Network Working Group
Request for Comments: 1392
FYI: 18

G. Malkin
Xylogics, Inc.
T. LaQuey Parker
UTexas
Editors

January 1993

Internet Users' Glossary

Status of this Memo

This memo provides information for the Internet community. It does not specify an Internet standard. Distribution of this memo is unlimited.

Abstract

There are many networking glossaries in existence. This glossary concentrates on terms which are specific to the Internet. Naturally, there are entries for some basic terms and acronyms because other entries refer to them.

Acknowledgements

This document is the work of the User Glossary Working Group of the User Services Area of the Internet Engineering Task Force (IETF). Special thanks go to Jon Postel for his definitive definition of "datagram".

Table of Contents

Glossary

10BaseT
A variant of Ethernet which allows stations to be attached via twisted pair cable. See also: Ethernet, twisted pair.

802.x
The set of IEEE standards for the definition of LAN protocols. See also: IEEE.

822
See: RFC 822

:-)
This odd symbol is one of the ways a person can portray "mood" in the very flat medium of computers--by using "smiley faces". This is "metacommunication", and there are literally hundreds of such symbols, from the obvious to the obscure. This particular example expresses "happiness". Don't see it? Tilt your head to the left 90 degrees. Smiles are also used to denote sarcasm.
[Source: ZEN]

abstract syntax
A description of a data structure that is independent of machine-oriented structures and encodings.
[Source: RFC1208]

Abstract Syntax Notation One (ASN.1)
The language used by the OSI protocols for describing abstract syntax. This language is also used to encode SNMP packets. ASN.1 is defined in ISO documents 8824.2 and 8825.2. See also: Basic Encoding Rules.

Acceptable Use Policy (AUP)
Many transit networks have policies which restrict the use to which the network may be put. A well known example is NSFNET's AUP which does not allow commercial use. Enforcement of AUPs varies with the network. See also: National Science Foundation.

Access Control List (ACL)
Most network security systems operate by allowing selective use of services. An Access Control List is the usual means by which access to, and denial of, services is controlled. It is simply a list of the services available, each with a list of the hosts permitted to use the service.

ACK
See: Acknowledgment

acknowledgment (ACK)
A type of message sent to indicate that a block of data arrived at its destination without error. See also: Negative Acknowledgement.
[Source: NNSC]

ACL
See: Access Control List

AD
See: Administrative Domain

address
There are three types of addresses in common use within the Internet. They are email address; IP, internet or Internet address; and hardware or MAC address. See also: email address, IP address, internet address, MAC address.

address mask
A bit mask used to identify which bits in an IP address correspond to the network and subnet portions of the address. This mask is often referred to as the subnet mask because the network portion of the address can be determined by the encoding inherent in an IP address.

address resolution
Conversion of an internet address into the corresponding physical address.

Address Resolution Protocol (ARP)
Used to dynamically discover the low level physical network hardware address that corresponds to the high level IP address for a given host. ARP is limited to physical network systems that support broadcast packets that can be heard by all hosts on the network. It is defined in RFC 826. See also: proxy ARP.

Administrative Domain (AD)
A collection of hosts and routers, and the interconnecting network(s), managed by a single administrative authority.

Advanced Research Projects Agency Network (ARPANET)
A pioneering longhaul network funded by ARPA (now DARPA). It served as the basis for early networking research, as well as a central backbone during the development of the Internet. The ARPANET consisted of individual packet switching computers interconnected by leased lines. See also: Defense Advanced Research Projects Agency.
[Source: FYI4]

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.
[Source: RFC1208]

alias
A name, usually short and easy to remember, that is translated into another name, usually long and difficult to remember.

American National Standards Institute (ANSI)
This organization is responsible for approving U.S. standards in many areas, including computers and communications. Standards approved by this organization are often called ANSI standards (e.g., ANSI C is the version of the C language approved by ANSI). ANSI is a member of ISO. See also: International Organization for Standardization.
[Source: NNSC]

American Standard Code for Information Interchange (ASCII)
A standard character-to-number encoding widely used in the computer industry. See also: EBCDIC.

anonymous FTP
Anonymous FTP allows a user to retrieve documents, files, programs, and other archived data from anywhere in the Internet without having to establish a userid and password. By using the special userid of "anonymous" the network user will bypass local security checks and will have access to publicly accessible files on the remote system. See also: archive site, File Transfer Protocol.

ANSI
See: American National Standards Institute

API
See: Application Program Interface

Appletalk
A networking protocol developed by Apple Computer for communication between Apple Computer products and other computers. This protocol is independent of the network layer on which it is run. Current implementations exist for Localtalk, a 235Kb/s local area network; and Ethertalk, a 10Mb/s local area network.
[Source: NNSC]

application
A program that performs a function directly for a user. FTP, mail

and Telnet clients are examples of network applications.

application layer
The top layer of the network protocol stack. The application layer is concerned with the semantics of work (e.g., formatting electronic mail messages). How to represent that data and how to reach the foreign node are issues for lower layers of the network. [Source: MALAMUD]

Application Program Interface (API)
A set of calling conventions which define how a service is invoked through a software package. [Source: RFC1208]

archie
A system to automatically gather, index and serve information on the Internet. The initial implementation of archie provided an indexed directory of filenames from all anonymous FTP archives on the Internet. Later versions provide other collections of information. See also: archive site, Gopher, Prospero, Wide Area Information Servers.

archive site
A machine that provides access to a collection of files across the Internet. An "anonymous FTP archive site", for example, provides access to this material via the FTP protocol. See also: anonymous FTP, archie, Gopher, Prospero, Wide Area Information Servers.

ARP
See: Address Resolution Protocol

ARPA
See: Defense Advanced Research Projects Agency

ARPANET
See: Advanced Research Projects Agency Network

AS
See: Autonomous System

ASCII
See: American Standard Code for Information Interchange

ASN.1
See: Abstract Syntax Notation One

assigned numbers
The RFC [STD2] which documents the currently assigned values from

several series of numbers used in network protocol implementations. This RFC is updated periodically and, in any case, current information can be obtained from the Internet Assigned Numbers Authority (IANA). If you are developing a protocol or application that will require the use of a link, socket, port, protocol, etc., please contact the IANA to receive a number assignment. See also: Internet Assigned Numbers Authority, STD.
[Source: STD2]

Asynchronous Transfer Mode (ATM)
A method for the dynamic allocation of bandwidth using a fixed-size packet (called a cell). ATM is also known as "fast packet".

ATM
See: Asynchronous Transfer Mode

AUP
See: Acceptable Use Policy

authentication
The verification of the identity of a person or process.
[Source: MALAMUD]

Autonomous System (AS)
A collection of routers under a single administrative authority using a common Interior Gateway Protocol for routing packets.

backbone
The top level in a hierarchical network. Stub and transit networks which connect to the same backbone are guaranteed to be interconnected. See also: stub network, transit network.

bandwidth
Technically, the difference, in Hertz (Hz), between the highest and lowest frequencies of a transmission channel. However, as typically used, the amount of data that can be sent through a given communications circuit.

bang path
A series of machine names used to direct electronic mail from one user to another, typically by specifying an explicit UUCP path through which the mail is to be routed. See also: email address, mail path, UNIX-to-UNIX CoPy.

baseband
A transmission medium through which digital signals are sent without complicated frequency shifting. In general, only one

communication channel is available at any given time. Ethernet is an example of a baseband network. See also: broadband, Ethernet. [Source: NNSC]

Basic Encoding Rules (BER)
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. See also: Abstract Syntax Notation One. [Source: NNSC]

BBS
See: Bulletin Board System

BCNU
Be Seein' You

BER
See: Basic Encoding Rules

Berkeley Internet Name Domain (BIND)
Implementation of a DNS server developed and distributed by the University of California at Berkeley. Many Internet hosts run BIND, and it is the ancestor of many commercial BIND implementations.

Berkeley Software Distribution (BSD)
Implementation of the UNIX operating system and its utilities developed and distributed by the University of California at Berkeley. "BSD" is usually preceded by the version number of the distribution, e.g., "4.3 BSD" is version 4.3 of the Berkeley UNIX distribution. Many Internet hosts run BSD software, and it is the ancestor of many commercial UNIX implementations. [Source: NNSC]

BGP
See: Border Gateway Protocol

big-endian
A format for storage or transmission of binary data in which the most significant bit (or byte) comes first. The term comes from "Gulliver's Travels" by Jonathan Swift. The Lilliputians, being very small, had correspondingly small political problems. The Big-Endian and Little-Endian parties debated over whether soft-boiled eggs should be opened at the big end or the little end. See also: little-endian. [Source: RFC1208]

binary
11001001

BIND
See: Berkeley Internet Name Domain

Birds Of a Feather (BOF)
A Birds Of a Feather (flocking together) is an informal discussion group. It is formed, often ad hoc, to consider a specific issue and, therefore, has a narrow focus.

