

## **CS604 - Operating Systems Glossary By [www.virtualians.pk](http://www.virtualians.pk)**

32-bit/16-bit: : 32 bit applications have several advantages over their 16 bit brothers. They run in their separate address space and they can rarely crash the system. They are always running in a preemptive multitasking environment and they can have multiple threads running in parallel. In addition they run generally faster than their corresponding 16 bit counterparts. 16 bit applications all run in the same, shared, address space meaning that the crash of a 16 bit application can easily bring down the entire system. In addition, the 16 bit application cannot handle long filenames. When you use a 16 bit application you will only be able to see the 8.3 short filenames.

Access Point : A hardware device or a computer's software that acts as a communication hub for users of a wireless device to connect to a wired LAN.

ACPI : Short for Advanced Configuration and Power Interface, a power management specification developed by Intel, Microsoft, and Toshiba. ACPI, which will be part of the next version of Windows, enables the operating system to control the amount of power given to each device attached to the computer. With ACPI, the operating system can turn off peripheral devices, such as a CD-ROM players, when they're not in use. As another example, ACPI will enable manufacturers to produce computers that automatically power up as soon as you touch the keyboard.

AGP : Short for Accelerated Graphics Port, a new interface specification developed by Intel Corporation. AGP is based on PCI, but is designed especially for the throughput demands of 3-D graphics. Rather than using the PCI bus for graphics data, AGP introduces a dedicated point-to-point channel so that the graphics controller can directly access main memory. The AGP channel is 32 bits wide and runs at 66 MHz. This translates into a total bandwidth of 266 MBps, as opposed to the PCI bandwidth of 133 MBps. AGP also supports two optional faster modes, with throughputs of 533 MBps and 1.07 GBps. In addition, AGP allows 3-D textures to be stored in main memory rather than video memory.

ASCII : It stands for American Standard Code Information Exchange and is pronounced (ask-ee). A standard code or protocol for displaying characters and transferring data between computers and associated equipment. It was developed for the purpose of information

exchange among the following: Associated equipment Data communications systems Data processing systems There are 128 standard ASCII codes each of which can be represented by a 7 digit binary number: 0000000 through 1111111.

Asynchronous :        1 : not synchronous; not occurring or existing at the same time or having the same period or phase. 2 : of, used in, or being digital communication (as between computers) in which there is no timing requirement for transmission and in which the start of each character is individually signaled by the transmitting device.

ATA :    AT Attachment - also known as IDE.

Administrator: :        Typically the owner, primary user, or designated technician of a computer and/or computer network. Typically, the administrator is any user with privileged access to most files and folders on the computer.

Application :    Any program that allows the user to perform a particular task or set of tasks. For example, Microsoft Word is an application which allows the user to type and format text documents.

Paging :        The process of realizing virtual memory in physical memory by moving blocks of physical memory to and from a slower storage media (usually a disk).

Partition :        Sub-division of a disk into smaller logical disks.

Process :        A collection of threads that share resources.

Protected Mode :        Refers to the Intel 80286 Protected Mode architecture. When the CPU runs in this mode, it supports virtual memory, memory access restrictions and task-switching in hardware. This is the preferred mode for all new operating system and the only mode where you can access memory above 1 MB.

Real Mode :        Refers to the Intel 80286 Protected Mode architecture. The mode in which the 8086 ran. It supports upto 1 MB of address space and has no access restrictions whatsoever.

Ring 0 : Refers to the Intel 80286 Protected Mode architecture. The least restricted level with access to all system resources. Should only be used by the OS and its drivers.

**Ring 3 :** Refers to the Intel 80286 Protected Mode architecture. The most restricted level of protection. Should be used by all user applications.

**Sector :** Smallest unit data storage on a disk. Often blocks with a size of 512, 1024, 2048 or 4096 bytes (CD-ROM can use 2352).

**Storage Media :** A media capable of storing data permanently. Often the shape of a disc or as a tape.

**UID :** User ID - a number or a string that represents the user uniquely within the OS.

**UMB :** Upper Memory Block - in DOS 5 or later, unused blocks of memory in the 640 KB - 1 MB memory range can be used to store device drivers.

