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A Glossary of Networking Terms

Status of this Memo

This RFC is a glossary adapted from "The INTEROP Pocket Glossary of Networking Terms" distributed at Interop '90. This memo provides information for the Internet community. It does not specify an Internet standard. Distribution of this memo is unlimited.

Introduction

This glossary is adapted from "The INTEROP Pocket Glossary of Networking Terms" produced to help you understand the many terms--and in particular the myriad of acronyms--that can be encountered at the INTEROP Tutorials, Conference, and Exhibition.

To keep this document reasonably small we have deliberately omitted common computer and communications terms such as disk, modem, byte, and VLSI. In addition, the definitions have been kept brief. We recommend that you consult the glossaries found in the major computer networking textbooks for more comprehensive definitions.

We also realize that producing this glossary is akin to shooting at a moving target. The computer and communications industries are moving very rapidly, and terms and acronyms are born every day. You are invited to submit words which you think should be included in future editions.

Glossary

abstract syntax: A description of a data structure that is independent of machine-oriented structures and encodings.

ACSE: Association Control Service Element. The method used in OSI for establishing a call between two applications. Checks the identities and contexts of the application entities, and could apply an authentication security check.

address mask: A bit mask used to select bits from an Internet address for subnet addressing. The mask is 32 bits long and selects the network portion of the Internet address and one or more bits of the local portion. Sometimes called subnet mask.

address resolution: A means for mapping Network Layer addresses onto media-specific addresses. See ARP.

ADMD: Administration Management Domain. An X.400 Message Handling System public service carrier. Examples: MCImail and ATTmail in the U.S., British Telecom Gold400mail in the U.K. The ADMDs in all countries worldwide together provide the X.400 backbone. See PRMD.

agent: In the client-server model, the part of the system that performs information preparation and exchange on behalf of a client or server application. See NMS, DUA, MTA.

ANSI: American National Standards Institute. The U.S. standardization body. ANSI is a member of the International Organization for Standardization (ISO)

AOW: Asia and Oceania Workshop. One of the three regional OSI Implementors Workshops, equivalent to OIW and EWOS.

API: Application Program Interface. A set of calling conventions defining how a service is invoked through a software package.

Application Layer: The top-most layer in the OSI Reference Model providing such communication services as electronic mail and file transfer.

ARP: Address Resolution Protocol. The Internet protocol used to dynamically map Internet addresses to physical (hardware) addresses on local area networks. Limited to networks that support hardware broadcast.

ARPA: Advanced Research Projects Agency. Now called DARPA, the U.S. government agency that funded the ARPANET.

ARPANET: A packet switched network developed in the early 1970s. The "grandfather" of today’s Internet. ARPANET was decommissioned in June 1990.

ASN.1: Abstract Syntax Notation One. The OSI language for describing abstract syntax. See BER.

attribute: The form of information items provided by the X.500 Directory Service. The directory information base consists of entries, each containing one or more attributes. Each attribute consists of a type identifier together with one or more values. Each directory Read operation can retrieve some or all attributes from a designated entry.

Autonomous System: Internet (TCP/IP) terminology for a collection of gateways (routers) that fall under one administrative entity and cooperate using a common Interior Gateway Protocol (IGP). See subnetwork.

backbone: The primary connectivity mechanism of a hierarchical distributed system. All systems which have connectivity to an intermediate system on the backbone are assured of connectivity to each other. This does not prevent systems from setting up private arrangements with each other to bypass the backbone for reasons of cost, performance, or security.

Bart Simpson (R): Internet and OSI cult hero.

baseband: Characteristic of any network technology that uses a single carrier frequency and requires all stations attached to the network to participate in every transmission. See broadband.

BER: Basic Encoding Rules. Standard rules for encoding data units described in ASN.1. Sometimes incorrectly lumped under the term ASN.1, which properly refers only to the abstract syntax description language, not the encoding technique.

big-endian: A format for storage or transmission of binary data in which the most significant bit (or byte) comes first. The reverse convention is called little-endian.

