NETWORK GLOSSARY OF TERMS

Adapter
Hardware that allows a computing device physical access to a network.

Address
A numerical designation that uniquely refers to a specific communication entity.

Address Mask
Bit combination used to describe which portion of an address refers to the network or subnet and which part refers to the host. Sometimes referred to simply as mask also subnet mask.

Adjacency
Relationship formed between selected neighbouring routers and end nodes for the purpose of exchanging routing information. Adjacency is based upon the use of a common media segment.

Administrative Distance
A rate of the trustworthiness of a routing information source. The higher the value, the lower the trustworthiness rating.

Advertising
Router process in which routing or service updates are sent at specified intervals so that other routers on the network can maintain lists of usable routes.

A-law
The ITU-T companding standard used in the conversion between analog and digital signals in PCM systems. A-law is used primarily in European telephone networks and is similar to the North American mu-law standard. See also companding and mu-law.

Algorithm
A set of rules and decision structures for actions in a specifically defined set of circumstances.

Alphanumeric
Referring to a group of printable characters that includes the letters of the alphabet in both upper and lower case, the numerals plus a limited group of additional symbols and punctuation marks.

Analog
Referring to a system or component that uses a system of measurement, response or storage in which values are expressed a s a magnitude using a continuous scale of measurement.

Analog Transmission
Signal transmission over wires or through the air in which information is conveyed through variation of some combination of signal amplitude, frequency, and phase.

Anomaly
An unusual instance or circumstance.

Architecture
The sum total of all of the specifications, protocols and implementations that define a particular networking system.

Archive
A storage of infrequently-used or historical data.

Area
Logical set of network segments (either CLNS-, DECnet-, OSPF-based) and their attached devices. Areas are usually connected to other areas via routers, making up a single autonomous system. See also autonomous system.

ARP
Address Resolution Protocol. The protocol for mapping IP addresses to physical addresses such as Ethernet or Token Ring.

AS
See autonomous system.

ASBR
Autonomous system boundary router. ABR located between an OSPF autonomous system and a non-OSPF network. ASBRs run both OSPF and another routing protocol, such as RIP, ASBRs must reside on a nonstub OSPF area.

ASIC
Application-Specific Integrated Circuit. A custom chip for a specific application.

Attenuation
A loss in the amplitude or strength of a signal due to an interaction with the signal's media. Generally expressed in decibels.

Attribute
Configuration data that defines the characteristics of database objects such as the chassis, cards, ports, or virtual circuits of a particular device. Attributes might be preset or user-configurable. On a LightStream 2020 ATM switch, attributes are set using the configuration program or CLI commands.

Automatic Call Reconnect
Feature permitting automatic call rerouting away from a failed trunk line.

Autonomous System
Collection of networks under a common administration sharing a common routing strategy. Autonomous systems are subdivided by areas. An autonomous system must be assigned a unique 16-bit number by the IANA. Sometimes abbreviated AS.

Average Rate
The average rate, in kilobits per second (kbps), at which a given virtual circuit will transmit.

Back End Processor
A computer running an application that supplies data to other computers on demand, but has no user interface.

Backbone
Referring to the internet, a central network that provides a pathway for other networks to communicate.

Backplane
The communication channels of a single device's architecture, such as in a hub or concentrator.

Backup
A copy of a set of files made for replacement purposes in case the original set is damaged or lost.

Backward Compatible
An upgraded component of a computing system that can be used interchangeably with its previous version.

Bandwidth
In analog communications, the difference between the highest and lowest frequencies available in the band. In digital communications, bandwidth is loosely used to refer to the information-carrying capacity of a network or component of a network.

Baud
Unit of signalling speed equal to the number of discrete signal elements transmitted per second. Baud is synonymous with bits per second (bps), if each signal element represents exactly 1 bit.

Baud Rate
The number of voltage or frequency transitions per second.

Benchmark
A test performed t compare a computer process in one set of circumstances to another.

BGP
Border Gateway Protocol. Interdomain routing protocol that replaces EGP. BGP exchanges reachability information with other BGP systems. It is defined by RFC 1163.

Binary
1. A numerical system using "2" as its base. 2. Data that is encoded or presented in machine-readable form (1's & 0's).

BIND
Berkeley Internet Name Domain. The standard TCP/IP naming service that links network names with IP addresses.

Bit
The basic unit of data representation in digital computers. a memory location that can have one of two values.

Bit rate
The rate at which bits are transmitted or received during communication, expressed as the number bits in a given amount of time, usually one second.

Black Box
A device that performs a function using mechanisms that are unimportant or impossible to understand.

Black Hole
Routing term for an area of the internetwork where packets enter, but do not emerge, due to adverse conditions or poor system configuration within a portion of the network.

Blocking
In a switching system, a condition in which no paths are available to complete a circuit. The term is also used to describe a situation in which one activity cannot begin until another has been completed.

Boot
A computer's startup operation.

BRI
Basic Rate Interface. an ISDN service with two bearer channels at 64 KBPS plus a "Data-Link" or control channel at 16 KBPS.

