Microsoft Computer Dictionary, Fifth Edition

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This dictionary defines 10,000 terms and acronyms pertaining to all areas of computing, including hardware, networks, programming, applications, and databases.

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Introduction

Overview

The Microsoft Computer Dictionary, Fifth Edition is designed to be a comprehensive and authoritative source of definitions for computer-related terms and abbreviations. The dictionary includes terms drawn from a wide variety of topics relevant to computer users, including software, hardware, networking, data storage, graphics, games, information processing, the Internet and the World Wide Web, gaming, history, jargon and slang, organizations, programming, and standards.

Although this book covers nearly every aspect of computing, it does not include entries on most companies or on most makes and models of computers, nor does it contain entries on most application software products. The few exceptions to this rule of thumb are key companies and products that have a historical or universal importance within the computing industry.

This dictionary emphasizes terminology that the average computer user will encounter in documentation, online help, computer manuals, marketing and sales materials, the popular media, and the computer trade press. Because most computer users operate personal computers and desktop systems at home, work, or both, the majority of the entries in this dictionary cover the terminology used in describing and working with these systems. However, some specialized or highly technical language is included that pertains to areas of industry, academia, software and

hardware development, and research. These terms have been included because they have a bearing on more common computer terminology or because they are of historical significance.

Changes in the Fifth Edition

The fifth edition of the Microsoft Computer Dictionary has been revised and expanded to include over 10,000 entries, reflecting the many advances in the computer field and including several areas that have come into prominence in the public eye, such as networking, Web authoring, and new technologies, such as .NET. The content from the Year 2000 appendix has been integrated into the body of the dictionary and a new appendix on emoticons and instant messaging symbols has been added.

Order of Presentation

Entries are alphabetized by letter. Spaces are ignored, as are characters such as hyphens and slashes; for example, Baudot code falls between baud and baud rate, and machine-independent falls between machine identification and machine instruction. Numbers and symbols are located at the beginning of the book and are listed in ascending ASCII order. If an entry begins with a letter or letters but contains a number, it is listed alphabetically, according to the initial letter(s), and then according to ASCII order. Thus, V20 precedes V.2x, and both precede VAB.

Entries

Entries are of two types: main entries, which contain full definitions, and synonymous cross-references, which contain See references to the appropriate main entries. Synonymous cross-references are generally secondary or less common ways of referring to a main entry. The definition at the main entry can be substituted as a definition for the synonymous cross-reference.

Format

Information in each main entry is presented in a consistent format: entry name in boldface, spelling variants (if any), part of speech, definition, illustration or table reference (if any), acronym (if any), alternative names (if any), and cross-references (if any).

Main Entries

Entries that are acronyms or abbreviations for one or more words or concatenations of two or more words have those words spelled out at the beginning of the definition. The letters in these words or phrases that make up the acronym, abbreviation, or concatenation are in boldface. When a main entry is spelled exactly the same as another main entry, the two entries are differentiated by the use of a superscript numeral after each term. These entries are called homographs, and they are generally different parts of speech. For example,
e-mail1 (noun)
e-mail2 (verb)

Spelling Variants

When a main entry has one or more variations in the way it is spelled, each spelling variant follows the main entry, after the word or.

Parts of Speech

Entries are broken down into four parts of speech, in addition to prefixes, abbreviated as follows:
n. noun
vb. verb
adj. adjective
adv. adverb

Definitions

Each of the more than 10,000 entries is written in clear, standard English. Many go beyond a simple definition to provide additional detail and to put the term in context for a typical computer user. When an entry has more than one sense or definition, the definitions are presented in a numbered list, to make it easier to distinguish the particular, sometimes subtle, variations in meaning.

Illustration and Table References

Some entries have affiliated illustrations or tables that aid in defining the entry. In most cases, illustrations and tables appear on the same page as the entries to which they apply. In some instances, however, page layout requirements have forced them to a subsequent page. Entries with illustrations or tables usually have references at the end of the definition for an entry, in the following formats:
See the illustration.
See the table.