BITNET: Because It's Time NETwork. An academic computer network based originally on IBM mainframe systems interconnected via leased 9600 bps lines. BITNET has recently merged with CSNET, The Computer+Science Network (another academic computer network) to form CREN: The Corporation for Research and Educational Networking. See CSNET.

BOC: Bell Operating Company. More commonly referred to as RBOC for Regional Bell Operating Company. The local telephone company in each of the seven U.S. regions.

bridge: A device that connects two or more physical networks and forwards packets between them. Bridges can usually be made to filter packets, that is, to forward only certain traffic. Related devices are: repeaters which simply forward electrical signals from one cable to another, and full-fledged routers which make routing decisions based on several criteria. In OSI terminology, a bridge is a Data Link Layer intermediate system. See repeater and router.

broadband: Characteristic of any network that multiplexes multiple, independent network carriers onto a single cable. This is usually

done using frequency division multiplexing. Broadband technology allows several networks to coexist on one single cable; traffic from one network does not interfere with traffic from another since the "conversations" happen on different frequencies in the "ether," rather like the commercial radio system.

broadcast: A packet delivery system where a copy of a given packet is given to all hosts attached to the network. Example: Ethernet.

BSD: Berkeley Software Distribution. Term used when describing different versions of the Berkeley UNIX software, as in "4.3BSD UNIX."

catenet: A network in which hosts are connected to networks with varying characteristics, and the networks are interconnected by gateways (routers). The Internet is an example of a catenet. See IONL.

CCITT: International Consultative Committee for Telegraphy and Telephony. A unit of the International Telecommunications Union (ITU) of the United Nations. An organization with representatives from the PTTs of the world. CCITT produces technical standards, known as "Recommendations," for all internationally controlled aspects of analog and digital communications. See X Recommendations.

CCR: Commitment, Concurrency, and Recovery. An OSI application service element used to create atomic operations across distributed systems. Used primarily to implement two-phase commit for transactions and nonstop operations.

client-server model: A common way to describenetwork services and the model user processes (programs) of those services. Examples include the name-server/name-resolver paradigm of the DNS and file-server/file-client relationships such as NFS and diskless hosts.

CLNP: Connectionless Network Protocol. The OSI protocol for providing the OSI Connectionless Network Service (datagram service). CLNP is the OSI equivalent to Internet IP, and is sometimes called ISO IP.

CLTP: Connectionless Transport Protocol. Provides for end-to-end Transport data addressing (via Transport selector) and error control (via checksum), but cannot guarantee delivery or provide flow control. The OSI equivalent of UDP.

CMIP: Common Management Information Protocol. The OSI network management protocol.

CMOT: CMIP Over TCP. An effort to use the OSI network management protocol to manage TCP/IP networks.

connectionless: The model of interconnection in which communication takes place without first establishing a connection. Sometimes (imprecisely) called datagram. Examples: LANs, Internet IP and OSI CLNP, UDP, ordinary postcards.

connection-oriented: The model of interconnection in which communication proceeds through three well-defined phases: connection establishment, data transfer, connection release. Examples: X.25, Internet TCP and OSI TP4, ordinary telephone calls.

core gateway: Historically, one of a set of gateways (routers) operated by the Internet Network Operations Center at BBN. The core gateway system forms a central part of Internet routing in that all groups must advertise paths to their networks from a core gateway, using the Exterior Gateway Protocol (EGP). See EGP, backbone.

COS: Corporation for Open Systems. A vendor and user group for conformance testing, certification, and promotion of OSI products.

COSINE: Cooperation for Open Systems Interconnection Networking in Europe. A program sponsored by the European Commission, aimed at using OSI to tie together European research networks.

CREN: See BITNET and CSNET.

CSMA/CD: Carrier Sense Multiple Access with Collision Detection. The access method used by local area networking technologies such as Ethernet.

CSNET: Computer+Science Network. A large computer network, mostly in the U.S. but with international connections. CSNET sites include universities, research labs, and some commercial companies. Now merged with BITNET to form CREN. See BITNET.