Bridge
A Data Link Layer device that limits traffic between two network segments by filtering the data between them based on hardware addresses.

Broadband
A transmission system capable of carrying many channels of communication simultaneously by modulating them on one of several carrier frequencies.

Broadcast
An information transmission that is intended to be interpreted by all entities capable of receiving it.

Broadcast Domain
The set of all devices that will receive broadcast frames originating from any device within the set. Broadcast domains are typically bounded by routers because routers do not forward broadcast frames.

Broadcast Storm
Undesirable network event in which many broadcasts are sent simultaneously across all network segments. A broadcast storm uses substantial network bandwidth and, typically, causes network time-outs.

Buffer
A temporary memory storage area for information.

Bug
A flaw in a software program.

Bus
A type of network topology in which nodes are connected along a continuous path that is not a closed circuit. Also refers to a communications channel used by a single computer such as Nubus, SCSI, etc.

Bus Topology
Linear LAN architecture in which transmissions from network stations propagate the length of the medium and are received by all other stations. Compare with ring topology, star topology, and tree topology.

Byte
A group of 8 bits.

Cable
The transmission media of a network.

Cache
A group of memory locations set aside for temporary storage of data, especially frequently-used data or data needing high speed retrieval by the CPU.

Call Admission Control
Traffic management mechanism used in ATM networks that determines whether the network can offer a path with sufficient bandwidth for a requested VCC.

Call Priority
Priority assigned to each origination port in circuit-switched systems. This priority defines the order in which calls are reconnected. Call priority also defines which calls can or cannot be placed during a bandwidth reservation.

Call Setup Time
The time required to establish a switched call between DTE devices.

CAM
Content-addressable memory. See associative memory.

Case Sensitive
Referring to a system in which upper case letters are differentiated from their lower case form.

CHAP
Challenge Handshake Authentication Protocol. Security feature supported on lines using PPP encapsulation that prevents unauthorized access. CHAP does not itself prevent unauthorized access, it merely identifies the remote end. The router or access server than determines whether that user is allowed access. Compare to PAP.

Character
1. A symbol such as a letter, number or punctuation mark that can be arranged to represent higher units of meaning, such as words and sentences. 2. The group of bits that represents such a symbol.

Checksum
The result of a mathematical operation that uses the binary representation of a group of data as its basis, usually to check the integrity of the data.

CIR
Committed information rate. The rate at which a Frame Relay network agrees to transfer information under normal conditions, averaged over a minimum increment of time. CIR, measured in bits per second, is one of the key negotiated tariff metrics.

Circuit
1. Any electrical pathway.
2. An arrangement of electrical and electronic devices and the conductive paths between them.

Clock
1. A component in a computer that provides a timing pulse for other components.
2. The timing pulse of a network transmission.

CODEC
Coder-decoder. Device that typically uses PCM to transform analog signals into a digital bit stream and digital signals back into analog.

Collapsed Backbone
Non distributed backbone in which all network segments are interconnected by way of an internetworking device. A collapsed backbone might be a virtual network segment existing in a device such as a hub, a router, or a switch.

Collision
In Ethernet, the result of two nodes transmitting simultaneously. The frames from each device impact and are damaged when they meet on the physical media. See also Collision domain.

Collision Domain
In Ethernet, the network area within which frames that have collided are propagated. Repeaters and hubs propagate collisions; LAN switches, bridges and routers do not. See also collision.

Community
In SNMP, a logical group of managed devices and NMSs in the same administrative domain.

Community String
Text string that acts as a password and is used to authenticate messages sent between a management station and a router containing a SNMP agent. The community string is sent in every packet between the manager and the agent.

Component
An indivisible unit of functionality, usually embodied in hardware.

Compression
An alteration performed on a unit of information intended to increase it density during storage of transmission.

Congestion
Traffic in excess of network capacity.

Connectivity
A term referring to the ability of a device to trade data and share resources with other devices of a similar and dissimilar type through electronic means including serial and parallel connections, networking and telecommunications.

Connector
A device that establishes a physical connection between one conductor or circuit and another.

Convergence
The speed and ability of a group of internetworking devices running a specific routing protocol to agree on the topology of an internetwork after a change in that topology.

Core Router
In a packet-switched star topology, a router that is part of the backbone and that serves as the single pipe through which all traffic from peripheral networks must pass on its way to other peripheral networks.

COS
1. Class of service. Indication of how an upper-layer protocol requires that a lower-layer protocol treat its messages. In SNA subarea routing, COS definitions are used by subarea nodes to determine the optimal route to establish to given session. A COS definition comprises a virtual route number and a transmission priority field. Also called TOS (type of service).
2. Corporation for Open Systems. Organization that promulgates the use of OSI protocols through conformance testing, certification, and related activities.

Cost
Arbitrary value, typically based on hop count, media bandwidth, or other measures, that is assigned by a network administrator and used to compare various paths through an internetwork environment. Cost values are used by routing protocols to determine the most favourable path to a particular destination: the lower the cost, the better the path. Sometimes called path cost. See also routing metric.