Acronyms

Some terminology in the computer field, particularly computer standards and Internet slang, can be shortened to form acronyms. Sometimes the acronym is the more common way to refer to the concept or object; in these cases, the acronym is the main entry. In other cases, the acronym is not as commonly used as the words or phrase for which it stands. In these cases, the words or phrase constitute the main entry. The acronym is given after the definition for these entries in the following format:
Acronym:

Alternative Names

Some items or concepts in the computer field can be referred to by more than one name. Generally, though, one way is preferred. The preferred terminology is the main entry. Alternative names are listed after any acronyms; otherwise they are listed after the definition in the following format:
Also called:

Cross-References

Cross-references are of three types: See, See also, and Compare. A See reference is used in an entry that is a synonymous cross-reference and simply points to another entry that contains the information sought. A See also reference points to one or more entries that contain additional or supplemental information about a topic and follows any acronyms or alternative names after the definition. A Compare reference points to an entry or entries that offer contrast and follows any See also references; otherwise it follows any acronyms or alternative names after the definition.

Future Printings and Editions

Every effort has been made to ensure the accuracy and completeness of this book. If you find an error, think that an entry does not contain enough information, or seek an entry that does not appear in this edition, please let us know. Address your letter to: Dictionary Editor, Microsoft Press, One Microsoft Way, Redmond, WA 98052-6399. Or send e-mail to .

Numbers and Symbols: $0.02 - Å

$0.02
n. See my two cents.

&

n. 1. UNIX command suffix for running the preceding command as a background process. See also background1. 2. In UNIX, a root user command suffix for starting a daemon that is to remain running after logout. See also daemon. 3. The default character used to designate a character entity (special character) in an HTML or SGML document. See also HTML, SGML. 4. In spreadsheet programs, an operator for inserting text into a formula specifying the relationship between cells.

*
n. 1. A character used in applications and programming languages to signify multiplication. 2. In Windows, MS-DOS, OS/2, and other operating systems, a wildcard character that can be used in place of one or more characters, as in *.*, which represents any combination of a filename and an extension. See also ?, *.*, wildcard character. 3. In the C and C++ programming languages, the character used to dereference a pointer to a class or structure. See also dereference, pointer (definition 1).

.
n. A file specification using the asterisk (star) wildcard, which means any combination of filename and extension in operating systems such as MS-DOS. See also asterisk (definition 2), wildcard character.

..
n. MS-DOS and UNIX syntax for the parent directory. A single dot refers to the current directory.

/
n. 1. A character used to separate parts of a directory path in UNIX and FTP or parts of an Internet address (URL) in Web browsers. 2. A character used to flag switches or parameters that control the execution of a program invoked through a command-line interface. See also command-line interface.

//
n. Notation used with a colon to separate the URL protocol (such as http or ftp) from the URL host machine name, as in http://www.yahoo.com. See also URL.

:
n. Colon, a symbol used after the protocol name (such as http or ftp) in a URL. See also URL.

<>
n. 1. Angle brackets, a pair of symbols used to enclose a keyword, comprising a tag in an HTML, SGML, or XML document. See also HTML, SGML, XML. 2. In an Internet Relay Chat (IRC) or multiuser dungeon (MUD), a set of symbols used to designate some action or reaction, as in <chuckle>. See also emotag, IRC, MUD. 3. A pair of symbols used to enclose a return address in an e-mail header.

>
n. 1. Right angle bracket, a symbol used in some operating systems, such as MS-DOS and UNIX, to direct the output resulting from some command into a file. 2. A symbol commonly used in e-mail messages to designate text included from another message.

?
n. In some operating systems and applications, a wildcard character often used to represent any other single character. The question mark is one of two wildcard characters supported by the MS-DOS, Windows NT, and OS/2 operating systems. See also *.

@
n. The separator between account names and domain names in Internet e-mail addresses. When spoken, @ is read as "at." Therefore, user@host.com would be read as "user at host dot com."

\
n. Back slash, a character used to separate directory names in MS-DOS and UNIX path specifications. When used as a leading character, it means that the path specification begins from the topmost level for that disk drive. See also path (definition 5).

