NEWTON'S TELECOM DICTIONARY

The Official Dictionary of Telecommunications & the Internet

- IP Telephony • LANs & Intranets • Call Centers & Computer Telephony
- Fiber Optics, SONET and DWDM • Satellites
- Voice, Data, Image & Video Networking • Wired and Wireless Telecom • VoIP • T-1, T-3, T-4, E-1, E-3 • ISDN & ADSL • Cable Modems • Cellular, PCS & GSM • Windows 95, 98, NT, NetWare, Apple, Sun & Unix Networking • Ecommerce

Updated 15th Expanded Edition

International service which provides cablegram communication to International destinations through the use of a computerized message switching center in New York City.

Cablehead The point where a marine cable connects to terrestrial facilities.

CableLabs Cable Television Laboratories, Inc. A research and development consortium of cable television system operators established in 1988. CableLabs plans and funds research and development projects to help member companies and the cable industry take advantage of opportunities and meet challenges in the telecommunications industry. A good deal of emphasis is placed on digital cable and cable modem technologies. www.cablelabs.com

Cableport Intel Corporation's new technology, which brings high speed multimedia-rich interactive services to personal computers in the home via cable.

Cablespan A Tellabs Operations, Inc. product which deliver two-way voice and data services over coaxial cable used by cable TV operators. Tellabs is in Lisle, Illinois.

Cableway An opening in a work surface that allows access to cords or cables from below, or mounting of an electrical receptacle or telephone jack. Cableways typically come with removable plastic grommets.

Cabling The combination of all cables, wire, cords, and connecting hardware installed. A term used to refer collectively to the installed wiring in a given space.

CABS Carrier Access Billing Specifications

CABS BOS Carrier Access Billing Specifications - Billing Output Specifications

CAC 1. Carrier Access Code. The digits you must dial in North America to reach the long distance carrier of your choice. Those digits fit the following format 101XXXX.
2. Customer Administration Center. A type of terminal used by a PBX user to maintain and troubleshoot his PBX.
3. Connection Admission Control is defined as the set of actions taken by the network during the call setup phase (or during call re-negotiation phase) in order to determine whether a connection request can be accepted or should be rejected (or whether a request for re-allocation can be accomplished).

CACH Call Appearance Call Handling.

Cache From the French "cacher," which translates "to press or hide," especially in terms of tools or provisions. In the context of computer systems and networks, information is cached by placing it closer to the user or user application in order to make it more readily and speedily accessible, and transparently so. At the same time, information which is cached places less stain on limited computer I/O (Input/Output) resources and limited network resources. Let's consider two specific definitions, the first of which relates to computer systems and the second of which relates to computer networks. Let's also consider a combination of the first two, in the context of the Internet.

1. In the context of a computer system, cache memory generally is a partition of SRAM (Static Random Access Memory). Since much of computing is highly repetitive or predictable in nature, and since solid state components (silicon chips) are much faster than mechanical disk drives, the speed of information access can be enhanced if certain information can be stored in RAM. That information typically is in the form of program information, memory addresses, or data. Thereby, the information can be stored in anticipation of your need for it, and can be presented to you faster than if the computer needed to access the hard drive through the execution of an I/O function. The cache memory sits (logically and, perhaps physically) between the CPU and the main memory (RAM).

