signs.

MS-DOS imposed an "eight-dot-three" limit on filenames, allowing at most an eight letter filename and three letter extension separated by a period. Some older MS-DOS based applications do not support long filenames.

'eight dot three' filename

lost cluster

A cluster that contains current data but, because of errors in the file allocation table or in other directories, the file that owns it cannot be determined

mail application programming interface

MAPI (mail application programming interface)

An API that supports email. It was developed by Microsoft, and implemented as a DLL.

Applications that recognize the presence of the MAPI DLL on your system allow you to send mail directly from them.

master file table (MFT)

Table used to organize the file storage on a disk formatted for the NT File System (NTFS). The MFT comprises a relational database of information about the files. The rows of the table corresond to individual files on the disk, and the columns correspond to attributes of the files. Directories are treated as files in this scheme, having a different set of attributes from a data file.

math coprocessor

A processor distinct from the main CPU that performs mathematical calculations using floating-point numbers. For personal computer systems using CPUs prior to Intel's i486DX or Motorola's 68040, adding a math coprocessor can dramatically increase the speeds of math and graphics functions. The i486DX, 68040, and subsequent CPU models incorporate the math coprocessor functions in the main CPU.

maximize

To enlarge a window to its maximum size. You can maximize a window by clicking the maximize button. You can maximize a minimized window by right-clicking on its icon in the taskbar, and clicking Maximize on its Control menu.

Maximize button

A button located on the right side of a window's title bar that maximizes the window. The Maximize button looks like this: ▣
When the window is already maximized, there is no maximize button; in its place is the Restore button.

MCI (media control interface)

A high-level interface enabling Windows applications to control multimedia devices, including playback and recording of audio and video.

media control interface

memory

Computer hardware that stores data and provides for the retrieval of that stored data. Generally, the term memory refers to [random access memory (RAM)](), which is used to run applications and temporarily store data during program execution.

memory-resident program

menu
A list of options. Clicking an option in a menu performs an action.

menu bar

A graphical interface component that consists of a rectangular bar usually across the top of a window. The menu bar displays a horizontal list of menus from which the user may choose one to see its associated options.

message

The primary means by which applications, and the windows they create, communicate. Every time a button is clicked, for example, a message is sent to the application indicating that the button was clicked.

MIDI (musical instrument digital interface)

Pronounced "middy." A software and hardware standard that allows computers, music synthesizers, and musical instruments to exchange information.

musical instrument digital interface

minimize

To shrink a window to an icon in the taskbar. Windows are frequently minimized to cause a program to run in the background while a user works on something else. You can minimize a window by clicking its Minimize button.

Minimize button

A button located on the right side of a window's title bar that <u>minimizes</u> the window to an icon in the taskbar. The Minimize button looks like this: ▬

motherboard

The main circuit board in a computer containing the primary system components. Expansion cards may be added to the motherboard by plugging them in to the bus via a bus connector.

mount

To make a physical disk, [volume](), or tape drive accessible to a computer's file system.

MPC Level 2 (MPC2) specification

Specification defined by the Multimedia PC Working Group of the Software Publishers Association to describe a standard multimedia capability for personal computers.

Systems conforming to the MPC2 standard include:

- 25 MHz 486SX or higher microprocessor
- 4 megabytes of RAM (8 megabytes recommended)
- Video display resolution capable of VGA (640x480) resolution with 64K or more colors
- Doublespeed (2X) CD-ROM Drive, multi-session and Photo CD-ready, with an average seek time of 400 milliseconds or less
- 16-bit sound capable

MSDOS.SYS

A system file that contains kernel of the MS-DOS operating system. **See also** IO.SYS.

multitasking

Sharing the processing time of a CPU such that more than one program can run concurrently on a computer. Multitasking can give the appearance that multiple processes are occurring simultaneously. In fact, only computers with multiple CPUs and a supporting operating system (such as Windows NT, UNIX, or OS/2) can run more than one program truly simultaneously. Single-CPU systems can simulate multiple processing through various multitasking techniques, two of which are preemptive and cooperative multitasking.

network

A group of computers and associated hardware that are connected together by communication lines or other means for the purpose of sharing information and hardware between users.

network interface card

network server

A computer that allows other computers on a <u>network</u> to access its files, and can provide them with centralized and shared services, including programs, storage, and communications.

NIC (network interface card)

A circuit board used to connect a computer to a [local area network](#).

non-maskable interrupt (NMI)
Interrupt used to deal with catastrophic events immediately. It is tied directly to a special NMI pin on the CPU.