DARPA: Defense Advanced Research Projects Agency. The U.S. government agency that funded the ARPANET.

Data Link Layer: The OSI layer that is responsible for data transfer across a single physical connection, or series of bridged connections, between two Network entities.

DCA: Defense Communications Agency. The government agency responsible for the Defense Data Network (DDN).

DCE: Distributed Computing Environment. An architecture of standard programming interfaces, conventions, and server functionalities (e.g., naming, distributed file system, remote procedure call) for distributing applications transparently across networks of heterogeneous computers. Promoted and controlled by the Open Software Foundation (OSF), a consortium led by HP, DEC, and IBM. See ONC.

DDN: Defense Data Network. Comprises the MILNET and several other DoD networks.

DECnet: Digital Equipment Corporation's proprietary network architecture.

DNS: Domain Name System. The distributed name/address mechanism used in the Internet.

domain: In the Internet, a part of a naming hierarchy. Syntactically, an Internet domain name consists of a sequence of names (labels) separated by periods (dots), e.g., "tundra.mpk.ca.us." In OSI, "domain" is generally used as an administrative partition of a complex distributed system, as in MHS Private Management Domain (PRMD), and Directory Management Domain (DMD).

dotted decimal notation: The syntactic representation for a 32-bit integer that consists of four 8-bit numbers written in base 10 with periods (dots) separating them. Used to represent IP addresses in the Internet as in: 192.67.67.20.

DSA: Directory System Agent. The software that provides the X.500 Directory Service for a portion of the directory information base. Generally, each DSA is responsible for the directory information for a single organization or organizational unit.

DUA: Directory User Agent. The software that accesses the X.500 Directory Service on behalf of the directory user. The directory user may be a person or another software element.

EARN: European Academic Research Network. A network using BITNET technology connecting universities and research labs in Europe.

EGP: Exterior Gateway Protocol. A reachability routing protocol used by gateways in a two-level internet. EGP is used in the Internet core system. See core gateway.

encapsulation: The technique used by layered protocols in which a layer adds header information to the protocol data unit (PDU) from the layer above. As an example, in Internet terminology, a packet

would contain a header from the physical layer, followed by a header from the network layer (IP), followed by a header from the transport layer (TCP), followed by the application protocol data.

end system: An OSI system which contains application processes capable of communicating through all seven layers of OSI protocols. Equivalent to Internet host.

entity: OSI terminology for a layer protocol machine. An entity within a layer performs the functions of the layer within a single computer system, accessing the layer entity below and providing services to the layer entity above at local service access points.

ES-IS: End system to Intermediate system protocol. The OSI protocol by which end systems announce themselves to intermediate systems.

EUnet: European UNIX Network.

EUUG: European UNIX Users Group.

EWOS: European Workshop for Open Systems. The OSI Implementors Workshop for Europe. See OIW.

FARNET: Federation of American Research NETworks.

FDDI: Fiber Distributed Data Interface. An emerging high-speed networking standard. The underlying medium is fiber optics, and the topology is a dual-attached, counter-rotating Token Ring. FDDI networks can often be spotted by the orange fiber "cable."

FIPS: Federal Information Processing Standard.

flame: To express strong opinion and/or criticism of something, usually as a frank inflammatory statement in an electronic message.

FNC: Federal Networking Council. The body responsible for coordinating networking needs among U.S. Federal agencies.

fragmentation: The process in which an IP datagram is broken into smaller pieces to fit the requirements of a given physical network. The reverse process is termed reassembly. See MTU.

FRICC: Federal Research Internet Coordinating Committee. Now replaced by the FNC.

FTAM: File Transfer, Access, and Management. The OSI remote file service and protocol.

FTP: File Transfer Protocol. The Internet protocol (and program) used to transfer files between hosts. See FTAM.

gateway: The original Internet term for what is now called router or more precisely, IP router. In modern usage, the terms "gateway" and "application gateway" refer to systems which do translation from some native format to another. Examples include X.400 to/from RFC 822 electronic mail gateways. See router.

