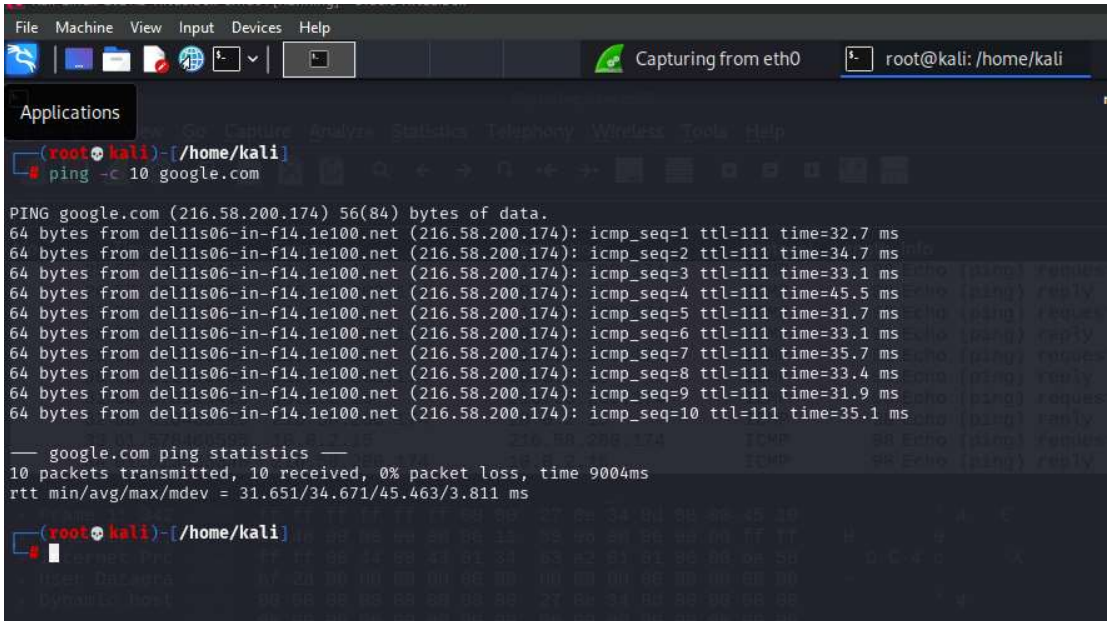
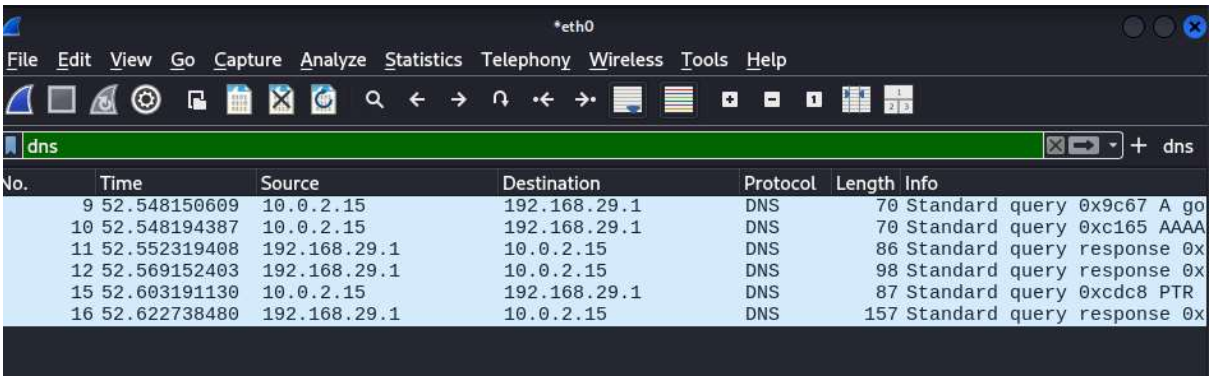
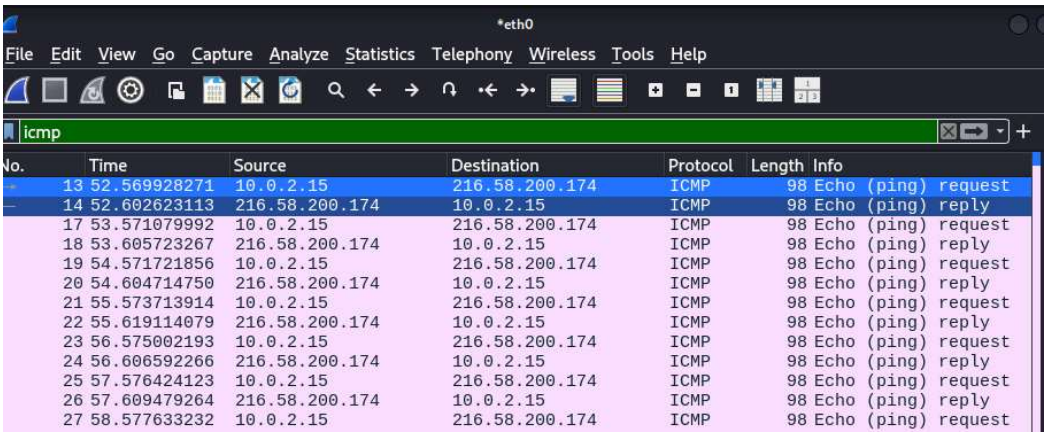
- **Capture and Analyze Network Traffic Using Wireshark**



