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A

Advanced Digital Network *n.* A dedicated line service capable of transmitting data, video, and other digital signals with exceptional reliability, offered as a premier service by communications companies. Usually Advanced Digital Network refers to speeds at or above 56 kilobits per second (Kbps). *See also* dedicated line.

Advanced Interactive Executive *n. See* AIX.

Advanced Mobile Phone Service *n. See* AMPS.

Advanced Power Management *n.* An application programming interface developed by Microsoft and Intel to monitor and conserve power on a PC-based system, particularly a battery-powered laptop computer, by enabling programs to communicate their power requirements so that the system can route power away from unused hardware components. *Acronym:* APM. *See also* application programming interface.

Advanced Program-to-Program Communication *n. See* APPC.

Advanced Research Projects Agency Network *n. See* ARPANET.

Advanced RISC *n.* Short for **Advanced Reduced Instruction Set Computing.** A specification for a RISC microchip architecture and system environment designed by MIPS Computer Systems to provide binary compatibility among software applications. *See also* RISC.

Advanced RISC Computing Specification *n.* The minimum hardware requirements enabling a RISC-based system to comply with the Advanced Computing Environment standard. *See also* Advanced RISC.

Advanced SCSI Programming Interface *n.* An interface specification developed by Adaptec, Inc., for sending commands to SCSI host adapters. The interface provides an abstraction layer that insulates the programmer from considerations of the particular host adapter used. *Acronym:* ASPI. *See also* adapter, SCSI.

Advanced Streaming Format *n.* An open file format specification for streaming multimedia files containing text, graphics, sound, video, and animation. ASF does not define the format for any media streams within the file. Rather, it defines a standardized, extensible file "container" that is not dependent on a particular operating system or communication protocol, or on a particular method (such as HTML or MPEG-4) used to compose the data stream in the file. An ASF file consists of three objects: a Header object containing information about the file itself; a Data object containing the media streams; and an optional Index object that can help support random access to data within the file. The ASF specification has been submitted to the ISO (International Standards Organization) for consideration. *Acronym:* ASF. *See also* streaming.

adventure game *n.* A role-playing computer game in which the player becomes a character in a narrative. In order to complete the game, the player must solve problems and avoid or overcome attacks and other forms of interference from the game's environment and other characters. The first adventure game was called "Adventure." It was developed in 1976 by Will Crowther of Bolt, Baranek & Newman. *See also* role-playing game.

AE *n.* Acronym for application entity. In the ISO/OSI reference model, one of the two software parties involved in a communications session. *See also* ISO/OSI reference model.

AFC *n. See* Application Foundation Classes.

AFDW *n. See* Active Framework for Data Warehousing.

AFIPS \ä´fips\ *n.* Acronym for American Federation of Information Processing Societies. An organization formed in 1961 for the advancement of computing and information-related concerns. The U.S. representative of the International Federation of Information Processing, AFIPS was replaced by the Federation on Computing in the United States (FOCUS) in 1990.

AFK *adv.* Acronym for away from keyboard. A phrase occasionally seen in live chat services on the Internet and online information services as an indication that one is momentarily unable to answer. *See also* chat[1] (definition 1).

AFS *n.* Acronym for Andrew File System. A distributed file system for facilitating accessibility to remote files in large networks. Owned and maintained by Transarc Corporation, AFS was originally developed as part of the Andrew project at the Information Technology Center at Carnegie-Mellon University.

agent *n.* **1.** A program that performs a background task for a user and reports to the user when the task is done or some expected event has taken place. **2.** A program that searches through archives or other re-

positories of inf
user. Agents of
Internet and are
single type of i
postings on Use
agent used on t
agent. *See also*
tions, a process
the server. **4.** In
col (SNMP), a
See also SNMP.

AGP *n.* Acronym
high-performan
high-quality dis
oped by Intel C
point-to-point c
troller and main
enables AGP-ca
ible chip sets to
system memory
ages more quick
displayed when
over the system
lows for storing
texture maps in
need for large a
itself. AGP runs
bus—and can s
533 Mb per sec

AI *n. See* artifici

.aiff *n.* The file e
the sound forma
con Graphics (S

AIFF *n.* The sou
and Silicon Gra
waveform files i
waveform.