GOSIP: Government OSI Profile. A U.S. Government procurement specification for OSI protocols.

IAB: Internet Activities Board. The technical body that oversees the development of the Internet suite of protocols (commonly referred to as "TCP/IP"). It has two task forces (the IRTF and the IETF) each charged with investigating a particular area.

ICMP: Internet Control Message Protocol. The protocol used to handle errors and control messages at the IP layer. ICMP is actually part of the IP protocol.

IESG: Internet Engineering Steering Group. The executive committee of the IETF.

IETF: Internet Engineering Task Force. One of the task forces of the IAB. The IETF is responsible for solving short-term engineering needs of the Internet. It has over 40 Working Groups.

IGP: Interior Gateway Protocol. The protocol used to exchange routing information between collaborating routers in the Internet. RIP and OSPF are examples of IGPs.

IGRP: Internet Gateway Routing Protocol. A proprietary IGP used by cisco System’s routers.

INTAP: Interoperability Technology Association for Information Processing. The technical organization which has the official charter to develop Japanese OSI profiles and conformance tests.

intermediate system: An OSI system which is not an end system, but which serves instead to relay communications between end systems. See repeater, bridge, and router.

internet: A collection of networks interconnected by a set of routers which allow them to function as a single, large virtual network.

Internet: (note the capital "I") The largest internet in the world consisting of large national backbone nets (such as MILNET, NSFNET,

and CREN) and a myriad of regional and local campus networks all over the world. The Internet uses the Internet protocol suite. To be on the Internet you must have IP connectivity, i.e., be able to Telnet to--or ping--other systems. Networks with only e-mail connectivity are not actually classified as being on the Internet.

Internet address: A 32-bit address assigned to hosts using TCP/IP. See dotted decimal notation.

IONL: Internal Organization of the Network Layer. The OSI standard for the detailed architecture of the Network Layer. Basically, it partitions the Network layer into subnetworks interconnected by convergence protocols (equivalent to internetworking protocols), creating what Internet calls a catenet or internet.

IP: Internet Protocol. The network layer protocol for the Internet protocol suite.

IP datagram: The fundamental unit of information passed across the Internet. Contains source and destination addresses along with data and a number of fields which define such things as the length of the datagram, the header checksum, and flags to say whether the datagram can be (or has been) fragmented.

IRTF: Internet Research Task Force. One of the task forces of the IAB. The group responsible for research and development of the Internet protocol suite.

ISDN: Integrated Services Digital Network. An emerging technology which is beginning to be offered by the telephone carriers of the world. ISDN combines voice and digital network services in a single medium making it possible to offer customers digital data services as well as voice connections through a single "wire." The standards that define ISDN are specified by CCITT.

IS-IS: Intermediate system to Intermediate system protocol. The OSI protocol by which intermediate systems exchange routing information.

ISO: International Organization for Standardization. You knew that, right? Best known for the 7-layer OSI Reference Model. See OSI.

ISODE: ISO Development Environment. A popular implementation of the upper layers of OSI. Pronounced eye-so-dee-eee.

JANET: Joint Academic Network. A university network in the U.K.

JUNET: Japan UNIX Network.

KA9Q: A popular implementation of TCP/IP and associated protocols for amateur packet radio systems.

Kermit: A popular file transfer and terminal emulation program.

little-endian: A format for storage or transmission of binary data in which the least significant byte (bit) comes first. See big-endian.

mail exploder: Part of an electronic mail delivery system which allows a message to be delivered to a list of addressees. Mail exploders are used to implement mailing lists. Users send messages to a single address (e.g., hacks@somehost.edu) and the mail exploder takes care of delivery to the individual mailboxes in the list.

mail gateway: A machine that connects two or more electronic mail systems (especially dissimilar mail systems on two different networks) and transfers messages between them. Sometimes the mapping and translation can be quite complex, and generally it requires a store-and-forward scheme whereby the message is received from one system completely before it is transmitted to the next system after suitable translations.

