

9 Address Resolution

9.1 MAC and IP

Adressen im Frame

- Physical address (the MAC address): NIC to NIC communication on the same Ethernet network
- Logical address (the IP address): source device to the destination device

MAC-Adressen herausfinden

- IPv4: ARP (Address Resolution Protocol)
- IPv6: ND (ICMPv6 Neighbor Discovery)

9.1.3: Packet Tracer Activity

9.2 ARP

- Resolving IPv4 addresses to MAC addresses
- Maintaining a table of IPv4 to MAC address mappings
- Einträge werden 15-45s gespeichert
- kohnlehome.de/netz/Sniffer_arp.pdf

Befehle

- Cisco-Router: `show ip arp`
- Windows: `arp -a`

ARP Poisoning, ARP-Spoofing

Gegenmaßnahme: Dynamic ARP Inspection (DAI) auf dem Switch

9.3 IPv6 Neighbor Discovery

Messages

- Device to device
 - Neighbor Solicitation messages (Wie ARP-Request)
 - Neighbor Advertisement messages (Wie ARP-Reply)
- Device - Router (bei SLAAC Stateless Address Autoconfiguration)
 - Router Solicitation messages
 - Router Advertisement messages
 - Redirect Message

Befehle

- Cisco-Router: `show ipv6 neighbors`
- Windows: `netsh interface ipv6 show neighbor`