Bitnet
An academic computer network that provides interactive electronic mail and file transfer services, using a store-and-forward protocol, based on IBM Network Job Entry protocols. Bitnet-II encapsulates the Bitnet protocol within IP packets and depends on the Internet to route them.

BOF
See: Birds Of a Feather

BOOTP
The Bootstrap Protocol, described in RFCs 951 and 1084, is used for booting diskless nodes. See also: Reverse Address Resolution Protocol.

Border Gateway Protocol (BGP)
The Border Gateway Protocol is an exterior gateway protocol defined in RFCs 1267 and 1268. It's design is based on experience gained with EGP, as defined in STD 18, RFC 904, and EGP usage in the NSFNET Backbone, as described in RFCs 1092 and 1093. See also: Exterior Gateway Protocol.

bounce
The return of a piece of mail because of an error in its delivery. [Source: ZEN]

bridge
A device which forwards traffic between network segments based on datalink layer information. These segments would have a common network layer address. See also: gateway, router.

broadband
A transmission medium capable of supporting a wide range of frequencies. It can carry multiple signals by dividing the total capacity of the medium into multiple, independent bandwidth channels, where each channel operates only on a specific range of frequencies. See also: baseband.

broadcast
A special type of multicast packet which all nodes on the network are always willing to receive. See also: multicast.

broadcast storm
An incorrect packet broadcast onto a network that causes multiple hosts to respond all at once, typically with equally incorrect packets which causes the storm to grow exponentially in severity.

brouter
A device which bridges some packets (i.e., forwards based on datalink layer information) and routes other packets (i.e., forwards based on network layer information). The bridge/route decision is based on configuration information. See also: bridge, router.

BSD
See: Berkeley Software Distribution

BTW
By The Way

Bulletin Board System (BBS)
A computer, and associated software, which typically provides electronic messaging services, archives of files, and any other services or activities of interest to the bulletin board system's operator. Although BBS's have traditionally been the domain of hobbyists, an increasing number of BBS's are connected directly to the Internet, and many BBS's are currently operated by government, educational, and research institutions. See also: Electronic Mail, Internet, Usenet.
[Source: NWNET]

Campus Wide Information System (CWIS)
A CWIS makes information and services publicly available on campus via kiosks, and makes interactive computing available via kiosks, interactive computing systems and campus networks. Services routinely include directory information, calendars, bulletin boards, databases.

CCIRN
See: Coordinating Committee for Intercontinental Research Networks

CCITT
See: Comite Consultatif International de Telegraphique et Telephonique

CERT
See: Computer Emergency Response Team

checksum
A computed value which is dependent upon the contents of a packet. This value is sent along with the packet when it is transmitted. The receiving system computes a new checksum based upon the received data and compares this value with the one sent with the packet. If the two values are the same, the receiver has a high degree of confidence that the data was received correctly. [Source: NNSC]

circuit switching
A communications paradigm in which a dedicated communication path is established between two hosts, and on which all packets travel. The telephone system is an example of a circuit switched network. See also: connection-oriented, connectionless, packet switching.

client
A computer system or process that requests a service of another computer system or process. A workstation requesting the contents of a file from a file server is a client of the file server. See also: client-server model, server. [Source: NNSC]

client-server model
A common way to describe the paradigm of many network protocols. Examples include the name-server/name-resolver relationship in DNS and the file-server/file-client relationship in NFS. See also: client, server, Domain Name System, Network File System.

CNI
See: Coalition for Networked Information

Coalition for Networked Information (CNI)
A consortium formed by American Research Libraries, CAUSE, and EDUCOM to promote the creation of, and access to, information resources in networked environments in order to enrich scholarship and enhance intellectual productivity.

Comite Consultatif International de Telegraphique et Telephonique (CCITT)
This organization is part of the United National International Telecommunications Union (ITU) and is responsible for making technical recommendations about telephone and data communications systems. Every four years CCITT holds plenary sessions where they adopt new standards; the most recent was in 1992. [Source: NNSC]

Computer Emergency Response Team (CERT)
The CERT was formed by DARPA in November 1988 in response to the needs exhibited during the Internet worm incident. The CERT charter is to work with the Internet community to facilitate its response to computer security events involving Internet hosts, to take proactive steps to raise the community's awareness of computer security issues, and to conduct research targeted at improving the security of existing systems. CERT products and services include 24-hour technical assistance for responding to computer security incidents, product vulnerability assistance, technical documents, and tutorials. In addition, the team maintains a number of mailing lists (including one for CERT Advisories), and provides an anonymous FTP server, at "cert.org", where security-related documents and tools are archived. The CERT may be reached by email at "cert@cert.org" and by telephone at +1-412-268-7090 (24-hour hotline). See also: Defense Advanced Research Projects Agency, worm.

congestion
Congestion occurs when the offered load exceeds the capacity of a data communication path.

connection-oriented
The data communication method in which communication proceeds through three well-defined phases: connection establishment, data transfer, connection release. TCP is a connection-oriented protocol. See also: circuit switching, connectionless, packet switching, Transmission Control Protocol.

connectionless
The data communication method in which communication occurs between hosts with no previous setup. Packets between two hosts may take different routes, as each is independent of the other. UDP is a connectionless protocol. See also: circuit switching, connection-oriented, packet switching, User Datagram Protocol.

Coordinating Committee for Intercontinental Research Networks (CCIRN)
A committee that includes the United States FNC and its counterparts in North America and Europe. Co-chaired by the executive directors of the FNC and the European Association of Research Networks (RARE), the CCIRN provides a forum for cooperative planning among the principal North American and European research networking bodies. See also: Federal Networking Council, RARE.
[Source: MALAMUD]

core gateway
Historically, one of a set of gateways (routers) operated by the

Internet Network Operations Center at Bolt, Beranek and Newman (BBN). The core gateway system formed a central part of Internet routing in that all groups must advertise paths to their networks from a core gateway.
[Source: MALAMUD]

Corporation for Research and Educational Networking (CREN)
This organization was formed in October 1989, when Bitnet and CSNET (Computer + Science NETwork) were combined under one administrative authority. CSNET is no longer operational, but CREN still runs Bitnet. See also: Bitnet.
[Source: NNSC]

cracker
A cracker is an individual who attempts to access computer systems without authorization. These individuals are often malicious, as opposed to hackers, and have many means at their disposal for breaking into a system. See also: hacker, Computer Emergency Response Team, Trojan Horse, virus, worm.

CRC
See: cyclic redundancy check

CREN
See: Corporation for Research and Educational Networking

CWIS
See: Campus Wide Information system

Cyberspace
A term coined by William Gibson in his fantasy novel Neuromancer to describe the "world" of computers, and the society that gathers around them.
[Source: ZEN]

Cyclic Redundancy Check (CRC)
A number derived from a set of data that will be transmitted. By recalculating the CRC at the remote end and comparing it to the value originally transmitted, the receiving node can detect some types of transmission errors.
[Source: MALAMUD]

DARPA
See: Defense Advanced Research Projects Agency

Data Encryption Key (DEK)
Used for the encryption of message text and for the computation of message integrity checks (signatures). See also: encryption.

Data Encryption Standard (DES)
A popular, standard encryption scheme. See also: encryption.

datagram
A self-contained, independent entity of data carrying sufficient information to be routed from the source to the destination computer without reliance on earlier exchanges between this source and destination computer and the transporting network. See also: frame, packet.
[Source: J. Postel]

DCA
See: Defense Information Systems Agency

DCE
Data Circuit-terminating Equipment

DCE
See: Distributed Computing Environment

DDN
See: Defense Data Network

DDN NIC
See: Defense Data Network Network Information Center

DECnet
A proprietary network protocol designed by Digital Equipment Corporation. The functionality of each Phase of the implementation, such as Phase IV and Phase V, is different.

default route
A routing table entry which is used to direct packets addressed to networks not explicitly listed in the routing table.
[Source: MALAMUD]

Defense Advanced Research Projects Agency (DARPA)
An agency of the U.S. Department of Defense responsible for the development of new technology for use by the military. DARPA (formerly known as ARPA) was responsible for funding much of the development of the Internet we know today, including the Berkeley version of Unix and TCP/IP.
[Source: NNSC]

Defense Data Network (DDN)
A global communications network serving the US Department of Defense composed of MILNET, other portions of the Internet, and classified networks which are not part of the Internet. The DDN

is used to connect military installations and is managed by the Defense Information Systems Agency. See also: Defense Information Systems Agency.