Martian: Humorous term applied to packets that turn up unexpectedly on the wrong network because of bogus routing entries. Also used as a name for a packet which has an altogether bogus (non-registered or ill-formed) Internet address.

MHS: Message Handling System. The system of message user agents, message transfer agents, message stores, and access units which together provide OSI electronic mail. MHS is specified in the CCITT X.400 series of Recommendations.

MIB: Management Information Base. A collection of objects that can be accessed via a network management protocol. See SMI.

MILNET: MILitary NETwork. Originally part of the ARPANET, MILNET was partitioned in 1984 to make it possible for military installations to have reliable network service, while the ARPANET continued to be used for research. See DDN.

MTA: Message Transfer Agent. An OSI application process used to store and forward messages in the X.400 Message Handling System. Equivalent to Internet mail agent.

MTU: Maximum Transmission Unit. The largest possible unit of data that can be sent on a given physical medium. Example: The MTU of Ethernet is 1500 bytes. See fragmentation.

multicast: A special form of broadcast where copies of the packet are delivered to only a subset of all possible destinations. See broadcast.

multi-homed host: A computer connected to more than one physical data link. The data links may or may not be attached to the same network.

name resolution: The process of mapping a name into the corresponding address. See DNS.

NetBIOS: Network Basic Input Output System. The standard interface to networks on IBM PC and compatible systems.

Network Address: See Internet address or OSI Network Address.

Network Layer: The OSI layer that is responsible for routing, switching, and subnetwork access across the entire OSI environment.

NFS(R): Network File System. A distributed file system developed by Sun Microsystems which allows a set of computers to cooperatively access each other's files in a transparent manner.

NIC: Network Information Center. Originally there was only one, located at SRI International and tasked to serve the ARPANET (and later DDN) community. Today, there are many NICs, operated by local, regional, and national networks all over the world. Such centers provide user assistance, document service, training, and much more.

NIST: National Institute of Standards and Technology. (Formerly NBS). See OIW.

NMS: Network Management Station. The system responsible for managing a (portion of a) network. The NMS talks to network management agents, which reside in the managed nodes, via a network management protocol. See agent.

NOC: Network Operations Center. Any center tasked with the operational aspects of a production network. These tasks include monitoring and control, trouble-shooting, user assistance, and so on.

NSAP: Network Service Access Point. The point at which the OSI Network Service is made available to a Transport entity. The NSAPs are identified by OSI Network Addresses.

NSF: National Science Foundation. Sponsors of the NSFNET.
NSFNET: National Science Foundation NETwork. A collection of local, regional, and mid-level networks in the U.S. tied together by a high-speed backbone. NSFNET provides scientists access to a number

of supercomputers across the country.

OIW: Workshop for Implementors of OSI. Frequently called NIST OIW or the NIST Workshop, this is the North American regional forum at which OSI implementation agreements are decided. It is equivalent to EWOS in Europe and AOW in the Pacific.

ONC(tm): Open Network Computing. A distributed applications architecture promoted and controlled by a consortium led by Sun Microsystems.

OSI: Open Systems Interconnection. An international standardization program to facilitate communications among computers from different manufacturers. See ISO.

OSI Network Address: The address, consisting of up to 20 octets, used to locate an OSI Transport entity. The address is formatted into an Initial Domain Part which is standardized for each of several addressing domains, and a Domain Specific Part which is the responsibility of the addressing authority for that domain.

OSI Presentation Address: The address used to locate an OSI Application entity. It consists of an OSI Network Address and up to three selectors, one each for use by the Transport, Session, and Presentation entities.

OSPF: Open Shortest Path First. A "Proposed Standard" IGP for the Internet. See IGP.

PCI: Protocol Control Information. The protocol information added by an OSI entity to the service data unit passed down from the layer above, all together forming a Protocol Data Unit (PDU).

PDU: Protocol Data Unit. This is OSI terminology for "packet." A PDU is a data object exchanged by protocol machines (entities) within a given layer. PDUs consist of both Protocol Control Information (PCI) and user data.

