



# Glossary

---

- 10Base-2** Specification for 10 Mbps (baseband) carried over coaxial cable. Also called Thin Ethernet or Thinnet.
- 10Base-5** Specification for 10 Mbps (baseband) carried over thick coaxial cable. Also called Thick Ethernet or Thicknet.
- 10Base-Fx** Specification for 10 Mbps (baseband) carried over fiber-optic cable.
- 10Base-T** Specification for 10 Mbps (baseband) carried over twisted-pair cable.
- 100Base-Tx** Specification for 100 Mbps (baseband) carried over twisted-pair cable.
- 1000Base-T** Specification for 1000 Mbps (one gigabit) carried over twisted pair cable.
- 802.x** Specification for various types of Ethernet networks.
- AAUI** Apple Attachment Unit Interface. A connector for connecting a Macintosh to an Ethernet network.

## 2 Networking: A Beginner's Guide

- Access Control List (ACL)** A list of security permissions for a Windows server's files, directories, and other resources. Access Control Lists are also used on other devices, and are essentially lists of who can access what.
- Access rights** The rights that control what a user can and cannot do with a particular network resource.
- Account** On a server, the definition for a user of the server's services. A user cannot access a server or a network without a valid account.
- Address Resolution Protocol (ARP)** A protocol that resolves a destination's Media Access Control (MAC) address from its Internet Protocol (IP) address.
- Administrator** The chief administrator of a network. The administrator generally has permission to perform any task on a network and access any resource, and can assign rights to network users. Sometimes called *supervisor* and *super user*.
- AFP** Apple Filing Protocol. A file access protocol for working with files through a network.
- Analog** An electrical signal that is multistate and usually has an infinite number of values. For example, a volume knob on a radio is usually an analog adjustment.
- ANSI** American National Standards Institute. A private, nonprofit organization that coordinates standards in the United States.
- AppleTalk** A set of networking protocols for Macintosh computers.
- Application layer** The seventh and highest layer in the OSI networking model. It handles communication between applications across a network. The application layer often performs user authentication on networks.
- Archive bit** A bit flag that indicates which files need to be archived (backed up). When a full backup is done, the archive bit is cleared. Any subsequent changes to the file cause the archive bit to be set on, indicating the need for an archive.
- ARCnet** A token-passing network protocol rarely used these days.
- ATM** Asynchronous Transfer Mode. A high-speed switched and multiplexed network specification.
- Attributes (file)** Characteristics given to files. For example, in DOS files, attributes include Read-Only, System, Hidden, and Archive.

Network systems generally add such attributes as Shareable and Delete Inhibit.

- AUI** Attachment Unit Interface. A box that connects a network cable to a transceiver.
- Backbone** A common cable shared by segments of a network. Usually, the backbone portion of a network operates at a higher speed than the individual segments, since it has to carry most of the traffic of all of the connected segments.
- Bandwidth** The amount of data that can be carried over a network, usually expressed in mega (million) bits per second, or Mbps. Sometimes bandwidth is also specified in Hertz, as in 10 megahertz (MHz).
- Baseband** A network cable that can carry only one signal at a time. See *Broadband*.
- Basic rate interface (BRI)** A package of ISDN services that includes two bearer channels at 56 or 64 Kbps each (64 Kbps is common in the U.S.), plus a single data channel that carries 16 Kbps. BRI is sometimes also called 2B + D.
- Baud rate** The speed at which an analog signal is carried. Baud rate is analogous to bits per second (bps). Thus 2,400 baud is roughly equivalent to 2,400 bps.
- B-channel** A channel in an ISDN connection that carries (normally) 64 Kbps of data.
- Bindery** A database that contains account and security information for Novell networks, versions 4 and earlier.
- Bit** Short for *binary digit*, a single digit having a value of either 0 or 1.
- BNC connector** A bayonet-style connector used in 10-Base2 (Thin) Ethernet networks.
- Bottleneck** In a complex system, the part of the system that limits the rate of work for the entire system.
- Bridge** A networking device that connects two networks to each other using Layers 1 and 2 of the OSI network model.
- Broadband** A network cable that can carry multiple signals at once. See *Baseband*.
- Broadcast** A network transmission sent to all nodes of a network or subnetwork.

