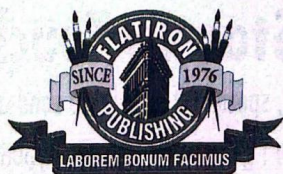


NEWTON's TELECOM DICTIONARY

24th Edition

Harry Newton



New York



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Stay In Touch

For suggestions, corrections, updates, special offers: please send an email to Harry@HarryNewton.com

I promise you I won't give your name to anybody. Nobody. Promise.

Harry Newton



Protocol Data Unit • proxy

Protocol Data Unit See PDU.

protocol dependent routing Any routing method in which routing decisions are made on the basis of information provided by the specific LAN protocol used by the communicating devices. TCP/IP and DECnet routers are protocol dependent routers. So are so-called multi protocol routers, because they must support each protocol running in the network. See also Protocol Independent Routing.

protocol filtering A feature available in some network bridges which allows it to be programmed to always forward or reject transmissions associated with specified protocols.

Protocol Independent Multicast - Dense Mode PIM-DM is a multicast routing protocol designed for networks that have a large number of multicast subscribers and enough bandwidth to support the multicast sessions. PIM-DM uses a flood and prune technique to reach all parts of the network to inform routers of the multicast session. Computers that want to join the multicast session contact the nearest router using the Internet Group Management Protocol (IGMP) and ask to be added to a specific multicast group. The router adds them to the group and builds a delivery tree that links the multicast sender to the computers that have joined the multicast group. Any paths to routers that do not have computers that want to join the multicast session are removed or "pruned" from the delivery tree until only the paths to those computers who have joined the multicast group are left. PIM-DM sends multicast packets to routers in the delivery tree, which are then delivered to only the computers that have joined the multicast group. PIM-DM uses reverse path forwarding (RPF) to distribute the multicast packets to the delivery tree and to keep network loops from forming in the process. The router implementing RPF receives a multicast packet from the multicast sender and compares the destination IP address of the packet to the delivery tree. If the IP address is in the delivery tree routing table the packet is forwarded; if not it is discarded. PIM-DM is similar to other multicast routing protocols such as the Distance Vector Multicast Routing Protocol (DVMRP), but unlike other protocols PIM-DM uses any underlying unicast routing protocol such as RIP, OSPF, BGP, etc. to build a multicast delivery tree. The ability to work with multiple unicast protocols allows PIM-DM to work across mixed network infrastructures that are present in large networks. The above courtesy Alcatel.

protocol independent router A routing device that provides the functionality of protocol specific routers such as TCP/IP or DECnet routers but is independent of protocols. In addition to routing "routable" protocols like TCP/IP, DECnet or XNS, it routes IBM protocols which are not routable. The protocol independent router combines the latest in computer hardware with the new advanced routing technologies such as SPF (Shortest Path First) and IS-IS (OSI routing standard). It represents an alternative to conventional routers that use old routing technologies and are protocol dependent. Protocol independent routers provide easy-to-install-and-use enterprise-wide networks in a token ring or Ethernet environment.

protocol independent routing A routing method in which routing decisions are made without reference to the protocol being used by the communicating devices. Protocol independent routers provide the functionality of protocol specific routers such as TCP/IP or DECnet routers, but can also route non-routable protocols. See also Protocol Independent Router.

protocol mapper Protocol Mappers are employed where a logical server is delivering a proprietary CTI protocol and / or providing connections through a proprietary transport protocol. Mappers deliver one of the specified CTI Protocols after first mapping, or translating, from the non-specified, proprietary protocol.

protocol mapper device Implementation of a Protocol Mapper as device which sits on a data connection and is transparent to the logical client. See Protocol Mapper.

protocol mapper code Implementation of a Protocol Mapper as a software component. Mapper Code components mimic transport protocol stack implementation, and, using an appropriate R/W interface, are layered above any transport protocol stack and are transparent to Client Implementations. See Protocol Mapper.

