

Glossary

10Base2	Ethernet specification for thin coaxial cable, transmits signals at 10 Mbps (megabits per second) with a distance limit of 185 meters per segment.
10Base5	Ethernet specification for thick coaxial cable, transmits signals at 10 Mbps (megabits per second) with a distance limit of 500 meters per segment.
10BaseF	Ethernet specification for fiber optic cable, transmits signals at 10 Mbps (megabits per second) with a distance limit of 2000 meters per segment.
10BaseT	Ethernet specification for unshielded twisted pair cable (category 3, 4, or 5), transmits signals at 10 Mbps (megabits per second) with a distance limit of 100 meters per segment.
100BaseT	Ethernet specification for unshielded twisted pair cabling that is used to transmit data at 100 Mbps (megabits per second) with a distance limit of 100 meters per segment.
100BaseTX	Ethernet specification for unshielded twisted pair cabling that is used to transmit data at 1 Gbps (gigabits per second) with a distance limitation of 220 meters per segment.
Analog	A format that uses continuous variables to transmit information
Asynchronous Transmission	A method of data transmission which allows characters to be sent at irregular intervals by preceding each character with a start bit and following it with a stop bit.
Asynchronous Transfer Mode (ATM)	A network protocol that transmits data at a speed of 155 Mbps and higher. It is most often used to interconnect two or more local area networks.
AppleTalk	Apple Computer's network protocol originally designed to run over LocalTalk networks, but can also run on Ethernet and Token Ring.
Attenuation	The decrease in magnitude of power of a signal in transmission between points. It expresses the total losses on a transmission line based on the ratio of output power to input power. Measured in decibels.
AUI Connector	(Attachment Unit Interface) - A 15 pin connector found on Ethernet cards that can be used for attaching coaxial, fiber optic, or twisted pair cable.
Backbone	Cabling used to connect the telecommunications closets, cross-connects, entrance facilities and equipment rooms.
Bandwidth	Information carrying capacity of a system. The greater the bandwidth, the greater the information carrying capacity in a given period of time.
Bit	Binary digit in the binary numbering system. Its value can be 0 or 1. In an 8-bit character scheme, it takes 8 bits to make a byte (character) of data.
BNC Connector	(Bayone-Neill-Concelman) - Standard connector used to connect 10Base2 coaxial cable.
Bridge	Devices that connect and pass packets between two network segments that use the same communications protocol.
Broadband	A general term for transmission of signals that have wide bandwidth or multiple modulated channels.
Cable	Transmission medium of copper wire or optical fiber wrapped in a protective cover.
Cladding	Layer of glass surrounding the light-carrying core of an optical fiber.
Client/Server	A networking system in which one or more file servers (Server) provide services; such as network management, application and centralized data storage for workstations (Clients).
Core	Central part of an optical fiber that carries light.
Cross-Connect	A group of connection points, either wall-mounted or rack-mounted, used to mechanically terminate wiring.