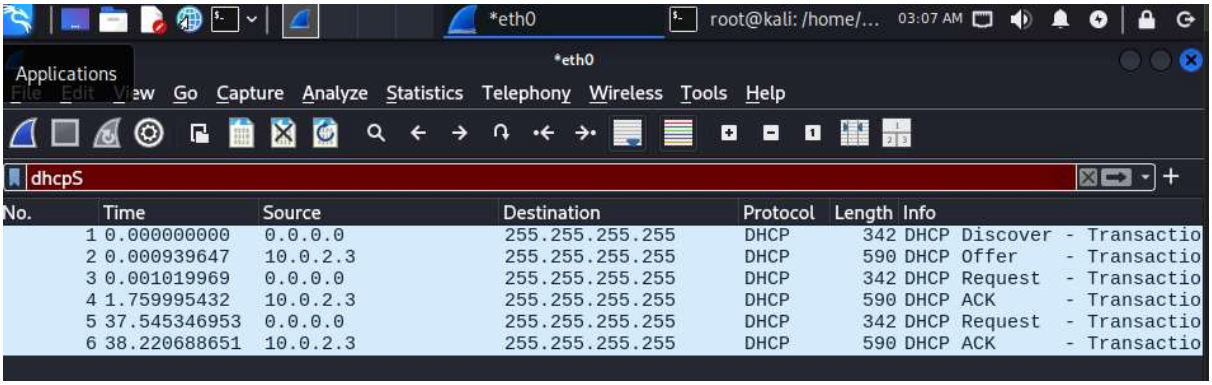
Filter :DNS



FIlter : ICMP



Filter : DHCP



Protocols Identified

1. **DHCP (Dynamic Host Configuration Protocol)**
   - **Packets:** 1–6
   - **Purpose:** Assigns IP addresses to the VM.
   - **Key Details:**
     - DHCP Discover, Offer, Request, ACK sequence captured.
     - Client IP was assigned via DHCP from 10.0.2.3.

2. **DNS (Domain Name System)**
   - **Packets:** 9–12, 15–16
   - **Purpose:** Resolves domain names like google.com to IP addresses.
   - **Key Details:**
     - Standard A and AAAA queries to 192.168.29.1.
     - Reverse lookup (PTR query) for IP 216.58.200.174.

3. **ICMP (Internet Control Message Protocol)**
   - **Packets:** 13–14, 17–34
   - **Purpose:** Used by the ping command to test connectivity.
   - **Key Details:**
     10 Echo Request–Reply pairs to IP 216.58.200.174 (Google server).
     - Consistent round-trip times, no packet loss.

4. **ARP (Address Resolution Protocol)**
   - **Packets:** 7–8
     Purpose: Resolves IP address 10.0.2.1 to its MAC address.
   - **Key Details:**
     - Request made by PCSSystemtec_0e:34:8d.
     - Response: MAC 52:54:00:12:35:00.