**UniCode :** A newer way of supporting all foreign languages special characters. Used instead of DBCS. Uses two bytes to represent one character, supports upto 65536 different characters. Used primarily in WinNT and Win95/98.

**V86 Mode :** Refers to the Intel 80386 Protected Mode architecture. A mode where the CPU emulates the 8086 real mode addressing but maintains support for paging and certain access restrictions. Often used by OS's to implement virtual DOS machines and can be used to implement a EMS memory manager (like QEMM386 or EMM386).

**Virtual Memory :** A CPU-addressible memory area, which does not exist in real memory, but is created on a slower storage media. The process of swapping virtual memory in and out of real memory is called paging.

**Volume :** An area of a disk containing a filesystem of some kind.

**XMS :** eXtended Memory Specification - a system to access additional memory in DOS. It uses a copying mechanism to copy to/from conventional memory to/from extended memory.

**GUI - Graphical User Interface :** A program interface that takes advantage of the computer's graphics capabilities to make the program easier to use. Well-designed graphical user interfaces can free the user from learning complex command languages. On the other hand, many users find that they work more effectively with a command-driven interface, especially if they already know the command language.

**Hot Fix :** Novell, Inc.'s term for the feature of their network file server operating system, Novell NetWare, which handles errors in disk write operations. The OS re-reads every block it writes to disk while it holds the data to be written in memory. In the case of an error, the data block is written to a spare area on the disk. The feature lost much of its importance with the widespread use of hard disk drives with built-in error correction and bad block re-mapping.

**Algorithm :** A formal set of instructions that can be followed to perform a specific task, such as a mathematical formula or a set of instructions in a computer program.

**AMD :** (Advanced Microchip Devices) A semiconductor manufacturer and is a major competitor of Intel. They manufacture the Athlon, Duron, and K6 CPU chips.

**GUI :** Any computer operating system where commands are executed visually on the screen, and directory structures and files are represented by pictures (icons). Popular examples of GUI's today are Microsoft Windows and the MacOS.

**Mac OS 9 (and earlier) :** The name given to earlier versions of the Macintosh Operating System (MacOS). The MacOS has gone through many versions since its inception in 1984, and it is heralded as the first successful Graphical User Interface (GUI) available to the public.

**Mac OS X :** The newest operating system from Apple Computer, designed to run on the newest Macintosh computers. Unlike the Classic Mac OS, Mac OS X is based on a UNIX architecture known as FreeBSD. Mac OS X is currently in version 10.2.3.

**Menu Bar :** The strip running across the top of the screen or along the top of a window that usually contains pull-down menus such as File, Edit, View, etc.

**Network :** Within companies and university settings, the company's internal network is often called a LAN (local-area network). A network is a system of cabling and file servers that allows one to access remote printers, and any remote file servers residing on the same network as the computer you are using. Most networks allow access to other networks, as well, enabling email and Internet browsing. At Purdue Calumet, most Mac and Windows computers are attached to a campuswide LAN. At home, you may use a modem to connect to your Internet Service Provider's network, such as America Online or MSN.

**Operating System :** The basic set of instructions by which a computer functions. The operating system tells the physical components of the computer what to do and when, and

provides the user with a method by which he or she may command the computer, run applications, and create files. Current examples of operating systems include Microsoft Windows XP, Windows 95 through 2000, Mac OS X and below, Linux, and DOS.

**File Server:** : A computer that stores files and allows them to be retrieved over a network by designated users of the system. File servers can also host web sites, but not every file server is necessarily a web server. Any computer can become a file or web server using software such as Novell Netware, Mac OS X Server, or Windows NT Server.

**Home Directory:** : A folder containing a particular user's documents, pictures, movies, et cetera. Generally refers to UNIX-based operating systems, where Home is the default storage location for a user's created documents. Only the owner of a Home Directory may see its contents; i.e., Sally, when logged in as herself, cannot see Bob's Home Directory contents, except for what is in the Public folder. Likewise, Bob can see his Home Directory when he is logged in, but he cannot see Sally's.