Caching works because of a phenomenon known as the locality principle which states that a von Neumann CPU (i.e., one that performs instructions and makes database calls sequentially, one after another) tends to access the same memory locations over and over again. A cache works like this. When the CPU needs data from memory, the system checks to see if the information is already in the cache. If it is, it grabs that information; this is called a cache hit. If it isn't, it's called a cache miss and the computer has to fetch the information by accessing the main memory or hard disk, which is slower. Data retrieved during a cache miss is often written into the cache in anticipation of further need for it. Let's assume that you open a CD-ROM application with hyperlinks. As the system can reasonably assume that you will exercise the hyperlink options, the information associated with them can be stored in cache memory. If you do, indeed, exercise those options, it's a cache hit and the data is there waiting for you. The cache also will hold information that you recently accessed, in anticipation of your wanting to back up, or access it again. Caching can take place through partitioned or segmented cache memory, which can be in the form of L1 (Level 1) primary cache and L2 (Level 2) secondary cache. L1 cache memory is accessed first, L2 second, the main memory (RAM) and then hard drive last. Also, one cache might hold program instructions and the other might hold data. Generally when the cache is exhausted, it is flushed and the data is written back to main memory, to be replaced with the next cache according to a replacement algorithm. Cache freshing and flushing mechanism is designed differently by different vendors. It behaves slightly different. However it mainly depends on main memory type, like write back or WB, write through WT, write protected or WT, write combining or WC and uncached or UC. See also Cache Memory.

2. In the context of a computer network such as a LAN, or the combination of the Internet and World Wide Web, data can be cached in a server which is close to you. In anticipation of your imminent request for that data in a logical sequence of data access, it will be transmitted from the main server to the remote server. Thereby, the data is accessible to you more quickly than if it had to be transmitted across the entire network each time you had a need for it. Should you access a certain set of data frequently, it might be permanently stored on a server in proximity, and refreshed by the main server from time to time in order to ensure its currency (i.e. that it remains up to date).

3. In the context of an Internet client/server application, caching really shows its stuff. First, the network uses distributed cache servers to house the WWW information that users in your region use frequently. As you access a Web site, your speed of access and response is improved because the data is housed on a server closer to you. The data then is loaded into cache memory on your client computer workstation. As you move forward, from page to page and link to link, your client caches the information provided by the cache server, with all of this happening in anticipation of your next move. As you move backward, the same thing happens, in anticipation of that next move, as well. Just in case you don't believe the client side of this story, go to Internet Explorer or Netscape, and click on cache. (The fastest way to regain space on your hard disk is to flush the cache which these programs dump to your hard disk.)

Cache Coherency Managing a cache so that data is not lost or overwritten. See also Cache.

Cache Controller A chip, such as the Intel 82385, that

manages the retrieval, s from memory or the har in either clients or serve

Cache Engine A cac speed dedicated Internet caching and retrieval. W cache engine locally sto text. When another user content is pulled from improves download time use on the network. Here from Cisco, which mak work? The cache engine which redirects Web rec Web Cache Control Prot of Cisco IOS software. T ing of traffic across mult tolerant, fail-safe opera caching? By reducing th on overburdened Web s benefits to ISPs, enterp benefits include cost s usage and dramatic imp users. The cache engine with a simple method through URL filtering. S

Cache Hit When the Thus you don't have to puting is faster. See Cac

Cache Memory Avai or SRAM (Static RAM) er to "remember" stuff wants that information, searching through a s process. This high spe wait state. When the C copy of this data is store the CPU reads the same the cache memory ins NetWare, for example, server access time. In directory and file cache Table), the turbo FAT, tl other functions. See als

Cache Miss When th and you have to read yc reading it from the cacl Hit and Cache Memory

Caching A process by ory or server in anticip See Cache for a full exp

CAD 1. Computer Aide 2. Computer Aided Des ware and terminals us might be as simple a complex as detailed I systems often have ter tral maxi-computer in CAD terminals are of works) or through tel often moved, thus hav switching system — extremely useful.

CAD/CAM Comput

...enon known as the local-...Neumann CPU (i.e., one...es database calls sequen-...iccess the same memory...che works like this. When...the system checks to see...ache. If it is, it grabs that...hit. If it isn't, it's called a...o fetch the information by...rd disk, which is slower.... is often written into the...d for it. Let's assume that...th hyperlinks. As the sys-...u will exercise the hyper-...ciated with them can be..., indeed, exercise those...a is there waiting for you....ation that you recently...wanting to back up, or...ice through partitioned or...an be in the form of L1...el 2) secondary cache. L1...second, the main memo-...so, one cache might hold...might hold data. Generally...shed and the data is writ-...laced with the next cache...hm. Cache freshing and...ferently by different ven-...owever it mainly depends...ick or WB, write through...combining or WC and...emory.