CPE
Customer premises equipment. Terminating equipment, such as terminals, telephones, and modems, supplied by the telephone company, installed at customer sites, and connected to the telephone company network.

CPU
Central Processing Unit. The main processor in the computer's configuration that handles processing tasks or directs auxiliary processors (coprocessors) to perform them.

CRC
Cyclic Redundancy Check. A method of insuring data integrity where a calculation is performed using the binary representation of the data itself as the basis of the calculation. The CRC is the numerical result of this calculation and is held separately from the data. The integrity of the data is checked by calculating a new CRC. If the two CRC's match, then there is a high degree of confidence that the data has not changed.

Crosstalk
In electronic signalling, an error condition caused when the signal from one circuit causes a disturbance to the signal of the nearby circuit.

Data
Information represented in a format readable by a computer.

Datagram
Logical grouping of information sent as a network layer unit over a transmission medium without prior establishment of a virtual circuit. IP datagrams are the primary information units in the Internet. The terms frame, message, packet, and segment are also used to describe logical information grouping at various layers of the OSI reference model and in various technology circles.

Data Link Layer
Layer 2 of the OSI reference model. This layer provides reliable transit of data across a physical link. The data link layer is concerned with physical addressing, network topology, line discipline, error notification, ordered delivery of frames, and flow control. The IEEE has divided this layer into two sublayers: The MAC sublayer and the LLC sublayer. Sometimes simply called link layer. Roughly corresponds to the data link control layer of the SNA model. See also application layer, LLC, MAC, network layer, physical layer, presentation layer, session layer, and transport layer.

Data Stream
All data transmitted through a communications line in a single read or write operation.

Decryption
The reverse application of an encryption algorithm to encrypted data, thereby restoring that data to its original, unencrypted state. See also encryption.

Dedicated LAN
Network segment allocated to a single device. Used in LAN switched network topologies.

Dedicated Line
Communications line that is indefinitely reserved for transmissions, rather than switched as transmission is required. See also leased line.

De Facto Standard
Standard that exists by nature of its widespread use. Compare with de jure standard.

Default Route
Routing table entry that is used to direct frames for which a next hop is not explicitly listed in the routing table.

Demarc
Demarcation point between carrier equipment and CPE.

Designated Router
OSPF router that generates LSAs for a multi-access network and has other special responsibilities in running OSPF. Each multi-access OSPF network that has at least two attached routers has a designated router that is elected by the OSPF Hello protocol. The designated router enables a reduction in the number of adjacencies required on a multi-access network, which in turn reduces the amount or routing protocol traffic and the size of the topological database.

Destination Address
Address of a network device that is receiving data. See also source address.

Diagnostic
A test or the data from a test which indicates the condition of the state of a computer or network's health.

DNS
Domain Name Service

DRAM
Dynamic random-access memory. RAM that stores information in capacitors that must be periodically refreshed. Delays can occur because DRAMs are inaccessible to the processor when refreshing their contents. However, DRAMs are less complex and have greater capacity than SRAMs. See also SRAM.

DTMF
Dual tone multi-frequency. Use of two simultaneous voice-band tones for dialling (such as touch tone).

Dual Homing
Network topology in which a device is connected to the network by way of two independent access points (points of attachment). One access point is the primary connection, and the other is a standby connection that is activated in the event of a failure of the primary connection.

DVMRP
Distance Vector Multicast Routing Protocol. Internetwork gateway protocol, largely based on RIP, that implements a typical dense mode IP multicast scheme. DVMRP uses IGMP to exchange routing datagrams with its neighbours. See also IGMP.

Dynamic Routing
Routing that adjusts automatically to network topology or traffic changes. Also called adaptive routing.

EGP
Exterior Gateway Protocol. Internet protocol for exchanging routing information between autonomous systems. Documented in RFC 904. Not to be confused with the general term exterior gateway protocol. EGP is an obsolete protocol that has been replaced by BGP. See also BGP.

EIGRP
See Enhanced IGRP.

Electromagnetic
Interference in the integrity of a signal caused by radiation. An

Interference (EMI)
Example is the radiation from a fluorescent light, which emits abroad spectrum of electromagnetic radiation, including radiation that may be harmful to a signal not protected by either shielding or adequate twisting.

Encapsulation
The process of placing one protocol inside of another. Usually implies that the encapsulated protocol was not originally intended by its designers to be carried by the encapsulating protocol.

Encryption
The application of a specific algorithm to data so as to alter the appearance of the data making it incomprehensible to those who are not authorized to see the information. See also decryption.

Enhanced IGRP
Enhanced Interior Gateway Routing Protocol. Advanced version of IGRP developed by Cisco. Provides superior convergence properties and operating efficiency, and combines the advantages of link state protocols with those of distance vector protocols. Compare with IGRP. See also IGP, OSPF, and RIP.

Enterprise network
A networking system that allows communication and resource sharing among all of a company's business functions and workers. In some circles, this would even include the company's business including its suppliers and distributors.