**Privileges:** : In computing terms, a user with privileged access to a file may read, copy, and modify that file at will. An unprivileged user, or non-administrator, only has privileges within certain directories, particularly his or her Home directory.

**Pull-Down Menus:** : A list of commands that can be "pulled down" and selected from the Menu Bar by clicking the menu name. In most operating systems that contain these menus, commands to perform routine tasks are located in the same place regardless of the application you are using. For example, the File menu always contains commands such as Save, Print, and New Document.

**Start Button:** : Appears on the far left of the taskbar, and provides quick access to programs, files, control panels, help, and search features in Windows 95 or higher.

**Disk:** A circular storage media, on which data can be recorded, usually in sectors. Often magnetically or optically coded.

**SCSI:** Small Computer Systems Interface - a general bus for connecting additional devices to a computer. Modified and exists in several variations today, known as SCSI-2, SCSI-3, Ultra-SCSI 1+2, Fast SCSI 1+2, Wide SCSI and several other combinations. Basic SCSI uses a 8-bit parallel bus running at 5 MHz giving it a transfer rate of 5MB/s.

**Thread :** A thread of execution is the series of machine instructions that the CPU executes.

**Online :** Connected and accessible to the computer. For example, most disk storage at UIC is online and is therefore easily and quickly accessed.

**OS :** The controlling program(s) that oversee the operation of the computer. Some operating system functions are job scheduling, low level input/output handling, and job accounting. Often abbreviated as "o/s".

**Output :** (1) Data transferred from a computer's internal storage unit to some storage or output device. (2) The final result of data that have been processed by the computer or a particular computer program.

**Packet :** The unit of data sent across a network -- a sequence of bits including data and call control signals (headers), arranged in a specific format, which is sent (switched) together as a single identity. Also known as frame, datagram, segment, or message, sometimes with a little different meaning. Sometimes "packet" is used more specifically to refer to a unit of data on a physical network.

**Parallel processing :** The ability to process "chunks" or blocks of a program simultaneously. To do this, the computer has to have several CPU units and the software to coordinate them, or it must be able to simulate such a situation.

**Parity Bit :** An extra check bit added to the binary representation a character to make it conform to the parity checking method used.

**Parity Check :** A method of error detection that checks whether the sum of bits in each character received conforms to a given protocol. In odd parity, the sum of the bits (including the parity bit) must be odd; if a pattern would otherwise be even, the parity bit is set to 1 to maintain oddity. In even parity, the opposite convention is used. In mark or no parity, no parity checking is done.

**Peripherals :** Any device which is attached to a computer system or LAN. Devices such as printers, disks and tape drives which are often attached to computers or LANs.

**PING :** Packet INternet Groper: The ICMP (Internet Control Message Protocol) provides message packets to report errors and other information in IP processing; PING uses ICMP echo messages and its reply to test the reachability of a network device. See Using Ping.

**Spooling :** Acronym for simultaneous peripheral operations on-line, spooling refers to putting jobs in a buffer, a special area in memory or on a disk where a device can access them when it is ready. Spooling is useful because devices access data at different rates. The buffer provides a waiting station where data can rest while the slower device catches up. The most common spooling application is print spooling. In print spooling, documents are loaded into a buffer (usually an area on a disk), and then the printer pulls them off the buffer at its own rate. Because the documents are in a buffer where they can be accessed by the printer, you can perform other operations on the computer while the printing takes place in the background. Spooling also lets you place a number of print jobs on a queue instead of waiting for each one to finish before specifying the next one.

**Port :** A pathway for data flow in and out of a computer. On PCs, a port is a slot or plug where cables for input and output devices are attached.

**Post Processing :** A post processing program process the output from another program. The most common use of a post processor is with systems which have one general program which processes user input and generate generic output, which contains no system or device dependent information. This device independent output is then passed to a post processor which creates final output which is specific for a particular machine or output device.

**PPP :** Point-to-Point Protocol, defined in RFC 1171, provides a method for transmitting packets over serial point-to-point links. See internet.com's PC Webopaedia entry on PPP, the Network Service Kit, and the NETNEWS/Usenet PPP FAQ. See also: SLIP.