0.07-micron
n. A manufacturing technology with which 400 million transistors, with an effective channel length 1000 times thinner than a human hair, can be placed on a single chip. The extremely small sizes and faster speeds of 0.07-micron products can be used to create improved-performance microprocessors that may extend clock speeds beyond 10 GHz. Possible applications of 0.07-micron technology range from tiny hearing aids that can be implanted in the ear to hard disk drives that read gigabits of data per second.

0 wait state
n. See zero wait state.

100Base-FX
n. An Ethernet standard for baseband LANs (local area networks) using fiber optic cable carrying 100 Mbps (megabits per second). Also called: Fast Ethernet. See also Ethernet (definition 1).

100Base-T
n. An Ethernet standard for baseband LANs (local area networks) using twisted-pair cable carrying 100 Mbps (megabits per second). The 100Base-T standard is comprised of 100Base-T4 (four pairs of medium-grade to high-grade twisted-pair cable) and 100Base-TX (two pairs of high-grade twisted-pair cable). Also called: Fast Ethernet. See also Ethernet (definition 1).

100Base-T4
n. See 100Base-T.

100Base-TX
n. See 100Base-T.

100Base-VG
n. An Ethernet standard for baseband LANs (local area networks) using voice-grade twisted-pair cable carrying 100 Mbps (megabits per second). Unlike other Ethernet networks, 100Base-VG relies on an access method called demand priority, in which nodes send requests to hubs, which in turn give permission to transmit based on the priority levels included with the requests. Also called: 100Base-VG-AnyLAN. See also Ethernet (definition 1).

100Base-VG-AnyLAN
n. See 100Base-VG.

100Base-X
n. Descriptor used for any of three forms of 100 Mbps Ethernet networks: 100Base-T4, 100Base-TX, or 100Base-FX. Also called: Fast Ethernet. See also 100Base-T, 100Base-FX, Ethernet (definition 1).

101-key keyboard
n. A computer keyboard modeled after the enhanced keyboard; introduced by IBM for the IBM PC/AT. The 101-key keyboard and the enhanced keyboard are similar in the number and function of their keys; they may differ in the way the keys are laid out, the amount of tactile feedback expressed when a key is pressed, and the shape and feel of the keycaps. See also enhanced keyboard.

1024x768

n. A standard super VGA computer display having a resolution of 1024 columns of pixels by 768 rows of pixels. See also SVGA.

10Base2
n. The Ethernet and IEEE 802.3 standard for baseband LANs (local area networks) using a thin coaxial cable (3/16 inch) up to 200 meters long and carrying 10 Mbps (megabits per second) in a bus topology. A network node is connected to the cable by a BNC connector on the adapter card. Also called: Cheapernet, thin Ethernet, ThinNet, ThinWire. See also BNC connector, bus network, coaxial cable, Ethernet (definition 1), IEEE 802.x.

10Base5
n. The Ethernet and IEEE 802.3 standard for baseband LANs (local area networks) using a thick coaxial cable (3/8 inch) up to 500 meters long and carrying 10 Mbps (megabits per second) in a bus topology. A network node is equipped with a transceiver that plugs into a 15-pin AUI connector on the adapter card and taps into the cable. This form of Ethernet is generally used for network backbones. Also called: thick Ethernet, ThickNet, ThickWire. See also coaxial cable, Ethernet (definition 1), IEEE 802.x.

10Base-F
n. The Ethernet standard for baseband LANs (local area networks) using fiber-optic cable carrying 10 Mbps (megabits per second) in a star topology. All nodes are connected to a repeater or to a central concentrator. A node is equipped with a fiber-optic transceiver that plugs into an AUI connector on the adapter card and attaches to the cable with an ST or SMA fiber-optic connector. The 10Base-F standard comprises 10Base-FB for a backbone, 10Base-FL for the link between the central concentrator and a station, and 10Base-FP for a star network. See also Ethernet (definition 1), fiber optics, star network.

10Base-FB
n. See 10Base-F.

10Base-FL
n. See 10Base-F.

10Base-FP
n. See 10Base-F.

10Base-T
n. The Ethernet standard for baseband LANs (local area networks) using twisted-pair cable carrying 10 Mbps (megabits per second) in a star topology. All nodes are connected to a central hub known as a multiport repeater. See also Ethernet (definition 1), star network, twisted-pair cable.