## 4 Networking: A Beginner's Guide

<b>Browser</b>	An application that interprets and displays data formatted using Hypertext Markup Language (HTML) on the World Wide Web.
<b>Buffer</b>	Memory set aside to cache data between two devices, providing faster access to frequently used data. Operating systems often use buffers to hold frequently used data stored on disks.
<b>Bus</b>	(1) A network topology in which a cable runs from node to node, terminating on each end. (2) A connection backbone used in a computer. Most peripherals connect to this backbone.
<b>Byte</b>	A collection of 8 bits that can represent up to 256 distinct values.
<b>Cache</b>	Memory set aside expressly for holding data frequently accessed from a disk.
<b>Capture</b>	A mechanism that enables a network printer to act like a local printer for a specific computer. Output sent to the computer's printer port is "captured" and redirected to a network printer.
<b>Central office (CO)</b>	A local switching facility, run by the Regional Bell Operating Company (RBOC), that provides an access point to the RBOC's network.
<b>Challenge Handshake Authentication Protocol (CHAP)</b>	An Internet communication standard for validating encrypted passwords.
<b>Client</b>	A computer on a network that uses data provided by a server.
<b>Client/server</b>	A network design model in which data processing work is divided between a client's processor and a server's processor, letting each perform the jobs to which they are best suited.
<b>CNE</b>	A Certified NetWare Engineer.
<b>Coaxial cable</b>	Cable with a center conductor surrounded by a shield. Common coaxial cable types are RG-58 and RG-8.
<b>Common Gateway Interface (CGI)</b>	A programming standard that connects databases and web browsers.
<b>Concentrator</b>	A network device that connects multiple user devices to a network. Sometimes called a <i>hub</i> .
<b>Console</b>	A NetWare server's administrative interface.

- Crossover cable** A cable that allows the connection of two types of communications equipment that normally do not communicate directly with one another. For instance, data communications equipment is classified as data terminal equipment (DTE) or data communications equipment (DCE). Normally, DTE equipment can only communicate with DCE equipment. A crossover cable allows two DTE or two DCE devices to communicate.
- CSMA/CD** Carrier Sense Multiple Access with Collision Detection. A method used with Ethernet networks to manage packets on a segment.
- CSU/DSU** Channel Service Unit/Data Service Unit. A hardware device that interfaces between a network's signals and the signals carried over a public network connection, such as a T-1 line.
- Customer premises equipment (CPE)** Telephone company lingo for interconnection equipment located on a company's premises.
- Cyclical redundancy check (CRC)** A method to detect errors in transmitted or stored data.
- DAT** Digital audio tape. A digital tape often used in network backup devices.
- Data communications equipment (DCE)** One end of an RS-232C or other serial connection. DCE and DTE are analogous to "male" and "female" cable connectors, in that both types are needed for a connection. See *Data terminal equipment*.
- Data terminal equipment (DTE)** One end of an RS-232C or other serial connection. A DTE device communicates only with a DCE device, and vice versa. See *Data communications equipment*.
- Datagram** On an IP network, a collection of network data along with its associated address and header information. Also called a *packet*.
- Data-link layer** The second layer of the OSI network model, the data-link layer handles error-free connections between two devices over a common physical connection.
- DBMS** Database management system. Usually a relational database.
- D-channel** One of the channels used in all ISDN interfaces; it carries 16 Kbps of data and is used for call setup and other signal control duties. Called the *data channel*, the channel actually carries no user data.

## 6 Networking: A Beginner's Guide

- Deadlock** A situation in which two computers or two processes attempt to access a resource simultaneously, and both wait indefinitely for the other one to finish using the resource.
- Delayed write** A method used in writing new or changed data to a network server's disks to improve overall performance. Data to be written is temporarily held in memory until the system is not busy (or for a set maximum amount of time), at which time the data is committed to the disk.
- Dial-up networking (DUN)** A Microsoft term for a dial-up network connection over a modem.
- Differential backup** A backup that copies all files with their archive bit set and does not clear the archive bit when done.
- Digital** A signaling method in which all signals are binary (1's and 0's only).
- Digital signature** An authentication code embedded in a network message.
- Direct cable connection** A serial (RS-232C) connection between two computers. You can also accomplish a direct cable connection between two Ethernet-equipped computers using a crossover RJ45 cable.
- Directory** In the tree-shaped structure of a disk's file system, a logical container for files.
- Disk mirroring** A method, also known as RAID 1, that writes data redundantly to two separate disks.
- Domain** (1) On the Internet, a network identified by a name, such as yahoo.com. (2) On Microsoft Windows NT networks, the smallest administrative unit in a network.
- Domain Name System (DNS)** An Internet system that resolves domain names to IP addresses.
- Drive map** A method that uses a network directory to simulate a local drive letter (such as F: or G:) for a client computer.
- DS0** A basic telephone line.
- DS1** A digital telephone line used for both voice and data applications. A DS1 carries up to 1.544 Mbps of data, split across 28 separate channels, or carries up to 28 voice channels. Often called a *T-1 line*.
- DS3** A digital telephone line that carries up to 44.736 Mbps of data. Often called a *T-3 line*.