NMI

NT file system (NTFS)

File system developed for the Windows NT operating system. NTFS supports large disks and files more efficiently than the FAT file system. NTFS adds many features that make it suitable for even high-end corporate file systems:

- Built-in data security
- Redundant data storage capabilities providing fault tolerance and data recoverability
- Data compression
- More efficient data storage and retrieval for large disks and files

object

A standard Windows NT data type representing a shareable system resource, such as a process, thread, file, section of memory, or physical device. Each type of resource is described by an object type. When the operating system needs to create an object to represent the resource, it creates an instance of the appropriate object type. Objects are created, named, and managed by NT's object manager component.

option button

A graphical interface component that may appear as ⬚ or
◉ depending on its selection state.
Option buttons represent mutually exclusive choices, so there are always at least two of them grouped together. When an option button is selected, it appears darker than the other buttons in the group. Only one button in the group can be on at any time. Options buttons are also known as "radio buttons."

paging file

A special file on your hard disk used by Windows NT to hold information from <u>RAM</u> temporarily in order to free the RAM for use by other applications. The result is that you can run more programs at one time than your computer's RAM would otherwise allow. The Windows NT paging file is named PAGEFILE.SYS.

paging

Windows NT allows every process 4 gigabytes of virtual address space (memory addresses that the process and it's threads may use), however most computers have substantially less than 4 gigabytes of physical memory (RAM). When the available RAM is full, Windows NT makes more available by temporarily moving some data from RAM to disk. This data is said to be stored in virtual memory.

When a process or thread tries to access information that has been moved to disk, NT moves the required data from the disk back into RAM. Because the data is moved between RAM and disk in chunks called "pages," this process is called "paging," and the special disk file used to temporarily hold the data is called a "paging file."

palette
The set of colors available for painting to the display.

partition

A portion of hard disk that the operating system treats as a single unit. Disk partitions are usually identified by separate drive letters, and can be formatted for different file and operating systems.

Some operating systems, such as Windows NT, can treat multiple partitions on different physical disk drives as a single <u>disk volume</u> (identified by a single drive letter). This can speed file access or increase the system's fault tolerance.

partition table

A table in the <u>system area</u> of a hard disk that identifies which <u>sectors</u> belong to which <u>partitions</u>.

physical

In the context of disk structures, refers to what physically exists on the disk. Or may refer to an entire disk that is one physical unit. Compare to logical disk organization.

port

The portion of a computer or a hardware device through which data passes to get in to or out of the computer or device. Computers connect to devices such as printers, monitors, and modems through ports.

preemptive multitasking

A type of multitasking in which the operating system allocates the CPU's processing time to the various threads that are running on a computer. Preemptive multitasking does not rely on the threads themselves yielding the CPU, so prevents any one application from monopolizing the system. This is in contrast to cooperative multitasking.

Windows allocates CPU time in discrete time units called "time slices" or "time quanta." It allocates these time units to the threads based on the threads' relative priority; the priority depends on a number of factors. Threads are continually reprioritized by the operating system.

32-bit applications can be preemptively multitasked; 16-bit applications must be cooperatively multitasked to maintain compatibility with older Windows programs.

primary mouse button

The mouse button that is most often used to select options in a graphical interface.

In the standard, right-handed mouse button configuration, the primary mouse button is the left button. The mouse button configuration can be changed from the Windows Control Panel to better suit left-handed users. **See also** secondary mouse button.

primary window

The principal window in an application. "Primary" refers to the window's function in the application, and does not necessarily imply that it is the first or only window.

process
A program or a series of steps undertaken by a program to accomplish a specific task.

process

Under Windows NT, a process is the basic unit of resource allocation for a program. A process includes a program itself (the steps and data required to perform a task), the memory address space that the program can use to perform its task, and other system resources that the program requires. The operating system organizes tasks and allocates resources based on the processes that exist.

Every process includes at least one thread of execution, and to make the most efficient use of the system resources, most processes include multiple threads that can be created and destroyed dynamically as the process runs.

programmable read-only memory

PROM (programmable read-only memory)

A type of memory chip that retains its data even after power to the computer is turned off. Standard PROMs only allow data to be written to them one time, after which the data can be read, but neither erased nor written again. Contrast this to an EPROM chip, which allows data to be written and erased multiple times.

prompt button

The small icon with a down-pointing arrow that appears to the right of a [drop-down list box](#) or [drop-down combination box](#). When clicked, a list of choices in alphabetical or historical order appears to "drop down."

property sheet
A dialog box which allows you to configure an object's properties or options.

push button

radio button

RAM (random access memory)

Memory that can be read from and written to by the microprocessor and other hardware devices. Unlike data stored on magnetic media (like hard disks) or PROMs, data in RAM memory is "volatile," meaning that the data stored in RAM is lost when the computer's power is turned off.

