

Glossary

The following is a glossary of terms used in literature from Cisco Systems.

access list A list kept by the system to control access to or from the network server for a number of services (for example, to restrict packets with a certain IP address from leaving a particular interface on the network server).

agent Code that processes queries and returns replies on behalf of a client or server application.

applique A mounting plate containing the connector hardware for attachment to the network. Appliques translate and transpose the serial communications signals into the signals expected by the communication standard of choice, such as RS-232, V.35, and so on.

ANSI (American National Standards Institute) The coordinating body for voluntary standards groups with the United States.

ARP (Address Resolution Protocol) The protocol used to bind an IP address to Ethernet/802.2 addresses.

ASCII (American Standard Code for Information Interchange) An eight-bit code for character representation, including seven bits plus parity.

AUI (Attachment Unit Interface) An Ethernet transceiver cable, or the backpanel connector to which such a cable might attach.

bandwidth The range of frequencies that can pass over a given circuit.

BootP A protocol which is used by a network node to determine the IP address of its Ethernet interfaces.

bridge A device that connects two network segments using the same medium and passes packets between them. Bridges operate at Level 2 of the ISO model (the data-link layer) and are protocol-insensitive.

broadcast A packet or frame whose destination address contains an address to which all entities on the network must listen. Typically, this address contains all ones.

CCITT French acronym for International Telegraph and Telephone Consultative Committee, an international organization that develops communications standards such as Recommendation X.25.

checksum A method for checking the integrity of transmitted data. A checksum is an integer value computed from a sequence of octets by treating them as integers and computing the sum. The value is recomputed at the receiving end and compared for verification.

client A user of a network service is a client of that service.

CRC Cyclic redundancy checksum; see **checksum**.

CSMA/CD (Carrier-Sense Multiple Access with Collision Detection) The style of network access used by Ethernet and IEEE 802.3.

CSU/DSU (Customer Service Unit/Digital Service Unit) A device that converts V.35 or RS-449 signals to a properly coded T1 transmission signal.

DARPA (Defense Advanced Research Project) A government agency that funded research and experimentation with the DARPA Internet.

DCA Defense Communications Agency

DCE (Data Communications Equipment) The devices and connections of a communications network which connect the communication circuit with the end device (data terminal equipment). A modem can be considered DCE.

DDN (Defense Data Network) The MILNET and associated parts of the Internet that connect military installations. Used loosely, it refers to the MILNET, ARPANET, and the TCP/IP protocols they use.

DECnet Refers to a protocol suite developed and supported by Digital Equipment Corporation.

display server In an X Window environment, display servers provide specific display capabilities and track user input.

DNS (Domain Name System) A part of the Internet protocol that allows a router to automatically determine host-name-to-address mappings.

DoD Department of Defense

domain names A directory service for matching host names with IP addresses.

DTE (Data Terminal Equipment) The part of a data station that serves as a data source, destination, or both, and that provides for the data communications control function according to protocols. DTE includes computers, protocol translators, and multiplexers.

EBCDIC Extended binary-coded decimal interchange code. A coded character set consisting of 8-bit coded characters. This character code is used by most IBM systems.

encapsulation Refers to the wrapping of data in a certain protocol header. For example, on Ethernet, all data is encapsulated in either an Ethernet header or IEEE 802.2 header.

Ethernet A baseband local area network (LAN) specification invented by Xerox Corporation and developed jointly by Xerox, Intel, and Digital Equipment Corporation. Ethernet networks operate at 10 megabits per second using CSMA/CD to run over coaxial cable or shielded twisted pair wiring.

EXEC Refers to the interactive command processor of the Cisco software.

FTAM (File Transfer, Access, and Management) The OSI standard developed by the ISO for network file exchange and management between network nodes.

FTP (File Transfer Protocol) The standard, high-level protocol for transferring files from one network node to another using TCP/IP.

gateway A special purpose device that connects two or more networks and routes packets from one to another using different protocols by converting one network's protocol to the format used by another network.

HDLC (High-Level Data Link Control) Specifies an encapsulation method of data on synchronous serial data links. The Cisco HDLC support performs only framing and checksumming functions. No retransmission of windowing is done.

host The controlling computer in a communications network that primarily provides services and is the source or destination of messages.

ICMP (Internet Control Message Protocol) A protocol that provides message packets to report changes in packet processing. See RFC 792.