**Print server :** Like a file server, a print server allows the machines on a LAN to share a single printer and also handles the printing queue for the printer.

**Protocols :** A set of rules or procedures implemented in both hardware and software to facilitate communications provide a well defined interface between different systems. The protocol govern format, timing, sequencing, error handling. A converter is device which translates one to another.

**Response Time :** The time measured from when you enter a command until you receive a response at the terminal.

**COM :** Stands for Component Object Module. In DOS systems, the name of a serial communications port. DOS supports four serial ports: COM1, COM2, COM3, and COM4. However, most software uses system interrupts to access the serial ports, and there are only two IRQ lines reserved. This means that the four COM ports share the same two IRQ lines. Typically, COM1 and COM3 use IRQ4, while COM2 and COM4 use IRQ3. So in general, if you have two devices, one of which is attached to COM1 and the other to COM3, you cannot use them simultaneously.

**DMA :** Hardware devices attached to PCs (ranging from keyboards to sound cards) can be designed to send their instructions to and from main memory in one of two ways. The default is to ask the CPU to do the work. The more efficient way is to allocate one of the PC's DMA channels to send instructions directly to memory. This leaves the CPU free to do more important things. Like IRQs, DMA channels are limited in number, and you can't allocate one channel to more than one device (unless you want to grind your system to a halt). Most users come in contact with DMA when they install a sound card that--if they're lucky--picks the right channel during setup.

**Expanded Memory:** : Also known as EMS (Expanded Memory Specification), expanded memory is a technique for utilizing more than 1MB (megabyte) of main memory in DOS -based computers. The limit of 1MB is built into the DOS operating system. The upper 384K is reserved for special purposes, leaving just 640K of conventional memory for programs.

**Extended Memory:** : Memory above and beyond the standard 1MB (megabyte) of main memory that DOS supports. Extended memory is only available in PCs with an Intel 80286 or later microprocessor. Two types of memory can be added to a PC to increase memory beyond 1MB: expanded memory and extended memory. Expanded memory conforms to a published standard called EMS that enables DOS programs to take advantage of it. Extended memory, on the other hand, is not configured in any special manner and is therefore unavailable to most DOS programs. However, MS-Windows and OS/2 can use extended memory.

**FAT :** Stands for File Allocation Table. Basically this is a table of contents in a directory that tells the computer what all is in there. Look at your Netscape cache, you'll see a FAT. It'll be the first file.

**FAT 32 :** A new version of the file allocation table (FAT) available in Windows 95 OSR 2 and Windows 98. FAT32 increases the number of bits used to address clusters and also reduces the size of each cluster. The result is that it can support larger disks (up to 2 terabytes) and better storage efficiency (less slack space).

**Interleaving :** A recording method that reduces data errors during playback. Instead of the file being written in a contiguous data stream, the data sectors are intermixed along the recording track. If a disc should have a smudge or scratch, the entire data file is generally recoverable because a smaller amount of the file data is affected

**Interrupt :** A signal informing a program that an event has occurred. When a program receives an interrupt signal, it takes a specified action (which can be to ignore the signal). Interrupt signals can cause a program to suspend itself temporarily to service the interrupt. Interrupt signals can come from a variety of sources. For example, every keystroke generates an interrupt signal. Interrupts can also be generated by other devices, such as a printer, to indicate that some event has occurred. These are called hardware interrupts. Interrupt signals initiated by programs are called software interrupts. A software interrupt is also called a trap or an exception. PCs support 256 types of software interrupts and 15 hardware interrupts. Each type of software interrupt is associated with an interrupt handler -- a routine key on your keyboard, this triggers a specific interrupt handler. The complete list of interrupts and associated interrupt handlers is stored in a table called the interrupt vector table, which resides in the first 1 K of addressable memory.

**API :** Application Programming Interface - the set of routines/functions made available to a program developer.

**ATAPI :** ATA Packet Interface - minor extension to IDE to control additional device types

**Desktop :** The work area on which you place files and folders in many operating systems, such as Windows and the MacOS. The Desktop is usually the first thing you see when you begin working with the computer, and on it are the icons that, when clicked, can lead you into the various directories of the system.

**Taskbar :** The bar typically located at the bottom of the screen in Windows 95 and above that houses the Start button, and displays all currently open windows, each of which may be made active at any time by clicking on the appropriate name in the taskbar.

**UNIX :** A computer operating system originally invented in the early 1970's. UNIX has come to be a general term describing a wide array of operating systems, some graphical and some command-line only. Some of the more popular examples of UNIX in use today are Solaris, Linux, Mac OS X, BSD, and BeOS.

**Windows Operating System: :** The operating system developed by the Microsoft Corporation in the mid-1980s as a competitor to Apple's MacOS. Windows began not as an actual operating system but as a simple shell alternative to MS-DOS (Windows 3.1 being the most popular). Windows 95 is the first complete Windows operating system, using DOS as a base architecture but not requiring its installation in order to function. The most current version of Windows is XP, although Windows 2000 is still in wide use.

**DLL :** Dynamic Link Library - a set of routines stored in a file. Addresses to the routines are determined by the OS on load or at run-time.

**DOS :** Disk Operating System - a simple single user single tasking OS bought by Bill Gates as QDOS and used on the first IBM PC's. A clone, DR-DOS is available.

**GID :** Group ID - a number or a string that represents the group to which a user belongs uniquely within the OS.

**Handle :** Usually a number used by the operating system to identify an object, like an open file or a window.

**IDE :** Integrated Drive Electronics - a system for connecting harddisks to your computer. Used in PC. Supports upto 2 units. Replaced by EIDE.

**LFN :** Long File Name - a filename that is longer than the DOS 8.3 specification.

**Boot Disk :** A diskette from which you can boot your computer. Normally, your computer boots from a hard disk, but if the hard disk is damaged (for example, by a virus), you can boot the computer from a bootable diskette. For this reason, it's a good idea to make sure you always have a bootable diskette on hand. In Windows 95, you can create a bootable diskette by following these steps: 1. Insert a blank, formatted diskette in the floppy drive 2. Select Start->Settings->Control Panel 3. Open Add/Remove Programs 4. Select the Startup Disk tab and press the Create Disk... button A bootable diskette is also called a bootable floppy, boot disk, and startup disk.

**Clock Speed:** : The clock speed is the frequency which determines how fast devices that are connected to the system bus operate. The speed is measured in millions of cycles per second (MHz or megahertz) and is generated by a quartz crystal on the motherboard which acts as a kind of metronome. Devices that are synchronized with the clock may run faster or slower but their speed is determined by multiplying or dividing a factor by the clock speed.

**Clustering:** : A technique in which two or more servers are interconnected and can access a common storage pool. Clustering prevents the failure of a single file server from denying access to data and adds computing power to the network for large numbers of users.

**CMOS:** Abbreviation of complementary metal oxide semiconductor. Pronounced see-moss, CMOS is a widely used type of semiconductor. CMOS semiconductors use both NMOS (negative polarity) and PMOS (positive polarity) circuits. Since only one of the circuit types is on at any given time, CMOS chips require less power than chips using just one type of transistor. This makes them particularly attractive for use in battery-powered devices, such as portable computers. Personal computers also contain a small amount of battery-powered CMOS memory to hold the date, time, and system setup parameters.

**Command Line:** Commands you type to run an application. You can type commands at an MS-DOS prompt or in the Run dialog box in the Program Manager of Windows. Interfaces in which you type commands rather than choose them from a menu are often called command line interfaces. MS-DOS has a command line interface while the Macintosh does not.

**Compile:** This is an application that converts a programming language into a machine language program.

**Config.SYS:** The configuration file for DOS systems. Whenever a DOS computer boots up, it reads the CONFIG.SYS file (if it exists) and executes any commands in it. The most common commands are BUFFERS= and FILES=, which enable you to specify the buffer size and the number of files that can be open simultaneously. In addition, you can enter commands that install drivers for devices.

**Conventional Memory:** : On DOS systems, conventional memory refers to the portion of memory that is available to standard DOS programs. DOS systems have an address space of 1MB (megabyte), but the top 384K (called high memory) is reserved for system use. This leaves 640K of conventional memory. Everything above 1MB is either extended or expanded memory.

**Data Conversion :** The translation of data from one format to another. Often when data are moved from one system to another, some form of data conversion is required to convert the data to a format the receiving system can interpret. Sometimes it is necessary to have an intermediate format.

**DHCP :** Dynamic Host Configuration Protocol. This protocol provides a mechanism for allocating IP addresses dynamically so that addresses can be reused. Often used for managing the IP addresses of all the cable modems in a cable plant and the PC's connected to the cable modems.

**Dial-Up Networking :** A component in Windows 95 that enables you to connect your computer to a network via a modem. If your computer is not connected to a LAN and you want to connect to the Internet, you need to configure Dial-Up Networking (DUN) to dial a Point of Presence (POP) and log into your Internet Service Provider (ISP). Your ISP will need to provide certain information, such as the gateway address and your computer's IP address. You access DUN through the My Computer icon. You can configure a different profile (called a connectoid) for each different online service you use. Once configured, you can copy a connectoid shortcut to your desktop so that all you need to do to make a connection is double-click the connectoid icon.

**Direct X :** A set of APIs developed by Microsoft that enables programmers to write programs that access hardware features of a computer without knowing exactly what hardware will be installed on the machine where the program eventually runs. DirectX achieves this by creating an intermediate layer that translates generic hardware commands into specific commands for particular pieces of hardware. In particular, DirectX lets multimedia applications take advantage of hardware acceleration features supported by graphics accelerators. DirectX 2, released in 1996, supports the Direct3D architecture. DirectX 5, released in 1998, adds new layers to the DirectX API. In addition to the low-level layer that communicates directly with multimedia hardware, DirectX 5 also includes a Media layer that enables programmers to manipulate multimedia objects and streams. DirectX 5 also supports USB and IEEE 1394 buses, AGP, and MMX.

**Driver :** A program that controls a device. Every device, whether it be a printer, disk drive, or keyboard, must have a driver program. Many drivers, such as the keyboard driver, come with the operating system. For other devices, you may need to load a new driver when you connect the device to your computer. In DOS systems, drivers are files with a .SYS extension. In

Windows environments, drivers often have a .DRV extension. A driver acts like a translator between the device and programs that use the device. Each device has its own set of specialized commands that only its driver knows. In contrast, most programs access devices by using generic commands. The driver, therefore, accepts generic commands from a program and then translates them into specialized commands for the device.

**Dumb Terminal:** : This a video screen that is seeing manipulation in another computer. Example: If you log in to AOL, your computer is not doing the work -- AOL's computer is. You are just being offered a window into that world. That window is your screen. It's a terminal, but it's just watching -- thus a dumb terminal.

**EBCDIC :** Extended Binary Coded Decimal Interchange Code. It is also called the Extended ASCII Code, as it adds an eighth digit to the normal seven-digit code.

**ECC Memory:** : Error Checking and Correction. A method of detecting and correcting system memory errors by adding additional bits and using a special algorithm.

**EDO Memory:** : Short for Extended Data Output Dynamic Random Access Memory, a type of DRAM that is faster than conventional DRAM. Unlike conventional DRAM which can only access one block of data at a time, EDO RAM can start fetching the next block of memory at the same time that it sends the previous block to the CPU.

**EEPROM:** : Acronym for electrically erasable programmable read-only memory. Pronounced double-ee-prom or e-e-prom, an EEPROM is a special type of PROM that can be erased by exposing it to an electrical charge. Like other types of PROM, EEPROM retains its contents even when the power is turned off. Also like other types of ROM, EEPROM is not as fast as RAM. EEPROM is similar to flash memory (sometimes called flash EEPROM). The principal difference is that EEPROM requires data to be written or erased one byte at a time whereas flash memory allows data to be written or erased in blocks. This makes flash memory faster.