RAM comprises the computer's working memory and determines the size and number of programs that can be run at the same time, as well as the amount of data than can be processed instantly.

random access memory

read-only memory

real mode

Mode of computer operation that allows 80286, 80386, 80486, and Pentium processors to emulate a 8086. When in real mode, only 1 MB of RAM may be addressed, and the processor can run only one process at a time. Because only a single process can run at any time, that process alone has free access to memory and all input/output devices.

Real mode is the only operating mode supported by MS-DOS.

registry

A Windows database that contains startup and configuration information. Under Windows 3.1, most of this information was kept in the WIN.INI and SYSTEM.INI files. Registry data describes user preferences, hardware settings, and other configuration information, and is organized into catagories called "registry keys."

registry key

Category of information stored in the Windows registry. Registry keys are the means used to index and organize the data stored in the registry. Because registry keys can hold other keys ("subkeys") as well as data, the registry forms a hierarchical structure.

restore

To return a window to the size it was before it was [maximized](#) or [minimized](#). You can restore a maximized window by clicking the [Restore button](#). You can restore a minimized window (icon) by clicking Restore on its [Control menu](#).

Restore button

A button located on the right side of a <u>maximized</u> window's title bar that restores the window. The Restore button looks like this: ▣ When the window is not maximized, there is no restore button; in its place is the <u>Maximize button</u>. If a window is <u>minimized</u>, you can restore it to its former size by either clicking once on the window's icon in the task bar, or by context clicking on the window's icon in the task bar and clicking Restore on the <u>Control menu</u>.

right-click

To click the right mouse button. By default, right-clicking while the mouse cursor is over an interface object displays a context menu containing options specific to that object. The mouse key assignments can be switched for left-handed computer users such that clicking the left mouse button displays the context menu.

ROM (read-only memory)

Memory that can be read from but not written to. Read-only memory may contain instructions (programs) and/or data. Two common types of read-only memory are PROM chips and CD-ROMs.

root

Refers to the starting point or parent level in a hierarchy. For example, the root level of a disk's folder hierarchy contains all of the disk's folders.

RS-232-C

An industry standard for <u>serial communication</u> connections. Specific lines (wires of the connection) and signal characteristics are used to control the serial transmission of data between devices.

scheduler

An operating system process that manages other processes (such as threads) and tasks.

scroll arrow

scroll bar

A graphical interface component that allows you to move a document or list relative to the window displaying it. Scroll bars usually appear as vertical or horizontal bars at the sides and/or bottom of a window or list box.

The "scroll box" appears on the scroll bar and can be dragged with the mouse along the length of the bar to move the text within the window.

"Scroll arrows" appear at both ends of a scroll bar and can be clicked to scroll the text in small increments (usually one line of text). You can also click between the scroll box and the scroll arrows to move the text in larger increments (usually one page or one window's worth of text).

scroll box

SCSI (small computer system interface)

Pronounced "skuzzy." One type of standard interface used to connect computers to devices such as hard disks, printers, and CD-ROMs. Up to seven SCSI devices can be connected together and then connected to a single SCSI port on the computer. Such a configuration is called a "daisy chain."

secondary mouse button

The less-used mouse button. A click of the secondary mouse button is known as a "context click," and frequently displays a context menu.

In the standard, right-handed mouse button configuration, the secondary mouse button is the right button. The mouse button configuration can be changed from the Windows Control Panel to better suit left-handed users. **See also** primary mouse button.

secondary window

An application window that is sometimes smaller and often less functional than the [primary window](#).

sector

A portion of the data storage area of a disk that is the smallest physical storage unit of the disk. Disk storage area is organized into:

- sides of the disk surface (top and bottom)

(A hard disk may have more than two sides if it consists of more than one media-coated disk.)