IDP (Initial Domain Part) That part of a CLNS address containing an authority and format identifier and a domain identifier.

IEEE (Institute of Electrical and Electronic Engineers) Committees that develop and propose standards for computers and networks, such as the 802-series of protocols.

IEN Internet Engineering Notes

IETF Internet Engineering Task Force

IGRP (Internal Gateway Routing Protocol) A protocol developed by Cisco Systems to address the problem of routing within a large network of general topology comprised of segments having different bandwidth and delay characteristics.

interface The physical connection between two systems or devices; the boundary between adjacent layers in the OSI model.

Internet address A 32-bit address assigned to hosts using TCP/IP. The address is written as four octets separated with periods (dotted decimal format) that are made up of a network portion and a host portion to make routing of information using the address easier.

internetwork A network of networks; also called an *internet*. An internetwork is a group of LANs and WANs that are geographically or organizationally separate, but appear to users as one integrated network.

interoperability The ability of computing equipment manufactured by different vendors to communicate successfully over one integrated network.

IP (Internet Protocol) A Level 3 protocol which contains addressing information and some control information which allows packets to be routed. See MIL-STD-1777.

IPSO (IP Security Option) That part of the Internet Protocol that defines security levels on a per-interface basis.

ISO (International Standards Organization) An organization which establishes international standards for computer network architecture. The ISO established the Open Systems Interconnection seven-layer model of network interconnection.

ISO layer Any of seven levels in a model proposed by the International Standards Organization (ISO) to describe the functions and relationships in computer networks. The lowest layers (1 and 2) specify media standards; upper layers specify functions more visible to users and programs using the network.

keymap Keyboard mapping; a map of the keys of a particular keyboard (such as an IBM 3278) to a particular display station attached to another computer or dissimilar terminal-type.

LAN (Local Area Network) A LAN consists of local segments of Ethernet cable, broadband cable, Token Rings, or other similar media.

LAPB (link access procedure balanced) X.25 represents Levels 2 and 3 of the OSI reference model; LAPB is the protocol that implements Level 2. This protocol provides a mechanism to exchange data (frames), detect out-of-sequence or missing frames, and provide for retransmission and acknowledgment.

LAT (Local Area Transport) A protocol developed by Digital Equipment Corporation.

MAC (Media Access Control) A part of the second layer of the OSI model. This is a method of access to the network media by which network stations can transmit information.

MAU (Medium Attachment Unit) Also known as an Ethernet transceiver, an MAU is a device that converts digital data from the Ethernet interface for connection to the appropriate medium. Token Ring MAUs also exist.

media The physical cabling plant, satellite, or microwave circuits over which network data passes. Common network media are coaxial and fiber optic cable, twisted-pair wiring, and telephone circuits.

MIB (Management Information Base) A collection of objects that may be accessed using the Simple Network Management Protocol.

MTU (Maximum Transmission Unit) Refers to the maximum packet size, in bytes, that a particular interface will handle.

name server A server provided on the network which responds to domain name requests. See RFC 882.

network Refers to a collection of computers and other devices that are able to communicate with each other over distances.

NVM (non-volatile memory) Read-only memory storage area maintained by a computer or system.

octet A byte which explicitly contains eight bits.

OSI (Open System Interconnection) The International Standards Organization's model for standards-based networking.

packet A collection of bits that constitutes one network transmission. Packets must include relevant network address and accounting information, as well as user data.

packet-switched Type of network on which each packet contends with others for data transmission. The channel is occupied only for the duration of the packet. Routers are called packet switches when they move packets along a route to its destination. In contrast, a circuit-switched network system dedicates one circuit at a time to data transmission.

PAD (Packet Assembler/Disassembler) The device that buffers data sent between hosts and terminals across an X.25 network, as defined by CCITT Recommendation X.3, X.28, and X.29.

physical layer The first layer in the Open Systems Interconnection model.

ping Refers to the ICMP echo message and its reply. See RFC 792.

protocol A formal description of a set of rules and conventions that govern how devices on a network exchange information in an orderly and meaningful way.

Proxy ARP The function of a router sending an Address Resolution Protocol (ARP) response to a host which does not know how to use a router, and that pretends to be a remote target host.

RARP (Reverse Address Resolution Protocol) The logical reverse of ARP that provides a method for finding IP addresses based on Ethernet/802.2 addresses. See RFC 903.

redirect A part of the ICMP protocol which allows a network server to tell a host to use another network server.

