

active desktop: Enhanced functionality that enables webpages to be turned into desktop items that are updated automatically. A webpage can also be turned into wallpaper, allowing a workgroup homepage to be readily visible on each user's computer with links to related information on the intranet. Active Desktop supports active channels, or subscriber-based content delivery systems. It is available on Windows 98 and Internet Explorer versions 4.0 and higher.

active server page: A specification for a dynamically created webpage that utilizes ActiveX scripting -- usually VB Script or Jscript code. When a browser requests an ASP page, the Web server generates a page with HTML code and sends it back to the browser. ASP pages are similar to CGI scripts, but they enable Visual Basic programmers to work with familiar tools.

A/D converter: A processor that converts analog electrical signals into digital data. The converter samples the electrical signal every few milliseconds. The signal is then quantized into a digital word. The larger the digital word, the more accurate the sample.

AC-3 (audio coding 3): Dolby's digital-audio data compression algorithm. It is now the standard for HDTV broadcasts and is also used in DVDs.

ADAT (Alesis Digital Audio Tape): A form of digital audio tape developed by Alesis for its digital multi-track recorders. It uses eight tracks of 16 bit/44.1-KHz digital audio on consumer S-VHS tape.

ADR (additional dialog recording): The process of replacing film dialog by over-dubbing new vocals that are recorded during post-production.

AES (Audio Engineering Society): The largest and oldest professional society dedicated to audio technology, the implementation of standards, as well as education.

AES/EBU Professional Interface: A professional-level audio interface designed to transfer digital-audio data.

Aftertouch: A feature of a MIDI keyboard that makes a key pressure-sensitive even after the key has initially been pressed.

algorithm: A formula or set of steps for solving a particular problem. To be considered an algorithm, a set of rules must be unambiguous and have a clear stopping point. Algorithms can be expressed in any language, from spoken languages such as English or French to programming languages such as Fortran. Most programs, with the exception of some artificial intelligence applications, consist of algorithms. Inventing elegant algorithms -- algorithms that are simple and require the fewest steps possible -- is one of the principal challenges in programming.

aliasing: Distortion caused by a low sample rate.

amplifier: An electronic device that uses capacitors or electron tubes to increase the strength of an electronic signal.

analog: A physical quantity of data or an electrical signal that is characterized by being continuously variable (as opposed to digital which is composed of a series of samples or "steps") and can be as accurate as the medium allows.

anchor: The underlined words or phrases you click on in World Wide Web documents to jump to another screen or page. See also, hyperlink.

applet: A simple program or utility designed to be executed from within another application. Java applets, for example, are executed within Web browsers to add increased functionality.

application: A program or group of programs designed for end users. Common applications include database programs, word processors, and spreadsheets.

application cache: High speed, temporary, chip-based storage that is specifically designed for a given application. For example, one type of cache is designed specifically for Microsoft Word.

ASCII (American Standard Code for Information Interchange): Pronounced "ask-ee," ASCII is a binary code used to represent English text characters as numbers, with each letter assigned a number from 0 to 127. By replacing text with numbers, computers can transfer information more easily.

ASDR: An acronym for attack, sustain, decay and release, which are the four different stages of a sound's envelope.

ASIC (Application-Specific Integrated Circuit): Pronounced "ay-sik," ASIC is a chip designed for a particular application rather than an all-purpose microprocessor. ASICs can be built from scratch, but a less strenuous method is to simply connect existing circuits in new ways.

ASIO (audio stream input/output): A multichannel audio transfer protocol developed by Steinberg North America in 1997 for audio/MIDI sequencing applications. It allows access to the multichannel capabilities of sound cards.

ASP (Active Server Page): A Web page that is generated on the fly. Microsoft developed this system so that when a browser requests an ASP document, the Web server generates the HTML on the spot and sends it back to the browser to be displayed. ASP pages are commonly used on sites that update content every day or use input from users to generate results.

attachment: Designates any file attached to an email message. Most email systems allow users to attach text files, audio files, video files, zip files, and image files. If the attachment is a binary file or formatted text file (such as an MS Word document), it must be encoded before it is sent and decoded once it is received. The two most common encoding schemes are Uuencode and MIME.

attack: The beginning stage of sound's envelope.

auxiliary send: An output used to route an audio signal to an external device.

AVI (Audio Video Interleave): Microsoft's video standard for Windows. AVI is the most common format for audio/video data on the PC. It interleaves standard waveform audio and digital video frames (bit maps) to provide reduced animation.

B2B (business-to-business): The exchange of products, services, or information between two or more businesses rather than between businesses and consumers.

B2C (business-to-consumer): The retailing part of e-commerce; the exchange of products, services, or information between businesses and consumers.

B2E (business-to-employee): An approach in which the focus of business is the employee, rather than the consumer. It encompasses everything that businesses do to attract and retain qualified staff.

B2G (business-to-government): The concept that businesses and government agencies can use central websites to exchange information and do business with each other more efficiently.

balanced cable: An audio cable that has two conductive wires, a ground, and is often shielded. These cables are used to reduce interference and noise.

bandwidth: The amount of data that can be transmitted in a fixed amount of time. For digital devices, bandwidth is usually expressed in bits per second (bps) or bytes per second (Bps). For analog devices, bandwidth is expressed in cycles per second, or hertz (Hz).

banner ad: A graphic image used on websites to advertise a product or service. Banner ads are typically rectangles about 460 pixels wide by 60 pixels high.

bi-amplification: The practice of using separate amplifiers to power the low-frequency and high-frequency speakers.

Basic (beginner's all-purpose symbolic instruction code): An early programming language that is still among the simplest and most popular of programming languages. Because of its simplicity, Basic has frequently been used to teach the introductory concepts of programming. Basic continues to be widely used because it can be learned quickly, its statements are easy to read by other programmers, and support is available on most operating systems. Basic is used in many business applications and is still considered a valid choice as a programming language for some purposes. Microsoft's Visual Basic adds object-oriented features and a graphical user interface to the standard Basic.

biometrics: The science of measuring unique physical or behavioral characteristics of the human anatomy. Often portrayed as futuristic technology in spy novels and science fiction films, biometric technologies are now emerging as practical, effective solutions for guarding high-security environments, conducting fraud-free e-commerce, and preventing time and attendance fraud.

bit (binary digit): The smallest element of computer storage. A bit is a single digit (0 or 1) in a binary system. Physically, a bit is a transistor or capacitor in a memory cell, a magnetic domain on disk or tape, a reflective spot on optical media, or a high or low voltage pulsing through a circuit.

bitmap: A binary representation of an image or font consisting of rows and columns of dots. The broader the color spectrum, the more bits are required for each pixel. For simple monochrome images, one bit is sufficient to represent each dot, but for colors and shades of gray, each dot requires more than one bit of data, hence "64-bit" graphics.

bitrate: The transmission speed of binary-coded data. See also: data rate.