12-hour clock
n. A clock that expresses the time within a 12-hour range, returning to 1:00 after 12:59 AM or PM. Compare 24-hour clock.

1.2M
adj. Short for 1.2-megabyte. Refers to the storage capacity for high-density 5.25-inch floppy disks.

1394
n. See IEEE 1394.

14.4
n. A modem with a maximum data transfer rate of 14.4 Kbps (kilobits per second).

1.44M
adj. Short for 1.44-megabyte. Refers to the storage capacity for high-density 3.5-inch floppy disks.

16-bit
adj. See 8-bit, 16-bit, 32-bit, 64-bit.

16-bit application
n. An application written to run on a computer with a 16-bit architecture or operating system, such as MS-DOS or Windows 3.x.

16-bit color
adj. Of, pertaining to, or characteristic of a display that can produce 216 (65,536) distinct colors. Compare 24-bit color, 32-bit color.

16-bit machine
n. A computer that works with data in groups of 16 bits at a time. A computer may be considered a 16-bit machine either because its microprocessor operates internally on 16-bit words or because its data bus can transfer 16 bits at a time. The IBM PC/AT and similar models based on the Intel 80286 microprocessor are 16-bit machines in terms of both the word size of the microprocessor and the size of the data bus. The Apple Macintosh Plus and Macintosh SE use a microprocessor with a 32-bit word length (the Motorola 68000), but they have 16-bit data buses and are generally considered 16-bit machines.

16-bit operating system
n. An operating system, now outdated, that can work with 2 bytes, or 16 bits, of information at one time. A 16-bit operating system, such as MS-DOS and Microsoft Windows 3.x, reflects the functionality of a 16-bit processor because the software and the chip must work together so closely. The main advantage of a 16-bit operating system over its earlier 8-bit predecessors (such as CP/M-80) was its ability to address more memory and use a larger (16-bit) bus. Sixteen-bit operating systems have since been eclipsed by 32-bit operating systems—such as the Macintosh operating system, Microsoft Windows NT, and Windows 9x—and by 64-bit operating systems, such as some versions of UNIX. See also 32-bit operating system.

/16 network
n. IP address class B. This class has 16,382 networks available and more than sixty-five thousand hosts available. See also host, IP address classes, network.

1999 problem
n. 1. A variation on the Year 2000 problem in computer systems that have two-digit years in date fields and are used by companies and organizations in which the fiscal year 2000 begins before the end of calendar year 1999. These computer systems may interpret the fiscal year as the year 1900. 2. A potential problem, if not corrected, with date fields in older code that were (sometimes) used to hold values with special meaning. For example, the date 9/9/99 was often used as an expiration date meaning "keep this information forever" or, worse, "destroy this document immediately."

1NF
n. Short for first normal form. See normal form (definition 1).

2000 time problem
n. See Year 2000 problem.

2038 limit
n. A consideration in some PCs that use a signed 32-bit integer to represent date and time. Because such systems determine date and time as the number of seconds elapsed since

midnight, January 1, 1970, they can handle a maximum of 231 seconds, a number that will be reached at 3:14:07 a.m. on January 19, 2038. When the elapsed seconds exceed that maximum value, the clock will overflow, resulting in an incorrect date and time and, potentially, causing disruptions. Some organizations have defined Year 2000 compliant to mean a system that will have the correct date/time and do proper date handling up through the year 2038, although this is not universal. The extent of the potential problem, of course, is directly related to the number of such system solutions still in operation at the time. See also Year 2000 compliant.

24-bit color
n. RGB color in which the level of each of the three primary colors in a pixel is represented by 8 bits of information. A 24-bit color image can contain over 16 million different colors. Not all computer monitors support 24-bit color, especially older models. Those that do not may use 8-bit color (256 colors) or 16-bit color (65,536 colors). Also called: true color. See also bit depth, pixel, RGB. Compare 16-bit color, 32-bit color.

24-hour clock
n. A clock that expresses the time within a 24-hour range, from 0000 (midnight) to 2359 (one minute before the following midnight). Compare 12-hour clock.