Defense Data Network Network Information Center (DDN NIC)
Often called "The NIC", the DDN NIC's primary responsibility is the assignment of Internet network addresses and Autonomous System numbers, the administration of the root domain, and providing information and support services to the DDN. It is also a primary repository for RFCs. See also: Autonomous System, network address, Internet Registry, Network Information Center, Request For Comments.

Defense Information Systems Agency (DISA)
Formerly called the Defense Communications Agency (DCA), this is the government agency responsible for managing the DDN portion of the Internet, including the MILNET. Currently, DISA administers the DDN, and supports the user assistance services of the DDN NIC. See also: Defense Data Network.

DEK
See: Data Encryption Key

DES
See: Data Encryption Standard

dialup
A temporary, as opposed to dedicated, connection between machines established over a standard phone line.

Directory Access Protocol
X.500 protocol used for communication between a Directory User Agent and a Directory System Agent.
[Source: MALAMUD]

Directory System Agent (DSA)
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.
[Source: RFC1208]

Directory User Agent (DUA)
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.
[Source: RFC1208]

DISA
See: Defense Information Systems Agency

Distributed Computing Environment (DCE)
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 Digital, IBM and Hewlett Packard.
[Source: RFC1208]

distributed database
A collection of several different data repositories that looks like a single database to the user. A prime example in the Internet is the Domain Name System.

DIX Ethernet
See: Ethernet

DNS
See: Domain Name System

domain
"Domain" is a heavily overused term in the Internet. It can be used in the Administrative Domain context, or the Domain Name context. See also: Administrative Domain, Domain Name System.

Domain Name System (DNS)
The DNS is a general purpose distributed, replicated, data query service. The principal use is the lookup of host IP addresses based on host names. The style of host names now used in the Internet is called "domain name", because they are the style of names used to look up anything in the DNS. Some important domains are: .COM (commercial), .EDU (educational), .NET (network operations), .GOV (U.S. government), and .MIL (U.S. military). Most countries also have a domain. For example, .US (United States), .UK (United Kingdom), .AU (Australia). It is defined in STD 13, RFCs 1034 and 1035. See also: Fully Qualified Domain Name.

dot address (dotted decimal notation)
Dot address refers to the common notation for IP addresses of the form A.B.C.D; where each letter represents, in decimal, one byte of a four byte IP address. See also: IP address.
[Source: FYI4]

DS1
A framing specification for T-1 synchronous lines. See also: T1

DS3
A framing specification for T-3 synchronous lines. See also: T3

DSA
See: Directory System Agent

DTE
Data Terminal Equipment

DUA
See: Directory User Agent

dynamic adaptive routing
Automatic rerouting of traffic based on a sensing and analysis of current actual network conditions. NOTE: this does not include cases of routing decisions taken on predefined information. [Source: J. Postel]

EARN
See: European Academic and Research Network

EBCDIC
See: Extended Binary Coded Decimal Interchange Code

Ebone
A pan-European backbone service.

EFF
See: Electronic Frontier Foundation

EFLA
See: Extended Four Letter Acronym

EGP
See: Exterior Gateway Protocol

Electronic Frontier Foundation (EFF)
A foundation established to address social and legal issues arising from the impact on society of the increasingly pervasive use of computers as a means of communication and information distribution.

Electronic Mail (email)
A system whereby a computer user can exchange messages with other computer users (or groups of users) via a communications network.

Electronic mail is one of the most popular uses of the Internet.
[Source: NNSC]

email
See: Electronic mail

email address
The domain-based or UUCP address that is used to send electronic mail to a specified destination. For example an editor's address is "gmalkin@xylogics.com". See also: bang path, mail path, UNIX-to-UNIX CoPy.
[Source: ZEN]

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.
[Source: RFC1208]

encryption
Encryption is the manipulation of a packet's data in order to prevent any but the intended recipient from reading that data. There are many types of data encryption, and they are the basis of network security. See also: Data Encryption Standard.

Ethernet
A 10-Mb/s standard for LANs, initially developed by Xerox, and later refined by Digital, Intel and Xerox (DIX). All hosts are connected to a coaxial cable where they contend for network access using a Carrier Sense Multiple Access with Collision Detection (CSMA/CD) paradigm. See also: 802.x, Local Area Network, token ring.

Ethernet meltdown
An event that causes saturation, or near saturation, on an Ethernet. It usually results from illegal or misrouted packets and typically lasts only a short time.
[Source: COMER]

European Academic and Research Network (EARN)
A network connecting European academic and research institutions with electronic mail and file transfer services using the Bitnet protocol. See also: Bitnet

Extended Binary Coded Decimal Interchange Code (EBCDIC)
A standard character-to-number encoding used primarily by IBM computer systems. See also: ASCII.

Extended Four Letter Acronym (EFLA)
A recognition of the fact that there are far too many TLAs. See also: Three Letter Acronym.
[Source: K. Morgan]

Exterior Gateway Protocol (EGP)
A protocol which distributes routing information to the routers which connect autonomous systems. The term "gateway" is historical, as "router" is currently the preferred term. There is also a routing protocol called EGP defined in STD 18, RFC 904. See also: Autonomous System, Border Gateway Protocol, Interior Gateway Protocol.

eXternal Data Representation (XDR)
A standard for machine independent data structures developed by Sun Microsystems and defined in RFC 1014. It is similar to ASN.1. See also: Abstract Syntax Notation One.
[Source: RFC1208]

FARNET
A non-profit corporation, established in 1987, whose mission is to advance the use of computer networks to improve research and education.

FAQ
Frequently Asked Question

FDDI
See: Fiber Distributed Data Interface

Federal Information Exchange (FIX)
One of the connection points between the American governmental internets and the Internet.
[Source: SURA]

Federal Networking Council (FNC)
The coordinating group of representatives from those federal agencies involved in the development and use of federal networking, especially those networks using TCP/IP and the Internet. Current members include representatives from DOD, DOE, DARPA, NSF, NASA, and HHS. See also: Defense Advanced Research Projects Agency, National Science Foundation.

Fiber Distributed Data Interface (FDDI)
A high-speed (100Mb/s) LAN standard. The underlying medium is fiber optics, and the topology is a dual-attached, counter-rotating token ring. See also: Local Area Network, token ring. [Source: RFC1208]

file transfer
The copying of a file from one computer to another over a computer network. See also: File Transfer Protocol, Kermit.

File Transfer Protocol (FTP)
A protocol which allows a user on one host to access, and transfer files to and from, another host over a network. Also, FTP is usually the name of the program the user invokes to execute the protocol. It is defined in STD 9, RFC 959. See also: anonymous FTP.

finger
A program that displays information about a particular user, or all users, logged on the local system or on a remote system. It typically shows full name, last login time, idle time, terminal line, and terminal location (where applicable). It may also display plan and project files left by the user.

FIX
See: Federal Information Exchange

flame
A strong opinion and/or criticism of something, usually as a frank inflammatory statement, in an electronic mail message. It is common to precede a flame with an indication of pending fire (i.e., FLAME ON!). Flame Wars occur when people start flaming other people for flaming when they shouldn't have. See also: Electronic Mail

FNC
See: Federal Networking Council

For Your Information (FYI)
A subseries of RFCs that are not technical standards or descriptions of protocols. FYIs convey general information about topics related to TCP/IP or the Internet. See also: Request For Comments, STD.

FQDN
See: Fully Qualified Domain Name

fragment
A piece of a packet. When a router is forwarding an IP packet to a network that has a maximum packet size smaller than the packet size, it is forced to break up that packet into multiple fragments. These fragments will be reassembled by the IP layer at the destination host.

fragmentation
The IP process in which a packet is broken into smaller pieces to fit the requirements of a physical network over which the packet must pass. See also: reassembly.

frame
A frame is a datalink layer "packet" which contains the header and trailer information required by the physical medium. That is, network layer packets are encapsulated to become frames. See also: datagram, encapsulation, packet.

freenet
Community-based bulletin board system with email, information services, interactive communications, and conferencing. Freenets are funded and operated by individuals and volunteers -- in one sense, like public television. They are part of the National Public Telecomputing Network (NPTN), an organization based in Cleveland, Ohio, devoted to making computer telecommunication and networking services as freely available as public libraries. [Source: LAQUEY]

FTP
See: File Transfer Protocol

Fully Qualified Domain Name (FQDN)
The FQDN is the full name of a system, rather than just its hostname. For example, "venera" is a hostname and "venera.isi.edu" is an FQDN. See also: hostname, Domain Name System.