Bluetooth: Wireless technology that lets computing devices "talk" to each other, or exchange data. Bluetooth synchronizes computers, PDAs, cameras, and cell phones within a range of 30 or more feet. Each device has a microchip transceiver that transmits and receives in a frequency band of 2.45 GHz. The name comes from a 10th-century king of Denmark named Harald Blatand credited with uniting all of Scandinavia and (at least according to legend) eating so many blueberries his teeth turned blue.

Boolean: A system of logic developed by George Boole (1815-1864), an English mathematician and computer pioneer. In Boolean searches, an "and" operator between two values (for example, "pear AND apple") will turn up only documents that contain both terms. An "or" operator between

two values (for example, "pear OR apple") will turn up documents with either of the terms. In computer operation with binary values, Boolean logic can be used to describe electromagnetically charged memory locations or circuit states that are either charged (1 or true) or not charged (0 or false).

bouncing: The process of taking multiple audio tracks and mixing them down into either a mono track, stereo track, or a surround sound mix.

Bps (bits per second): The standard measure of data transmission speeds.

break out box: A box that attaches to a sound card and is used to house additional input/output jacks.

broadband: Typically used to describe high-speed data transmission over T1 lines (1,544 Mbps) and above. Broadband also more generally describes any type of data transmission in which a single wire can carry several channels at once. Cable TV, for example, uses broadband transmission.

browser: Usually short for Web browser, a software application used to locate and display webpages. Technically, any program that allows you to search through a set of data qualifies as a browser.

bulk dump: A MIDI function that allows the transfer of system-specific data, such as instrument settings, between MIDI devices. Also known as System Exclusive messages or Sys Ex.

burner: A device that writes CD-ROMs. CD burners connect to a computer via a SCSI or USB terminal.

bus (mixer): The output circuit of a mixer. Most mixers have multiple busses, each to route an audio signal to a different place. Both software and digital mixers use this same concept to route signals.

bus: A common pathway, or channel, between multiple devices. The computer's internal bus is known as the local bus, or processor bus. It provides a parallel data-transfer path between the CPU, main memory, and the peripheral buses. A 16-bit bus transfers 2 bytes at a time over 16 wires; a 32-bit bus uses 32 wires, and so on. The bus is comprised of two parts: the address bus and the data bus. Addresses are sent over the address bus to signal a memory location, and the data is transferred over the data bus to that location.

bus speed: The internal speed of the motherboard.

byte: Eight bits, which the computer treats as a single unit. A byte is the unit most computers use to represent a character such as a letter, number, or typographic symbol. A byte can also hold a string of bits that need to be used in some larger unit for application purposes.

cable modem: A device that connects your computer to the Internet via cable lines. See also: dial-up modem.

cache memory: The area of memory that stores the most recently accessed data. When a computer needs data once, chances are it will need it again, soon, so computer designers realized they could speed up the computer by storing the most recently accessed data in a high-speed storage area. Most caches are FIFO (first in, first out). This means that as the cache fills, the older data is thrown out. This makes sense because you want the most recently accessed

data available. There are several types of cache on your computer, including application cache, disk cache, hardware cache, and processor cache.

CD-ROM player: A device that plays compact discs or runs computer programs stored on a compact disc.

CD-R (compact disc recordable): A type of CD that can be recorded to. With proper formatting, it can be used to create a disc that will play in most CD players.

CD-RW (compact disc rewritable): A type of CD that can be recorded, erased, and rewritten to by the user. A CD-RW disc cannot be placed in a conventional CD player.

contentware: Software that blocks certain types of Internet traffic such as pornography from being accessed by the user.

CGI: (common gateway interface): A standard way for a Web server to pass a Web user's request to an application program, receive data back from that program, and forward it to the user.

chip: A small piece of semiconducting material (usually silicon) on which an integrated circuit is embedded. A typical chip is less than a square inch in size and can contain millions of electronic components (transistors). Computers consist of many chips placed on electronic boards called printed circuit boards.

circuit board: A thin plate on which chips and other electronic components are placed. Computers consist of one or more boards, often called cards or adapters.

clustering: Connecting two or more computers to behave as a single computer. Thanks to clustering, two or more computers can jointly execute a function, activity can be distributed evenly across a computer network, and systems can respond gracefully to unexpected failures.

CMOS (complimentary metal-oxide semiconductor): Pronounced "see-moss," a CMOS is a small, 64-byte, memory chip on the motherboard that stores information your computer needs in order to boot up.

Comdex: A trade show in which IT professionals have convened twice yearly for the past 20 years to unveil new products, announce burgeoning technology trends, and schmooze with other geeks from around the world. Since the trade show's humble beginnings in 1980, Comdex has grown into the computer industry's premiere US event.

compressor: A signal processor that reduces the gain of a signal by a set ratio once it exceeds the set threshold.

computer: A programmable device that can store, retrieve, and process data. Computers can store pre-recorded lists of instructions, which we call programs. The computer's brain is the microprocessor, which is capable of doing math, moving data around, and altering the data after storing it in binary code. Most computers have a fast, short-term storage medium and a slower, long-term storage medium. The faster storage medium, known as RAM, is used to store information temporarily while you work and run applications. The long-term, permanent storage is your hard drive. In order to feed the computer information and tell it how to process the data, you need input devices such as your mouse and keyboard. The monitor, or output device, displays the results.

condenser microphone: A type of microphone that uses an electrostatic diaphragm rather than an electromagnetic one. Generally, the microphones have a much better frequency response.

controller: Any MIDI device that can be used to control any other MIDI-capable device. Generally, controllers are in the form of a keyboard, but they can also be drum pads, mixer controllers, and so on.

cookie: Information a website puts on your hard disk so it can remember something about you at a later time. Typically, a cookie records your preferences when using a particular site. Cookies are commonly used to rotate the banner ads that a site sends so that it doesn't keep sending you the same ad. They can also be used to customize pages for you based on your browser type or other information you may have provided the website. Originally designed to aid users by giving them access to customized material via the Web, cookies have drawn the ire of some consumer groups, which claim they are sometimes used to gather information about users without their consent.

CPU (central processing unit): A complex silicon chip that acts as a computer's brain, taking requests from applications and then processing, or executing, operations.

crossover: An electrical circuit designed to separate an audio signal into different frequency ranges that are then routed to the appropriate speaker (such as a subwoofer).

D/A converter: The processor on a sound card that converts the analog electrical signal into digital data.

daemon (pronounced "demon"): A UNIX program or agent designed to wait in the background while another program is running and execute only when required. Using a daemon, a program can simply hand off data to the smaller program and go on to more important things. For example, a print daemon could handle print requests from multiple users and applications, freeing them for other tasks.

daisy chain: The practice of connecting several MIDI devices together in a chain. Generally, the total length of the cables can extend up to 50 feet.

DAT (digital audio tape) recorder: A digital linear tape that uses PCM to convert analog signals into a digital form.

data rate: The throughput rate at which data can be sent from one device to another.

DAW (digital audio workstation): A computer that has been specially configured for work with audio.

decibel (dB): A measurement to measure sound pressure levels (dB SPL) or the voltage levels of an electrical audio signal (dBv).

dial-up modem: A device that gives your computer access to an external network by connecting to a serial port at a maximum speed of 56kbps.

DIMM (dual in-line memory module): A small circuit board that holds memory chips. Unlike SIMMS (single in-line memory modules), you can install memory one DIMM at a time.

digital signal processor (DSP): A chip that is designed to manipulate audio in real-time.

direct input (DI): The practice of plugging an instrument directly into a mixer or recording device. DI boxes and pre-amps are used to bring the instruments up to line level.

directory: A simulated file folder on disk. Programs and data for various applications (spreadsheets, word processing, etc.), are typically kept in separate directories. Directories create the illusion of compartments, but are actually links to files, which may be scattered all over the disk. UNIX and DOS use the term directory, while the Mac and Windows use the term "folder."

disk (or diskette): A random access, removable data storage medium that can be used with personal computers. The three main kinds of disks are diskettes, hard disks, and optical disks.

disk cache: High-speed, temporary, chip-based storage that reserves an area of RAM to store data that has been accessed from the hard drive. If the data is requested from the hard drive again, the computer gets it from RAM, which is much faster.

DivX (digital video express): A video rental system for digital versatile disks. For about \$300 to \$500, a user can purchase a DVD player that is equipped for Divx. The special Divx equipment includes a modem, a encryption microchip, and a proprietary flash memory. The user can then purchase Divx disks, which are essentially DVD-formatted disks that contain encrypted data. The user can play the disk within 48 hours of hitting the Play button. The user establishes a Divx account at the Divx website using a major credit card. The player automatically contacts the billing office once a month to update the account. This is the only time Internet access is required. The movie itself is played off-line.

dongle: A device developed to prevent piracy. It attaches to a port on your computer and works as a key to unlock a particular software application.

.DOC: A file extension for an MS Word file. In DOS and Windows environments, the file's type is specified by its three-character extension. For example, the .DOC extension identifies Microsoft Word documents. Once a file type has been associated with an application, selecting any file of that type automatically starts its associated application and loads the selected file.

domain name: The name that tells an Internet browser to go to a particular website. For example, TechTV's domain name is www.techtv.com.

dongle: A copy protection device that attaches to a computer to control access to a particular application. Also called a "hardware key." A dongle attaches to a PC's parallel port and prevents access to multiple copies of the same software. It is possible to attach several dongles to the same port.

DOS (disk operating system): The term DOS, pronounced "dahss," can refer to any operating system, but it is most often used as shorthand for MS-DOS, the original operating system developed by Microsoft for the PC. MS-DOS is a single-user operating system, meaning it does not support multiple users or multitasking. MS-DOS began as the standard operating system for IBM-compatible personal computers and remained the underlying control program for all early Windows software up to version 3.1.

dpi (dots per inch): A measurement of printer resolution. The more dots per inch, the higher the resolution. A 400 dpi printer creates 160,000 dots (400x400).

DRAM (dynamic RAM): The most common type of RAM. It accesses information as it needs it, then closes and goes on to something else. Because DRAM is random, pieces of information can be stacked one upon another without discarding the entire stack. The information in DRAM is not

only dynamic and randomly accessed, it's also fast. Today's processors handle information so fast they require a steady flow of information to optimize their capabilities. While hard drives offer plenty of storage space at a low cost per megabyte, their rotating parts and small buffering systems are too slow to keep up with the processor's need for input. Because DRAM is solid-state (with no moving parts), it can send data as fast as the processor can keep up with it.

DSL (digital subscriber line): A high-speed Internet-access connection that works over telephone networks and is available from 600Kbps to 26Mbps. Your maximum speed depends on your distance from the telephone provider's central office. The farther away you are, the slower it will be.

DV (digital video): The recording, editing, and storing of video in digital formats. A digital video (DV) camcorder is a video camera that captures and stores images on a digital medium such as a DAT or compact flash card.

DVD (digital video disk): A two-sided optical disc that holds a minimum of 4.7GB, enough for a full-length movie. DVDs can store significantly more data than ordinary CD-ROMs can, and can play high-quality videos.

DVD-R: DVD Recordable. Pioneer introduced the authoring use drive (635nm laser) in 1998. The general use format (650nm laser) was authorized in 2000. DVD-R offers a write-once, read-many storage format similar to CD-R. It's used to master DVD-Video and DVD-ROM discs.

DVD-RAM: DVD Random Access Memory. A rewritable DVD disc that is a cartridge-based, and more recently, bare disc technology for data recording and playback. DVD-RAM bare discs are fragile and do not guarantee data integrity. DVD-RAM Version 2 discs have double-sided 9.4GB discs. DVD-RAM drives typically read DVD-Video, DVD-ROM and CD media.

DVD-ROM: Read Only Memory. The disc stores data, interactive sequences, and audio and video. DVD-ROMs run in DVD-ROM or DVD-RAM drives, but not DVD-Video players connected to TVs and home theaters. Most DVD-ROM drives will play DVD-Video movies, however.

DVD-RW: DVD ReWritable. A rewritable DVD format that is similar to DVD+RW, but with less capability to work as a random access device. It has a read-write capacity of 4.7 GB.

dynamic microphone: A microphone that uses an electromagnetic coil. Generally, these microphones are less responsive than condenser microphones.

dynamic range: The difference between the loudest sound and the quietest sound that is produced or can be reproduced by a piece of equipment.

dynamics processor: A processor used specifically to control dynamic levels.

EBU (European Broadcasting Union): The largest professional society of audio engineers in Europe.

email: Short for "electronic mail," email is the transmission of messages over computer networks.

email spoofing: The practice of changing your name in an outgoing email so it looks like the email came from somewhere or someone else. Spammers generally use spoofing to prevent people from finding out who they are. It's also used by general malcontents to practice mischievous and malicious behavior. However, spoofing can be a legitimate and helpful tool for someone with more than one email account.

emoticon: Punctuation characters that suggest how an email should be interpreted by indicating the writer's mood. For example, a :-) emoticon indicates that the message is meant as a joke. The name is short for emotion icon. An emoticon is also called a smiley.

encryption: The translation of data into secret code for security purposes.. To read an encrypted file, you must possess the secret key or password that unlocks the encryption.

envelope: The dynamic shape of a sound over time, commonly characterized by its attack, decay, sustain, and release.

equalizer (EQ): An amplifier that can boost or cut specific frequencies.

Ethernet: A LAN (local area networking) protocol. Ethernet is used to network, or hook computers together so they can share information.

expander: A processor used to expand the dynamic range of a signal.

FDISK: A DOS and Windows utility that is used to partition a hard disk, which is necessary before high-level formatting

fast Ethernet: The same thing as Ethernet, only ten times faster.

file extension: Extensions identify the type of file to which they're attached. All programs and almost all data files use extensions, which are separated from the file name with a dot. For example, LETTER.DOC is a Word document. NOTEPAD.EXE is a text editor program that comes with Windows. Before Windows 95, an extension could only have up to three letters or digits, and that has remained the case as a matter of convention.

filter: A type of equalizer that is designed to pass or cut specific frequencies.

firewall: A method of protecting one network from another network. A firewall blocks unwanted access to the protected network while giving the protected network access to networks outside of the firewall.

FireWire: A high-speed bus. FireWire is a serial connector, like USB, and allows you to add peripheral devices to your computer very easily, without having to open the box. FireWire, however, can transmit data 30 to almost 40 times faster than USB. That makes it very good for tasks like getting video off a camcorder. For most devices, you don't need that much speed, but if you wanted to add a very fast hard drive to your PC, FireWire would be an excellent solution. FireWire was originally developed by Apple, and is now also sold under the names iLink and IE-1394.

flame: To communicate emotionally and/or excessively via electronic mail. In other words, to insult someone online.

flutter: High-frequency variations in pitch of a recorded waveform due to fast speed variations in a recorder or playback machine. **Or:** Originally, and more formally, any variations (fast or slow) in pitch of a recorded tone due to speed fluctuations in a recorder or playback unit.

fly in: To add sounds into a mix or recording that have no time code or synchronization, also called wild tracks.

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freeware: Software that has been made freely available by the author. Unlike open-source software, the author retains the copyright, which means that the application cannot be modified without the author's consent.

FTP (file transfer protocol): A series of protocols or rules that define how to transfer files across the Internet. FTP is a very popular way to send files across the Net. To use it you must have an FTP server and client.

full duplex sound card: A sound card that can make sound and receive sound at the same time. You can talk and listen at the same time, just like on a telephone. Walkie-talkies are half duplex: You press the button to talk, but you can't talk and listen at the same time. Almost all sound cards sold in the last four or five years are full duplex.

gain: Amount of amplification, measured in decibels.

gate: A signal processor that only allows a signal to pass if it is above the set threshold.

GIF (graphics interchange format): An 8-bit (256 color) graphics file format developed by CompuServe that lets users transfer images to one another over computer networks, including the Internet. GIFs are widely used on the Web because they compress well.

gigabyte (G or GB): 1,024 megabytes.

GPS (Global Positioning System): A system of 24 satellites for identifying earth locations, launched by the U.S. Department of Defense. By triangulation of signals from three of the satellites, a receiving unit can pinpoint its current location anywhere on earth to within a few meters.

With GPS, the "James Bond" style of on-screen, mobile map reading became a reality by the mid-1990s. By 2000, in-the-dash GPS-based "navigation systems" were standard or at least an option in luxury cars, and third-party systems are available for all cars. Such systems include a CD-ROM reader or hard disk that reads the digital maps that guide you to your destination city or street address. They can even take you to the nearest gas station, hotel, restaurant and many other points of interest. Newer DVD-based systems provide coverage of the entire U.S. and are amazingly accurate and helpful. In time, built-in navigation systems are expected to be an option for all classes of cars. See GIS glossary.

GUI (graphical user interface): A picture-based system of interaction between people and computers. A GUI lets you interact by using a mouse rather than by having to type in keyboard commands.

hard drive: The place on a computer where data is stored and retrieved.

hardware cache: High-speed, temporary, chip-based storage that offers faster access time than CD-ROM hardware. By placing data in the hardware cache, you minimize the CD-ROM system's waiting time. Hardware cache speeds up access to the CD and the CD's performance.

headroom: The amount of gain an amplifier can produce before distorting.

hertz: A unit used to measure frequency in cycles/seconds.

host: Any computer on a network that is a repository for services available to other computers on the network.

HTML (hypertext markup language): The document format used to build pages on the World Wide Web. HTML tags, or codes, define the structure and layout of a Web document. There are hundreds of tags used to format and lay out a webpage. For instance, is used to make bold text and

denotes a new paragraph. HTML tags also specify hypertext links , allowing Web designers to direct users to other Web addresses or URLs.

HTTP (hypertext transfer protocol):The underlying communications protocol used to connect servers on the World Wide Web. For example, when you enter a URL in your browser, the browser sends an HTTP command to the Web server directing it to retrieve and transmit the requested page.

hub: Hardware used to network computers together (usually over an Ethernet connection). It's a small box with five or more RJ-45 connectors that accept cables from individual computers.

hyperlink: An icon or text element in a document that serves as a connection to another place in the same document or to an entirely different document. Hyperlinks are the foundation of hypertext systems, including the World Wide Web.

hypertext: Any text that contains links to other documents. When users click on hyperlinked text, another document is retrieved and displayed.

ICANN (Internet Corporation for Assigned Names and Numbers): A nonprofit, private corporation responsible for overseeing the following aspects of the World Wide Web: assigning space for IP addresses, managing the domain name system, and taking care of the root server system. Jon Postel created ICANN in 1998 in response to a call from the US Department of Commerce for a private sector, not-for-profit organization to manage r the Internet name and address system.

IDE (intelligent [or integrated] drive electronics): IDE connects mass storage devices such as hard drives or CD-ROMs to a computer.

in-line console: A type of mixing console that houses the monitor circuits within the same modules as the channel circuit. Most modern consoles are constructed this way.

insert: An input jack on an audio device that is used to route in audio signals from other devices.

IP address: The identifying address of a computer or device attached to a TCP/IP network. TCP/IP networks use IP addresses to route messages to their proper destinations. The IP address is written as four sets of numbers separated by periods. For an isolated network, IP addresses may be assigned at random provided each one is unique. However, if the private

network is to be connected to the Internet, registered IP addresses (called Internet addresses) must be used, in order to avoid duplicates. Available unregistered addresses are becoming scarce under the three class (A, B and C) system of assigning addresses, so it is being replaced by the classless CIDR (Classless Inter-Domain Routing) system.

IRC (Internet relay chat): A system that allows people to have live conversations over the Internet. You can get on one of hundreds of available IRC channels, and whatever messages you type are seen by everyone on that channel. It was the first chat system to allow more than two people at a time to have a discussion.

ISDN (integrated services digital network): A digital communication system that can transmit voice or packet data over a regular phone line at rates between 64 Kbps and 256 Kbps. (Most home service maxes out at 128 Kbps.)

ISP (Internet service provider): An organization that supplies you with access the Internet for a fee.

Java: A programming language that is particularly useful on the Internet. Java was created and licensed by Sun Microsystems and is typically used to provide interactivity.

JavaScript: JavaScript has nothing to do with Java. This confusion was created by Netscape, which parasitically named the scripting language for its browser "JavaScript" to capitalize on the success of the Java programming language. Java, the programming language, is what's called a compiled language. It's written using English-language words and then translated by the computer into something that the computer can understand. Script is written in English as well, but is only understood and translated by the browser, not the computer itself. JavaScript is basically an advance on HTML coding that is used to provide functionality in webpages -- rollovers, pull-down menus, and so on.

JPEG (Joint Photographic Experts Group): Pronounced "jay-peg," JPEG is an ISO/ITU standard for compressing still images. Using discrete cosine transform, it provides lossy compression (you lose some data from the original image) with ratios up to 100:1 and higher. It depends on the image, but ratios of 10:1 to 20:1 may provide little noticeable loss. The more the loss can be tolerated, the more the image can be compressed. Compression is achieved by dividing the picture into tiny pixel blocks, which are halved over and over until the appropriate ratio is achieved. JPEG is implemented in software and hardware, with the latter providing sufficient speed for real-time, on-the-fly compression.

kernel: The central part of the Linux operating system that oversees all other operations. It loads first and stays in the memory throughout the operation of the OS.

kilobyte: In decimal systems, kilo stands for 1,000, but in binary systems, a kilo is 1,024 (2 to the 10th power). Technically, a kilobyte is 1,024 bytes, but it is often used loosely as a synonym for 1,000 bytes.

LAN (local area network): A communications network that serves users within a relatively small area. Most LANs serve just one building or a group of buildings. A LAN's servers run the programs and hold the data that all users on the LAN share. The users' individual PCs are workstations (clients) which access the serves as needed.

limiter: A signal processor used to keep audio signals from exceeding a set level.

line level: The standard volume level for routing audio signals. For pro audio gear, line level is set at +4dBv and for consumer gear it is -10dBv.

Linux: A Unix-like operating system that runs on many different types of computers. Linus Torvalds wrote the Linux operating system while he was a college student at the University of Helsinki in Finland. Instead of making it proprietary and trying to sell it, Torvalds gave it away, so anyone who wanted to develop for it could do so. But don't run out and download Linux just because it's free. It's not a consumer operating system, and it requires a very high level of skill to install and run. It's a flavor of the Unix operating system -- on which most of the Internet runs -- and is mainly used by programmers as a development tool. Linux, which has attracted a passionate cult following among programmers, represents the latest entry in the worldwide race for domination of the PC desktop and computer server markets.

LFO (low-frequency oscillator): Low-frequency signals used to modulate other signals for vibrato and other effects.

LPT: The typical designation for a computer's connection to a printer or other device through a parallel port. The name originally stood for "line printer terminal," but the LPT port can be used for other devices as well, such as a video camera.

macro: A mini-program that performs a series of keystrokes, commands or other functions that have been recorded into it. Calling the macro (usually through pressing a combination of keys) causes the actions recorded in the macro to be run in sequence. Macros are often used to enter words or phrases that you use frequently.

megabit: One million bits. Abbreviated as Mb, Mbit, and M-bit.

megabyte (MB): A measure of computer processor storage and real and virtual memory; a 2 to the 20th power byte, or 1,048,576 bytes in decimal notation.

memory: The electronic holding place for instructions and data that your computer's microprocessor can reach quickly. When your computer is in normal operation, its memory usually contains the main parts of the operating system and some or all of the application programs and related data that are being used.

META tag: A special HTML tag that identifies a webpage's contents. META tags do not have any influence on the appearance of the page, but instead hold information such as keywords for search engine, descriptions of the site, and update histories. The information in META tags is often used in the indexes of search engines.

microprocessor: A silicon chip that contains a CPU, or central processing unit. This is the brain of any computing device.