AIX *n.* Acronym
A version of the
and maintained
and PCs.

alarm *n.* A visua
alerting the user

alert *n.* **1.** In ma
(graphical user i
that signals an e
sort. *See also* al
chronous notific

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cts: a Header
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. *Acronym:*

nputer game in
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ayer must solve
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in 1976 by Will
ın. *See also* role-

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Data Warehous-

ican Federation
:. An organization
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The U.S. represen-
n of Information
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keyboard. A
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ɜ to answer. *See*

ystem. A distrib-
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; originally devel-
t at the Information
ellon University.

ıs a background
ıser when the task
ıs taken place. 2. A
:hives or other re-

positories of information on a topic specified by the user. Agents of this sort are used most often on the Internet and are generally dedicated to searching a single type of information repository, such as postings on Usenet groups. Spiders are a type of agent used on the Internet. *Also called* intelligent agent. *See also* spider. **3.** In client/server applications, a process that mediates between the client and the server. **4.** In Simple Network Management Protocol (SNMP), a program that monitors network traffic. *See also* SNMP.

AGP *n.* Acronym for **A**ccelerated **G**raphics **P**ort. A high-performance bus specification designed for fast, high-quality display of 3-D and video images. Developed by Intel Corporation, AGP uses a dedicated point-to-point connection between the graphics controller and main system memory. This connection enables AGP-capable display adapters and compatible chip sets to transfer video data directly between system memory and adapter memory, to display images more quickly and smoothly than they can be displayed when the information must be transferred over the system's primary (PCI) bus. AGP also allows for storing complex image elements such as texture maps in system memory and thus reduces the need for large amounts of memory on the adapter itself. AGP runs at 66 MHz—twice as fast as the PCI bus—and can support data transfer speeds of up to 533 Mb per second. *See also* PCI local bus.

AI *n. See* artificial intelligence.

.aiff *n.* The file extension that identifies audio files in the sound format originally used on Apple and Silicon Graphics (SGI) computers.

AIFF *n.* The sound format originally used on Apple and Silicon Graphics (SGI) computers. AIFF stores waveform files in an 8-bit monaural format. *See also* waveform.

AIX *n.* Acronym for **A**dvanced **I**nteractive **E**xecutive. A version of the UNIX operating system developed and maintained by IBM for its UNIX workstations and PCs.

alarm *n.* A visual or auditory signal from a computer alerting the user to an error or hazardous situation.

alert *n.* **1.** In many operating systems with GUIs (graphical user interfaces), an audible or visual alarm that signals an error or represents a warning of some sort. *See also* alert box. **2.** In programming, an asynchronous notification sent by one thread to another. The alert interrupts the recipient thread at defined points in its execution and causes it to execute an asynchronous procedure call. *See also* asynchronous procedure call, thread (definition 1).

alert box *n.* An on-screen box, in a GUI (graphical user interface), that is used to deliver a message or warning. *Compare* dialog box.

ALGOL \al´gäl, al´gôl\ *n.* Acronym for **A**lgorithmic **L**anguage. The first structured procedural programming language, developed in the late 1950s and once widely used in Europe.

algorithm *n.* A finite sequence of steps for solving a logical or mathematical problem or performing a task.

algorithmic language *n.* A programming language, such as Ada, Basic, C, or Pascal, that uses algorithms for problem solving.

Algorithmic Language *n. See* ALGOL.

alias *n.* **1.** An alternative label for some object, such as a file or data collection. **2.** A name used to direct e-mail messages to a person or group of people on a network. **3.** A false signal that results from the digitization of an analog audio sample.

aliasing *n.* In computer graphics, the jagged appearance of curves or diagonal lines on a display screen, which is caused by low screen resolution. See the illustration.

Aliasing. The lower resolution of the image on the right reveals the aliasing effect.

aliasing bug *n.* A class of subtle programming errors that can arise in code that performs dynamic allocation. If several pointers address the same chunk of storage, the program may free the storage using one of the pointers, but then attempt to use another one (an alias), which would no longer be pointing to the desired data. This bug is avoidable by the use of allocation strategies that never use more than one copy of a pointer to allocated core memory, or by the use of higher-level languages, such as LISP, which employ a garbage collection feature. *Also called* stale pointer bug. *See also* alias, dynamic allocation, garbage collection.