FYI
See: For Your Information

gross
A dozen dozen (144).

gated
Gatedaemon. A program which supports multiple routing protocols and protocol families. It may be used for routing, and makes an effective platform for routing protocol research. The software is freely available by anonymous FTP from "gated.cornell.edu".

Pronounced "gate-dee". See also: Exterior Gateway Protocol, Open Shortest Path First..., Routing Information Protocol, routed.

gateway
The term "router" is now used in place of the original definition of "gateway". Currently, a gateway is a communications device/program which passes data between networks having similar functions but dissimilar implementations. This should not be confused with a protocol converter. By this definition, a router is a layer 3 (network layer) gateway, and a mail gateway is a layer 7 (application layer) gateway. See also: mail gateway, router, protocol converter.

Gopher
A distributed information service that makes available hierarchical collections of information across the Internet. Gopher uses a simple protocol that allows a single Gopher client to access information from any accessible Gopher server, providing the user with a single "Gopher space" of information. Public domain versions of the client and server are available. See also: archie, archive site, Prospero, Wide Area Information Servers.

GOSIP
See: Government OSI Profile

Government OSI Profile
A subset of OSI standards specific to U.S. Government procurements, designed to maximize interoperability in areas where plain OSI standards are ambiguous or allow excessive options. [Source: BIG-LAN]

hacker
A person who delights in having an intimate understanding of the internal workings of a system, computers and computer networks in particular. The term is often misused in a pejorative context, where "cracker" would be the correct term. See also: cracker.

header
The portion of a packet, preceding the actual data, containing source and destination addresses, and error checking and other fields. A header is also the part of an electronic mail message that precedes the body of a message and contains, among other things, the message originator, date and time. See also: Electronic Mail, packet.

heterogeneous network
A network running multiple network layer protocols. See also: DECnet, IP, IPX, XNS.

hierarchical routing
The complex problem of routing on large networks can be simplified by reducing the size of the networks. This is accomplished by breaking a network into a hierarchy of networks, where each level is responsible for its own routing. The Internet has, basically, three levels: the backbones, the mid-levels, and the stub networks. The backbones know how to route between the mid-levels, the mid-levels know how to route between the sites, and each site (being an autonomous system) knows how to route internally. See also: Autonomous System, Exterior Gateway Protocol, Interior Gateway Protocol, stub network, transit network.

High Performance Computing and Communications (HPCC)
High performance computing encompasses advanced computing, communications, and information technologies, including scientific workstations, supercomputer systems, high speed networks, special purpose and experimental systems, the new generation of large scale parallel systems, and application and systems software with all components well integrated and linked over a high speed network.
[Source: HPCC]

High Performance Parallel Interface (HIPPI)
An emerging ANSI standard which extends the computer bus over fairly short distances at speeds of 800 and 1600 Mb/s. HIPPI is often used in a computer room to connect a supercomputer to routers, frame buffers, mass-storage peripherals, and other computers. See also: American National Standards Institute
[Source: MALAMUD]

HIPPI
See: High Performance Parallel Interface

hop
A term used in routing. A path to a destination on a network is a series of hops, through routers, away from the origin.

host
A computer that allows users to communicate with other host computers on a network. Individual users communicate by using application programs, such as electronic mail, Telnet and FTP.
[Source: NNSC]

host address
See: internet address

hostname
The name given to a machine. See also: Fully Qualified Domain

Name.
[Source: ZEN]

host number
See: host address

HPCC
See: High Performance Computing and Communications

hub
A device connected to several other devices. In ARCnet, a hub is used to connect several computers together. In a message handling service, a hub is used for the transfer of messages across the network.
[Source: MALAMUD]

I-D
See: Internet-Draft

IAB
See: Internet Architecture Board

IANA
See: Internet Assigned Numbers Authority

ICMP
See: Internet Control Message Protocol

IEEE
Institute of Electrical and Electronics Engineers

IEEE 802
See: 802.x

IEN
See: Internet Experiment Note

IESG
See: Internet Engineering Steering Group

IETF
See: Internet Engineering Task Force

IINREN
See: Interagency Interim National Research and Education Network

IGP
See: Interior Gateway Protocol

IMHO
In My Humble Opinion

IMR
See: Internet Monthly Report

Integrated Services Digital Network (ISDN)
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. See also: CCITT.
[Source: RFC1208]

Interagency Interim National Research and Education Network (IINREN)
An evolving operating network system. Near term (1992-1996) research and development activities will provide for the smooth evolution of this networking infrastructure into the future gigabit NREN.
[Source: HPCC]

Interior Gateway Protocol (IGP)
A protocol which distributes routing information to the routers within an autonomous system. The term "gateway" is historical, as "router" is currently the preferred term. See also: Autonomous System, Exterior Gateway Protocol, Open Shortest Path First..., Routing Information Protocol.

Intermediate System (IS)
An OSI system which performs network layer forwarding. It is analogous to an IP router. See also: Open Systems Interconnection, router.

Intermediate System-Intermediate System (IS-IS)
The OSI IGP. See also: Open Systems Interconnection, Interior Gateway Protocol.

International Organization for Standardization (ISO)
A voluntary, nontreaty organization founded in 1946 which is responsible for creating international standards in many areas, including computers and communications. Its members are the national standards organizations of the 89 member countries, including ANSI for the U.S. See also: American National Standards Institute, Open Systems Interconnection.
[Source: TAN]

internet
While an internet is a network, the term "internet" is usually used to refer to a collection of networks interconnected with routers. See also: network.

Internet
(note the capital "I") The Internet is the largest internet in the world. Is a three level hierarchy composed of backbone networks (e.g., NSFNET, MILNET), mid-level networks, and stub networks. The Internet is a multiprotocol internet. See also: backbone, mid-level network, stub network, transit network, Internet Protocol, Corporation for Research and Educational Networks, National Science Foundation.

internet address
A IP address that uniquely identifies a node on an internet. An Internet address (capital "I"), uniquely identifies a node on the Internet. See also: internet, Internet, IP address.

Internet Architecture Board (IAB)
The technical body that oversees the development of the Internet suite of protocols. It has two task forces: the IETF and the IRTF. "IAB" previously stood for Internet Activities Board. See also: Internet Engineering Task Force, Internet Research Task Force.

Internet Assigned Numbers Authority (IANA)
The central registry for various Internet protocol parameters, such as port, protocol and enterprise numbers, and options, codes and types. The currently assigned values are listed in the "Assigned Numbers" document [STD2]. To request a number assignment, contact the IANA at "iana@isi.edu". See also: assigned numbers, STD.

Internet Control Message Protocol (ICMP)
ICMP is an extension to the Internet Protocol. It allows for the generation of error messages, test packets and informational messages related to IP. It is defined in STD 5, RFC 792. [Source: FYI4]

Internet-Draft (I-D)
Internet-Drafts are working documents of the IETF, its Areas, and its Working Groups. As the name implies, Internet-Drafts are draft documents. They are valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. Very often, I-Ds are precursors to RFCs. See also: Internet Engineering Task Force, Request For Comments.

Internet Engineering Steering Group (IESG)
The IESG is composed of the IETF Area Directors and the IETF Chair. It provides the first technical review of Internet standards and is responsible for day-to-day "management" of the IETF. See also: Internet Engineering Task Force.

Internet Engineering Task Force (IETF)
The IETF is a large, open community of network designers, operators, vendors, and researchers whose purpose is to coordinate the operation, management and evolution of the Internet, and to resolve short-range and mid-range protocol and architectural issues. It is a major source of proposals for protocol standards which are submitted to the IAB for final approval. The IETF meets three times a year and extensive minutes are included in the IETF Proceedings. See also: Internet, Internet Architecture Board. [Source: FYI4]

Internet Experiment Note (IEN)
A series of reports pertinent to the Internet. IENs were published in parallel to RFCs and are no longer active. See also: Internet-Draft, Request For Comments.

Internet Monthly Report (IMR)
Published monthly, the purpose of the Internet Monthly Reports is to communicate to the Internet Research Group the accomplishments, milestones reached, or problems discovered by the participating organizations.

internet number
See: internet address

Internet Protocol (IP)
The Internet Protocol, defined in STD 5, RFC 791, is the network layer for the TCP/IP Protocol Suite. It is a connectionless, best-effort packet switching protocol. See also: packet switching, Request For Comments, TCP/IP Protocol Suite.

Internet Registry (IR)
The IANA has the discretionary authority to delegate portions of its responsibility and, with respect to network address and Autonomous System identifiers, has lodged this responsibility with an IR. The IR function is performed by the DDN NIC. See also: Autonomous System, network address, Defense Data Network..., Internet Assigned Numbers Authority.

