



GLOSSARY

- 802.1X** Also called *802.1X for 802.11*. 802.1X is the new standard for wireless LAN security, as defined by the Institute of Electrical and Electronics Engineers (IEEE). An access point that supports 802.1X and its protocol, Extensible Authentication Protocol (EAP), acts as the interface between a wireless client and an authentication server, such as a Remote Authentication Dial-In User Service (RADIUS) server, to which the access point communicates over the wired network.
- 802.11** The IEEE standard that specifies carrier sense media access control and physical layer specifications for 1- and 2-megabit-per-second (Mbps) 2.4-GHz wireless LANs.
- 802.11b** The IEEE standard that specifies carrier sense media access control and physical layer specifications for 5.5- and 11-Mbps wireless LANs.

A

- Access Point** A wireless LAN data transceiver that uses radio waves to connect a wired network with wireless stations.
- ActiveSync** A Microsoft program that enables a desktop-to-Windows CE device connection in order to transfer files.
- Ad Hoc Network** A wireless network composed of stations without access points.
- Alphanumeric** A set of characters that contains both letters and numbers.
- Associated** A station is configured properly to allow it to wirelessly communicate with an access point.

B

- Bandwidth** Specifies the amount of the frequency spectrum that is usable for data transfer. It identifies the maximum data rate that a signal can attain on the medium without encountering significant power loss.
- BPSK** Binary phase shift keying. A modulation technique used by IEEE 802.11-compliant wireless LANs for transmission at 1 Mbps.
- Broadcast key rotation** A security feature for use with dynamic WEP keys. If your client adapter uses LEAP, EAP-FAST, EAP-TLS, or PEAP authentication and you enable this feature, the access point changes the dynamic broadcast WEP key that it provides at the interval you select.

C

CCK	Complementary code keying. A modulation technique used by IEEE 802.11 b-compliant wireless LANs for transmission at 5.5 and 11 Mbps.
CeAppMgr	Windows CE Application Manager. The desktop Windows CE Services component that provides a desktop-to-device application management tool. It is responsible for adding and removing applications on the Windows CE device and for deleting the application files from the desktop computer. CeAppMgr is included with every installation of Windows CE Services.
Cisco TKIP	Also referred to as Cisco Key Integrity Protocol (CKIP). Cisco's WEP key permutation technique based on an early algorithm presented by the IEEE 802.11i security task group.
Client	A radio device that uses the services of an access point to communicate wirelessly with other devices on a local area network.
CSMA	Carrier sense multiple access. A wireless LAN media access method specified by the IEEE 802.11 specification.
Cyclic Redundancy Check (CRC)	A method of checking for errors in a received packet.

D

Data Rates	The range of data transmission rates supported by a device. Data rates are measured in megabits per second (Mbps).
dBi	A ratio of decibels to an isotropic antenna that is commonly used to measure antenna gain. The greater the dBi value, the higher the gain and the more acute the angle of coverage.
DHCP	Dynamic Host Configuration Protocol. A protocol available with many operating systems that automatically issues IP addresses within a specified range to devices on the network. The device retains the assigned address for a specific administrator-defined period.
Dipole	A type of low-gain (2.2-dBi) antenna consisting of two (often internal) elements.
Domain Name Server	A network server that translates text names to IP addresses.
Domain Name System (DNS)	Provides names for computers using alphanumeric characters instead of numbers like IP addresses use. Maintains a database of the host alphanumeric names and their corresponding IP addresses.
DSSS	Direct-sequence spread spectrum. A type of spread spectrum radio transmission that spreads its signal continuously over a wide frequency band.
Duplicate Packets	Packets that were received twice because an acknowledgement got lost and the sender retransmitted the packet.

E

- EAP** Extensible Authentication Protocol. EAP is the protocol for the optional IEEE 802.1X wireless LAN security feature. An access point that supports 802.1X and EAP acts as the interface between a wireless client and an authentication server, such as a Remote Authentication Dial-In User Service (RADIUS) server, to which the access point communicates over the wired network.
- EAP-FAST** Extensible Authentication Protocol - Flexible Authentication via Secure Tunneling. An 802.1X authentication type that is available for use with PPC 2002, PPC 2003, and Windows CE .NET 4.2 devices. Support for EAP-FAST is provided in the client adapter's firmware and the Cisco software that supports it, rather than in the operating system. With EAP-FAST, a username, password, and PAC are used by the client adapter to perform mutual authentication with the RADIUS server through an access point.
- Ethernet** The most widely used wired local area network. Ethernet uses carrier sense multiple access (CSMA) to allow computers to share a network and operates at 10, 100, or 1000 megabits per second (Mbps), depending on the physical layer used.