Ethernet
A specification for a transmission system including Layers 1 and2 of the OSI 7-layer model using the CSMA/CD access method. In common usage, "Ethernet" refers to both the DIX (DEC - Intel - Xerox) version of this specification or to the IEEE version, more formally known as "802.3". The DIX version is distinguished by the reference "Ethernet V.2".

Expedited Delivery
Option set by a specific protocol layer telling other protocol layers, or the same protocol layer in another device, to handle specific data more rapidly.

Exterior gateway protocol
Any internetwork protocol used to exchange routing information between autonomous systems. Not to be confused with Exterior Gateway Protocol EGP), which is a particular instance of an exterior gateway protocol.

Fast Ethernet
A 100 MB network using 4 twisted pairs.

Fibre-optic Cable
Physical medium capable of conducting modulated light transmission. Compared with other transmission media, fibre-optic cable is more expensive, but is not susceptible to electromagnetic interference and is capable of higher data rates. Sometimes called optical fibre.

Filter
A network manager-defined conditional test placed on incoming packets in a network bridge or protocol analyser. Generally, if the packet meets the conditions defined in the filter criteria, it under goes further processing. If the packet does not meet the filter criteria, it is rejected.

Firewall
Router or access server, or several routers or access servers, designated as a buffer between any connected public networks and a private network. A firewall router uses access lists and other methods to ensure the security of the private network.

Firmware
A collection of programmed routines and instructions that is implemented in a computer chip or similar hardware form instead of a software form.

Flapping
Routing problem where an advertised route between two nodes alternates (flaps) back and forth between two paths due to a network problem that causes intermittent interface failures.

Flooding
Traffic-passing technique used by switches and bridges in which traffic received on an interface is sent out all of the interfaces of that device except the interface on which the information was originally received.

Flow
Stream of data traveling between two endpoints across a network (for example, from one LAN station to another). Multiple flows can be transmitted on a single circuit.

Fragment
Piece of a larger packet that has been broken down to smaller units.

Fragmentation
Process of breaking a packet into smaller units when transmitting over a network medium that cannot support a packet of the original size. See also reassembly.

Frame
In data networks, the information packet and all of the preceding and succeeding signals necessary (flag bytes, preambles, frame checks, abort sequences, etc.) to convey it along the data link.

FTP
File Transfer Protocol. Lowest-common-denominator protocol for the point-to-point transfer of text and binary files between IP connected hosts.

Full-duplex
A communication system between two entities in which either entity can transmit simultaneously.

Full Mesh
Term describing a network in which devices are organized in a mesh topology, with each network node having either a physical circuit or a virtual circuit connecting it to every other network node. A full mesh provides a great deal of redundancy, but because it can be prohibitively expensive to implement, it is usually reserved for network backbones. See also mesh and partial mesh.

Gateway
1. A device that performs a protocol translation at the Session Layer or higher. 2. Archaic. A TCP/IP router that routes packets between different network numbers.

Gb
Gigabit.

Gbps
Gigabits per second.

GHz
Gigahertz.

Giga
A prefix denoting a billion.

GRE
Generic Routing Encapsulation. Tunnelling protocol developed by Cisco that can encapsulate a wide variety of protocol packet types inside IP tunnels, creating a virtual point-to-point link to Cisco routers at remote points over an IP internetwork. By connecting multiprotocol subnetworks in a single-protocol backbone environment, IP tunnelling using GRE allows network expansion across a single-protocol backbone environment.

Ground
An electrical conductor that is neither negatively or positively charged.

GUI
Graphical User Interface. User environment that uses pictorial as well as textual representations of the input and output of applications and the hierarchical or other data structure in which information is stored. Conventions such as buttons, icons, and windows are typical, and many actions are performed using a pointing device (such as a mouse).

Half Duplex
Capability for data transmission in only one direction at a time between a sending station and a receiving station. Compare with full duplex and simplex.

Handshake
Sequence of messages exchanged between two or more network devices to ensure transmission synchronization.

Hardware Address
An address, fixed at the time of manufacturing that identifies a network adapter such as an Ethernet card.

Headend
The end point of a broadband network. All stations transmit toward the headend; the headend then transmits toward the destination station.

Header
In a network packet or frame, a section of data that describes the data that immediately follows.

Hertz (HZ)
A unit of measure of the frequency of cyclic wave form, equal to one cycle or period per second.

Heterogeneous Network
Network consisting of dissimilar devices that run dissimilar protocols and in many cases support dissimilar functions or applications.

Hexadecimal
A numerical system with a base of 16 that is useful for expressing digital data. One hexadecimal digit represents for bits.

Hierarchical Routing
Routing based on a hierarchical addressing system. For example, IP routing algorithms use IP addresses, which contain network numbers, subnet numbers, and host numbers.

Hop
In routed networks, the passage of a packet through a router on the way to its destination.

Host
In terminal emulation, the remote computer that is being controlled by the terminal emulation software.

HSRP
Hot Standby Router Protocol. Provides high network availability and transparent network topology changes. HSRP creates a Hot Standby router group with a lead router that services all packets sent to the Hot Standby address. The lead router is monitored by other routers in the group, and if it fails, one of the standby routers inherits the lead position and the Hot Standby group address.