MIDI (pronounced "middy"): Short for musical instrument digital interface, MIDI is a standard protocol for communication between musical devices such as synthesizers and PC sound cards. At minimum, MIDI defines the codes for a musical event, such as a note's pitch, length, volume, and other attributes, like vibrato, attack, and delay time. The MIDI standard is supported by most synthesizers, allowing MIDI music to be played by an orchestra of separate MIDI instruments. The MIDI standard is also utilized by musical editing and composition software.

modem: A device that allows a computer to transmit data over telephone lines. It is the most common way that people connect to the Internet. A modem modulates data by converting it to audible tones that can be transmitted over a telephone line, and then demodulates received

signals to get the data. A high-speed cable or DSL modem is highly recommend for transferring audio data across the internet.

monitor: The display screen for a computer.

monitors: Special speakers that have a very flat frequency response and are used during recording and mixing.

motherboard: The central nervous system of a microcomputer. Typically it contains the CPU, BIOS, RAM, and mass storage interfaces, serial and parallel ports, expansion slots, and all the controllers required to control standard peripheral devices, such as the display screen, keyboard, and disk drive.

mouse: A handheld device that a computer user can use to move the on-screen pointer without having to resort to key commands.

MP3 (MPEG-1, Layer 3): Developed in Germany by the Fraunhofer Institute in 1991, MP3 is an audio compression technology. As part of the MPEG-1 and MPEG-2 specifications, it compresses CD-quality sound by a factor of 12 using perceptual audio coding. It provides almost the same high fidelity as a CD. MP3 music files, played via software or a handheld device, make it possible to download high-quality audio from the Web quickly.

multiplier: The function that determines the speed of the processor, which, in turn, is a multiple of the bus speed.

multitrack recording: The process of recording multiple sound sources to individual isolated tracks that are synchronized to record and playback in time.

Napster: A peer-to-peer file-sharing format developed to trade mass amounts of music files over the Internet. Lawsuits forced the original version to be shut down, but the Napster technology is set to re-emerge as a subscription-based service.

near field monitor: Speakers that are designed to be placed in relatively close proximity to the listener and used to monitor recording and playback.

noise floor: The level of noise that an audio device produces, measured in negative dB. The lower the dB level, the quieter the device is.

normalization: Adjusting sound files so the volume is consistent.

Nyquist's theorem: States that a sampling device must capture samples at twice the frequency of sound being sampled to avoid aliasing.

OCR (optical character recognition): A branch of computer science that involves reading text on paper and translating the images into a form that computer users can manipulate.. When a text document is scanned into the computer, it is turned into a bitmap, or picture, of the text. OCR software identifies letters and numbers by analyzing the light and dark areas of the bitmap. When it recognizes a character, it converts it into ASCII text. Advanced OCR programs can recognize hand printing.

OEM (original equipment manufacturer): A misleading term for a company that buys computers in bulk from a manufacturer , then customizes the machines and sells them under its

own name. The term is a misnomer because OEMs aren't the original manufacturers. Another term for OEM is VAR (value-added reseller).

oscillator: An electrical device that uses varying voltages to oscillate at different frequencies, thereby producing musical notes.

overclocking: Running your processor at a speed faster than it's rated. Most processors can run faster than their rated speed with some sacrifice of reliability.

over-sampling: A technique in which each sample coming from the D/A converter is sampled multiple times. The samples are then interpolated creating an anti-aliasing effect.

Q (bandwidth): The bandwidth of an equalizer band.

quantize: Forcing the notes in a MIDI sequence to fall on the nearest beat.

QuickTime: A sound, video, and animation system developed by Apple Computer. A QuickTime file can contain up to 32 tracks of audio, video, MIDI or other time-based control information. Apple also provides a version of QuickTime for Windows.

rack: A special type of storage shelf used to house pro audio gear. The height of rack mount gear is often expressed as a whole rack unit (meaning it occupies one entire rack space) or a half rack unit (half the vertical size of a whole rack unit).

RAM (random access memory): A common type of computer memory that functions as a machine's primary workspace. It can be accessed randomly. That is, any byte of memory can be accessed without touching the bytes before or after it. The more RAM your computer has, the more efficiently it will operate.

RAS (remote access services): A Windows NT feature that allows remote users to log into an a LAN using a modem, X.25 connection, or WAN link. RAS is compatible with network protocols including TCP/IP, IPX, and NetBEUI.

raster: A pattern of horizontal lines displayed on a computer or TV monitor. As the part of a monitor's screen that is actually being used to display images, it's a bit smaller than the physical dimensions of the display screen itself. It varies for different resolutions. Most monitors have controls that allow you to move or resize the raster.

RealAudio (.RA): The standard for streaming audio data over the Web. Developed by RealNetworks, RealAudio supports FM-stereo-quality sound. To hear a webpage that includes a RealAudio sound file, you need a RealAudio player or plug-in, a program that is freely available from a number of places, including Netscape Navigator and Microsoft Internet Explorer.

release: The final stage of a sound's envelope.

removable media: Information storage that allow users to remove the stored information if necessary. Examples of removable media include disks and magnetic tapes. The most popular form of removable media for audio is the CD-R.

resolution: The degree of clarity an image displays. The term is most often used to describe the sharpness of bit-mapped images on monitors, but of course it also applies to images on printed pages, as expressed by the number of dots-per-inch (dpi). x. For example, a 300-dpi printer can print 300 dots in an inch-long line., or 90,000 dots per square inch. For monitors, screen

resolution signifies the number of dots (pixels) on the screen. For example, a 640x480 pixel screen can display 640 dots on each of 480 lines, or about 300,000 pixels. Screens of different sizes have different dpi measurements. Printers, monitors, scanners, and other I/O devices are often classified as high resolution, medium resolution, or low resolution, but the corresponding degrees of clarity improve along with the technology.

resonance: The persistence of a tone, usually caused by sympathetic vibration.

reverb: The persistence of an acoustic signal after the original signal has ceased.

ripping: Using software to extract raw audio data from a music CD.

ROM (read-only memory): A storage chip that typically contains hard-wired instructions for use when a computer starts up.

RSA: A public-key encryption technology created by Ron Rivest, Adi Shamir, and Leonard Adleman of RSA Data Security, Inc. The key has two parts, one private and one public. Both parts are required for decryption. The RSA algorithm takes into account the inefficiency of factoring very large numbers. Therefore, decrypting an RSA key requires enormous amounts of time and computer processing power. Used in Netscape Navigator, Microsoft Internet Explorer, and other applications that require industrial-strength encryption, the RSA algorithm has become a standard, especially for data sent over the Internet.