Physical Layer: The OSI layer that provides the means to activate and use physical connections for bit transmission. In plain terms, the Physical Layer provides the procedures for transferring a single bit across a Physical Media.

Physical Media: Any means in the physical world for transferring signals between OSI systems. Considered to be outside the OSI Model, and therefore sometimes referred to as "Layer 0." The physical connector to the media can be considered as defining the bottom interface of the Physical Layer, i.e., the bottom of the OSI

Reference Model.

ping: Packet internet groper. A program used to test reachability of destinations by sending them an ICMP echo request and waiting for a reply. The term is used as a verb: "Ping host X to see if it is up!"

port: The abstraction used by Internet transport protocols to distinguish among multiple simultaneous connections to a single destination host. See selector.

POSI: Promoting Conference for OSI. The OSI "800-pound gorilla" in Japan. Consists of executives from the six major Japanese computer manufacturers and Nippon Telephone and Telegraph. They set policies and commit resources to promote OSI.

PPP: Point-to-Point Protocol. The successor to SLIP, PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits. See SLIP.

Presentation Address: See OSI Presentation Address.

Presentation Layer: The OSI layer that determines how Application information is represented (i.e., encoded) while in transit between two end systems.

PRMD: Private Management Domain. An X.400 Message Handling System private organization mail system. Example: NASAmail. See ADMD.

protocol: A formal description of messages to be exchanged and rules to be followed for two or more systems to exchange information.

proxy: 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.

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.

PSN: Packet Switch Node. The modern term used for nodes in the ARPANET and MILNET. These used to be called IMPs (Interface Message Processors). PSNs are currently implemented with BBN C30 or C300 minicomputers.

RARE: Reseaux Associes pour la Recherche Europeenne. European association of research networks.

RARP: Reverse Address Resolution Protocol. The Internet protocol a diskless host uses to find its Internet address at startup. RARP maps a physical (hardware) address to an Internet address. See ARP.

RBOC: Regional Bell Operating Company. See BOC.

repeater: A device which propagates electrical signals from one cable to another without making routing decisions or providing packet filtering. In OSI terminology, a repeater is a Physical Layer intermediate system. See bridge and router.

RFC: Request For Comments. The document series, begun in 1969, which describes the Internet suite of protocols and related experiments. Not all (in fact very few) RFCs describe Internet standards, but all Internet standards are written up as RFCs.

RFS: Remote File System. A distributed file system, similar to NFS, developed by AT&T and distributed with their UNIX System V operating system. See NFS.

RIP: Routing Information Protocol. An Interior Gateway Protocol (IGP) supplied with Berkeley UNIX.

RIPE: Reseaux IP Europeenne. European continental TCP/IP network operated by EUnet. See EUnet.

rlogin: A service offered by Berkeley UNIX which allows users of one machine to log into other UNIX systems (for which they are authorized) and interact as if their terminals were connected directly. Similar to Telnet.

ROSE: Remote Operations Service Element. A lightweight RPC protocol, used in OSI Message Handling, Directory, and Network Management application protocols.

router: A system responsible for making decisions about which of several paths network (or Internet) traffic will follow. To do this it uses a routing protocol to gain information about the network, and algorithms to choose the best route based on several criteria known as "routing metrics." In OSI terminology, a router is a Network Layer intermediate system. See gateway, bridge and repeater.

RPC: Remote Procedure Call. An easy and popular paradigm for implementing the client-server model of distributed computing. A request is sent to a remote system to execute a designated procedure,

using arguments supplied, and the result returned to the caller. There are many variations and subtleties, resulting in a variety of different RPC protocols.

RTSE: Reliable Transfer Service Element. A lightweight OSI application service used above X.25 networks to handshake application PDUs across the Session Service and TP0. Not needed with TP4, and not recommended for use in the U.S. except when talking to X.400 ADMDs.

SAP: Service Access Point. The point at which the services of an OSI layer are made available to the next higher layer. The SAP is named according to the layer providing the services: e.g., Transport services are provided at a Transport SAP (TSAP) at the top of the Transport Layer.

selector: The identifier used by an OSI entity to distinguish among multiple SAPs at which it provides services to the layer above. See port.