<b>Ethernet</b>	A network standard that uses CSMA/CD methods to carry network data over many different types of media at many different speeds.
<b>EtherTalk</b>	An Apple protocol for connecting Macintosh computers to an Ethernet network.
<b>Fast Ethernet</b>	An Ethernet network that runs at 100 Mbps.
<b>FAT</b>	File allocation table. A table used by several operating systems to allocate space for files on physical disks.
<b>Fiber Distributed Data Interface (FDDI)</b>	A fiber-optic LAN that operates at 100 Mbps.
<b>File Transfer Protocol (FTP)</b>	(1) An Internet protocol for copying files between two computers. (2) A program that uses the FTP protocol to do its job.
<b>Fileserver</b>	A network server that primarily is responsible for storing, sharing, and retrieving files for network clients.
<b>Firewall</b>	A network device that protects a network from outside intruders.
<b>Fractional T1</b>	A T-1 telecommunications connection in which only some of the channels are leased for use.
<b>Frame</b>	A data-link layer unit of transmission in the OSI network model. Frames can be of variable length.
<b>Frame relay</b>	A telecommunications server that carries asynchronous data between two points on a WAN. For efficiency, frame relay does not perform error detection and correction, leaving this task up to software on the two connected points.
<b>Full backup</b>	A process where all files on a network drive are copied to tape or other archival media. Each file's archive bit is cleared as part of a full backup.
<b>Full-duplex</b>	A connection in which both ends can transmit and receive simultaneously.
<b>Gateway</b>	A device that connects two networks together at all layers of the OSI network model. An example is an e-mail gateway that transmits e-mail from one network to another.
<b>Gb</b>	Short for <i>gigabit</i> , or one billion bits.
<b>GB</b>	Short for <i>gigabyte</i> , or one billion bytes.

- Generational backup** A tape-swapping methodology that gives good restoration granularity without consuming too many tapes. Also called the Grandfather/Father/Son method.
- GHz** Short for *gigahertz*, or one billion cycles per second.
- Half-duplex (simplex)** A connection in which only one end can transmit at a time.
- Handshaking** Negotiating a connection and data transmission between two devices.
- Header** Control information carried along with a file or a unit of network data, such as a packet.
- HTML** Hypertext Markup Language. A formatting language used to format web pages.
- HTTP** Hypertext Transfer Protocol. A network protocol used to retrieve web pages from a web server.
- Hub** A network device that connects multiple nodes to a network segment.
- IEEE** Institute of Electrical and Electronics Engineers. A body that defines standards for electrical devices.
- Incremental backup** A backup method that backs up files that have their archive attribute set and then clears the archive attribute.
- Internet** A worldwide public network of services for businesses and consumers.
- Intranet** A company-specific network modeled after the Internet.
- IPv6** Internet Protocol version 6, which increases the number of IP addresses available dramatically and includes other enhancements to the IP protocol.
- IPX** A network protocol used with NetWare networks.
- IRQ** Interrupt request line. A hardware switch in a computer that allows a device to signal the processor.
- ISA bus** Industry Standard Architecture bus. A computer bus originally developed for the IBM PC-AT.
- ISDN** Integrated Services Digital Network. A telecommunications standard for providing digital telephone services to consumers and businesses.
- ISO** International Standards Organization. A body that defines many computer standards, including networking standards.