HTML
Hypertext markup language. Simple hypertext document formatting language that uses tags to indicate how a given part of a document should be interpreted by a viewing application, such as a WWW browser. See also hypertext and WWW browser.

Hub
1. Generally, a term used to describe a device that serves as the centre of a star-topology network.
2. Hardware of software devices that contains multiple independent but connected modules of network and internetwork equipment. Hubs can be active (where they repeat signals sent through them) or passive (where they do not repeat, but merely split, signals sent through them).
3. In Ethernet and IEEE 802.3, an Ethernet multiport repeater, sometimes referred to as a concentrator.

Hybrid Network
Internetwork made up of more than one type of network technology, including LANs and WANs.

ICMP
Internet Control Message Protocol. Network layer Internet protocol that reports errors and provides other information relevant to IP packet processing. Documented in RFC 792.

ICMP Router Discovery Protocol
See IRDP.

IGP
Interior Gateway Protocol. Internet protocol used to exchange routing information within an autonomous system. Examples of common Internet IGPs include IGRP, OSPF, and RIP. See also IGRP, OSPF, and RIP.

IGMP
Internet Group Management Protocol. Used by IP hosts to report their multicast group memberships to an adjacent multicast router.

IGRP
Interior Gateway Routing Protocol. IGP developed by Cisco to address the problems associated with routing in large, heterogeneous networks. Compare with Enhanced IGRP. See also IGP, OSPF, and RIP.

Implementation
The physical manifestation of a network standard or design.

Interface
1. Connection between two systems or devices.
2. In routing terminology, a network connection.
3. In telephony, a shared boundary defined by common physical interconnection characteristics, signal characteristics, and meanings of interchanged signals.
4. The boundary between adjacent layers of the OSI model.

Internet protocol
Any protocol that is part of the TCP/IP protocol stack. See TCP/IP.

Internet Router
A router that uses the rules of one or more Network Layer protocols to forward packets between networks.

Internetworking
General term used to refer to the industry that has arisen around the problem of connecting networks together. The term can refer to products, procedures, and technologies.

IP
Internet Protocol. The Network Layer protocol in the TCP/IP stack offering a connectionless internetwork service. IP provides features for addressing, type-of-service. IP provides features for addressing, type-of-service specification, fragmentation and reassembly, and security. Documented in RFC 791.

IP Address
32-bit address assigned to hosts using TCP/IP. An IP address belongs to one of five classes (A, B, C, D, or E) and is written as 4 octets separated with periods (dotted decimal format). Each address consists of a network number, an optional subnet work number, and a host number. The network and subnetwork numbers together are used for routing, while the host number is used to address an individual host within the network or subnetwork. A subnet mask is used to extract network and subnetwork information from the IP address. Also called an Internet address. See also IP and subnet mask.

IP Multicast
Routing technique that allows IP traffic to be propagated from one source to a number of destinations or from many sources to many destinations. Rather than sending one packet to each destination, one packet is sent to a multicast group identified by a single IP destination group address.

ISDN
Integrated Services Digital Network. Communication protocol, offered by telephone companies, that permits telephone networks to carry data, voice, and other source traffic. See also BISDN, BRI, N-ISDN, and PRI.

Jitter
The difference between a real signal and its ideal due to distortion.

KB
Kilobyte.

Kb
Kilobit.

KBPS
A unit of measure used to describe the rate of data transmission equal to 1000 bits per second.

KByte
A unit of measure used to describe an amount of information equal to 1024 (210) bytes.

LAN
A communication infrastructure that supports data and resource sharing within a small area (<2 km diameter) that is completely contained on the premises of a single owner.

LAN Switch
High-speed switch that forwards packets between data-link segments. Most LAN switches forward traffic based on MAC addresses. This variety of LAN switch is sometimes called a frame switch. LAN switches are often categorized according to the method they use to forward traffic: cut-through packet switching or store-and-forward packet switching. Multilayer switches are an intelligent subset of LAN switches. Compare with multilayer switch. See also cut-through packet switching and store and forward packet switching.

Latency
In data transmission, the delay in transmission time that occurs while information remains in a device's buffered memory (such as a bridge or router) before it can be sent along its path.

Leased Line
Transmission line reserved by a communications carrier for the private use of a customer. A leased line is a type of dedicated line. See also dedicated line.

LED
Light emitting diode. Semiconductor device that emits light produced by converting electrical energy. Status lights on hardware devices are typically LEDs.

Link
Network communications channel consisting of a circuit or transmission path and all related equipment between a sender and a receiver. Most often used to refer to a WAN connection. Sometimes referred to as a line or a transmission link.

Link State Routing
A routing protocol that takes link loading and bandwidth when selecting between alternate routes. Example: OSPF.

Link State Routing Algorithm
Routing algorithm in which each router broadcasts or multicasts information regarding the cost of reaching each of its neighbours to all nodes in the internetwork. Link state algorithms create a consistent view of the network and are therefore not prone to routing loops, but they achieve this at

the cost of relatively greater computational difficulty and more widespread traffic (compared with distance vector routing algorithms). Compare with distance vector routing algorithm.