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...as the Intel 82385, that

manages the retrieval, storage and delivery of data to and from memory or the hard disk. Cache controllers may reside in either clients or servers. See also Cache.

Cache Engine A cache engine is a carrier-class, high-speed dedicated Internet appliance that performs Web content caching and retrieval. When a user accesses a Web page, the cache engine locally stores the page's graphics and HTML text. When another user later requests the same Web page, the content is pulled from the cache engine. This process improves download time for the user and reduces bandwidth use on the network. Here is a an explanation of a cache engine from Cisco, which makes one. How does the cache engine work? The cache engine communicates with a Cisco router, which redirects Web requests to the cache engine using the Web Cache Control Protocol (WCCP), a new standard feature of Cisco IOS software. The WCCP also enables load balancing of traffic across multiple cache engines and ensures fault-tolerant, fail-safe operation. What are the benefits of Web caching? By reducing the amount of traffic on WAN links and on overburdened Web servers, caching provides significant benefits to ISPs, enterprise networks and end users. Those benefits include cost savings due to a reduction on WAN usage and dramatic improvements in response times for end users. The cache engine also provides network administrators with a simple method to enforce a site-wide access policy through URL filtering. See also Cache.

Cache Hit When the data you want is actually in cache. Thus you don't have to access your hard disk and your computing is faster. See Cache, Cache Miss and Cache Memory.

Cache Memory Available RAM (Random Access Memory) or SRAM (Static RAM) that you set up to allow your computer to "remember" stuff — so the next time your computer wants that information, it can find it fast from RAM, instead of searching through a slower hard disk I/O (Input/Output) process. This high speed cache memory eliminates the CPU wait state. When the CPU reads data from main memory, a copy of this data is stored in the cache memory. The next time the CPU reads the same address, the data is transferred from the cache memory instead of from main memory. Novell's NetWare, for example, uses cache memory to improve file server access time. In NetWare, cache memory contains the directory and file caches, along with the FAT (File Allocation Table), the turbo FAT, the Hash table, and an open space for other functions. See also Cache.

Cache Miss When the caching software guesses wrongly and you have to read your data off your hard disk rather than reading it from the cache in memory. See also Cache, Cache Hit and Cache Memory.

Caching A process by which information is stored in memory or server in anticipation of next request for information. See Cache for a full explanation.

CAD 1. Computer Aided Dispatch.
2. Computer Aided Design. A computer and its related software and terminals used to design things. A CAD system might be as simple as computerized drafting tools or as complex as detailed layouts of integrated circuits. CAD systems often have terminals on peoples' desks and a central maxi-computer in the company's main computer room. CAD terminals are often run over LANs (local area networks) or through telephone systems. The terminals are often moved, thus having universal wiring and a universal switching system — a LAN or a phone system — is extremely useful.

CAD/CAM Computer Aided Design/Computer Aided

Manufacturing. See CAD.

CADB Calling Area Data Base. An MCI definition. An MCI System that stores reference data for various MCI Systems and reconciles MCI Calling Areas with those of Bell.

Caddy The shell of an optical disc. Protects it from grubby fingerprints, and includes write protection devices. AKA case.

Cadence In voice processing, cadence is used to refer to the pattern of tones and silence intervals generated by a given audio signal. Examples are busy and ringing tones. A typical cadence pattern is the US ringing tone, which is one second of tone followed by three seconds of silence. Some other countries, such as the UK, use a double ring, which is two short tones within about a second, followed by a little over two seconds of silence.

CADS Code Abuse Detection System.

CAE Computer Aided Engineering.

Cage Antenna An antenna having conductors arranged cylindrically.

CAGR Compound Annual Growth Rate.