Internet Relay Chat (IRC)
A world-wide "party line" protocol that allows one to converse with others in real time. IRC is structured as a network of

servers, each of which accepts connections from client programs, one per user. See also: talk.
[Source: HACKER]

Internet Research Steering Group (IRSG)
The "governing body" of the IRTF. See also: Internet Research Task Force.
[Source: MALAMUD]

Internet Research Task Force (IRTF)
The IRTF is chartered by the IAB to consider long-term Internet issues from a theoretical point of view. It has Research Groups, similar to IETF Working Groups, which are each tasked to discuss different research topics. Multi-cast audio/video conferencing and privacy enhanced mail are samples of IRTF output. See also: Internet Architecture Board, Internet Engineering Task Force, Privacy Enhanced Mail.

Internet Society (ISOC)
The Internet Society is a non-profit, professional membership organization which facilitates and supports the technical evolution of the Internet, stimulates interest in and educates the scientific and academic communities, industry and the public about the technology, uses and applications of the Internet, and promotes the development of new applications for the system. The Society provides a forum for discussion and collaboration in the operation and use of the global Internet infrastructure. The Internet Society publishes a quarterly newsletter, the Internet Society News, and holds an annual conference, INET. The development of Internet technical standards takes place under the auspices of the Internet Society with substantial support from the Corporation for National Research Initiatives under a cooperative agreement with the US Federal Government.
[Source: V. Cerf]

Internetwork Packet eXchange (IPX)
Novell’s protocol used by Netware. A router with IPX routing can interconnect LANs so that Novell Netware clients and servers can communicate. See also: Local Area Network.

interoperability
The ability of software and hardware on multiple machines from multiple vendors to communicate meaningfully.

IP
See: Internet Protocol

IP address
The 32-bit address defined by the Internet Protocol in STD 5, RFC 791. It is usually represented in dotted decimal notation. See also: dot address, internet address, Internet Protocol, network address, subnet address, host address.

IP datagram
See: datagram

IPX
See: Internetwork Packet eXchange

IR
See: Internet Registry

IRC
See: Internet Relay Chat

IRSG
See: Internet Research Steering Group

IRTF
See: Internet Research Task Force

IS
See: Intermediate System

IS-IS
See: Intermediate System-Intermediate System

ISDN
See: Integrated Services Digital Network

ISO
See: International Organization for Standardization

ISO Development Environment (ISODE)
Software that allows OSI services to use a TCP/IP network. Pronounced eye-so-dee-eee. See also: Open Systems Interconnection, TCP/IP Protocol Suite.

ISOC
See: Internet Society

ISODE
See: ISO Development Environment

JKREY
Joyce K. Reynolds

KA9Q
A popular implementation of TCP/IP and associated protocols for amateur packet radio systems. See also: TCP/IP Protocol Suite. [Source: RFC1208]

Kerberos
Kerberos is the security system of MIT's Project Athena. It is based on symmetric key cryptography. See also: encryption.

Kermit
A popular file transfer protocol developed by Columbia University. Because Kermit runs in most operating environments, it provides an easy method of file transfer. Kermit is NOT the same as FTP. See also: File Transfer Protocol
[Source: MALAMUD]

Knowbot
An experimental directory service. See also: white pages, WHOIS, X.500.

LAN
See: Local Area Network

layer
Communication networks for computers may be organized as a set of more or less independent protocols, each in a different layer (also called level). The lowest layer governs direct host-to-host communication between the hardware at different hosts; the highest consists of user applications. Each layer builds on the layer beneath it. For each layer, programs at different hosts use protocols appropriate to the layer to communicate with each other. TCP/IP has five layers of protocols; OSI has seven. The advantages of different layers of protocols is that the methods of passing information from one layer to another are specified clearly as part of the protocol suite, and changes within a protocol layer are prevented from affecting the other layers. This greatly simplifies the task of designing and maintaining communication programs. See also: Open Systems Interconnection, TCP/IP Protocol Suite.

listserv
An automated mailing list distribution system originally designed for the Bitnet/EARN network. See also: Bitnet, European Academic Research Network, mailing list.

little-endian
A format for storage or transmission of binary data in which the least significant byte (bit) comes first. See also: big-endian.
[Source: RFC1208]

LLC
See: Logical Link Control

Local Area Network (LAN)
A data network intended to serve an area of only a few square kilometers or less. Because the network is known to cover only a small area, optimizations can be made in the network signal protocols that permit data rates up to 100Mb/s. See also: Ethernet, Fiber Distributed Data Interface, token ring, Wide Area Network.
[Source: NNSC]

Logical Link Control (LLC)
The upper portion of the datalink layer, as defined in IEEE 802.2. The LLC sublayer presents a uniform interface to the user of the datalink service, usually the network layer. Beneath the LLC sublayer is the MAC sublayer. See also: 802.x, layer, Media Access Control.

Lurking
No active participation on the part of a subscriber to an mailing list or USENET newsgroup. A person who is lurking is just listening to the discussion. Lurking is encouraged for beginners who need to get up to speed on the history of the group. See also: Electronic Mail, mailing list, Usenet.
[Source: LAQUEY]

MAC
See: Media Access Control

MAC address
The hardware address of a device connected to a shared media. See also: Media Access Control, Ethernet, token ring.
[Source: MALAMUD]

mail bridge
A mail gateway that forwards electronic mail between two or more networks while ensuring that the messages it forwards meet certain administrative criteria. A mail bridge is simply a specialized form of mail gateway that enforces an administrative policy with regard to what mail it forwards. See also: Electronic Mail, mail gateway.
[Source: NNSC]

Mail Exchange Record (MX Record)
A DNS resource record type indicating which host can handle mail for a particular domain. See also: Domain Name System, Electronic Mail.
[Source: MALAMUD]

mail exploder
Part of an electronic mail delivery system which allows a message to be delivered to a list of addresses. Mail exploders are used to implement mailing lists. Users send messages to a single address and the mail exploder takes care of delivery to the individual mailboxes in the list. See also: Electronic Mail, email address, mailing list.
[Source: RFC1208]

mail gateway
A machine that connects two or more electronic mail systems (including dissimilar mail systems) and transfers messages between them. Sometimes the mapping and translation can be quite complex, and it generally 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. See also: Electronic Mail.
[Source: RFC1208]

mail path
A series of machine names used to direct electronic mail from one user to another. This system of email addressing has been used primarily in UUCP networks which are trying to eliminate its use altogether. See also: bang path, email address, UNIX-to-UNIX CoPy.

mail server
A software program that distributes files or information in response to requests sent via email. Internet examples include Almanac and netlib. Mail servers have also been used in Bitnet to provide FTP-like services. See also: Bitnet, Electronic Mail, FTP.
[Source: NWNET]

mailing list
A list of email addresses, used by a mail exploder, to forward messages to groups of people. Generally, a mailing list is used to discuss certain set of topics, and different mailing lists discuss different topics. A mailing list may be moderated. This means that messages sent to the list are actually sent to a moderator who determines whether or not to send the messages on to everyone else. Requests to subscribe to, or leave, a mailing list

should ALWAYS be sent to the list's "-request" address (e.g., ietf-request@cnri.reston.va.us for the IETF mailing list). See also: Electronic Mail, mail exploder.

MAN
See: Metropolitan Area Network

Management Information Base (MIB)
The set of parameters an SNMP management station can query or set in the SNMP agent of a network device (e.g., router). Standard, minimal MIBs have been defined, and vendors often have Private enterprise MIBs. In theory, any SNMP manager can talk to any SNMP agent with a properly defined MIB. See also: client-server model, Simple Network Management Protocol.
[Source: BIG-LAN]

Martian
A 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.
[Source: RFC1208]

Maximum Transmission Unit (MTU)
The largest frame length which may be sent on a physical medium. See also: fragmentation, frame.

Media Access Control (MAC)
The lower portion of the datalink layer. The MAC differs for various physical media. See also: MAC Address, Ethernet, Logical Link Control, token ring.

message switching
See: packet switching

Metropolitan Area Network (MAN)
A data network intended to serve an area approximating that of a large city. Such networks are being implemented by innovative techniques, such as running fiber cables through subway tunnels. A popular example of a MAN is SMDS. See also: Local Area Network, Switched Multimegabit Data Service, Wide Area Network.
[Source: NNSC]

MIB
See: Management Information Base

mid-level network
Mid-level networks (a.k.a. regionals) make up the second level of

the Internet hierarchy. They are the transit networks which connect the stub networks to the backbone networks. See also: backbone, Internet, stub network, transit network.

MIME
See: Multipurpose Internet Mail Extensions

moderator
A person, or small group of people, who manage moderated mailing lists and newsgroups. Moderators are responsible for determining which email submissions are passed on to list. See also: Electronic Mail, mailing list, Usenet.