CSMA/CA	Carrier Sense Multiple Access Collision Avoidance is a network access method in which each device signals its intent to transmit before it actually does so. This prevents other devices from sending information, thus preventing collisions from occurring between signals from two or more devices. This is the access method used by LocalTalk.
CSMA/CD	Carrier Sense Multiple Access Collision Detection is a network access method in which devices that are ready to transmit data first check the channel for a carrier. If no carrier is sensed, a device can transmit. If two devices transmit at once, a collision occurs and each computer backs off and waits a random amount of time before attempting to retransmit. This is the access method used by Ethernet.
Coaxial Cable	Cable consisting of a single copper conductor in the center surrounded by a plastic layer for insulation and a braided metal outer shield.
Concentrator	A device that provides a central connection point for cables from workstations, servers, and peripherals. Most concentrators contain the ability to amplify the electrical signal they receive.
Decibel	A standard unit for expressing transmission gain or loss and relative power levels.
Delay Skew	The difference in the propagation delay between any pairs in the same cable.
Demarcation Point	A point at which two services may interface and identify the division of responsibility.
Digital	A data format that uses at least two distinct states to transmit information.
DIN	A plug and socket connector consisting of a circular pattern of pins in a metal sleeve. This type of connector is commonly seen on keyboards.
Dumb Terminal	Refers to devices that are designed to communicate exclusively with a host (main frame) computer. It receives all screen layouts from the host computer and sends all keyboard entry to the host. It cannot function without the host computer.
ELFEXT	Equal Level Far-End Crosstalk - The ratio of the attenuated signal on one pair to the crosstalk on an adjacent pair at the far end.
E-mail	An electronic mail message sent from a host computer to a remote computer.
EMI	Electro-Magnetic Interference - Noise generated on a cable when electromagnetic fields induce currents in electrical conductors.
End User	Refers to the human executing applications on the workstation.
Ethernet	A network protocol invented by Xerox Corporation and developed jointly by Xerox, Intel and Digital Equipment Corporation. Ethernet networks use CSMA/CD and run over a variety of cable types at 10 Mbps (megabits per second).
Expansion Slot	Area in a computer that accepts additional input/output boards to increase the capability of the computer.
Fast Ethernet	A new Ethernet standard that supports 100 Mbps using category 5 twisted pair or fiber optic cable.
Fiber Distributed Data Interface (FDDI)	A network protocol that is used primarily to interconnect two or more local area networks, often over large distances.
Fiber Optic Cable	A cable, consisting of a center glass core surrounded by layers of plastic, that transmits data using light rather than electricity. It has the ability to carry more information over much longer distances.
File Server	A computer connected to the network that contains primary files/applications and shares them as requested with the other computers on the network. If the file server is dedicated for that purpose only, it is connected to a client/server network. An example of a client/server network is Novell Netware. All the computers connected to a peer-to-peer network are capable of being the file server. Two examples of peer-to-peer networks are LANtastic and Windows for Workgroups.
Full Duplex Transmission	in either direction at the same time.

Gigabit Ethernet	An Ethernet protocol that raises the transmission rates to 1 Gbps (gigabits per second). It is primarily used for a high speed backbone of a network.
Gigabyte	(GB) - One billion bytes of information. One thousand megabytes.
Half Duplex	Data transmission in either direction but not at the same time.
Hertz	(Hz) - Frequencies in cycles per second.
Hub	A hardware device 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).
Infrared	Electromagnetic waves whose frequency range is above that of microwaves, but below that of the visible spectrum.
Intranet	Network internal to an organization that uses Internet protocols.
Internet	A global network of networks used to exchange information using the TCP/IP protocol. It allows for electronic mail and the accessing and retrieval of information from remote sources.
LAN	(Local Area Network) - A network connecting computers in a relatively small area such as a building.
Linear Bus	A network topology in which each node attaches directly to a common cable.
LocalTalk	Apple Corporation proprietary protocol that uses CSMA/CA media access scheme and supports transmissions at speeds of 230 Kbps (Kilobits per second).
MAN	(Metropolitan Area Network) - A network connecting computers over a large geographical area, such as a city or school district.
MAU	(Multistation Access Unit) - A Token Ring wiring hub.
Modal Dispersion	Dispersion arising from differences in the time it takes different modes to travel through multimode fiber.
Modem	(Modulator/Demodulator) - Devices that convert digital and analog signals. Modems allow computer data (digital) to be transmitted over voice-grade telephone lines (analog).
Modulation	Certain characteristics of a wave are varied or selected in accordance with a modulating function.
Multimode	Transmits multiple paths of light.
Multiplexer	A device that allows multiple logical signals to be transmitted simultaneously across a single physical channel.
Network Modem	A modem connected to a Local Area Network (LAN) that is accessible from any workstation on the network.
Network Interface Card	(NIC) - A board that provides network communication capabilities to and from a computer.
Network Operating System	(NOS) - Operating system designed to pass information and communicate between more than one computer. Examples include AppleShare, Novell NetWare, and Windows NT Server.
Node	End point of a network connection. Nodes include any device attached to a network such as file servers, printers, or workstations.
Node Devices	Any computer or peripheral that is connected to the network.
OTDR	Optical Time Domain Reflectometer - Instrument used to measure transmission characteristics of fiber optic cable.
PCMCIA	An expansion slot found in many laptop computers.