Load Balancing
In routing, the ability of a router to distribute traffic over all its network ports that are the same distance from the destination address. Good load-balancing algorithms use both line speed and reliability information. Load balancing increases the utilization of network segments, thus increasing effective network bandwidth.

Local Loop
Line from the premises of a telephone subscriber to the telephone company CO.

Local Traffic
Filtering Process by which a bridge filters out (drops) frames whose source and destination MAC addresses are located on the same interface on the bridge, thus preventing unnecessary traffic from being forwarded across the bridge. Defined in the IEEE 802.1 standard. See also IEEE 802.1.

Loop
Route where packets never reach their destination, but simply cycle repeatedly through a constant series of network nodes.

Loss
The aggregate attenuation of a signal due to interaction with its environment.

LSA
Link-state Advertisement. Broadcast packet used by link-state protocols that contains information about neighbours and path costs. LSAs are used by the receiving routers to maintain their routing tables. Sometimes called a link-state packet (LSP).

Mac address
Standardized data link layer address that is required for every port or device that connects to a LAN. Other devices in the network use these addresses to locate specific ports in the network and to create and update routing tables and data structures. MAC addresses are 6 bytes long and are controlled by the IEEE. Also known as a hardware address, a MAC-layer address, or a physical address.

Magnetic field
The area surrounding an electrically charged body in which an electromagnetic force can be detected.

MAN
Metropolitan-area network. Network that spans a metropolitan area. Generally, a MAN spans a larger geographic area than a LAN, but a smaller geographic area that a WAN.

MBPS
A unit of measure used to describe the rate of data transmission equal to one millions bits per second.

MByte
A unit of measure used to describe an amount of information equal to 1,048,576 (220) bytes.

MD5
Message Digest 5. Algorithm used for message authentication in SNMP v.2. MD5 verifies the integrity of the communication, authenticates the origin, and checks for timelines.

Memory
In computing, a system where data is stored for direct, highspeed access by a microprocessor.

Memory Allocation
The amount of memory, usually RAM, that an process reserves for itself.

Mesh
Network topology in which devices are organized in a manageable, segmented manner with many, often redundant, interconnections strategically placed between network nodes.

MIB
Management Information Base. In SNMP, a specification of the data objects and data structures that the Agent is responsible for knowing and reporting to the Console on demand.

Micro
1. A prefix that denotes a one millionth part of a unit of measure, such as a microsecond or microampere. 2. A prefix that denotes something small. 3. A slang term for any personal computer.

Microwave
1. Any electromagnetic radiation with a wavelength between 1 millimetre and 1 meter.
2. A point-to-point data transmission system employing electromagnetic radiation using a carrier frequency in the microwave region.

Milli
A prefix denoting a one thousandth part of a unit of measure, such as a millisecond or millimetre.

Mips
Millions of instructions per second. Number of instructions executed by a processor per second.

MIS
Management Information System. Used to describe the set of computing resources that hold and allow access to the information owned by an organization.

Modem
A device that can covert data signals between analog and digital signalling systems.

Modulation
Process by which the characteristics of electrical signals are transformed to represent information. Types of modulation include AM, FM, and PAM.

Mosaic
Public-domain WWW browser, developed at the National Center for Supercomputing Applications (NCSA).

MOSPF
Multicast OSPF. Intradomain multicast routing protocol used in OSPF networks. Extensions are applied to the base OSPF unicast protocol to support IP multicast routing.

MTU
Maximum Transmission Unit. A specification in a data link protocol that defines the maximum number of bytes that can be carried in any one packet on that link.

Mu-law
North American companding standard used in conversion between analog and digital signals in PCM systems.

Multi-access Network
Network that allows multiple devices to connect and communicate simultaneously.

Multicast
Single packets copied by the network and sent to a specific subset of network addresses. These addresses are specified in the destination address field.

Multicast router
Router used to send IGMP query messages on their attached local networks. Host members of a multicast group respond to a query by sending IGMP reports noting the multicast groups to which they belong. The multicast router takes responsibility for forwarding multicast datagrams from one multicast group to all other networks that have members in the group.

Multicast Server
Establishes a one-to-many connection to each device in a VLAN, thus establishing a broadcast domain for each VLAN segment. The multicast server forwards incoming broadcasts only to the multicast address that maps to the broadcast address.

Multihomed Host
Host attached to multiple physical network segments in an OSI CLNS network.

Multilayer switch
Switch that filters and forwards packets based on MAC addresses and network addresses. A subset of LAN switch.

Multimode Fibre
Optical fibre supporting propagation of multiple frequencies of light.

Multiplexing
Scheme that allows multiple logical signals to be transmitted simultaneously across a single physical channel.

Multi-user
A term used to describe a computing process that can handle the requirements of several users simultaneously.

Multivendor network
Network using equipment from more than one vendor.

Nano
A prefix that denotes a 1 billionth portion of a unit of measure, as in nanosecond or nanometer.

NAP
Network access point. Location for interconnection of internet service providers in the United States for the exchange of packets.