MTU
See: Maximum Transmission Unit

MUD
See: Multi-User Dungeon

multicast
A packet with a special destination address which multiple nodes on the network may be willing to receive. See also: broadcast.

multihomed host
A host which has more than one connection to a network. The host may send and receive data over any of the links but will not route traffic for other nodes. See also: host, router.
[Source: MALAMUD]

Multipurpose Internet Mail Extensions (MIME)
An extension to Internet email which provides the ability to transfer non-textual data, such as graphics, audio and fax. It is defined in RFC 1341. See also: Electronic Mail

Multi-User Dungeon (MUD)
Adventure, role playing games, or simulations played on the Internet. Devotees call them "text-based virtual reality adventures". The games can feature fantasy combat, booby traps and magic. Players interact in real time and can change the "world" in the game as they play it. Most MUDs are based on the Telnet protocol. See also: Telnet.
[Source: LAQUEY]

MX Record
See: Mail Exchange Record

NAK
See: Negative Acknowledgment

name resolution
The process of mapping a name into its corresponding address. See also: Domain Name System.
[Source: RFC1208]

namespace
A commonly distributed set of names in which all names are unique.
[Source: MALAMUD]

National Institute of Standards and Technology (NIST)
United States governmental body that provides assistance in developing standards. Formerly the National Bureau of Standards.
[Source: MALAMUD]

National Research and Education Network (NREN)
The NREN is the realization of an interconnected gigabit computer network devoted to Hign Performance Computing and Communications. See also: HPPC, IINREN.
[Source: HPCC]

National Science Foundation (NSF)
A U.S. government agency whose purpose is to promote the advancement of science. NSF funds science researchers, scientific projects, and infrastructure to improve the quality of scientific research. The NSFNET, funded by NSF, is an essential part of academic and research communications. It is a highspeed "network of networks" which is hierarchical in nature. At the highest level, it is a backbone network currently comprising 16 nodes connected to a 45Mb/s facility which spans the continental United States. Attached to that are mid-level networks and attached to the mid-levels are campus and local networks. NSFNET also has connections out of the U.S. to Canada, Mexico, Europe, and the Pacific Rim. The NSFNET is part of the Internet.

Negative Acknowledgment (NAK)
Response to receipt of a corrupted packet of information. See also: Acknowledgement.

netiquette
A pun on "etiquette" referring to proper behavior on a network.

Netnews
See: Usenet

network
A computer network is a data communications system which interconnects computer systems at various different sites. A network may be composed of any combination of LANs, MANs or WANs.

See also: Local Area Network, Metropolitan Area Network, Wide Area Network, internet.

network address
The network portion of an IP address. For a class A network, the network address is the first byte of the IP address. For a class B network, the network address is the first two bytes of the IP address. For a class C network, the network address is the first three bytes of the IP address. In each case, the remainder is the host address. In the Internet, assigned network addresses are globally unique. See also: Internet, IP address, subnet address, host address, Internet Registry.

Network File System (NFS)
A protocol developed by Sun Microsystems, and defined in RFC 1094, which allows a computer system to access files over a network as if they were on its local disks. This protocol has been incorporated in products by more than two hundred companies, and is now a de facto Internet standard.
[Source: NNSC]

Network Information Center (NIC)
A NIC provides information, assistance and services to network users. See also: Network Operations Center.

Network Information Services (NIS)
A set of services, generally provided by a NIC, to assist users in using the network. See also: Network Information Center.

Network News Transfer Protocol (NNTP)
A protocol, defined in RFC 977, for the distribution, inquiry, retrieval, and posting of news articles. See also: Usenet.

network number
See: network address

Network Operations Center (NOC)
A location from which the operation of a network or internet is monitored. Additionally, this center usually serves as a clearinghouse for connectivity problems and efforts to resolve those problems. See also: Network Information Center.
[Source: NNSC]

Network Time Protocol (NTP)
A protocol that assures accurate local timekeeping with reference to radio and atomic clocks located on the Internet. This protocol is capable of synchronizing distributed clocks within milliseconds over long time periods. It is defined in STD 12, RFC 1119. See

also: Internet.
[Source: NNSC]

NFS
See: Network File System

NIC
See: Network Information Center

NIC.DDN.MIL
This is the domain name of the DDN NIC. See also: Defense Data Network..., Domain Name System, Network Information Center.

NIS
See: Network Information Services

NIST
See: National Institute of Standards and Technology

NNTP
See: Network News Transfer Protocol

NOC
See: Network Operations Center

Nodal Switching System (NSS)
Main routing nodes in the NSFnet backbone. See also: backbone, National Science Foundation.
[Source: MALAMUD]

node
An addressable device attached to a computer network. See also: host, router.

NREN
See: National Research and Education Network

NSF
See: National Science Foundation

NSS
See: Nodal Switching System

NTP
See: Network Time Protocol

OCLC
See: Online Computer Library Catalog

octet
An octet is 8 bits. This term is used in networking, rather than byte, because some systems have bytes that are not 8 bits long.

Online Computer Library Catalog
OCLC is a nonprofit membership organization offering computer-based services to libraries, educational organizations, and their users. The OCLC library information network connects more than 10,000 libraries worldwide. Libraries use the OCLC System for cataloging, interlibrary loan, collection development, bibliographic verification, and reference searching.
[Source: OCLC]

Open Shortest-Path First Interior Gateway Protocol (OSPF)
A link state, as opposed to distance vector, routing protocol. It is an Internet standard IGP defined in RFC 1247. See also: Interior Gateway Protocol, Routing Information Protocol.

Open Systems Interconnection (OSI)
A suite of protocols, designed by ISO committees, to be the international standard computer network architecture. See also: International Organization for Standardization.

OSI
See: Open Systems Interconnection

OSI Reference Model
A seven-layer structure designed to describe computer network architectures and the way that data passes through them. This model was developed by the ISO in 1978 to clearly define the interfaces in multivendor networks, and to provide users of those networks with conceptual guidelines in the construction of such networks. See also: International Organization for Standardization.
[Source: NNSC]

OSPF
See: Open Shortest-Path First Interior Gateway Protocol

packet
The unit of data sent across a network. "Packet" a generic term used to describe unit of data at all levels of the protocol stack, but it is most correctly used to describe application data units. See also: datagram, frame.

Packet InterNet Groper (PING)
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!" See also: Internet Control Message Protocol.
[Source: RFC1208]

Packet Switch Node (PSN)
A dedicated computer whose purpose is to accept, route and forward packets in a packet switched network. See also: packet switching, router.
[Source: NNSC]

packet switching
A communications paradigm in which packets (messages) are individually routed between hosts, with no previously established communication path. See also: circuit switching, connection-oriented, connectionless.

PD
Public Domain

PDU
See: Protocol Data Unit

PEM
See: Privacy Enhanced Mail

PING
See: Packet INternet Groper

Point Of Presence (POP)
A site where there exists a collection of telecommunications equipment, usually digital leased lines and multi-protocol routers.

Point-to-Point Protocol (PPP)
The Point-to-Point Protocol, defined in RFC 1171, provides a method for transmitting packets over serial point-to-point links. See also: Serial Line IP.
[Source: FYI4]

POP
See: Post Office Protocol and Point Of Presence

port
A port is a transport layer demultiplexing value. Each application has a unique port number associated with it. See also: Transmission Control Protocol, User Datagram Protocol.

Post Office Protocol (POP)
A protocol designed to allow single user hosts to read mail from a server. There are three versions: POP, POP2, and POP3. Latter versions are NOT compatible with earlier versions. See also: Electronic Mail.

Postal Telegraph and Telephone (PTT)
Outside the USA, PTT refers to a telephone service provider, which is usually a monopoly, in a particular country.

postmaster
The person responsible for taking care of electronic mail problems, answering queries about users, and other related work at a site. See also: Electronic Mail.
[Source: ZEN]

PPP
See: Point-to-Point Protocol

Privacy Enhanced Mail (PEM)
Internet email which provides confidentiality, authentication and message integrity using various encryption methods. See also: Electronic Mail, encryption.

Prospero
A distributed filesystem which provides the user with the ability to create multiple views of a single collection of files distributed across the Internet. Prospero provides a file naming system, and file access is provided by existing access methods (e.g., anonymous FTP and NFS). The Prospero protocol is also used for communication between clients and servers in the archie system. See also: anonymous FTP, archie, archive site, Gopher, Network File System, Wide Area Information Servers.

protocol
A formal description of message formats and the rules two computers must follow to exchange those messages. Protocols can describe low-level details of machine-to-machine interfaces (e.g., the order in which bits and bytes are sent across a wire) or high-level exchanges between allocation programs (e.g., the way in which two programs transfer a file across the Internet).
[Source: MALAMUD]

protocol converter
A device/program which translates between different protocols which serve similar functions (e.g., TCP and TP4).