Peer-to-Peer Network	A network in which resources and files are shared without a centralized management source.
Physical Topology	The physical layout of the network; how the cables are arranged; and how the computers are connected.
Plenum Cable	Cable made of fire retardant material that meets electrical code requirements (UL 910) for low smoke generation.
Point-to-Point	A direct link between two objects in a network.
Ports	A connection point for a cable.
Propagation Delay	The time it takes for a signal to travel from one point on a circuit to another over a transmission channel.
Protocol	A formal description of a set of rules and conventions that govern how devices on a network exchange information.
RAID	(Redundant Array of Inexpensive Disks) - A configuration of multiple disks designed to preserve data after a disk casualty.
RAM	(Random Access Memory) - The working memory of a computer where data and programs are temporarily stored. RAM only holds information when the computer is on.
Receiver	Device that detects an optical signal and converts it into an electrical format.
Refraction	Bending of light as it passes between materials of different refractive index.
Repeater	A device used in a network to strengthen a signal as it is passed along the network cable.
RJ-45	Standard connectors used for unshielded twisted-pair cable.
Router	A device that routes information between interconnected networks. It can select the best path to route a message, as well as translate information from one network to another. It is similar to a superintelligent bridge.
Scattering	A property of a fiber which causes light to deflect from the fiber and contribute to losses.
SCSI	(Small Computer Serial Interface) - An interface controller that allows several peripherals to be connected to the same port on a computer.
Segment	Refers to a section of cable on a network. In Ethernet networks, two types of segments are defined. A populated or trunk segment is a network cable that has one or more nodes attached to it. A link segment is a cable that connects a computer to an interconnecting device, such as a repeater or concentrator, or connects a interconnecting device to another interconnecting device.
Single-Mode Fiber	An optical fiber in which the signal travels in one mode.
Speed of Data Transfer	The rate at which information travels through a network, usually measured in megabits per second.
Star Topology	LAN topology in which each node on a network is connected directly to a central network hub or concentrator.
Star-Wired Ring	Network topology that connects network devices (such as computers and printers) in a complete circle.
Tape Back-Up	Copying all the data and programs of a computer system on magnetic tape. On tape, data is stored sequentially. When retrieving data, the tape is searched from the beginning of tape until the data is found.
Terminator	A device that provides electrical resistance at the end of a transmission line. Its function is to absorb signals on the line, thereby keeping them from bouncing back and being received again by the network.
Thicknet	A thick coaxial cable that is used with a 10Base5 Ethernet LAN.

Thinnet	A thin coaxial cable that is used with a 10Base2 Ethernet LAN.
Token	A special packet that contains data and acts as a messenger or carrier between each computer and device on a ring topology. Each computer must wait for the messenger to stop at its node before it can send data over the network.
Token Ring	A network protocol developed by IBM in which computers access the network through token-passing. Usually uses a star-wired ring topology.
Topology	There are two types of topology: physical and logical. The physical topology of a network refers to the configuration of cables, computers, and other peripherals. Logical topology is the method used to pass the information between workstations. Issues involving logical topologies are discussed on the Protocol chapter
Transceiver	(Transmitter/Receiver) - A Device that receives and sends signals over a medium. In networks, it is generally used to allow for the connection between two different types of cable connectors, such as AUI and RJ-45.
Tree Topology	LAN topology similar to linear bus topology, except that tree networks can contain branches with multiple nodes.
Twisted Pair	Network cabling that consists of four pairs of wires that are manufactured with the wires twisted to certain specifications. Available in shielded and unshielded versions.
USB	(Universal Serial Bus) Port - A hardware interface for low-speed peripherals such as the keyboard, mouse, joystick, scanner, printer, and telephony devices.
WAN	(Wide Area Network) - A network connecting computers within very large areas, such as states, countries, and the world.
Workgroup	A collection of workstations and servers on a LAN that are designated to communicate and exchange data with one another.
Workstation	A computer connected to a network at which users interact with software stored on the network.