- tracks, which are arranged as concentric rings on the sides of the disk
- sectors, which radiate out from the disk center much like slices of a pie

One sector of data storage occupies an arc-shaped portion of one of the disk tracks.

selector
The contents of a segment register.

separator line
A horizontal line that divides a menu into groups of related menu items.

serial communication

Transmission of data between computers or between computers and peripheral devices such that the data is sent as a sequential series of bits, one at a time, over a single line.

serial interface

The interface that imparts to a computer the capability of serial communication. The serial interface usually consists of an expansion card that plugs in to the motherboard, and that includes a serial port.

serial port

A computer's input/output connection for serial communication. It is attached to the serial interface and is usually of the RS-232-C type.

shortcut key

A key combination that allows you to carry out a particular command from the keyboard, without using the mouse to choose a menu item. The shortcut key combination for menu items that have them is listed on the menu after the item name.

slack

The operating system allocates (reserves) space for files in discrete chunks. Most files, however, occupy less physical space on the disk than the operating system has reserved. Slack is the excess space allocated for a file that remains unoccupied by any of that file's data. While allocated for a particular file, disk space cannot be used for any other purpose, so slack space is essentially disk space that is wasted.

small computer system interface

spin button

A graphical interface component that looks like this: 🖫
Spin buttons allow you to cycle through a series of values such as letters or numbers. By clicking the up or down arrows you can increase or decrease the value displayed.

startup files

status bar

A graphical interface component that displays information about a process, function, or selected item. The status bar normally appears at the bottom of a window or dialog box.

stepping

Used to designate a minor revision in a CPU chip. Thus, a chip designated "Pentium, Stepping 5" is slightly updated from a chip designated "Pentium, Stepping 4."

super VGA

SVGA (super VGA)

A type of video adapter board used in personal computers. In the evolution of PC video display standards, SVGA was developed after VGA. SVGA cards add several higher resolutions than were possible with VGA cards.

swap file

A hidden file on your hard disk used by Windows to hold information from RAM temporarily in order to free the RAM for use by other applications. The Windows 95 swap file is named WIN386.SWP. In previous versions of Windows, the swap file was named 386SPART.PAR.

system area

Area of a disk that stores information used by the operating system for accessing the disk and the files stored on the disk. The system area of a disk contains the boot record, file allocation tables, and root information. The system area of most hard disks also includes a partition table to accommodate multiple operating systems and multiple volumes for the disk.

system box

system cache

system files

The group of files used to start a computer and/or used to start and configure Windows. These files include:

- AUTOEXEC.BAT
- CONFIG.SYS
- WIN.INI
- SYSTEM.INI
- SYSTEM.DAT
- USER.DAT

These files are also known as "startup files."

system files

The group of files used to start a computer and/or used to start and configure Windows. These files are also known as "startup files."

system menu

system timer port

Hardware port that is used to communicate directly with the system timer (or system clock), and typically used to change timer interrupt rates.

SYSTEM.DAT

Windows 95 file that contains system-related registry information which doesn't change from one user to the next. The primary system files containing registry information are SYSTEM.DAT and USER.DAT.

SYSTEM.INI

A Windows startup file that contains system-specific drivers and configuration information. Most of the information that was stored in SYSTEM.INI for Windows 3.1 has been relocated to the Windows registry. SYSTEM.INI still exists, however, for compatibility with older applications.

text box

A graphical interface component consisting of a rectangular box into which you type one or more lines of information needed by the program. Text boxes are often empty, but may also contain text when they first appear.

thread

A process that is part of a larger process or program. A process can have many threads; each thread shares the memory allocated to the parent process. Threads (not the entire process) are managed by the system scheduler.

thread

A subprocess that is part of a larger process or program. Threads share the address space and resources allocated to their parent process. Every process creates at least one thread, and most have more than one. Threads can be created and destroyed dynamically as necessary while their parent process runs.

Threads are the basis for allocating CPU time during multitasking. 32-bit Windows applications can have many threads, each of which shares the memory allocated to its parent process. These threads are preemptively multitasked.

16-bit applications (Windows 3.x and MS-DOS applications) have only one thread each, and these threads are cooperatively multitasked relative to each other under Windows NT.

three-state check box

A check box having three possible states:

On. Usually implies that all the items to which the check box applies are turned on or are included in a selection.

Middle state. Usually implies that some of the options to which the check box applies are turned on and some are turned off, or that some
– but not all
– are included in a selection.

Off. Usually implies that all the items to which the check box applies are turned off, or are not included in a selection.

Clicking the check box changes the state.

timer interrupts

There are two [interrupts](#) relating to the system clock chip in a PC. They are INT 8h and INT 1Ch, known collectively as the timer interrupts. When software requires timer-related operations, it usually hooks onto INT 1Ch (widely considered the interrupt to hook for user operations) and occasionally INT 8h, which is not considered as wise a choice.

