

List of Glossary Terms

Use the list below to find definitions for technical terms used in this manual.

10BASE-T

IEEE 802.3 specification for 10 Mbps Ethernet over twisted pair wiring.

100BASE-Tx

IEEE 802.3 specification for 100 Mbps Ethernet over twisted pair wiring.

802.1x

802.1x defines port-based, network access control used to provide authenticated network access and automated data encryption key management. The IEEE 802.1x draft standard offers an effective framework for authenticating and controlling user traffic to a protected network, as well as dynamically varying encryption keys. 802.1x uses a protocol called EAP (Extensible Authentication Protocol) and supports multiple authentication methods, such as token cards, Kerberos, one-time passwords, certificates, and public key authentication. For details on EAP specifically, refer to IETF's RFC 2284.

802.11a

IEEE specification for wireless networking at 54 Mbps operating in unlicensed radio bands over 5GHz.

802.11b

IEEE specification for wireless networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.5GHz.

802.11g

A soon to be ratified IEEE specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.5GHz. 802.11g is backwards compatible with 802.11b.

Ad-hoc Mode

An 802.11 networking framework in which devices or stations communicate directly with each other, without the use of an access point (AP). Ad-hoc mode is also referred to as peer-to-peer mode or an Independent Basic Service Set (IBSS). Ad-hoc mode is useful for establishing a network where wireless infrastructure does not exist or where services are not required.

ADSL

Short for asymmetric digital subscriber line, a technology that allows data to be sent over existing copper telephone lines at data rates of from 1.5 to 9 Mbps when receiving data (known as the downstream rate) and from 16 to 640 Kbps when sending data (known as the upstream rate).

ADSL requires a special ADSL modem. ADSL is growing in popularity as more areas around the world gain access.

CA

A Certificate Authority is a trusted third-party organization or company that issues digital certificates used to create digital signatures and public-private key pairs.

Certificate Authority

A Certificate Authority is a trusted third-party organization or company that issues digital certificates used to create digital signatures and public-private key pairs. The role of the CA in this process is to guarantee that the individual granted the unique certificate is, in fact, who he or she claims to be. Usually, this means that the CA has an arrangement with a financial institution, such as a credit card company, which provides it with information to confirm an individual's claimed identity. CAs are a critical component in data security and electronic commerce because they guarantee that the two parties exchanging information are really who they claim to be.

DHCP

An Ethernet protocol specifying how a centralized DHCP server can assign network configuration information to multiple DHCP clients. The assigned information includes IP addresses, DNS addresses, and gateway (router) addresses.

DNS

Short for Domain Name System (or Service), an Internet service that translates domain names into IP addresses. Because domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses. Every time you use a domain name, therefore, a DNS service must translate the name into the corresponding IP address. For example, the domain name `www.example.com` might translate to `198.105.232.4`. The DNS system is, in fact, its own network. If one DNS server doesn't know how to translate a particular domain name, it asks another one, and so on, until the correct IP address is returned.

Domain Name

A descriptive name for an address or group of addresses on the Internet. Domain names are of the form of a registered entity name plus one of a number of predefined top level suffixes such as `.com`, `.edu`, `.uk`, etc. For example, in the address `mail.NETGEAR.com`, `mail` is a server name and `NETGEAR.com` is the domain.

DSL

Short for digital subscriber line, but is commonly used in reference to the asymmetric version of this technology (ADSL) that allows data to be sent over existing copper telephone lines at data rates of from 1.5 to 9 Mbps when receiving data (known as the downstream rate) and from 16 to 640 Kbps when sending data (known as the upstream rate).

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Dynamic Host Configuration Protocol

DHCP. An Ethernet protocol specifying how a centralized DHCP server can assign network configuration information to multiple DHCP clients. The assigned information includes IP addresses, DNS addresses, and gateway (router) addresses.

EAP

Extensible Authentication Protocol is a general protocol for authentication that supports multiple authentication methods. EAP, an extension to PPP, supports such authentication methods as token cards, Kerberos, one-time passwords, certificates, public key authentication and smart cards. In wireless communications using EAP, a user requests connection to a WLAN through an AP, which then requests the identity of the user and transmits that identity to an authentication server such as RADIUS. The server asks the AP for proof of identity, which the AP gets from the user and then sends back to the server to complete the authentication. EAP is defined by RFC 2284.

EAP-TLS

EAP-TLS provides strong security through mutual authentication and automatic key exchange between the two endpoints. Periodic updates are performed using public-key cryptography through a certificate server and a Remote Authentication Dial-In User Service (RADIUS) server. *See TLS.*

ESSID

The Extended Service Set Identification (ESSID) is a thirty-two character (maximum) alphanumeric key identifying the wireless local area network.

Gateway

A local device, usually a router, that connects hosts on a local network to other networks.

IETF

Internet Engineering Task Force. Working groups of the IETF propose standard protocols and procedures for the Internet, which are published as RFCs (Request for Comment) at www.ietf.org. An open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.

IP

Internet Protocol is the main internetworking protocol used in the Internet. Used in conjunction with the Transfer Control Protocol (TCP) to form TCP/IP.

IP Address

A four-byte number uniquely defining each host on the Internet, usually written in dotted-decimal notation with periods separating the bytes (for example, 134.177.244.57). Ranges of addresses are assigned by Internic, an organization formed for this purpose.

IPX

Short for Internetwork Packet Exchange, a networking protocol used by the Novell NetWare operating systems. Like UDP/IP, IPX is a datagram protocol used for connectionless communications. Higher-level protocols, such as SPX and NCP, are used for additional error recovery services.

ISP

Internet service provider.