2.4 kernel
n. Update of the core of the Linux OS, released at the end of 2000. Features in the 2.4 kernel emphasize support for new buses, devices, and controllers; increased USB support; improved Web server performance; and increased symmetrical multiprocessing scalability.

/24 network
n. IP address class A. This class has more than two million networks available and 254 hosts available. See also host, IP address classes, network.

256-bit
adj. Having a data path that is 256 bits wide.

286
n. See 80286.

287
n. See 80287.

28.8
n. A modem with a maximum data transfer rate of 28.8 Kbps (kilobits per second).

2-digit year
n. The capacity for storing only the last two digits of the year in a date. In such systems, the century for the date is not stored. See also two-digit date storage.

2G
n. Acronym for 2nd Generation. The second generation of digital wireless technology, as defined by the International Telecommunications Union (ITU). Second generation technology delivers data transmission at speeds from 9.6 Kbps (kilobits per second) to 19.2 Kbps. Second generation technology provides greater data transmission capabilities and more efficient voice transmission than the analog technology first developed for wireless telecommunications.

2NF
n. Short for second normal form. See normal form (definition 1).

2-nines availability
n. See two-nines availability.

2.PAK
n. An artificial intelligence programming language.

32-bit
adj. See 8-bit, 16-bit, 32-bit, 64-bit.

32-bit application
n. An application written to run on a computer with a 32-bit architecture or operating system, such as Mac OS or Windows 9x.

32-bit clean
adj. 1. Refers to Macintosh hardware designed to run in 32-bit mode, which can address up to 1 gigabyte of physical RAM under System 7. This includes all present Macintosh computers; some older models used 16-bit addressing. 2. Refers to software written for 32-bit operation.

32-bit color
n. RGB color that is similar to 24-bit color, with 8 additional bits used to allow for faster transfer of an image's color. See also bit depth, RGB. Compare 16-bit color, 24-bit color.

32-bit driver
n. A software subsystem that controls either a hardware device (device driver) or another software subsystem. The 32-bit versions of this software take full advantage of the instruction sets of the 486 and Pentium processors for improved speed. See also driver, instruction set.

32-bit machine
n. A computer that works with data in groups of 32 bits at a time. The Apple Macintosh II and higher models are 32-bit machines, in terms of both the word size of their microprocessors and the size of the data buses, as are computers based on the Intel 80386 and higher-level microprocessors.

32-bit operating system
n. An operating system in which 4 bytes, or 32 bits, can be processed at one time. Windows 95, Windows 98, Windows NT, Linux, and OS/2 are examples. See also instruction set, protected mode.

33.6
n. A modem with a maximum data transfer rate of 33.3 Kbps (kilobits per second).

34010, 34020
n. Graphics coprocessors from Texas Instruments (TI), used mainly in high-end PC graphics boards, which have become a de facto standard for programmable graphics processors. Although both chips use 32-bit registers, the 34010 uses a 16-bit data bus and the 34020 uses a 32-bit bus. The 34020 is compatible with the earlier 34010, and both chips work with TIGA (Texas Instruments Graphical Architecture), a TI standard that allows a single application driver to be used with all boards based on the standard. See also de facto standard, TIGA, video graphics board.

3.5-inch floppy disk
n. Used with the Macintosh and with IBM and compatible microcomputers. A microfloppy disk is a round piece of polyester film coated with ferric oxide and encased in a rigid plastic shell equipped with a sliding metal cover. On the Macintosh, a single-sided 3.5-inch floppy disk can hold 400 kilobytes (KB); a double-sided (standard) disk can hold 800 KB; and a double-sided high-density disk can hold 1.44 megabytes (MB). On IBM and compatible machines, a microfloppy can hold either 720 KB or 1.44 MB of information. See also floppy disk.

360K
adj. Short for 360-kilobyte. The storage capacity for standard 5.25-inch floppy disks.

.386
n. A file extension for virtual device drivers under Windows 3.1. See also virtual device driver.

386
n. See 80386DX.

386BSD
n. A version of BSD UNIX, different from BSD386 from Berkeley Software Development, Inc. Freely distributable, 386BSD was released in 1992 and is available in two newer versions: NetBSD and FreeBSD. See also BSD UNIX, FreeBSD, NetBSD.