CAI 1. Computer Assisted Instruction. Commonly known as CBT (Computer Based Training). See CBT. See also CAD for a discussion on telecom needs.
2. Common Air Interface. A standard for the interface between a radio network and equipment. A CAI allows multiple vendors to develop equipment, such as radio terminal devices (e.g., cordless phones, cellular phones and PCS terminals) and base stations (e.g., cellular antenna sites), which will interoperate. The yield is a competitive (read less expensive) market for equipment. The British CT2/Telepoint system incorporated one of the first CAI standards. See also CT2.

CALC Customer Access Line Charge. Also known variously as Access Charge, EUCL (End User Line Charge), and SLC (Subscriber Line Charge). See Access Charge.

CALEA Communications Assistance for Law Enforcement Act 1994.

Calendar Routing A call center term for directing calls according to the day of the week and time of day. See also SOURCE/DESTINATION ROUTING, SKILLS BASED ROUTING and END-OF-SHIFT ROUTING.

Calibrate To test and reset a measuring or timing device against a standard to make sure it is functioning correctly.

Call Everyone has a different definition for "call." My definition is simplest: Two people or two machines are on a phone line speaking to each other. That's a call. Bellcore's definition of a call: An arrangement providing for a relation between two or more simultaneously present users for the purpose of exchanging information. The ATM Forum's definition: A call is an association between two or more users or between a user and a network entity that is established by the use of network capabilities. This association may have zero or more connections. Here are some more formal definitions:
1. In communications, any demand to set up a connection.
2. A unit of traffic measurement.
3. The actions performed by a call originator.
4. The operations required to establish, maintain, and release a connection.
5. To use a connection between two stations.
6. The action of bringing a computer program, a routine, or a subroutine into effect, usually by specifying the entry conditions and the entry point.

Call Abandons Also called ABANDONED CALLS. Call Abandons are calls that are dropped by the calling party before their intended transaction is completed. The call may

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CIA PC Card Standards. It includes the PC Card Standard Release v2.01, Socket Services Specification Release v2.0, Card Services Specification Release v2.0, ATA Specification Release v1.01, AIMS Specification Release v1.0, and the Recommended Extensions Release v1.0. Standard v3.0 has been proposed. See PCMCIA. www.pcmcia.org

PCN Personal Communications Network. A new type of wireless telephone system that would use light, inexpensive handheld handsets and communicate via low-power antennas. When it was originally conceived, PCN was primarily seen as an a city communications system, with far less range than cellular. Subscribers would be able to make and receive calls while they are traveling, as they can do today with cellular radio systems, but at a low price. Now PCN is seen as what Dr. Sorin Cohn of Northern Telecom calls an "enabler of unplanned growth." One idea for PCN is to locate a PCN cell site (transmitter/receiver) in a residential community. When someone wanted a new phone line, they'd simply drop down to their local phone store, pick up a PCN portable phone and, by the time, they got back home, their frequency would be "switched on" and they'd be "live." The original plans for PCN never materialized fully. However, the concept has been implemented in the forms of Personal Communications Service (PCS) and Wireless Local Loop (WLL). See also PCS, Personal Communications Network, Wireless Local Loop.

PCO Point of Control and Observation: A place (point) within a testing environment where the occurrence of test events is to be controlled and observed as defined by the particular abstract test method used.

PCP 1. Post Call Processing.

2. Program Clock Reference: A timestamp that is inserted by the MPEG-2 encoder into the Transport Stream to aid the decoder in the recovering and tracking the encoder clock.

PCR An ATM term. Peak Cell Rate: The Peak Cell Rate, in cells/sec, is the cell rate which the source may never exceed.

PCS 1. the plural of PCs, i.e. PCc.