Some programs alter the rate at which these interrupts are generated by the system clock chip (default is 18.2 times a second). When they do, they are expected to maintain an emulation of the default rate. If they don't, the system time will no longer be kept correct and other operations (such as disk I/O) may fail.

title bar

The title bar appears at the top of the window or dialog box. it shows the name of the application running in the window, or the name of the dialog box. The title bar of windows and some dialog boxes also contains Control menu and the Minimize, Maximize, and Restore buttons. The title bar in the active window is generally a different color or intensity than the title bar in an inactive window.

toggle
verb: To change the state of a two-state object (such as a check box) using the same control or action.
noun: An object that can be switched between two states by using the same action (such as clicking on the object).

toolbar

A row of pictographic command buttons displayed in an application window, usually immediately under the window's menu bar. Toolbars provide quick mouse access to options or commands that are specific to the window or application.

TSR (terminate-and-stay-resident)

A type of program that loads itself into memory the first time it is run and remains there until explicitly removed or until the computer is restarted. TSRs are also known as a "memory-resident programs."

terminate-and-stay-resident

UART

undo file

File created by Norton Disk Doctor before it makes repairs to your disk. The undo file allows Norton Disk Doctor to reverse the changes it makes, if necessary.

Universal Asynchronous Receiver Transmitter

upper memory block (UMB)

The upper memory area consists of the RAM between 640K and 1 MB. An upper memory block is a portion of this upper memory area.

On computers using 80836 processors and more advanced models, memory management software can copy information from the conventional memory area (the first 640k of RAM) into the upper memory blocks in order to free conventional RAM. Many older programs require free conventional memory in order to run.

UMB

User resources

Resources allocated to the Windows' User module, which manages the creation and manipulation of components of the graphical user interface, including windows, dialog boxes, and buttons. Windows includes three main subsystems: the kernel, [graphics device interfaceI](), and User resources.

USER.DAT

Windows 95 file that contains user-related registry information. The primary system files containing registry information are USER.DAT and SYSTEM.DAT.

vendor-independent mail

VGA (video graphics array)

A type of video adapter board used in personal computers. In the evolution of PC video display standards, VGA was developed after EGA. VGA cards are capable of several video modes but have a limit of 256 colors for graphics and text.

VGA

video card

VIM (vendor-independent mail)

[API](#) developed by Lotus and implemented as a [DLL](#).

Applications that recognize the presence of a VIM DLL on your system allow you to send mail directly from them.

virtual device driver (VxD)

A special type of device driver that allows multiple virtual machines to run on a computer.

The original function of VxDs when they were introduced for Windows on the 80386 computer was to extend Windows to support multiple virtual machines. The VxD is now taking on a more traditional device driver role allowing for device independence by providing a common set of functions for each hardware device.

VxD

virtual machine

A program that mimics the performance of a hardware device, usually a <u>CPU</u>. Virtual machines are used to run applications on a machine for which they have not been specifically designed.

Under Windows, virtual machines are created by the <u>virtual memory manager</u>. One is created for Windows itself (the system virtual machine), one for 16-bit Windows applications, and one for each non-Windows application.

MS-DOS applications run in a virtual machine using the virtual 8086 mode. In this mode, the applications get copies of all <u>real mode</u> related data. This includes address space, the <u>interrupt</u>-vector table, and mappings to <u>ROM BIOS</u>, MS-DOS, <u>TSRs</u>, and <u>device drivers</u>.

virtual memory manager

virtual memory

The physical space on your hard drive that is used for temporary data storage by Windows. The virtual memory allows Windows to free some RAM for applications. A portion of your hard drive's physical space is reserved for use as virtual memory. This reserved space is a hidden file called a swap file**.**

virtual memory

The physical space on your hard drive that is used for temporary data storage by Windows. The virtual memory allows Windows to free some RAM for applications. A portion of your hard drive's physical space is reserved for use as virtual memory. This reserved space is the Windows NT paging file. The space reserved for the paging file shrinks and grows dynamically to meet the changing requirements of the system, so the potential size of the virtual memory can be larger than the currently reserved size of the paging file.

VMM (virtual memory manager)

Program that supports the creation of multiple <u>virtual machines</u> in Windows.

Virtual Memory (VM) Manager

Windows NT allows every process 4 gigabytes of virtual address space (memory addresses that the process and it's threads may use), however most computers have substantially less than 4 gigabytes of physical memory (RAM). When the available RAM is full, Windows NT makes more available to processes that need it by moving some data from RAM to disk. This process is controlled by NT's Virtual Memory (VM) Manager

When a process or thread tries to access information that has been moved to disk, the VM Manager moves the required data from the disk back into RAM. Because the data is moved between RAM and disk in chunks called "pages," this process is called "paging," and the special disk file used to temporarily hold the data is called a "paging file."

volume

A location used by the operating system to store data. Each volume has a unique label, frequently a drive letter, by which the volume is identified to the computer.