Session Layer: The OSI layer that provides means for dialogue control between end systems.

SGMP: Simple Gateway Management Protocol. The predecessor to SNMP. See SNMP.

SLIP: Serial Line IP. An Internet protocol used to run IP over serial lines such as telephone circuits or RS-232 cables interconnecting two systems. SLIP is now being replaced by PPP. See PPP.

SMDS: Switched Multimegabit Data Service. An emerging high-speed networking technology to be offered by the telephone companies in the U.S.

SMI: Structure of Management Information. The rules used to define the objects that can be accessed via a network management protocol. See MIB.

SMTP: Simple Mail Transfer Protocol. The Internet electronic mail protocol. Defined in RFC 821, with associated message format descriptions in RFC 822.

SNA: Systems Network Architecture. IBM’s proprietary network architecture.

SNMP: Simple Network Management Protocol. The network management protocol of choice for TCP/IP-based internets.

SPAG: Standards Promotion and Application Group. A group of European OSI manufacturers which chooses option subsets and publishes these in a "Guide to the Use of Standards" (GUS).

SQL: Structured Query Language. The international standard language for defining and accessing relational databases.

subnet mask: See address mask.

subnetwork: A collection of OSI end systems and intermediate systems under the control of a single administrative domain and utilizing a single network access protocol. Examples: private X.25 networks, collection of bridged LANs.

TCP: Transmission Control Protocol. The major transport protocol in the Internet suite of protocols providing reliable, connection-oriented, full-duplex streams. Uses IP for delivery. See TP4.

Telnet: The virtual terminal protocol in the Internet suite of protocols. Allows users of one host to log into a remote host and interact as normal terminal users of that host.

three-way-handshake: The process whereby two protocol entities synchronize during connection establishment.

TP0: OSI Transport Protocol Class 0 (Simple Class). This is the simplest OSI Transport Protocol, useful only on top of an X.25 network (or other network that does not lose or damage data).

TP4: OSI Transport Protocol Class 4 (Error Detection and Recovery Class). This is the most powerful OSI Transport Protocol, useful on top of any type of network. TP4 is the OSI equivalent to TCP.

transceiver: Transmitter-receiver. The physical device that connects a host interface to a local area network, such as Ethernet. Ethernet transceivers contain electronics that apply signals to the cable and sense collisions.

Transport Layer: The OSI layer that is responsible for reliable end-to-end data transfer between end systems.

UA: User Agent. An OSI application process that represents a human user or organization in the X.400 Message Handling System. Creates, submits, and takes delivery of messages on the user’s behalf.

UDP: User Datagram Protocol. A transport protocol in the Internet suite of protocols. UDP, like TCP, uses IP for delivery; however, unlike TCP, UDP provides for exchange of datagrams without

acknowledgements or guaranteed delivery. See CLTP.

UUCP: UNIX to UNIX Copy Program. A protocol used for communication between consenting UNIX systems.

XDR: eXternal Data Representation. A standard for machine-independent data structures developed by Sun Microsystems. Similar to ASN.1.

X/Open: A group of computer manufacturers that promotes the development of portable applications based on UNIX. They publish a document called the X/Open Portability Guide.

X Recommendations: The CCITT documents that describe data communication network standards. Well-known ones include: X.25 Packet Switching standard, X.400 Message Handling System, and X.500 Directory Services.

The X Window System (TM): A popular window system developed by MIT and implemented on a number of workstations.

For More Information

As indicated in the introduction, this is only a partial list of words from the world of interoperability. Yes, you're right, we didn't list "interoperability" because the jury is still out on exactly what it means, and we invite you to suggest a definition.

To learn more about these topics, consult the books, standards documents, bibliographies, periodicals, mailing lists, etc. listed in "Information Sources" in the December 1989 issue of ConneXions--The Interoperability Report.

Security Considerations

Security issues are not discussed in this memo.

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