386DX
n. See 80386DX.

386SL
n. See 80386SL.

386SX
n. See 80386SX.

387
n. See 80387.

387SX
n. See 80387SX.

3-D or 3D
adj. 1. Short for three-dimensional. Of, pertaining to, or being an object or image having or appearing to have all three spatial dimensions (length, width, and depth). 2. Having the illusion of depth or varying distances, as in 3-D audio.

3-D array
n. See three-dimensional array.

3-D audio
n. Short for three-dimensional audio. Recorded as stereo sound, 3-D audio enables the listener to feel immersed in the sound and to determine its exact location (up, down, left, right, forward, or backward). This technology is commonly used in video games and virtual-reality systems, as well as in some Internet applications. Also called: 3-D sound, binaural sound.

3-D graphic
n. Any graphical image that depicts one or more objects in three dimensions—height, width, and depth. A 3-D graphic is rendered on a two-dimensional medium; the third dimension, depth, is indicated by means of perspective and by techniques such as shading or gradient use of color.

3-D metafile
n. A device-independent file for storing a 3-D display. See also metafile.

3DMF
n. See QuickDraw 3-D.

3-D model
n. See three-dimensional model.

3-D sound
n. See 3-D audio.

3-finger salute
n. See three-finger salute.

3G
n. Acronym for 3rd Generation. The third generation of digital wireless technology, as defined by the International Telecommunications Union (ITU). Third generation technology is expected to deliver data transmission speeds between 144 Kbps (kilobits per second) and 2 Mbps (megabits per second), compared to the 9.6 Kbps to 19.2 Kbps offered by second generation technology. Western Europe and Japan lead the world in adoption of 3G technology and services.

3GL
n. Short for third-generation language. A high-level programming language that was designed to run on the third generation of computer processors, built on integrated circuit technology roughly from 1965 to 1970. C, FORTRAN, Basic, and Pascal are examples of third-generation languages still in use today. See also high-level language, integrated circuit. Compare 4GL, low-level language.

3NF
n. Short for third normal form. See normal form (definition 1).

3-nines availability
n. See three-nines availability.

3Station
n. A diskless workstation developed by Bob Metcalfe at 3Com Corporation. See also diskless workstation.

400
n. HTTP status code—Bad Request. A Hypertext Transfer Protocol message from an HTTP server indicating that a client request cannot be completed because the syntax of the request is incorrect. See also HTTP server (definition 1), HTTP status codes.

401
n. HTTP status code—Unauthorized. A Hypertext Transfer Protocol message from an HTTP server indicating that a client request cannot be completed because the transaction requires an Authorization header, which was not supplied. See also HTTP server (definition 1), HTTP status codes.

402
n. HTTP status code—Payment Required. A Hypertext Transfer Protocol message from an HTTP server indicating that a client request cannot be completed because the transaction requires a payment, and no ChargeTo header was supplied. See also HTTP server (definition 1), HTTP status codes.

403
n. HTTP status code—Forbidden. A Hypertext Transfer Protocol message from an HTTP server indicating that a client request cannot be completed because access is restricted. See also HTTP server (definition 1), HTTP status codes.

404
n. HTTP status code—Not Found. A Hypertext Transfer Protocol message from an HTTP server indicating that a client request cannot be completed because the server is unable to find an

address that matches the URL requested. See also HTTP server (definition 1), HTTP status codes, URL.

486
n. See i486DX.

486DX
n. See i486DX.

486SL
n. See i486SL.

486SX
n. See i486SX.

4-digit year
n. The capacity for storing all four digits of the year in a date in hardware or firmware products.

4GL
n. Short for fourth-generation language. A programming language designed to mimic human language. The designation is often used to specify languages used with relational databases and is intended to imply that such languages are a step up from standard high-level programming languages such as C, Pascal, and COBOL. See also application development language, high-level language. Compare 3GL, assembly language.

4GL architecture
n. See two-tier client/server.

4mm tape
n. See digital audio tape.

4NF
n. Short for fourth normal form. See normal form (definition 1).

4-nines availability
n. See four-nines availability.