RSI (repetitive strain injury): Ailments of the hands, neck, back, and eyes due to computer use.

Samba: An SMB (server message block) daemon that emulates SMB services for a Linux box.

sampling frequency: The rate at which measurements of an audio signal are taken during A/D and D/A conversion. A higher sampling rate makes for a higher-fidelity audio signal.

ScanDisk: a DOS and Windows utility that detects various errors on hard disk. It can repair some of them. In DOS, run ScanDisk by entering scandisk at the prompt and pressing the Enter key. In Windows 95 or 98, run ScanDisk by selecting Start->Programs->Accessories->System Tools->ScanDisk.

scanner: A device that converts paper documents or photos into a format that can be viewed on a computer and manipulated by the user.

SCSI (small computer system interface): Pronounced "scuzzy," SCSI is the standard port for Macintosh computers and is common in PCs and Unix boxes as well. SCSI is really a family of interfaces, ranging from the relatively primitive SCSI-1 to the spiffy new Wide Ultra2 SCSI. It offers some advantages over IDE, a similar port, including a higher data access rate (up to 80 MBps, depending on the type) and the ability to connect a number of devices to one port. SCSI can control seven devices, while IDE can control only two. SCSI hard drives are commonly used for audio applications as they generally can read and write data faster than can an IDE drive.

semiconductor: A substance, usually a solid chemical element or compound, that can conduct electricity under some conditions but not others, making it a good medium for the control of electrical current. Its conductance varies depending on the current or voltage applied to a control electrode, or on the intensity of irradiation by infrared, visible light, ultraviolet, or X rays.

send: See [auxiliary send](#).

sequencer: A device that stores MIDI data.

server: The business end of a client/server setup, a server is usually a computer that provides the information, files, webpages, and other services to the client that logs on to it.

shareware: Shareware is not software. Rather, it's a marketing method. When you buy software at your local computer store, you have to pay for the product before you see it. With shareware, you can try before you buy. That way you know whether it will meet your needs before you pay anything.

shelving EQ: An EQ that is designed to boost or cut a selected frequency and tapers off at a fixed slope.

.SHS files: Windows95/98/NT "scraps" -- usually dragged onto the desktop to be used as shortcuts. Trojan Horses can be hidden within .SHS files. Your computer does not need .SHS files. If you come across .SHS files, delete them.

SIMM (single in-line memory module): A narrow circuit board that holds memory chips. It plugs into a SIMM socket on a motherboard or memory board. Usually, a SIMM holds up to 8 chips on a Macintosh or 9 chips on a PC. Unlike memory chips, SIMMs are measured in bytes rather than bits. SIMMs, which are generally available in configuration from 1MB to 32MB, are easier to install than individual memory chips.

signal to noise ratio (S/N): The difference between the nominal signal level and the residual noise floor, usually expressed in decibels.

SMART (self-monitoring, analysis, and reporting technology): An open standard within hardware and software that automatically monitors a disk drive's health and reports of potential failure. All major hard-drive manufacturers use SMART to detect imminent disk problems and report the danger to the computer user. The user can then take appropriate action, which typically means backing up critical data stored on the disk -- before the drive becomes unusable.

SMB: A file-sharing protocol that Windows uses to share files and resources, such as printers, across a network.

software: Computer programs that instruct the computer. Some examples are word processors, spreadsheets, and games.

sound card: The card that processes audio data on a PC. It's often a PCI card, but it can also be USB or FireWire based. Or it can be built into the computer's motherboard.

system exclusive: A MIDI message that is used to transmit data to a specific MIDI device that is in a chain. See also bulk dump.

semiconductor: A substance, usually a solid chemical element or compound, that can conduct electricity under some conditions but not others, making it a good medium for the control of electrical current. Its conductance varies depending on the current or voltage applied to a control electrode, or on the intensity of irradiation by infrared radiation, visible light, ultraviolet radiation, or X-rays.

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spam: Electronic junk mail. Some people define spam as any unsolicited email. A narrower definition is unsolicited advertising, most commonly for credit cards, weight loss methods, and pyramid schemes, sent to a mailing list or newsgroup.

S/PDIF: The Sony/Phillips Digital Interface. Carries up to 24-bit data.

spreadsheet: Software that simulates a paper spreadsheet, or worksheet, in which columns of numbers are summed for budgets and plans. A spreadsheet appears on-screen as a matrix of rows and columns, the intersections of which are identified as cells. Spreadsheets can have thousands of cells and can be scrolled horizontally and vertically in order to view them.

SRAM (static RAM): RAM (random access memory) that retains data bits in its memory as long as power is being supplied. Unlike DRAM (dynamic random access memory), which stores bits in cells consisting of a capacitor and a transistor, SRAM does not have to be periodically refreshed. SRAM provides faster access to data and is more expensive than DRAM. It is used for a computer's cache memory and as part of the digital-to-analog converter on a video card.

streaming: Refers to the continuous transmission of data, typically audio or video, so it can be processed as a steady stream. Streaming technologies are increasingly important as the Internet grows because many users don't have fast enough Internet connections to download large multimedia files quickly. With streaming, the client browser or plug-in can start displaying the data as sound and pictures before the entire file has been transmitted. If the streaming client receives the data more quickly than required, it must save the excess data in a buffer. If the data arrives too slowly, its display will appear choppy.

suite (also known as an "office suite"): A set of applications designed to work together. A suite typically includes word processing, spreadsheet, presentation graphics, and database programs. Some of the programs may be available separately, while others come only in the bundle. Microsoft Office, WordPerfect Office and Lotus SmartSuite are the major business application suites for Windows. Sun's StarOffice is a new contender that is expected to become popular. Although Windows provides integration features such as cut-and-paste and compound document creation, the suites provide additional tools to move data from one application more easily into another. In addition, common functions such as spell checking can be installed once and shared among all programs. While no single application suite has the best program in each category, they have become very popular because they come on one CD-ROM, are upgradable as a single unit, and training is available for the entire package.

sustain: The part of the ADSR envelope that determines where the sound will decay while the note or key is depressed.

synching: The process of linking two devices together in order to exchange data or work from the same documents. For example, a DAT can be synched to a PC and be used to store audio data while still being controlled by the PC.