Infrastructure Mode

An 802.11 networking framework in which devices communicate with each other by first going through an Access Point (AP). In infrastructure mode, wireless devices can communicate with each other or can communicate with a wired network. When one AP is connected to wired network and a set of wireless stations it is referred to as a Basic Service Set (BSS). An Extended Service Set (ESS) is a set of two or more BSSs that form a single subnetwork. Most corporate wireless LANs operate in infrastructure mode because they require access to the wired LAN in order to use services such as file servers or printers.

Internet Protocol

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IP

See "TCP/IP"

IP Address

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LAN

A communications network serving users within a limited area, such as one floor of a building.

local area network

LAN. A communications network serving users within a limited area, such as one floor of a building. A LAN typically connects multiple personal computers and shared network devices such as storage and printers. Although many technologies exist to implement a LAN, Ethernet is the most common for connecting personal computers.

MAC address

The Media Access Control address is a unique 48-bit hardware address assigned to every network interface card. Usually written in the form 01:23:45:67:89:ab.

Mbps

Megabits per second.

NetBIOS

The Network Basic Input Output System is an application programming interface (API) for sharing services and information on local-area networks (LANs). Provides for communication between stations of a network where each station is given a name. These names are alphanumeric names, up to 16 characters in length.

Network Address Translation

NAT. A technique by which several hosts share a single IP address for access to the Internet.

NIC

Network Interface Card. An adapter in a computer which provides connectivity to a network.

packet

A block of information sent over a network. A packet typically contains a source and destination network address, some protocol and length information, a block of data, and a checksum.

PEAP

Protected EAP (PEAP) are Internet Drafts that have been proposed to simplify 802.1X deployment. PEAP requires certificate-based RADIUS server authentication, but supports an extensible set of user authentication methods. Organizations that have not yet issued certificates to every station and don't want to just for 802.1X can use Windows logins and passwords instead. RADIUS servers that support EAP-TTLS and PEAP can check LAN access requests with Windows Domain Controllers, Active Directories, and other existing user databases. From a sniffing perspective, these options are just as strong as EAP-TLS. However, user passwords are still more likely to be guessed, shared, or disclosed through social engineering than client-side certificates.

RADIUS

Short for Remote Authentication Dial-In User Service, RADIUS is an authentication system. Using RADIUS, you must enter your user name and password before gaining access to a network. This information is passed to a RADIUS server, which checks that the information is correct, and then authorizes access. Though not an official standard, the RADIUS specification is maintained by a working group of the IETF.

router

A device that forwards data between networks. An IP router forwards data based on IP source and destination addresses.

Routing Information Protocol

RIP. A protocol in which routers periodically exchange information with one another so that they can determine minimum distance paths between sources and destinations.

router

A device that forwards data between networks. An IP router forwards data based on IP source and destination addresses.

SSID

A Service Set Identification is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name. *See also* Wireless Network Name and ESSID.

Subnet Mask

A mask used to determine what subnet an IP address belongs to. Subnetting enables a network administrator to further divide an IP address into two or more subnets.

TCP/IP

The main internetworking protocols used in the Internet. The Internet Protocol (IP) used in conjunction with the Transfer Control Protocol (TCP) form TCP/IP.

TLS

Short for Transport Layer Security, a protocol that guarantees privacy and data integrity between client/server applications communicating over the Internet. The TLS protocol is made up of two layers:

- The TLS Record Protocol -- layered on top of a reliable transport protocol, such as TCP, it ensures that the connection is private by using symmetric data encryption and it ensures that the connection is reliable. The TLS Record Protocol also is used for encapsulation of higher-level protocols, such as the TLS Handshake Protocol.
- The TLS Handshake Protocol -- allows authentication between the server and client and the negotiation of an encryption algorithm and cryptographic keys before the application protocol transmits or receives any data.

TLS is application protocol-independent. Higher-level protocols can layer on top of the TLS protocol transparently. Based on Netscape's SSL 3.0, TLS supercedes and is an extension of SSL. TLS and SSL are not interoperable.

WAN

A long distance link used to extend or connect remotely located local area networks. The Internet is a large WAN.

WEB Proxy Server

A Web proxy server is a specialized HTTP server that allows clients access to the Internet from behind a firewall.

The proxy server listens for requests from clients within the firewall and forwards these requests to remote Internet servers outside the firewall. The proxy server reads responses from the external servers and then sends them to internal client clients.

WEP

Wired Equivalent Privacy is a data encryption protocol for 802.11 wireless networks. All wireless nodes and access points on the network are configured with a 64-bit or 128-bit Shared Key for data encryption.

wide area network

WAN. A long distance link used to extend or connect remotely located local area networks. The Internet is a large WAN.

Wi-Fi

A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see <http://www.wi-fi.net>), an industry standards group promoting interoperability among 802.11b devices.

Windows Internet Naming Service

WINS. Windows Internet Naming Service is a server process for resolving Windows-based computer names to IP addresses. If a remote network contains a WINS server, your Windows PCs can gather information from that WINS server about its local hosts. This allows your PCs to browse that remote network using the Windows Network Neighborhood feature.

WINS

WINS. Windows Internet Naming Service is a server process for resolving Windows-based computer names to IP addresses.

Wireless Network Name (SSID)

Wireless Network Name (SSID) is the name assigned to a wireless network. This is the same as the SSID or ESSID configuration parameter.

WPA

Wi-Fi Protected Access (WPA) is a specification of standards-based, interoperable security enhancements that increase the level of data protection and access control for existing and future wireless LAN systems.

WPA-PSK

For environments without a RADIUS infrastructure, the WPA PSK option supports the use of a pre-shared key.