protocol stack First, read the definition on what a protocol is. Understand that a protocol is a specific set of rules, procedures or conventions relating to format and timing of transmission between two devices. Protocol defines the rules for "conversations" - voice, data, video, etc. - between two computers. A protocol stack is basically a collection of modules of software that together combine to produce the software that enables the protocol to work, i.e. to allow communications between dissimilar computer devices. It is called a stack because the software modules are piled on top of each other. The process of communicating typically starts at the bottom of the pile and works itself up. Each software module typically (not always) needs the one below it. Sometimes one big protocol stack - such as the one for H.323 - might include specific protocol standards further down the stack. The TCP/IP protocol stack includes such protocols as TCP, IP, FTP, SMTP, telnet, and so on. A protocol

stack is also called a protocol family or protocol suite. See Protocol.

protocol suite A hierarchical set of related protocols.

protocol translator Network device or software that converts one protocol into another similar protocol.

protocols For an explanation of protocols, see Protocol. Here are the more common PC protocols:

MODULATION PROTOCOLS Bell 103: Low Speed (300 baud)

Bell 212: Low Speed (1200bps)

ITU-T V.22bis: Medium (2400bps)

ITU-T V.32: Medium Speed (9600bps)

ITU-T V.32bis: High Speed (14,400bps)

ITU-T V.34: High Speed (28,800bps)

ERROR CONTROL PROTOCOLS

Microcom Network Protocol (MNP)

ITU-T V.42 (Includes LAP-M & MNP)

DATA COMPRESSION PROTOCOLS

MNP/5

ITU-T V.42bis

All data compression requires an underlying error control protocol.

FILE TRANSFER PROTOCOLS

Kermit: 7-bit data path, quotes control characters.

XMODEM: 8 bit data path, ACK/NAK protocol.

YMODEM: 8-bit data path, batch capability.

ZMODEM: 8-bit data path, quotes some control characters.

TCP Transmission Control Protocol. See Internet.

proton A Proton is a heavy subatomic particle that carries a positive charge. Protons are found in the nucleus of the atom.

prototyping The development of a model that displays the appearance and behavior (look and feel) of an application to be built. A prototype may only demonstrate the application's. It may also demonstrate navigation and user controls, or it may even accept input data that can be stored in and retrieved from a simulated database. (See also iterative development.)

provider A process that represents an interface between the Sun Solaris Teleservices platform and an installed telephone device, such as a telephone line or a fax machine. Multiple instances of a provider can be configured, each based on the same information. Each configuration is identified by a unique primary alias. A primary alias is the primary label used to prefer to a provider configuration. The primary alias is a provider's default and primary name. This definition courtesy Sun.

provider of last resort The service provider that is obligated to provide basic service to a customer in the absence of the availability or willingness of an alternative competitive service provider to do so. The term generally applies to the telecommunications industry, although it now also applies to the electric industry. In the days of monopolistic utilities, when there was only one local service provider, there was no issue. Since competition has been introduced in the local exchange, however, some service provider must serve as the provider of last resort, regardless of profitability (or the lack thereof). The provider of last resort is obligated to provide basic service (i.e., local dial tone) to customers within its franchised serving areas in the event that either no other service provider is available or no other service provider is willing to provide service. Examples include people and companies with terrible credit records, people who require lifeline service, and people who need TDDs (Telecommunications Devices for the Deaf). Providing such services is decidedly unprofitable, but some company must do it as a matter of social policy. In the telecommunications domain, the provider of last resort is the ILEC (Incumbent Local Exchange Carrier); in areas where the electric industry has been deregulated, it is the incumbent electric utility. The concept is closely tied to that of Universal Service. See also Universal Service.

provisioning The act of supplying telecommunications service to a user, including all associated transmission, wiring, and equipment. The telephone industry defines provisioning as an engineering term referring to the act of providing sufficient quantities of switching equipment to meet established service standards. In NS/EP telecommunication services, "provisioning" and "initiation" are synonymous and include altering the state of an existing priority service or capability.

proximity sensor A device that detects the presence of an object and signals another device. Proximity sensors are often used on manufacturing lines to alert robots or routing devices on a conveyor to the presence of an object.