Neighbouring Routers
In OSPF, two routers that have interfaces to a common network. On multi-access networks, neighbours are dynamically discovered by the OSPF Hello protocol.

Net
Short for network.

Network
The infrastructure that supports electronic data exchange.

Network Adapter
A hardware device that translates electronic signals between a computing device's native network hardware and the transmission media. A network adapter may also include memory or additional hardware or firmware to aid or perform the computing device's network operations.

Network Address
Network layer address referring to a logical, rather than a physical, network device. Also called a protocol address.

Network Administrator
A person who is charged with the responsibility of caring for a network and the communication abilities of its users.

Network Analyser
Hardware or software device offering various network troubleshooting features, including protocol-specific packet decodes, specific pre-programmed troubleshooting tests, packet filtering, and packet transmission.

Network Architecture
A set of specifications that defines every aspect of a data network's communication system, including but not limited to the types of user interfaces employed, the networking protocols used and the structure and types of network cabling that may be used.

Network Interface
Boundary between a carrier network and a privately-owned installation

Network Management
A set of activities and duties whose goal is to provide high-quality reliable communication among a group of networked computer users. Typical activities may include resource planning, network design, providing user assistance and training, reconfiguration of the network due to a change in user requirements, assessing user needs and designing appropriate solutions and trouble shooting and remedying network problems as they arise.

Network Number
Part of an IP address that specifies the network to which the host belongs.

Network Operator
Person who routinely monitors and controls a network, performing tasks such as reviewing and responding to traps, monitoring throughput, configuring new circuits, and resolving problems.

NHRP
Next Hop Resolution Protocol. Protocol used by routers to dynamically discover the MAC address of other routers and hosts connected to a NBMA network. These systems can then directly communicate without requiring traffic to use an intermediate hop, increasing performance in ATM, Frame Relay, SMDS, and X.25 environments.

NIC
1. Network Information Centre. The group responsible for the assignment of IP addresses.
2. Network Interface Card. A network adapter on a circuit board that plugs into a computer internal bus architecture.
3. A 16-bit Ethernet chip designed by Texas Instruments.

NOC
Network Operations Centre. Organization responsible for maintaining a network.

Node
A networked computing device that takes a protocol address and can initiate and respond to communication from other networked devices that employ similar protocols.

Noise
Undesirable electrical or electromagnetic signals.

Non-Volatile
Information that will remain usable by a computer despite loss of power or shutdown.

NTP
Network Time Protocol.

OEM
Original Equipment Manufacture. A system of distribution where a company markets equipment purchased from another company under its own label.

Ohm (Ω)
A measure of the opposition to the flow of electric current.

Operating System
A collection of system software routines that manages all of the peripherals, hardware components and other computing resources and processes in a computing device.

OSI
Open Systems Interconnection. Referring to the subset of the ISO that promotes and defines standards for open networking systems.

OSI 7-Layer Model
A method of describing the relationships between network protocols by grouping them according to the communication functions the protocols provide. The OSI model defines 7 distinct categories (Layers) that act successively on data as it makes its way between the user and the transmission media.

OSPF
Open Shortest Path First. A link state routing protocol for IP.

Out of Band
Referring to a transmission system that is separate and auxiliary to the network's transmission system and who's operability is independent of the operability of the network.

Packet
A discrete chunk of communication in a pre-defined format.

Peek
A term used to describe the viewing of network data not ordinarily visible to a user.

Peer
In networking, a device to which a computer has a network connection that is relatively symmetrical, i.e. where both devices can initiate or respond to a similar set of requests.

Physical Address
A synonym for Hardware Address or MAC - layer address.

Pin
A type of electrical contact point for a single conductor.

Ping
1. A network diagnostic utility on Unix systems that sends an ICMP Echo Request to a distant node which must then immediately return an ICMP Echo Reply packet back to the originating node. 2. An ICMP Echo Request packet.

Polarity
A Term used to describe the orientation of a differential voltage.

Port
On a network hub, bridge or router, a physically distinct and individually controllable set of transmission hardware. Each such port is connected to the devices other ports through the device's internal electronic structures.

PPP
Point-to-Point Protocol. A specification for synchronous or asynchronous data communication between two routers or between a computer system and a network.

PRI
Primary Rate Interface. An ISDN service over a T1 link that provides 23 data channels "bearer" or "b" Channels" at 64 KBPS and one 16 KBPS control channel (or "D" channel).

Protocol
In networking, a specification of the data structures and algorithms necessary to accomplish a particular network function.

Protocol Stack
A group of protocols, usually specified by a single vendor or organization, that are implemented at more than one Layer of the OSI 7-Layer model that also have Service Access Points defined.

Radio (RF) Frequency
1. Electromagnetic radiation with a frequency in the range of 10 KHz to 300 GHz. 2. Wireless data communication using such radiation.

RAM
Random Access Memory. A group of memory locations that are numerically identified to allow high speed access by a CPU. In random access, any memory location can be accessed at any time by referring to its numerical identifier as compared to sequential access, where memory location 6 can only be accessed after accessing memory locations 1-5.