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B

binomial distribution *n.* In statistics, a list or a function that describes the probabilities of the possible values of a random variable chosen by means of a Bernoulli sampling process. A Bernoulli process has three characteristics: each trial has only two possible outcomes—success or failure; each trial is independent of all other trials; and the probability of success for each trial is constant. A binomial distribution can be used to calculate the probability of getting a specified number of successes in a Bernoulli process. For example, the binomial distribution can be used to calculate the probability of getting a 7 three times in 20 rolls of a pair of dice. *Also called* Bernoulli distribution.

biometrics *n.* Traditionally, the science of measuring and analyzing human biological characteristics. In computer technology, biometrics relates to authentication and security techniques that rely on measurable, individual biological stamps to recognize or verify an individual's identity. For example, fingerprints, handprints, or voice-recognition might be used to enable access to a computer, to a room, or to an electronic commerce account. Security schemes are generally categorized into three levels: level 1 relies on something the person carries, such as an ID badge with a photo or a computer cardkey; level 2 relies on something the person knows, such as a password or a code number; level 3, the highest level, relies on something that is a part of the person's biological makeup or behavior, such as a fingerprint, the pattern of blood vessels in a retina, or a signature. *See also* fingerprint reader, handwriting recognition (definition 1), voice recognition.

bionics \bī-on´iks`\ *n.* The study of living organisms, their characteristics, and the ways they function, with a view toward creating hardware that can simulate or duplicate the activities of a biological system. *See also* cybernetics.

BIOS \bī´ōs\ *n.* Acronym for **b**asic **i**nput/**o**utput **s**ystem. On PC-compatible computers, the set of essential software routines that tests hardware at startup, starts the operating system, and supports the transfer of data among hardware devices. The BIOS is stored in read-only memory (ROM) so that it can be executed when the computer is turned on. Although critical to performance, the BIOS is usually invisible to computer users. *See also* AMI BIOS, CMOS setup, Phoenix BIOS, ROM BIOS. *Compare* Toolbox.

bipolar *adj.* **1.** Having two opposite states, such as positive and negative. **2.** In information transfer and processing, pertaining to or characteristic of a signal in which opposite voltage polarities represent on and off, true and false, or some other pair of values. *See also* nonreturn to zero. *Compare* unipolar. **3.** In electronics, pertaining to or characteristic of a transistor having two types of charge carriers. *See also* transistor.

BIS *n. See* business information system.

BISDN *n. See* broadband ISDN.

bistable *adj.* Of, pertaining to, or characteristic of a system or device that has two possible states, such as on and off. *See also* flip-flop.

bistable circuit *n.* Any circuit that has only two stable states. The transition between them must be initiated from outside the circuit. A bistable circuit is capable of storing 1 bit of information.

bistable multivibrator *n. See* flip-flop.

BISYNC \bī´sēnk\ *n.* Short for **bi**nary **sync**hronous communications protocol. A communications standard developed by IBM. BISYNC transmissions are encoded in either ASCII or EBCDIC. Messages can be of any length and are sent in units called frames, optionally preceded by a message header. BISYNC uses synchronous transmission, in which message elements are separated by a specific time interval, so each frame is preceded and followed by special characters that enable the sending and receiving machines to synchronize their clocks. STX and ETX are control characters that mark the beginning and end of the message text; BCC is a set of characters used to verify the accuracy of transmission. See the illustration. *Also called* BSC.

bit *n.* Short for **bi**nary digi**t**. The smallest unit of information handled by a computer. One bit expresses a 1 or a 0 in a binary numeral, or a true or false logical condition, and is represented physically by an element such as a high or low voltage at one point in a circuit or a small spot on a disk magnetized one way or the other. A single bit conveys little information a human would consider meaningful. A group of 8 bits, however, makes up a byte, which can be used to represent many types of information, such as a letter of the alphabet, a decimal digit, or other character. *See also* ASCII, binary[1], byte.