proxy 1. A proxy is an intermediate application program that acts as both a client and a server. A proxy runs on a gateway that relays packets between a other trusted clients





trusted host, perhaps making protocol translations in the process. A proxy accepts requests from the trusted client for specific Internet services and then acts on behalf of this client (in other words, serves as proxy for this client) by establishing a connection for the requested service. The request appears to originate from the gateway running the proxy, rather directly than from the client. All application-level gateways use application-specific proxies (that is, modified versions of specific TCP/IP services). Most circuit-level gateways use pipe, or generic, proxies that offer the same forwarding service but support most TCP/IP services. A "transparent proxy" makes no modifications to a request from an origin client other than what absolutely is required to identification and authentication. A "non-transparent proxy" modifies requests from the origin client and/or responses from the origin server in order to provide additional services. See Client, Dual-Homed Gateway, Proxy Server, and Server.

2. A software agent that acts on behalf of a user. Also, the mechanism whereby one system "fronts for" another system in responding to protocol requests. Proxy systems are used in network management to avoid having to implement full protocol stacks in simple devices, such as modems. In SNMP, a proxy is a device which performs SNMP functionality for a separate managed device. The amount of responsibility may vary. Proxy ARPing refers to address recognition for another unit with SNMP capability, while a proxy agent provides an external SNMP agent for a managed device which does not have SNMP capability.

proxy ARP The technique in which one machine, usually a router, answers ARP requests intended for another machine. By "faking" its identity, the router accepts responsibility for routing packets to the "real" destination. Proxy ARP allows a site to use a single IP address with two physical networks. Subnetting would normally be a better solution.

proxy card A credit size card that identifies itself when within close proximity of a reader. Card "swiping" is not necessary. The card contains a 3 digit Facility Code, a 5 digit internal card number and a 5 digit External Printed number, that may or may not match the Internal number.

proxy server A proxy is an application running on a gateway that relays packets between a trusted client and an untrusted host. A proxy server is software that runs on a PC and is basically a corporate telephone system for the Internet. Here's what I mean: A telephone system's main job is to allow a large number of people access to a few number of phone lines. Example: we have 100 people in our firm. But we have only 30 outside phone lines. To grab an outside phone line you dial 9 and then dial your number. When the 31st person tries to grab an outside line, he gets a busy. If this happens a lot, we install more phone lines. The reason we have fewer phone lines than people is clearly economic. We save money that way. All phone systems work that way. A proxy server performs the same function. Let's say your company is connected to the Internet on a single high-speed digital line, e.g. a T-1. The provider of this line gives you a certain number of distinct and different IP addresses which you can use - just like our phone system gives us 30 distinct and different phone lines. Since most firms will have fewer IP addresses than they have people wanting to use the Internet, they'll need a proxy server to act like a phone system - allocating precious IP addresses as the people want them. This process is called address translation. A proxy server is typically also a firewall - that means it keeps unwanted intrusion from the Internet getting into your corporate network. Thus, the firewall's IP addresses function as a proxy addresses. Proxy servers provide extra security by replacing calls to insecure systems' subroutines. Proxy servers also allow companies to provide World Wide Web access to selected people, restricting some, allowing others through the firewall - just like a phone system restricts some people from making long distance calls, etc. Acting as behind-the-scenes directors, proxy servers can also help distribute processing load and provide an added layer of security. A proxy server could also cache some of the material from popular Web sites, saving access time and phone monies.

In short, a proxy server lets your employees access the Internet right from their desktop PCs over a shared, managed, and secure connection to the Internet. No more running modems to desktops - a slow, expensive solution. That connection to the Net can be "nailed up," like a T-1 or equivalent, or it can even be an on-demand connection. That is, if there is no traffic moving over the connection for a period of time, a proxy server can turn off the connection so your company isn't wasting dollars on an Internet connection not being used. And the proxy would then re-establish the connection immediately when a user tried to access a web site.

According to Microsoft, a proxy server has the following advantages:

1. It accelerates access to the Internet with intelligent caching - no more World Wide Wait!
2. It protects your Intranet in ways a packet filtering router can not.
3. It blocks access to undesirable sites and provides other easy-to-use management features.
4. It saves money by consolidating and making the most of your Internet connection.

proxy ARP • Pseudo Automatic Number Identification

See also Router-based Firewall and Dual-Homed Gateway.