Protocol Data Unit (PDU)
"PDU" is internationalstandardscomitteespeak for packet. See also: packet.

protocol stack
A layered set of protocols which work together to provide a set of network functions. See also: layer, protocol.

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. See also: Address Resolution Protocol [Source: RFC1208]

PSN
See: Packet Switch Node.

PTT
See: Postal, Telegraph and Telephone

queue
A backup of packets awaiting processing.

RARE
See: Reseaux Associes pour la Recherche Europeenne

RARP
See: Reverse Address Resolution Protocol

RBOC
Regional Bell Operating Company

RCP
See: Remote copy program

Read the F*cking Manual (RTFM)
This acronym is often used when someone asks a simple or common question.

reassembly
The IP process in which a previously fragmented packet is reassembled before being passed to the transport layer. See also: fragmentation.

recursive
See: recursive

regional
See: mid-level network

remote login
Operating on a remote computer, using a protocol over a computer network, as though locally attached. See also: Telnet.

Remote Procedure Call (RPC)
An easy and popular paradigm for implementing the client-server model of distributed computing. In general, 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 in various implementations, resulting in a variety of different (incompatible) RPC protocols.
[Source: RFC1208]

repeater
A device which propagates electrical signals from one cable to another. See also: bridge, gateway, router.

Request For Comments (RFC)
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. The RFC series of documents is unusual in that the proposed protocols are forwarded by the Internet research and development community, acting on their own behalf, as opposed to the formally reviewed and standardized protocols that are promoted by organizations such as CCITT and ANSI. See also: For Your Information, STD.

Reseaux Associes pour la Recherche Europeenne (RARE)
European association of research networks.
[Source: RFC1208]

Reseaux IP Europeenne (RIPE)
A collaboration between European networks which use the TCP/IP protocol suite.

Reverse Address Resolution Protocol (RARP)
A protocol, defined in RFC 903, which provides the reverse function of ARP. RARP maps a hardware (MAC) address to an internet address. It is used primarily by diskless nodes when they first initialize to find their internet address. See also: Address Resolution Protocol, BOOTP, internet address, MAC address.

RFC
See: Request For Comments

RFC 822
The Internet standard format for electronic mail message headers. Mail experts often refer to "822 messages". The name comes from "RFC 822", which contains the specification (STD 11, RFC 822). 822 format was previously known as 733 format. See also: Electronic Mail.
[Source: COMER]

RIP
See: Routing Information Protocol

RIPE
See: Reseaux IP Europeenne

Round-Trip Time (RTT)
A measure of the current delay on a network.
[Source: MALAMUD]

route
The path that network traffic takes from its source to its destination. Also, a possible path from a given host to another host or destination.

routed
Route Daemon. A program which runs under 4.2BSD/4.3BSD UNIX systems (and derived operating systems) to propagate routes among machines on a local area network, using the RIP protocol. Pronounced "route-dee". See also: Routing Information Protocol, gated.

router
A device which forwards traffic between networks. The forwarding decision is based on network layer information and routing tables, often constructed by routing protocols. See also: bridge, gateway, Exterior Gateway Protocol, Interior Gateway Protocol.

routing
The process of selecting the correct interface and next hop for a packet being forwarded. See also: hop, router, Exterior Gateway Protocol, Interior Gateway Protocol.

routing domain
A set of routers exchanging routing information within an administrative domain. See also: Administrative Domain, router.

Routing Information Protocol (RIP)
A distance vector, as opposed to link state, routing protocol. It is an Internet standard IGP defined in STD 34, RFC 1058 (updated by RFC 1388). See also: Interior Gateway Protocol, Open Shortest Path First....

RPC
See: Remote Procedure Call

RTFM
See: Read the F*cking Manual

RTT
See: Round-Trip Time

Serial Line IP (SLIP)
A protocol used to run IP over serial lines, such as telephone circuits or RS-232 cables, interconnecting two systems. SLIP is defined in RFC 1055. See also: Point-to-Point Protocol.

server
A provider of resources (e.g., file servers and name servers). See also: client, Domain Name System, Network File System.

SIG
Special Interest Group

signature
The three or four line message at the bottom of a piece of email or a Usenet article which identifies the sender. Large signatures (over five lines) are generally frowned upon. See also: Electronic Mail, Usenet.

Simple Mail Transfer Protocol (SMTP)
A protocol, defined in STD 10, RFC 821, used to transfer electronic mail between computers. It is a server to server protocol, so other protocols are used to access the messages. See also: Electronic Mail, Post Office Protocol, RFC 822.

Simple Network Management Protocol (SNMP)
The Internet standard protocol, defined in STD 15, RFC 1157, developed to manage nodes on an IP network. It is currently possible to manage wiring hubs, toasters, jukeboxes, etc. See also: Management Information Base.

SLIP
See: Serial Line IP

SMDS
See: Switched Multimegabit Data Service

SMI
See: Structure of Management Information

SMTP
See: Simple Mail Transfer Protocol

SNA
See: Systems Network Architecture

snail mail
A pejorative term referring to the U.S. postal service.

SNMP
See: Simple Network Management Protocol

STD
A subseries of RFCs that specify Internet standards. The official list of Internet standards is in STD 1. See also: For Your Information, Request For Comments.

stream-oriented
A type of transport service that allows its client to send data in a continuous stream. The transport service will guarantee that all data will be delivered to the other end in the same order as sent and without duplicates. See also: Transmission Control Protocol.
[Source: MALAMUD]

Structure of Management Information (SMI)
The rules used to define the objects that can be accessed via a network management protocol. This protocol is defined in STD 16, RFC 1155. See also: Management Information Base.
[Source: RFC1208]

stub network
A stub network only carries packets to and from local hosts. Even if it has paths to more than one other network, it does not carry traffic for other networks. See also: backbone, transit network.

subnet
A portion of a network, which may be a physically independent network segment, which shares a network address with other portions of the network and is distinguished by a subnet number. A subnet is to a network what a network is to an internet. See also: internet, network.

[Source: FYI4]

subnet address
The subnet portion of an IP address. In a subnetted network, the host portion of an IP address is split into a subnet portion and a host portion using an address (subnet) mask. See also: address mask, IP address, network address, host address.

subnet mask
See: address mask

subnet number
See: subnet address

Switched Multimegabit Data Service (SMDS)
An emerging high-speed datagram-based public data network service developed by Bellcore and expected to be widely used by telephone companies as the basis for their data networks. See also: Metropolitan Area Network.
[Source: RFC1208]

Systems Network Architecture (SNA)
A proprietary networking architecture used by IBM and IBM-compatible mainframe computers.
[Source: NNSC]

T1
An AT&T term for a digital carrier facility used to transmit a DS-1 formatted digital signal at 1.544 megabits per second.

T3
A term for a digital carrier facility used to transmit a DS-3 formatted digital signal at 44.746 megabits per second.
[Source: FYI4]

TAC
See: Terminal Access Controller (TAC)

talk
A protocol which allows two people on remote computers to communicate in a real-time fashion. See also: Internet Relay Chat.

TCP
See: Transmission Control Protocol

TCP/IP Protocol Suite
Transmission Control Protocol over Internet Protocol. This is a

common shorthand which refers to the suite of transport and application protocols which runs over IP. See also: IP, ICMP, TCP, UDP, FTP, Telnet, SMTP, SNMP.

TELENET
A public packet switched network using the CCITT X.25 protocols. It should not be confused with Telnet.

Telnet
Telnet is the Internet standard protocol for remote terminal connection service. It is defined in STD 8, RFC 854 and extended with options by many other RFCs.

Terminal Access Controller (TAC)
A device which connects terminals to the Internet, usually using dialup modem connections and the TACACS protocol.

terminal emulator
A program that allows a computer to emulate a terminal. The workstation thus appears as a terminal to the remote host. [Source: MALAMUD]

terminal server
A device which connects many terminals to a LAN through one network connection. A terminal server can also connect many network users to its asynchronous ports for dial-out capabilities and printer access. See also: Local Area Network.

Three Letter Acronym (TLA)
A tribute to the use of acronyms in the computer field. See also: Extended Four Letter Acronym.