- ISP** Internet service provider. A company that provides Internet services directly to businesses and/or consumers.
- Java** A programming language, derived from C, that allows automation of Internet web pages.
- Kb** Short for *kilobit*, or 1,024 bits.
- KB** Short for *kilobyte*, or 1,024 bytes. KB represents 1,024 bytes instead of 1,000 bytes because 1,024 is the closest binary-driven (powers of 2) number.
- Key** A digital password used to sign electronic documents to guarantee their authenticity.
- LAN** Local area network. A building-specific network.
- LAN Manager** An older Microsoft network operating system.
- Leased line** A dedicated, always-on, telephone connection.
- Linear Tape Open (LTO)** A tape backup standard created originally by an industry consortium made up of Hewlett-Packard, IBM, and Seagate. Different levels of LTO tape specifications exist, numbered LTO-1, LTO-2, LTO-3, and so forth.
- LocalTalk** An Apple networking system for connecting Macintoshes and Apple laser printers together on a low-speed (230 Kbps) network over twisted-pair wire.
- Login** The process of providing account and authentication information (such as a password) to a computer or network to gain access to its resources.
- Login script** A set of commands that runs automatically when a user logs in to a computer or network.
- MAC** Media Access Control. A sublayer (Layer 2) of the OSI networking model. IEEE 802.x networks divide up Layer 2 into a MAC layer and a logical link control (LLC) layer. The software at the MAC sublayer is unique to every different network media type. In other words, the MAC sublayer software for Thin Ethernet is different than the software used for twisted-pair Token Ring.
- Mb** Short for *megabit*, or approximately one million bits. Usually used for speed ratings, such as 100 Mbps, or 100 million bits per second.
- MB** Short for *megabyte*, or 1,048,576 bytes.

- MCA bus** Microchannel Architecture bus. A computer bus standard introduced by IBM that was not widely accepted.
- MCSA** Microsoft Certified Systems Administrator. This is a subset of the requirements for the MCSE certification and is oriented toward network administrators.
- MCSE** Microsoft Certified Systems Engineer. A person who has completed a set of tests given by Microsoft to certify him or her as a networking engineer.
- MHz** Short for *megahertz*, or one million Hertz (signals per second). Roughly equivalent to Mbps (million bits per second).
- MIME** Multipurpose Internet Mail Extension. A standard for the attachment of binary data (attachments) to Internet e-mail messages. Also available as S/MIME, which is a secure form of MIME.
- Modem** Modulator/demodulator. A device that allows digital signals to travel over an analog telephone line. Each end of the connection requires a modem.
- MSAU** Multistation access unit. A hub used to connect Token Ring nodes together.
- Multiplexing** A technique that allows multiple signals to be aggregated onto a single channel.
- Multiprocessor** A computer, operating system, or application that uses more than one processor to accomplish its work.
- Multitasking** Running multiple programs simultaneously on a single computer.
- NetBEUI** NetBIOS Extended User Interface. An enhancement to the NetBIOS protocol.
- NetBIOS** Network Basic Input/Output System. An older and slower networking protocol originally developed by IBM.
- NetWare** A network operating system developed by Novell Corporation.
- NetWare Core Protocol (NCP)** An underlying protocol that manages server and workstation communications on a NetWare network.
- NetWare Directory Service (NDS)** A directory service for NetWare networks. NDS is also available from Novell as a tool to manage other types of servers, such as Solaris, Windows, and UNIX.

- Network layer** Layer 3 of the OSI networking model. The network layer defines different packet protocols, such as IPX or IP.
- Nibble** Four bits.
- NIC** Network interface card. A peripheral card attached to a computer that lets it interface to a network.
- NLM** NetWare Loadable Module. A special program that runs only on NetWare servers.
- Node** A computer or device that is a distinct network entity, such as a computer or printer.
- NOS** Network operating system. An operating system that runs on network servers.
- OSI** Open System Interconnection. A reference model that conceptually describes how networks work.
- Packet** A collection of data sent as a single entity from one node on a network to another node.
- Packet filtering** Examining packets coming into and going out of a network in order to prevent unauthorized traffic and to identify bottlenecks, failing hardware, and other network problems.
- Partition** A logical division of a hard disk.
- Patch cable** A cable that connects between a patch panel and a network hub, or from a wall jack to a computer.
- PCI** Peripheral Component Interconnect. A very fast bus introduced by Intel Corporation to allow high-speed communications between peripherals and the computer in which they are installed.
- PCI Express** A newer version of PCI that runs at much higher data rates. PCI Express used to be called PCI-X.
- Peer-to-peer network** A network that spreads shareable resources among all of the client computers on the network. A peer-to-peer network has no central network servers.
- Physical layer** Layer 1 of the OSI networking model. The physical layer defines the specifications for the physical wiring of a network.
- Point-to-Point Protocol (PPP)** An IP-specific protocol that enables remote nodes to connect to a network over telephone connections.
- Post Office Protocol (POP)** A communications protocol for the exchange of e-mail over the Internet.