TCP/IP (transmission control protocol): An Internet protocol for moving data from one computer to another. IP, or Internet protocol, is also an essential part of the Internet data transmission process. The Internet protocol coordinates the addressing and packaging of the data packets that make up the article.

terminal: A device with a screen and keyboard that relies on a mainframe or another computer for intelligence.

thumbnail: A miniature representation of a page or image. A thumbnail program may be stand-alone or part of a desktop-publishing or graphics program. Thumbnails take considerable time to generate, but provide a convenient way to browse through multiple images before retrieving the one you need. A number of programs let you click on the thumbnail to retrieve the item it represents.

TIFF (tagged image file format): A common file format for storing bit-mapped images on computers. The images may display any resolution, and they can be monochrome, gray-scaled, or in full color. TIFF file extensions often end with .tif.

timecode: Timecode is a signal that contains a chronological record of the absolute time in a recording. It is used for synchronizing different recorders. It can be used for electronic editing. Timecode was initially invented for motion pictures as a method of synchronizing the pictures recorded in the frames of a camera with the sound recorded on a tape recorder.

Trojan horse: Like its namesake from Greek mythology, a Trojan horse is something nasty that pretends to be nice. In tech terms, it's a destructive program that masquerades as a benign one. It doesn't replicate itself like a virus, but it can be just as destructive as one. Among the most insidious species of Trojan horse is a program that claims it will cleanse your computer of viruses even as it introduces them.

TrueType: A scalable font technology that renders fonts for both the printer and the screen. Originally developed by Apple, it was enhanced jointly by Apple and Microsoft. Unlike PostScript, in which the algorithms are maintained in the rasterizing engine, each TrueType font contains its own algorithms for converting the outline into bitmaps. The lower-level language embedded within the TrueType font allows unlimited flexibility in the design.

Uuencode: When it was new, uuencode stood for Unix-to-Unix encode, but gradually it became a universal protocol for transferring files between platforms such as Unix, Windows, and Macintosh. It's a set of algorithms that converts files into a series of 7-bit ASCII characters that can be transmitted over the Internet. Uuencoding is especially popular for sending email attachments. Most email applications support uuencoding for sending attachments and uudecoding for receiving attachments. See also, ASCII.

Unix: A computer operating system. Unix is designed to be used by many people at the same time and has TCP/IP built-in.

USB (universal serial bus): An external bus standard that supports data transfer rates of 12 Mbps (12 million bits per second). One USB port can connect up to 127 peripheral devices, such as keyboards, modems, and mice.. USB also supports hot plugging and Plug-and-Play installation.

unbalanced: A connector that has a positive conductor that's surrounded by the negative conductor.

VBS (Visual Basic Script): A programming language for World Wide Web applications from Microsoft. It is an extension to Microsoft's Visual Basic language. VBScript is widely used as the scripting language in Active Server Pages.

Visual Basic: Based on the BASIC computer programming language, Microsoft's Visual Basic was one of the first products to provide a graphical programming environment and a paint metaphor for developing user interfaces. With Visual Basic, a programmer can add or delete code by dragging and dropping controls, like buttons and dialog boxes, instead of worrying about syntax details.

virtual memory: An area of imaginary memory that some operating systems support. Virtual memory expands the available RAM by commandeering hard-disk space and making it work as pseudo RAM. The more RAM you have, the more applications you can open at the same time. True RAM works many times faster than virtual memory. Once your computer starts using hard-drive space for RAM, it slows down considerably.

virus: A piece of software that has been written to surreptitiously enter your computer system and "infect" your files. Some viruses are benign and won't harm your system, while others are destructive and can damage or destroy your data. Typically, a computer virus will replicate itself and try to infect as many files and systems as possible. If your system is infected, when you save a file to a disk, you will probably infect the disk, and in turn, whoever uses that disk will infect his or her system.

WAN (wide area network): A connection between two or more local area networks (LANs). Wide area networks can be made up of interconnected smaller networks spread throughout a building, a state, or the globe.

WAP (wireless application protocol): A standard for providing cellular phones, pagers, and other handheld devices with secure access to email and text-based webpages. WAP features the Wireless Markup Language (WML), a streamlined version of HTML for small-screen displays. It also uses WMLScript, a compact JavaScript-like language that runs in limited memory.

webring: A navigation system that links related websites together. Each ring links sites that pertain to a particular topic.

white noise: A random noise that contains an equal amount of energy per frequency band. That is, 100-200, 800-900, and 3000-3100. Pink noise has an equal amount of energy per octave. The bands 0-200, 800-1600, and 3000-6000 all contain the same amount of energy.

word: One sample of audio data.

wordclock: Wordclock is a synch pulse that lets devices determine the start of each digital word. When multiple digital devices are connected together, it is vital that each device knows where a digital word starts and stops. Otherwise dropout or distortion may result. Although most digital interconnect protocols are self-clocking, it is more reliable to use a dedicated line for your wordclock signal. This is especially important in a multitrack environment where up to eight channels of digital data may be multiplexed on one cable.

worm: A program that makes copies of itself, for example from one disk drive to another, or by copying itself using email or some other transport mechanism. Recent worms have traveled by sending themselves to all the addresses in an infected user's email address book.

XLR: A connector that's used to carry balanced audio signals.

XML (extensible markup language): Designed especially for Web documents, XML lets programmers create customized tags that provide functionality not available in HTML. Not only does it make the language easier to understand, it also lets you search and extract information. This can be particularly helpful for use in databases.

XNS (extensible name service): Combines the technology of XML with Web agents.

Zip drive: A small, portable disk drive used primarily for backing up and archiving personal computer files. The trademarked Zip drive was developed and is sold by Iomega Corporation. Zip drives and disks come in two sizes. The 100 megabyte size actually holds 100,431,872 bytes of data or the equivalent of 70 floppy diskettes. There is also a 250 megabyte drive and disk. The Iomega Zip drive comes with a software utility that lets you copy the entire contents of your hard drive to one or more Zip disks.

Zombie: A dead program or process that occupies memory but is no longer functional but will not go away.