F

- File Server** A repository for files so that a local area network can share files, mail, and programs.
- Firmware** Software that is programmed on a memory chip and kept in a computer's semi-permanent memory.
- Fragmentation Threshold** The size at which packets are fragmented and transmitted a piece at a time instead of all at once. The setting must be within the range of 64 to 2312 bytes.

G

- Gateway** A device that connects two otherwise incompatible networks together.
- GHz** Gigahertz. One billion cycles per second. A unit of measure for frequency.

H

- Hexadecimal** A set of characters consisting of ten numbers and six letters (0-9, A-F, and a-f).
- HPC** Handheld Personal Computer. One of the three defined types of Windows CE devices.

I

- IEEE** Institute of Electrical and Electronic Engineers. A professional society serving electrical engineers through its publications, conferences, and standards development activities. The body responsible for the Ethernet 802.3 and wireless LAN 802.11 specifications.
- Infrastructure** The wired Ethernet network.

Infrastructure Device	A device (such as an access point, bridge, or base station) that connects client adapters to a wired LAN.
IP Address	The Internet Protocol (IP) address of a station.
IP Subnet Mask	The number used to identify the IP subnetwork, indicating whether the IP address can be recognized on the LAN or if it must be reached through a gateway.
Isotropic	An antenna that radiates its signal 360 degrees both vertically and horizontally in a perfect sphere.

L

LEAP	LEAP, or <i>EAP-Cisco Wireless</i> , is an 802.1X authentication type that is available on Windows CE devices. Support for LEAP is provided in the client adapter's firmware and the Cisco software that supports it, rather than in the operating system. With LEAP, a username and password are used by the client adapter to perform mutual authentication with the RADIUS server through an access point.
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M

MAC Address	The Media Access Control (MAC) address is a unique serial number assigned to a networking device by the manufacturer.
MIC	Message integrity check. MIC prevents bit-flip attacks on encrypted packets. During a bit-flip attack, an intruder intercepts an encrypted message, alters it slightly, and retransmits it, and the receiver accepts the retransmitted message as legitimate. The client adapter's driver must support MIC functionality, and MIC must be enabled on the access point.
Modulation	Any of several techniques for combining user information with a transmitter's carrier signal.
Multicast Packets	Packets transmitted to multiple stations.
Multipath	The echoes created as a radio signal bounces off of physical objects.

O

Overrun Packets	Packets that were discarded because the access point had a temporary overload of packets to handle.
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P

PAC	Protected access credentials. Credentials that are either automatically or manually provisioned and used to perform mutual authentication with the RADIUS server during EAP-FAST authentication. PACs are created by the Cisco Secure ACS server and are identified by an ID. The user obtains a copy of the PAC from the server, and the ID links the PAC to the profile created in ACU. When manual PAC provisioning is enabled, the PAC file is manually copied from the server and imported onto the client device.
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Packet A basic message unit for communication across a network. A packet usually includes routing information, data, and sometimes error detection information.

PPC Pocket-sized Personal Computer. One of the three defined types of Windows CE devices.

Q

QPSK Quadruple phase shift keying. A modulation technique used by IEEE 802.11-compliant wireless LANs for transmission at 2 Mbps.

R

Radio Channel The frequency at which a radio operates.

Range A linear measure of the distance that a transmitter can send a signal.

Receiver Sensitivity A measurement of the weakest signal a receiver can receive and still correctly translate it into data.

RF Radio frequency. A generic term for radio-based technology.

Roaming A feature of some access points that allows users to move through a facility while maintaining an unbroken connection to the LAN.

RTS Threshold The packet size at which an access point will issue a request to send (RTS) before sending the packet.

S

Spread Spectrum A radio transmission technology that spreads the user information over a much wider bandwidth than otherwise required in order to gain benefits such as improved interference tolerance and unlicensed operation.

SSID Service set identifier. A unique identifier that stations must use to be able to communicate with an access point. The SSID can be any alphanumeric entry up to a maximum of 32 characters.

T

TKIP Temporal Key Integrity Protocol. Also referred to as *WEP key hashing*. A security feature that defends against an attack on WEP in which the intruder uses the initialization vector (IV) in encrypted packets to calculate the WEP key. TKIP removes the predictability that an intruder relies on to determine the WEP key by exploiting IVs.

Transmit Power The power level of radio transmission.

U

Unicast Packets Packets transmitted in point-to-point communication.

W

WEP Wired equivalent privacy. An optional security mechanism defined within the 802.11 standard designed to protect your data as it is transmitted through your wireless network by encrypting it through the use of encryption keys.

Workstation A computing device with an installed client adapter.

WPA Wi-Fi Protected Access. A standards-based, interoperable security certification that greatly increases the level of data protection and access control for existing and future wireless LAN systems. It is derived from and compatible with the IEEE 802.11i standard. WPA leverages Temporal Key Integrity Protocol (TKIP) for data protection and 802.1X for authenticated key management.