Receiver
The node or process for which a packet or other information is intended.

Resistor
A passive electrical device that adds resistance to a circuit.

Response Time
The gap between the time when a user initiates an action and the time that the action displays its results.

RF Interference
Radio Frequency signals that degrade the integrity of a data signal.

RFC
Request For Comment. For the IETF, the document that specifies a standard after an exhaustive review process.

RIP
Routing Information Protocol. A distance vector routing protocol for IP.

ROM
Read Only Memory. A chip or other electronic device that contains memory that cannot be altered. In the Macintosh, the ROM contains the Macintosh OS and instructions for basic system operations.

Router
A device that forwards packets between networks according to the rules of a network layer protocol such as DDP and information it has gathered during its service concerning the structure of the internet.

RTT
Round Trip Time. the time between the transmission of a packet and the receipt of its acknowledgment or reply.

Scalability
The suitability of a system (particularly a network system to operate properly and efficiently when configured on a large scale.

Serial Port
A port on a computing device that is capable of either transmitting or receiving one bit at a time. Examples include the Mac's printer and modem ports.

Server
A device that is shared by several users of a network.

Session
An on-going relationship between two computing devices involving the allocation of resources and sustained date flow.

SMTP
Simple Mail Transfer Protocol. The standard protocol for exchanging mail over TCP/IP networks.

SNMP
Simple Network Management Protocol. A de facto standard for management of networked devices using a simple request-response data retrieval mechanism.

SNMPv2
Simple Network Management Protocol Version 2. Offers increased performance, better security, greater portability and greater ability to manage non-network resources.

Source
The node or process transmitting information.

Specification
A document that defines a concept and its allowable implementation forms.

Spike
A sudden and transient increase in the voltage from a power supply.

Star
A network topology that is constructed by connecting computing devices to a common device.

Star Topology
LAN topology in which end points on a network are connected to a common central switch by point-to-point links. A ring topology that is organized as a star implements a unidirectional closed-loop star, instead of point-to-point links. Compare with bus topology, ring topology, and tree topology.

Static Route
Route that is explicitly configured and entered into the routing table. Static Routes take precedence over routes chosen by dynamic routing protocols.

STP
Shielded twisted-pair. Two-pair wiring medium used in a variety of network implementations. STP cabling has a layer of shielded insulation to reduce EMI.

Stub Area
OSPF area that carries a default route, intra-area routes, and inter-area routes, but does not carry external routes. Virtual links cannot be configured across a stub area, and they cannot contain as ASBR.

Subnet Address
Portion of an IP address that is specified as the subnetwork by the subnet mask. See also IP address, subnet mask, and subnetwork.

Subnet Mask
A representation of a user's Internet address where all of the bit positions corresponding to the user's network and subnetwork id are 1's and the bit corresponding to the user's host id are 0's.

Switch
A switch is a device that forwards packets between nodes based on the packet's destination node address (either hardware or protocol), typically with a buffer time longer than a repeater but shorter than the transmission time of the packet.

TACACS
Terminal Access Controller Access Control System. Authentication protocol, developed by the DDN community, that provides remote access authentication and related services, such as event logging. User passwords are administered in a central database rather than in individual routers, providing an easily scalable network security solution.

TCP/IP
Transmission Control Protocol/Internet Protocol. A Transport and Network Layer Protocol, respectively, used by a large number of computers.

Telco
Abbreviation for telephone company.

Telecommunications
The system of technologies used in telephone communications.

Telephony
The science and practice of telecommunications.

TFTP
Trivial File Transfer Protocol. A simplified version of FTP.

Throughput
Rate of information arriving at, and possibly passing through, a particular point in a network system.

Topology
1. The arrangement of computing devices in a network.
2. A term describing such an arrangement.

Transceiver
1. In Ethernet, an electronic device that transforms signals between a node's internal circuitry and the Ethernet signals and also detects collisions.
2. Any device that can simultaneously transmit and receive.

Transfer Rate
The rate at which data is transferred from one device to another, usually expressed in bit per second or in bytes per second.

Tweak
A minor adjustment.

UDP
User Datagram protocol.

Upload
The activity of transferring a file from a user's computer system to a remote system.

UPS
Uninterruptable Power Supply. An electrical supply system that conditions electrical power for a computer system and will allow continued operating in the event of a power failure.

User
A person who uses a computer system to accomplish a non-computing goal, as compared to a programmer or network manager.

UTP
Unshielded twisting pair wiring.

Virtual
A quality used to describe a situation where a computer simulates aspects of an activity or device but the activity or device does not have a physical form.

Volt
The standard unit of measure for a difference in electric potential

WAN
Wide Area Network. A network that is created between and among devices separated by large distances (typically in excess of 50 miles).

Wave
The phenomena that occurs when a physical medium is host to a measurable condition that varies in intensity, frequency or velocity with time.

Wireless
A System that provides communication without the use of wires.

Wiring closet
In wiring for telephone or data systems, any location from which the communication wires emanate, usually enclosed.

Workgroup
A group of networked computer users who frequently communicate with each other and share common devices.