5.25-inch floppy disk
n. Used with the Macintosh and with IBM and compatible microcomputers. A microfloppy disk is a round piece of polyester film coated with ferric oxide and encased in a rigid plastic shell equipped with a sliding metal cover. A floppy disk 5.25 inches in diameter is encased in a flexible plastic jacket and has a large hole in the center, which fits around a spindle in the disk drive; such a disk can hold from a few hundred thousand to over one million bytes of data. See floppy disk.

56flex
n. See K56flex.

56K1
adj. Having 56 kilobits per second (Kbps) available for traffic on a communications circuit. One voice channel can carry up to 64 Kbps (called a T0 carrier); 8 Kbps are used for signaling, leaving 56 Kbps available for traffic. See also T-carrier.

56K2
n. See 56-Kbps modem.

56-Kbps modem

n. An asymmetric modem that operates over POTS (Plain Old Telephone Service) to deliver data downstream at 56 Kbps, with upstream speeds of 28.8 and 33.6 Kbps. Earlier, slower modems invoke a two-conversion transmission process: digital data from a computer is converted into analog form for transmission over the telephone wire and is then reconverted to digital data by the receiving modem. In contrast, 56-Kbps modems achieve faster speeds by converting analog data to digital data only once, typically at the telephone company's switching office near the beginning of the transmission's journey. Designed to improve download times for Internet users, 56-Kbps modems rely on a public phone network that allows for a single conversion and on the availability of a digital connection, such as ISDN or T1, at the ISP (Internet Service Provider) location that provides the actual connection to the Internet. See also analog data, digital data transmission, modem, POTS.

586
n. The unofficial name used by industry analysts and by the computer trade press to describe Intel's successor to the i486 microprocessor prior to its release. In the interest of using a name that could be trademarked, however, Intel decided to name the microprocessor Pentium. See also Pentium.

5NF
n. Short for fifth normal form. See normal form (definition 1).

5-nines availability
n. See five-nines availability.

5x86
n. Cyrix Corporation's clone of the Intel Pentium CPU. See also 586, 6x86, central processing unit, clone, Pentium.

601
n. See PowerPC 601.

603
n. See PowerPC 603.

604
n. See PowerPC 604.

64-bit
adj. Of, pertaining to, or descriptive of the amount of data—64 bits, or 8 bytes—that certain computer systems or programs can process at one time.

64-bit machine
n. A computer that works with data in groups of 64 bits at a time. A computer may be considered a 64-bit machine either because its CPU operates internally on 64-bit words or because its data bus can transfer 64 bits at a time. A 64-bit CPU thus has a word size of 64 bits, or 8 bytes; a 64-bit data bus has 64 data lines, so it ferries information through the system in sets of 64 bits at a time. Examples of 64-bit architecture include the Alpha AXP from Digital Equipment Corporation, the Ultra workstation from Sun Microsystems, Inc., and the PowerPC 620 from Motorola and IBM.

64-bit operating system
n. An operating system in which 8 bytes, or 64 bits, can be processed at one time. For Microsoft Windows, the 64-bit operating systems are Windows XP 64-Bit Edition, the 64-bit versions of Windows .NET Enterprise Server, and Windows .NET Datacenter Server. The IBM AS/400 uses a 64-bit operating system.

6502

n. The 8-bit microprocessor, developed by Rockwell International, that was used in the Apple II and Commodore 64 microcomputers.

65816
n. A 16-bit microprocessor from Western Digital Design used in the Apple IIGS. It can emulate the 6502, providing compatibility with all old Apple II software. See also 6502.

6800
n. An 8-bit microprocessor developed by Motorola in the early 1970s. It failed to gain wide acceptance.

68000
n. The original microprocessor in the 680x0 family from Motorola, introduced in 1979 and used in the first Apple Macintosh computers as well as the Apple LaserWriter IISC and Hewlett-Packard's LaserJet printers. The 68000 has 32-bit internal registers but transfers data over a 16-bit data bus. With 24-bit physical addressing, the 68000 can address 16 megabytes of memory—16 times as much memory as does the Intel 8088 found in the IBM PC. In addition, the 68000's architecture, in which addressing is linear (as opposed to the 8088's segmented addressing) and in which all address registers work the same way and all data registers work the same way, makes programming more straightforward. See also linear addressing architecture, segmented addressing architecture.