- Presentation layer** Layer 6 of the OSI networking model. The presentation layer “presents” network data to the system and may include compression/decompression or encryption/decryption functions.
- Primary Rate Interface (PRI)** An aggregation of ISDN B-channels plus one D-channel that provides 1.544 Mbps of network bandwidth through the telephone network.
- Print job** A unit of printing from a client computer to a network printer.
- Print queue** A place on a network server that accepts and accumulates user print jobs and then sends them to the network printer in sequence.
- Print server** A computer or dedicated device on a network that accepts jobs from print queues and sends them to the individual printers.
- Protocol** A syntax for communication over a network.
- RAID** Redundant array of inexpensive disks. A variety of methods that allow high-speed, fail-safe arrays of disks to be used in concert.
- Registry** A database used on Microsoft Windows operating systems that stores computer and user settings.
- Remote access (node and control)** The process of accessing a network from a remote computer, usually over a telephone line or sometimes through the Internet. Remote node access makes the remote computer a node on the network. Remote control access lets the remote computer “take control” of a computer that is already a local node on a network.
- Remote Access Service (RAS)** A Windows NT service that provides remote node access to remote computers. The newer variant is called Routing and Remote Access Service (RRAS).
- Repeater** A device that extends the distance that a network segment can be run.
- Requestor** Special networking software that runs on a client computer that interfaces between the computer’s operating system and the network operating system. Requestors are specific to each different type of NOS.
- Ring topology** An electrical arrangement of nodes on a network in a ring configuration.

<b>RJ-45</b>	A snap-in connector used with some kinds of network media, similar to modular telephone connectors (called RJ-11) used in homes, but larger.
<b>Router</b>	A device that routes network traffic from one network to another.
<b>Routing Information Protocol (RIP)</b>	A protocol that allows routers to communicate with each other to discover the best route between networks.
<b>SCSI</b>	Small Computer Systems Interface. A high-speed interface used primarily to interface hard disks to network servers.
<b>Segment</b>	An individual part of a network that connects two or more computers together.
<b>Server</b>	A computer on a network that provides some kind of network service to client computers.
<b>Session layer</b>	Layer 5 of the OSI networking model. The session layer controls a persistent connection between two network devices or programs.
<b>Share</b>	A Windows NT or UNIX shared directory, available for use over a network provided the user has permission.
<b>SNMP</b>	Simple Network Management Protocol. A protocol that enables special management software to manage network devices.
<b>SMTP</b>	Simple Mail Transfer Protocol. An Internet standard for the exchange of e-mail between systems on the Internet.
<b>SPX</b>	Sequenced Packet Exchange. A NetWare protocol used in concert with IPX.
<b>SSL VPN</b>	A virtual private networking technology that works through a web browser's Secure Sockets Layer capabilities.
<b>Star topology</b>	A network arrangement in which individual cables connect a central hub to the nodes that it services.
<b>Switch</b>	An Ethernet device that switches traffic between two or more network segments.
<b>TB</b>	Short for <i>terabyte</i> , or one trillion bytes.
<b>Token</b>	An electrical signal circulated around Token Ring networks. Only the computer that "has the token" can transmit on the Token Ring network.

<b>Token Ring</b>	A network designed by IBM that uses a ring topology and circulates a token to manage traffic on the network.
<b>Transceiver</b>	A device that connects a computer to a network cable. Often transceivers are built into NIC cards.
<b>Transmission Control Protocol/Internet Protocol (TCP/IP)</b>	A standard network protocol used on the Internet and on many private networks.
<b>Transport layer</b>	Layer 4 of the OSI networking model. The transport layer coordinates the packet exchange between network nodes. Examples of transport layer protocols are TCP and SPX.
<b>Twisted pair</b>	Cable that uses small-gauge wires twisted together within a common sheath to carry network or telephone signals. Twisted-pair cable comes in unshielded (UTP) and shielded (STP) varieties.
<b>UPS</b>	Uninterruptible power supply. A battery-driven power supply that allows a server to continue operating when a building's power supply is cut off.
<b>URL</b>	Uniform resource locator. An address that allows a resource on the Internet to be located and accessed.
<b>Virtual private network (VPN)</b>	A secure, virtual network connection formed over a public network, such as the Internet.
<b>Wiring closet</b>	A closet or room that brings together all of the cables needed for a building's network. Some buildings have separate wiring closets on each floor of the building, or for each 100 meters of horizontal distance.
<b>Workstation</b>	A generic computer client on a network. Sometimes also a high-powered computer used for engineering purposes.