2. Personal Communications Service. A new, lower powered, higher-frequency competitive technology to cellular. Whereas cellular typically operates in the 800-900 MHz range, PCS operates in the 1.5 to 1.8 Ghz range. The idea with PCS is that the phones are cheaper, have less range, are digital; the cells would be smaller and closer together and the airtime would be cheaper also. Several licenses have been awarded and several systems have started in North America. The concept of PCS is evolving. It is not clear exactly where it will end up. So far, it looks like another cellular system with some digital messaging on the phone's larger screen. this is how the Federal Government awarded PCS licenses:

• "C-Block" Carrier
A 30 MHz PCS carrier serving a Basic Trading Area (BTA) in the frequency
block 1895-1910 MHz paired with 1975-1990 MHz.
• "D-Block" Carrier
A 10 MHz PCS carrier serving a Basic Trading Area (BTA) in the frequency
block 1865-1870 MHz paired with 1945-1950 MHz.
• "E-Block" Carrier
A 10 MHz PCS carrier serving a Basic Trading Area (BTA) in the frequency
block 1885-1890 MHz paired with 1965-1970 MHz.
• "F-Block" Carrier
A 10 MHz PCS carrier serving a Basic Trading Area (BTA) in the frequency
block 1890-1895 MHz paired with 1970-1975 MHz.

See PERSONAL COMMUNICATIONS NETWORKS and PERSONAL COMMUNICATION SERVICES.

PCS Over Cable You run a CATV — cable TV company. You have a wires strung all over the neighborhood. On one of your wires you attach a six foot by four foot by four box of electronics and three two feet attenae. Bingo, you're now a way station — also called a cell site — for a PCS cellular phone system. People who are PCS subscribers will talk and receive calls when they're close to your cell site. Calls come and go via your coax cable, up it to a landline connection point with the PCS carrier. You, the CATV company, get paid money for completing calls. See www.sanders.com/telecomm

PCSA Personal Computing System Architecture. A PC implementation of DECnet, that lets PCs work in a DECnet environment. PCSA is a network architecture defined and supported by Digital Equipment Corporation for the incorporation of personal computers into server-based networks.

PCT Personal Communications Technology. A security protocol developed by Microsoft for online Web commerce and financial transactions. Transparent to the user, PCT provides authentication and encryption routines that complement credit-card based commerce on the World Wide Web. Internet Explorer, Microsoft's Web browser, makes use of PCT. See also AUTHENTICATION and ENCRYPTION.

PCTA Personal Computer Terminal Adapter. A printed circuit card that slips into an IBM PC or PC compatible and allows that PC to be connected to the ISDN T-interface. See PERSONAL COMPUTER TERMINAL ADAPTER.

PCTE Portable Common Tool Environment.

PCTS Public Cordless Telephone Service. A Canadian digital cordless telephone service for residential, business and public use. For other variations of digital cordless telephone service, see CT1, CT2, CT2Plus, CT3, and DECT.

PCWG Personal Conferencing Work Group (www.gogcwg.org/pcwg/)

PCX Server Software PCX server software turns your PC into a graphics terminal front-end for Unix and X applications. Thus, your PC can display application output generated by remote X-based client applications.

PDA Personal Digital Assistant. A consumer electronics gadget that looks like a palmtop computer. Unlike personal computers, PDAs will perform specific tasks — acting like an electronic diary, carry-along personal database, multimedia player, personal communicator, memo taker, calculator, alarm clock. The communications will take place through the phone or through wireless. Apple has announced a PDA, which it has named Newton. When I added this definition in the late fall of 1992, sales of PDAs weren't doing well and some wag in Silicon Valley called them Probably Disappointed Again. IBM prefers to call them Personal Communicators. General Magic prefers to called them PICs, Personal Intelligent Communicators.

PDAU Physical Delivery Access Unit. A gateway device that facilitates the delivery of messages (excluding probes and reports) in physical form. This is an X.400 term.

PDC 1. Personal Digital Cellular. (Digital system used in Japan).

2. See Primary Domain Controller

PDF Portable Document Format. This is the file format for documents viewed and created by Adobe's Acrobat Reader, Capture, Distiller, Exchange and the Acrobat Amber Plug-in for Netscape Navigator. The PDF file format was developed to standardize Internet-based documents. One of the benefits of using Acrobat and the .pdf format is you can deliver business documents others without reauthoring them and read them

DOCKET ALARM

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fastcase
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