68020
n. A microprocessor in the 680x0 family from Motorola, introduced in 1984. This chip has 32-bit addressing and a 32-bit data bus and is available in speeds from 16 MHz to 33 MHz. The 68020 is found in the original Macintosh II and the LaserWriter IINT from Apple.

68030
n. A microprocessor in the 680x0 microprocessor family from Motorola, introduced in 1987. This chip has 32-bit addressing and a 32-bit data bus and is available in speeds from 20 MHz to 50 MHz. The 68030 has built-in paged memory management, precluding the need for supplemental chips to provide that function.

68040
n. A microprocessor in the 680x0 family from Motorola, introduced in 1990, with 32-bit addressing and a 32-bit data bus. The 68040 runs at 25 MHz and includes a built-in floating-point unit and memory management units, including independent 4-KB instruction and data caches, which eliminate the need for supplemental chips to provide these functions. In addition, the 68040 is capable of parallel instruction execution by means of multiple independent instruction pipelines, multiple internal buses, and separate caches for both data and instructions.

68060
n. The latest and fastest of the 680x0 microprocessors from Motorola, introduced in 1995. This chip has 32-bit addressing and a 32-bit data bus and is available in speeds from 50 MHz to 75 MHz. There was no 68050. The 68060 is probably the last in the 680x0 series from Motorola.

6845
n. A programmable video controller from Motorola used in IBM's Monochrome Display Adapter (MDA) and Color/Graphics Adapter (CGA). The 6845 became such an integral part of the IBM PC and compatibles that later generations of video adapters, such as EGA and VGA, continue to support the operations of the 6845. See also CGA, EGA, MDA, VGA.

68881
n. The floating-point coprocessor from Motorola for use with the 68000 and the 68020. The 68881 provides instructions for high-performance floating-point arithmetic, a set of floating-point data registers, and 22 built-in constants including p and powers of 10. The 68881 conforms to the

ANSI/IEEE 754-1985 standard for binary floating-point arithmetic. The 68881 can produce a dramatic improvement in system performance when software takes advantage of it. See also floating-point processor.

68K
n. See 68000.

6x86
n. An 8086-compatible microprocessor designed by Cyrix Corporation. It is socket-compatible with some Pentium microprocessors from Intel and can be used in their place. See also 8086, microprocessor, Pentium.

740
n. See PowerPC 740.

750
n. See PowerPC 750.

7-bit ASCII
n. A 7-bit ASCII character set used for standard UNIX mail messages. The leftover eighth bit is a parity bit used for error correction. See also ASCII, parity bit.

7-track
n. A tape storage scheme that places data on seven separate, parallel tracks on 1/2-inch reel-to-reel magnetic tape. This is an old recording format used with computers that transfer data 6 bits at a time. Data is recorded as 6 data bits and 1 parity bit. Some personal computers now use the 9-track tape storage scheme. See also 9-track.

80286
n. A 16-bit microprocessor from Intel, introduced in 1982 and included in the IBM PC/AT and compatible computers in 1984. The 80286 has 16-bit registers, transfers information over the data bus 16 bits at a time, and uses 24 bits to address memory locations. The 80286 operates in two modes: real mode, which is compatible with the 8086 and supports MS-DOS, and protected mode, which enables the CPU to access 16 megabytes of memory and protects the operating system from incorrect memory accesses by ill-behaved applications, which could crash a system in real mode. Also called: 286. See also protected mode, real mode.

80287
n. A floating-point coprocessor from Intel for use with the 80286 family of microprocessors. Available in speeds from 6 MHz to 12 MHz, the 80287 offers the same mathematical capabilities that the 8087 coprocessor provides to an 8086-based system. Because the 80287 conforms to the 80286 memory management and protection schemes, it can be used in both the real and protected modes of the 80286. Also, if the computer manufacturer implements support for it in the motherboard design, the 80287 can be used in a system with an 80386 microprocessor. See also floating-point processor.

802.x standards
n. See IEEE 802.x.

802.11 standards
n. See IEEE 802.11.

80386
n. See 80386DX.

80386DX