**EIDE:** : (Enhanced Integrated Development Environment), also called EIDE, is a term that Western Digital coined in 1994 to represent a particular set of extensions it devised to the original AT Attachment standard. At that time, the official ATA standard was rather limiting, and work was progressing towards the new ATA-2 standard. Western Digital decided that it did not want to wait for the new standard, and also that it could better position itself as a market

leader by creating a new feature set for (then) future drives. The name "Enhanced IDE" was presumably selected to build upon the common name for ATA then in popular use: IDE.

**Emulation :** Refers to the ability of a program or device to imitate another program or device. Many printers, for example, are designed to emulate Hewlett-Packard LaserJet printers because so much software is written for HP printers. By emulating an HP printer, a printer can work with any software written for a real HP printer. Emulation tricks the software into believing that a device is really some other device. Communications software packages often include terminal emulation drivers. This enables your PC to emulate a particular type of terminal so that you can log on to a mainframe. It is also possible for a computer to emulate another type of computer. For example, there are programs that enable an Apple Macintosh to emulate a PC.

**Encryption: :** Encryption is the process of converting data into "unreadable code" is so that unauthorized people cannot understand the content. Encryption may be used to make stored data private (e.g., data that is stored on a potentially vulnerable hard disk), or to allow a nonsecure communications channel to serve as a private communications channel. Encryption is sometimes described as the process of converting plaintext into ciphertext. To decipher the message, the receiver of the encrypted data must have the proper decryption key.

**EPROM: :** Acronym for erasable programmable read-only memory, and pronounced ee-prom, EPROM is a special type of memory that retains its contents until it is exposed to ultraviolet light. The ultraviolet light clears its contents, making it possible to reprogram the memory. To write to and erase an EPROM, you need a special device called a PROM programmer or PROM burner. An EPROM differs from a PROM in that a PROM can be written to only once and cannot be erased. EPROMs are used widely in personal computers because they enable the manufacturer to change the contents of the PROM before the computer is actually shipped. This means that bugs can be removed and new versions installed shortly before delivery.

**Executable File: :** A file in a format that the computer can directly execute. Unlike source files, executable files cannot be read by humans. To transform a source file into an executable file, you need to pass it through a compiler or assembler. In DOS systems, executable files have either a .COM or .EXE extension and are called COM files and EXE files, respectively.

**FDISK** : A program found in all Aptiva software loads that allows modification of the partitions and/or logical drives on the hard drive. It can Display, Delete and Create partitions and logical drives, defining them for DOS, OS/2 or Windows, depending on which version of FDISK is used and how it is used. Type FDISK and hit Enter to start the program. This is a DESTRUCTIVE command and incorrect use will result in data loss!

**File Sharing** : This is the most important feature of the Internet. This is a method of allowing one server to give the same file to many different end users.

**FSB** : Stands for Front Side Bus, which denotes the speed at which your processor interacts with the components on the motherboard. Typically the FSB is 100Mhz or 133Mhz, but overclockers often manipulate this value to increase the speed at which their processor runs. i.e. 100Mhz FSB X 5.0 clock multiplier = 500Mhz processor.

**General Protection Fault** : GPF, short for General Protection Fault, is a computer condition that causes a Windows application to crash. The most common cause of a GPF is two applications trying to use the same block of memory, or more specifically, one application trying to use memory assigned to another application. The following situations can also cause GPFs: Running an application with insufficient resources Using improper hardware device drivers Corrupted or missing Windows files Applications exchanging data that cannot be read GPFs are often preceded by an invalid page fault.

**Classic** : A program layer within Mac OS X that contains the resources necessary to run applications designed for Mac OS 9 and earlier. Requires the presence of a valid Mac OS 9.1 or higher System Folder.

**Command-line Interface** : Any computer operating system where commands are entered into the computer by the user typing in a set of phrases. Many types of UNIX are command-line interfaces, as was the precursor to Windows, MS-DOS.

**Directory** : Often known as a folder, and usually displayed as a folder icon on-screen. A floppy, Zip, CD-ROM, file server, or hard disk are all also examples of directories. All files reside in a directory of some kind.