PRS 1. Primary Reference Source. The master clocking source in a network. Other, distributed devices derive their clocking from the PRS in order that the entire network and all associated network elements maintain synchronization. See also Clock, Stratum Level and Timing.

2. See Personal Radio Services.

PRSM Post Release Software Manager.

PRX Program.

PS Paging Systems.

PS-ACR Power Sum-Attenuation-to-Crosstalk Ratio. A measurement of the strength of the data signal in one pair compared to one or more other pairs in a common cable. PS-ACR is measured in dB (decibels). See also ACR and dB.

PS-NEXT Power Sum-Near End CrossTalk. A measurement of the extent to which one cable pair resists interference generated by one or more other pairs in a common cable. PS-NEXT is measured in dB (decibels). See also dB and NEXT.

Ps and Qs In English pubs, ale is ordered by pints and quarts. In old England, when customers got unruly, the bartender would yell at them to mind their own pints and quarts and settle down. It's where we get the phrase "mind your Ps and Qs."

PS/ALI Public Safety Automatic Line Information for E911. See ALI.

PS/2 IBM Personal System/2 personal computer. An IBM personal computer that was popular for a while. It became extinct when IBM could not make personal computers as cheap as its competitors (like Dell and Compaq) could.

PSA Professional Services Automation.

PSAI AT&T's Processor-to-Switch Applications Interface. See also ASAI and SCAL.

psalmtop A growing number of people are using their hand-held organizers to help them practice their religion. The New York Times coined the word on February 7, 2002.

PSAP Public Safety Answering Point. PSAPs are customarily segmented as "primary," "secondary" and so on. The primary PSAP is the first contact a 911 caller will get. Here, the PSAP operator verifies or obtains the caller's whereabouts (called locational information), determines the nature of the emergency and decides which emergency response teams should be notified. ALI (Automatic Location Information), contained in a database, provides supplemental information for purposes of locating the caller, determining if hazardous materials are located at the subject, and so on. In some instances, the primary PSAP may dispatch aid. In most cases, the caller is then conferenced or transferred to a secondary PSAP from which help will be dispatched. Secondary PSAPs might be located at fire dispatch areas, municipal police force headquarters or ambulance dispatch centers. Often the primary PSAP will answer for an entire region. See also 911, Enhanced 911 and ALI.

PSC/PUC Public Service Commission. Also known as Public Utility Commission. It's the state agency charged with regulating the local phone company utility. In reality, there are only two things the PSC can do: 1. Allow the phone company to increase its prices, and 2. Restrict competition to the phone company by creating all sorts of restrictive rules and regulations. As competition in the telecommunications industry grows - chiefly because of Federal rulings - the state PSCs are losing their power. This bothers them.

PSD See Power Spectral Density Mask.

PSD Mask See Power Spectral Density.

PSDS Public Switched Digital Service. A BOC service. AT&T Circuit Switched Digital Capability (CSDC), also known commercially as AT&T's Accunet Switched 56 service. It allows a full-duplex, dial up, 56-Kbit/s digital circuits on an end-to-end basis.

PSE Power Sourcing Equipment. See 802.3af.

PSELFEXT Power Sum Equal Level Far End Crosstalk. A calculation derived from an algebraic summation of the individual ELFEXT effects on each pair by the other three pairs. There are four PSELFEXT results for each end.

pseudo access tandem Also called pseudo tandem. It is an end-office switch in a remote geographical area to which other end offices in the area are connected instead of their being connected to the LEC's access tandem. When a long-distance call originates in one of these distant end offices, the originating end-office switch sends it to the pseudo tandem, and then the pseudo tandem routes the call to the LEC's access tandem for routing to the IXC's POP. It's more economical to have a pseudo access tandem in such a geographical situation rather than having each distant end office directly connect to the LEC's access tandem.

pseudo Automatic Location Identification pALI. A telephone network database record that holds the location of a wireless cell or sector (whereas an ALI contains the location of a wireline telephone). In wireless E-911, the pALI is used to provide a rough estimate of the wireless caller's location. See Position Determination Technology.

Pseudo Automatic Number Identification pANI. Also called Routing