Module 5.1: Wireless Communications

Endpoint Security | Cisco Networking Academy

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Agenda

- Wireless vs Wired LANs
- 802.11 Frame Structure
- CSMA/CA
- Client & Access Point Association
- Passive & Active Discovery
- Wireless Devices (AP, LWAP, WLC)
- Summary

Wireless vs Wired LANs

- Wireless LANs use radio waves instead of cables.
- They provide mobility but are more vulnerable to interference and attacks.
- Wired LANs are faster, more stable, and harder to intercept.

802.11 Frame Structure

- Defines how data is packaged and transmitted wirelessly.
- Includes headers, payload, and trailer.
- Contains control and addressing information.

CSMA/CA

- Carrier Sense Multiple Access with Collision Avoidance.
- Used in wireless networks to reduce collisions.
- Devices check the channel before transmitting.

Wireless Client & AP Association

- Clients scan for access points.
- Authentication and association occur.
- Secure connection is established.

Passive vs Active Discovery

- Passive: AP sends beacon frames.
- Active: Client sends probe requests.
- Both help devices find networks.

Wireless Devices

- AP: Access Point
- LWAP: Lightweight Access Point
- WLC: Wireless LAN Controller
- Used to manage and control wireless networks.

Summary

- Wireless networks enable mobility.
- Security depends on proper configuration.
- Understanding WLAN operation improves defense.