**Dock** : The Dock in Mac OS X contains shortcuts to applications, folders, and the Trash. The Dock also shows currently open applications visually by placing a triangle next to the appropriate icons.

**File:** : Any data file that is not a directory (folder or disk). Includes applications, documents, and system resources.

**Trash or Recycle Bin:** : A directory usually found on the Desktop that acts as a repository for deleted files. Items placed in the trash or recycle bin may be retrieved by the user at any time until the user chooses to “empty” the directory.

**User:** : You! In other words, the person currently logged in and using the computer. In many systems in use today, each user is designated by a username and password that is specific to him or her.

**GPF:** General Protection Fault - a process violated its assigned resources and tried to access a resource which it was not granted (often unavailable memory due to pointer errors).

**HMA:** High Memory Area - a 64 KB block of memory accessible by the i80286 and later above 1 MB when running in real mode.

**Offline:** Logically or physically disconnected from the computer. For example, a reel of tape is offline storage.

**Server:** Server is a special device used to "serve" some system or facility. A server is usually a microcomputer, or, on CMS, a special account which runs automatically without interactive supervision. Servers act in response to requests which are sent to it.

**Shared File System (SFS):** A file system on CMS that let users organize their files into directory trees.

**SLIP:** Serial Line Internet Protocol: SLIP is currently a de facto standard, commonly used for point-to-point serial connections running TCP/IP. It is not an Internet standard but is defined in RFC 1055. The ACCC's dial-up lines that give ADN and Internet service support SLIP. See internet.com's PC Webopaedia entry on SLIP and the Network Service Kit. See also PPP.

**SMTP:** Simple Mail Transfer Protocol: A protocol from the Internet suite (e.g., TCP/IP) that is used to send electronic mail between users on different host systems. SMTP is defined in the Internet RFC 821. For more information on SMTP as it is used at the UIC, see Changing to your ISP's SMTP server.

**Spooler :** A program which manages requests or jobs submitted to it for execution, selection requests for execution in an orderly manner from a queue. Print spoolers are a common example.

**statistical multiplexing :** ATM networking: If bursts of data result in more data being put on an ATM network than it can handle at one time, the excess data is buffered and put in subsequent free cells. This allows the peak bandwidth on ATM networks to be higher than the network's physical media can carry. The network's administrators use "statistical" estimates to decide by how much they can oversubscribe the network's total bandwidth. (In other words, they hope that simultaneous multiple bursts like this will be statistically unlikely.)

**Backup :** To copy files to a second medium (a disk or tape) as a precaution in case the first medium fails. One of the cardinal rules in using computers is. Back up your files regularly. Even the most reliable computer is apt to break down eventually. Many professionals recommend that you make two, or even three, backups of all your files. To be especially safe, you should keep one backup in a different location from the others. You can back up files using operating system commands, or you can buy a special-purpose backup utility. Backup programs often compress the data so that backups require fewer disks. (1) The act of backing up. (2) A substitute or alternative. The term backup usually refers to a disk or a tape that contains a copy of data.

**BIOS :** Stands for Basic Input/Output System. The BIOS gives the computer a little built-in starter kit to run the rest of softwares from floppy disks (FDD) and hard disks (HDD). The BIOS is responsible for booting the computer by providing a basic set of instructions.

**Buffer: :** A place, especially in RAM, for the temporary storage of data for the purpose of speeding up an operation such as printing or disk access. Data from a buffer is available more quickly than data from where the buffer got it. Typically buffers get data before it is needed so it will be ready quickly when it is needed. Similar to cache.

**Cache RAM :** Cache (usually SRAM) stores frequently requested data and instructions. It is a small block of high-speed memory located between the CPU and the main memory. When your computer processor needs data, it will check the Cache first to see if it is there. If the data is not there, it will retrieve it from the slower main memory.



Fault Tolerance: : The ability of a system to respond gracefully to an unexpected hardware or software failure. There are many levels of fault tolerance, the lowest being the ability to continue operation in the event of a power failure. Many fault-tolerant computer systems mirror all operations -- that is, every operation is performed on two or more duplicate systems, so if one fails the other can take over.