A volume may comprise a disk, a portion of a disk, portions of several disks, or a magnetic tape. A large hard disk can be partitioned such that the computer treats it as more than one discrete volume, even though the data resides on the same physical disk. This is frequently the case for the large drives shared by a network. Likewise, some operating system can combine several partitions of several disks as a single volume (identified by a single drive letter) to achieve enhanced performance or fault tolerance. Volumes are also known as "disk volumes" or "logical disks."

waveform
Refers to the way in which a wave's amplitude changes over time.

WIN.INI

A Windows startup file that contains system settings and application preferences. Most of the information that was stored in WIN.INI for Windows 3.1 has been relocated to the Windows registry. WIN.INI still exists, however, for compatibility with older applications.

window

A graphical interface component that provides an area for display of data and user interaction with an application.

There are two major types of windows distinguished by their function in the application:

- [Primary window](#) — The main window of the application in which most of the information is displayed. Primary windows are usually [document windows](#)
- [Secondary windows](#) — The ancillary windows used by the application, they may be [property sheets](#), [dialog boxes](#), [messages](#), or [palettes](#).

window corner

Any of the four corner areas of a window's [frame](). By clicking on any window corner, you can resize the window in two dimensions simultaneously.

window frame

The thin border that appears around a window. By clicking on the frame between the corners, you can change a window's height or width. By clicking on the frame's corners, you can resize the window in two dimensions simultaneously.

workstation

A powerful, single-user computer, often running the UNIX operating system. Workstations are principally used for high-end graphics and computer-aided design applications. Also called "graphics workstations."

Recently, this term has been applied to any computer that is attached to a network and that is not the network server.

inoculation

When you inoculate a file, Norton AntiVirus records critical information about it (similar to taking a "fingerprint"). On subsequent scans, Norton AntiVirus checks the file against the "fingerprint" and notifies you if there are any changes that could indicate the presence of an unknown virus. System files and boot records are inoculated by preset options.

unknown virus

A virus for which Norton AntiVirus does not contain a virus definition. **See also** virus definition.

virus like activities

These are activities that may be performed legitimately by some programs. However, in other cases, they may indicate a virus at work. For a complete description, look up "virus-like activities" in the help index.

boot virus

A virus that infects the boot record program on both hard and floppy disks and/or the master boot record program on hard disks. A boot virus loads into memory before DOS, taking control of your computer and infecting any floppy disks that you access. A boot virus may prevent your computer from starting up at all from an infected disk.

compressed file

Usually refers to a file or disk that has been processed by a compression (utility) program so that it takes less disk space than when it is in its normal (uncompressed) state.

high-risk environment

A high-risk environment is one which meets most of the following characteristics:

- You have a network connection (LAN without a professional administrator)
- No AntiVirus software is running on the network
- You use shared network programs
- You use a modem to download programs form BBSs and on-line services
- You are connected to the Internet
- You use preformatted floppies or recycled floppies of unknown origin
- You share files on floppy disks, collect software, use pirated software, and/or trade computer games
- Other people frequently use your computer

infected file
A file that contains a virus.

known virus

Any virus that Symantec has analyzed and defined and that Norton AntiVirus can detect and identify by name.

multipartite virus
Viruses that affect both programs and boot files, and can spread from one type of file to another.

polymorphic virus

A type of virus that changes its telltale code segments so that it "looks" different from one infected file to another, thus making detection more difficult.

program virus

A virus that infects executable program files, which often have one of these file extensions: .COM, .EXE, .OVL, .DRV, .SYS, .BIN. Program viruses can stay in memory even after a program is executed, until you turn off your computer.

smart search
A feature that allows you to begin typing the first few letters of a name to move quickly through the list.

stealth virus

A virus that actively seeks to conceal itself from discovery or defends itself against attempts to analyze or remove it.

Trojan horse

A program that promises to be something useful or interesting (like a game), but covertly may damage or erase files on your computer while you are running it. Trojan horses are not viruses.

virus definition

Virus information that allows Norton AntiVirus to recognize and alert you to the presence of a specific virus.

Virus List

The Virus List shows all viruses for which Norton AntiVirus has a virus definition. **See also** virus definition. It is important to update this list regularly.