Time to Live (TTL)
A field in the IP header which indicates how long this packet should be allowed to survive before being discarded. It is primarily used as a hop count. See also: Internet Protocol. [Source: MALAMUD]

TLA
See: Three Letter Acronym

TN3270
A variant of the Telnet program that allows one to attach to IBM mainframes and use the mainframe as if you had a 3270 or similar terminal.
[Source: BIG-LAN]

token ring
A token ring is a type of LAN with nodes wired into a ring. Each node constantly passes a control message (token) on to the next; whichever node has the token can send a message. Often, "Token Ring" is used to refer to the IEEE 802.5 token ring standard, which is the most common type of token ring. See also: 802.x, Local Area Network.

topology
A network topology shows the computers and the links between them. A network layer must stay abreast of the current network topology to be able to route packets to their final destination. [Source: MALAMUD]

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. [Source: RFC1208]

transit network
A transit network passes traffic between networks in addition to carrying traffic for its own hosts. It must have paths to at least two other networks. See also: backbone, stub network.

Transmission Control Protocol (TCP)
An Internet Standard transport layer protocol defined in STD 7, RFC 793. It is connection-oriented and stream-oriented, as opposed to UDP. See also: connection-oriented, stream-oriented, User Datagram Protocol.

Trojan Horse
A computer program which carries within itself a means to allow the creator of the program access to the system using it. See also: virus, worm. See RFC 1135.

TTFN
Ta-Ta For Now

TTL
See: Time to Live

tunnelling
Tunnelling refers to encapsulation of protocol A within protocol B, such that A treats B as though it were a datalink layer. Tunnelling is used to get data between administrative domains which use a protocol that is not supported by the internet

connecting those domains. See also: Administrative Domain.

twisted pair
A type of cable in which pairs of conductors are twisted together to produce certain electrical properties.

UDP
See: User Datagram Protocol

Universal Time Coordinated (UTC)
This is Greenwich Mean Time.
[Source: MALAMUD]

UNIX-to-UNIX CoPy (UUCP)
This was initially a program run under the UNIX operating system that allowed one UNIX system to send files to another UNIX system via dial-up phone lines. Today, the term is more commonly used to describe the large international network which uses the UUCP protocol to pass news and electronic mail. See also: Electronic Mail, Usenet.

urban legend
A story, which may have started with a grain of truth, that has been embroidered and retold until it has passed into the realm of myth. It is an interesting phenonmenon that these stories get spread so far, so fast and so often. Urban legends never die, they just end up on the Internet! Some legends that periodically make their rounds include "The Infamous Modem Tax," "Craig Shergold/Brain Tumor/Get Well Cards," and "The $250 Cookie Recipe".
[Source: LAQUEY]

Usenet
A collection of thousands of topically named newsgroups, the computers which run the protocols, and the people who read and submit Usenet news. Not all Internet hosts subscribe to Usenet and not all Usenet hosts are on the Internet. See also: Network News Transfer Protocol, UNIX-to-UNIX CoPy.
[Source: NWNET]

User Datagram Protocol (UDP)
An Internet Standard transport layer protocol defined in STD 6, RFC 768. It is a connectionless protocol which adds a level of reliability and multiplexing to IP. See also: connectionless, Transmission Control Protocol.

UTC
See: Universal Time Coordinated

UUCP
See: UNIX-to-UNIX CoPy

virtual circuit
A network service which provides connection-oriented service regardless of the underlying network structure. See also: connection-oriented.

virus
A program which replicates itself on computer systems by incorporating itself into other programs which are shared among computer systems. See also: Trojan Horse, worm.

W3
See: World Wide Web

WAIS
See: Wide Area Information Servers

WAN
See: Wide area network

WG
Working Group

white pages
The Internet supports several databases that contain basic information about users, such as email addresses, telephone numbers, and postal addresses. These databases can be searched to get information about particular individuals. Because they serve a function akin to the telephone book, these databases are often referred to as "white pages. See also: Knowbot, WHOIS, X.500.

WHOIS
An Internet program which allows users to query a database of people and other Internet entities, such as domains, networks, and hosts, kept at the DDN NIC. The information for people shows a person’s company name, address, phone number and email address. See also: Defense Data Network Network ..., white pages, Knowbot, X.500.
[Source: FYI4]

Wide Area Information Servers (WAIS)
A distributed information service which offers simple natural language input, indexed searching for fast retrieval, and a "relevance feedback" mechanism which allows the results of initial searches to influence future searches. Public domain implementations are available. See also: archie, Gopher,

Prospero.

Wide Area Network (WAN)
A network, usually constructed with serial lines, which covers a large geographic area. See also: Local Area Network, Metropolitan Area Network.

World Wide Web (WWW or W3)
A hypertext-based, distributed information system created by researchers at CERN in Switzerland. Users may create, edit or browse hypertext documents. The clients and servers are freely available.

worm
A computer program which replicates itself and is self-propagating. Worms, as opposed to viruses, are meant to spawn in network environments. Network worms were first defined by Shoch & Hupp of Xerox in ACM Communications (March 1982). The Internet worm of November 1988 is perhaps the most famous; it successfully propagated itself on over 6,000 systems across the Internet. See also: Trojan Horse, virus.

WRT
With Respect To

WWW
See: World Wide Web

WYSIWYG
What You See is What You Get

X
X is the name for TCP/IP based network-oriented window systems. Network window systems allow a program to use a display on a different computer. The most widely-implemented window system is X11 - a component of MIT’s Project Athena.

X.25
A data communications interface specification developed to describe how data passes into and out of public data communications networks. The CCITT and ISO approved protocol suite defines protocol layers 1 through 3.

X.400
The CCITT and ISO standard for electronic mail. It is widely used in Europe and Canada.

X.500
The CCITT and ISO standard for electronic directory services. See also: white pages, Knowbot, WHOIS.

XDR
See: eXternal Data Representation

Xerox Network System (XNS)
A network developed by Xerox corporation. Implementations exist for both 4.3BSD derived systems, as well as the Xerox Star computers.

XNS
See: Xerox Network System

Yellow Pages (YP)
A service used by UNIX administrators to manage databases distributed across a network.

YP
See: Yellow Pages

zone
A logical group of network devices (AppleTalk).

References

BIG-LAN "BIG-LAN Frequently Asked Questions Memo", BIG-LAN DIGEST V4:I8, February 14, 1992.

COMER Comer, D., "Internetworking with TCP/IP: Principles, Protocols and Architecture", Prentice Hall, Englewood Cliffs, NJ, 1991.

FYI4 Malkin, G., and A. Marine, "FYI on Questions and Answers: Answers to Commonly asked "New Internet User" Questions", FYI 4, RFC 1325, Xylogics, SRI, May 1992.

HACKER "THIS IS THE JARGON FILE", Version 2.9.8, January 1992.

HPCC "Grand Challenges 1993: High Performance Computing and Communications", Committee on Physical, Mathmatical and Engineering Sciences of the Federal Coordinating Council for Science, Engineering and Technology.

MALAMUD Malamud, C., "Analyzing Sun Networks", Van Nostrand Reinhold, New York, NY, 1992.

NNSC "NNSC's Hypercard Tour of the Internet".

LAQUEY LaQuey, T. (with J. Ryer), "The Internet Companion: A Beginner's Guide to Global Networking", Addison-Wesley, Reading, MA, 1992.

NWNET Kochmer, J., and NorthWestNet, "The Internet Passport: NorthWestNets Guide to Our World Online", NorthWestNet, Bellevue, WA, 1992.

RFC1208 Jacobsen, O., and D. Lynch, "A Glossary of Networking Terms", RFC 1208, Interop, Inc., March 1991.

STD1 Postel, J., "IAB Official Protocol Standards", STD 1, RFC 1360, Internet Architecture Board, September 1992.

STD2 Reynolds, J., and J. Postel, "Assigned Numbers", STD 2, RFC 1340, USC/Information Sciences Institute, July 1992.

TAN Tanenbaum, A., "Computer Networks; 2nd ed.", Prentice Hall, Englewood Cliffs, NJ, 1989.

ZEN Kehoe, B., "Zen and the Art of the Internet", February 1992.

Security Considerations

While security is not explicitly discussed in this document, some of the glossary's entries are security related. See the entries for Access Control List (ACL), authentication, Computer Emergency Response Team (CERT), cracker, Data Encryption Key (DEK), Data Encryption Standard (DES), encryption, Kerberos, Privacy Enhanced Mail (PEM), Trojan Horse, virus, and worm.

Authors' Addresses

Gary Scott Malkin
Xylogics, Inc.
53 Third Avenue
Burlington, MA 01803

Phone: (617) 272-8140
EMail: gmalkin@Xylogics.COM

Tracy LaQuey Parker
University of Texas at Austin
Computation Center
Austin, TX 78712

Phone: (512) 471-2444
EMail: tracy@utexas.edu