RFC (Request for Comments) Documents specifying some particular functionality for a data communications protocol available from the DDN Network Information Center.

RIF (Routing Information Field) That portion of the IEEE 802.5 MAC header of a datagram used by a bridge to determine to which Token Ring network segments a packet must transit. A RIF is made up of ring and bridge numbers.

rlogin A TCP connection protocol that allows connection to a UNIX host.

router A device that can decide which of several paths network traffic will follow based on the fastest or cheapest route. Also called a network server, it forwards packets of data from one network to another, based on network-level (ISO model Level 3) information.

routing The process of finding a path to the destination host. Routing is very complex in large networks, because of the many potential intermediate destinations a packet might traverse before reaching its destination host.

routing domains A concept in ISO CLNS-based networks to describe areas that are connected to other areas.

SMTP (Simple Mail Transfer Protocol) A protocol that provides electronic mail over TCP/IP.

SNA (Systems Network Architecture) A network architecture developed by IBM.

SNMP (Simple Network Management Protocol) A protocol that provides a means to access and set configuration and runtime parameters of the router and terminal servers. See RFC 1155, RFC 1156, and RFC 1157.

static route A route that is manually entered into the routing table.

subnet A subnetwork address.

subnet mask Subnetting allocates a portion of the host part of a Class A, B or C Internet address for use as a subnet. A subnet mask is a 32-bit value used to distinguish the combined network and subnet parts of the Internet address from the remaining host part. Bits in a subnet mask set to 1 correspond to the bits in the network portion of the Internet address. Bits in a subnet mask set to 0 correspond to the bits in the host portion of the Internet address. A subnet mask may be specified when a server is initially started up.

TACACS (Terminal Access Controller Access System) A system developed by the Defense Data Network to control access to its TAC terminal servers.

termcap A generic terminal-handling mechanism that consists of a database that describes the capabilities of each terminal to be supported and a subroutine library that allows programs to query that database and to make use of the capability values it contains.

TCP/IP (Transmission Control Protocol/Internet Protocol) A protocol corresponding to levels three and four (network and transport) in the ISO OSI model. It provides for the reliable transmission of data through retransmission. TCP/IP was developed by the U.S. Department of Defense to support the

construction of world-wide internetworks. This protocol is the most commonly used public standard protocol available today. Most computer systems can support TCP/IP.

Telnet (Telecommunications Network Protocol) A protocol used for remote terminal access used within the TCP/IP protocol.

terminal server A communications processor that connects asynchronous devices to any local or wide area network that uses the TCP/IP, X.25, or LAT protocol suites.

TFTP (Trivial File Transfer Protocol) A simplified method of transfer of logical files on an IP network; see RFC 783.

TN3270 A facility that provides IBM 3270 terminal emulation through TCP/IP to an IBM host.

token A packet of control information.

Token Ring A token access method that involves the use of sequential or ring network topology. Each computer knows the address of the computer that should receive the token next. When the token is not for a given computer, it passes the token to the next computer in line. See IEEE 802.5.

TOS Type of service

transparent bridge Level 2 bridges used with Ethernet networks. They are *transparent* in that hosts need not know any addressing information in order to pass messages through the bridge.

topology The physical arrangement of network nodes and connections.

UDP (User Datagram Protocol) A transaction-oriented transport layer protocol paralleling TCP; however, unlike TCP, it is connectionless. See RFC 768.

WAN (Wide Area Network) A computer network over a wide geographic area.

wildcard mask A wildcard mask is a 32-bit quantity used in conjunction with an Internet address to determine which bits in an Internet address should be ignored when comparing that address with another Internet address. A wildcard mask is specified when setting up access lists.

X.21 A CCITT recommendation that defines a protocol for communication between a circuit-switched network and user devices.

X.25 A CCITT standard that defines the packet format for data transfers in a public data network. Many establishments have X.25 networks in place that provide remote terminal access. These networks can be used for other types of data, including the Internet Protocol, DECnet, and XNS.

X.28 A CCITT recommendation that defines the terminal-PAD interface.

X.29 A CCITT recommendation that defines the PAD-computer interface.

X.3 A CCITT recommendation that defines the PAD parameters.

X Window System A set of network protocols developed by MIT for workstations; also called X and X11. The underlying architecture of the X Window System is based on a client server model. The system is split into two parts: display servers and clients. These two parts can reside on the same computer, or can be separated over a network.

