



Vidyavardhini's College of Engineering & Technology

Department of Artificial Intelligence and Data Science

EXPERIMENT 09

Aim: Detect ARP spoofing using nmap and/or open source tool ARPWATCH and wireshark

Objectives:

- To understand ARP spoofing.
- To understand ARPWATCH and use it to detect ARP spoofing.

Theory:

1. Nmap (Network Mapper):

While Nmap isn't specifically designed for ARP spoofing detection, it can be used indirectly. Nmap can perform a quick network scan to identify active devices and their MAC addresses. You can then compare this information with the ARP table on your machine (using `arp -a` on Linux/macOS) to identify any discrepancies.

For example, if Nmap identifies a device with a specific IP address but the ARP table shows a different MAC address associated with that IP, it might indicate ARP spoofing. However, this method can be unreliable as legitimate network configurations can also cause MAC address changes.

2. Arpwatch:

Arpwatch is a dedicated tool for monitoring ARP activity on your network. It keeps track of learned MAC addresses for IPs and monitors for any changes. Here's how it helps detect ARP spoofing:

Database: Arpwatch maintains a database of learned IP/MAC mappings.

Monitoring: It continuously monitors ARP packets on the network.

Alerting: If Arpwatch detects an unsolicited ARP reply (attacker trying to modify the ARP table) or a change in the MAC address associated with a known IP, it raises an alert in the system logs.

3. Wireshark:

Wireshark is a powerful network packet analyzer. While not solely for ARP spoofing detection, it can be used for in-depth analysis of network traffic. Here's how it helps:

Packet Capture: Wireshark can capture live network traffic.

Filtering: You can filter captured packets to focus specifically on ARP traffic.

Analysis: By examining ARP packets, you can identify inconsistencies. For instance, if you see multiple ARP replies for the same IP address with different MAC addresses, it might indicate ARP spoofing.



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Implementation :

Conclusion: