



INTRO TO CYBER | PROJECTS: NET CRAFTS

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# 1. Map the Network

## 1.1. Display Device IP Address

```
C:\Users\vanho>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet0:

    Connection-specific DNS Suffix  . : localdomain
    Link-local IPv6 Address . . . . . : fe80::f4dc:1d62:c410:79ab%13
    IPv4 Address. . . . . : 192.168.220.139
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.220.2

C:\Users\vanho>
```

## 1.2. Display Devices MAC Address and Vendor (display partially).

- MAC Address

```
C:\Users\vanho>ipconfig/all

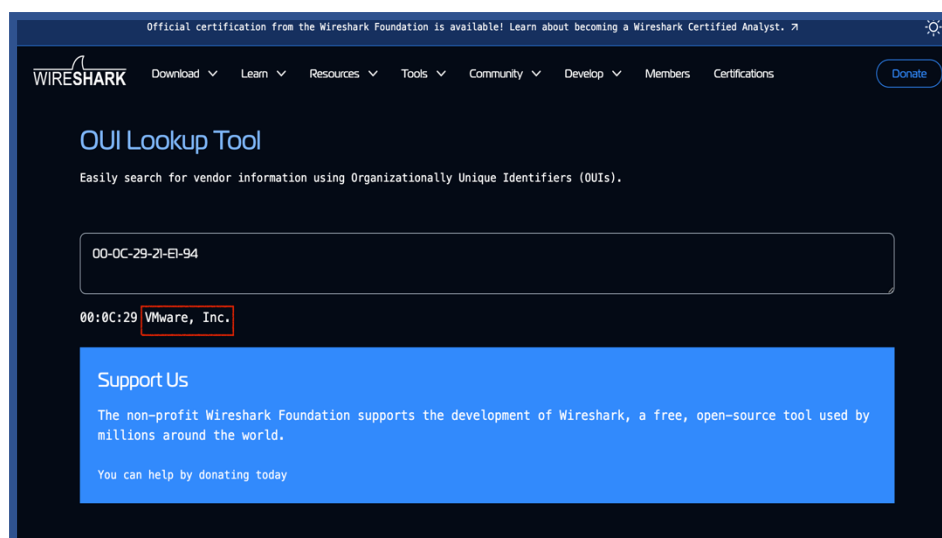
Windows IP Configuration

    Host Name . . . . . : HornVanhong
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Hybrid
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No
    DNS Suffix Search List. . . . . : localdomain

Ethernet adapter Ethernet0:

    Connection-specific DNS Suffix  . : localdomain
    Description . . . . . : Intel(R) 82574L Gigabit Network Connection
    Physical Address. . . . . : 00-0C-29-21-E1-94
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::f4dc:1d62:c410:79ab%13(Preferred)
    IPv4 Address. . . . . : 192.168.220.139(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
    Lease Obtained. . . . . : Friday, November 21, 2025 8:15:49 PM
    Lease Expires . . . . . : Friday, November 21, 2025 8:45:49 PM
    Default Gateway . . . . . : 192.168.220.2
    DHCP Server . . . . . : 192.168.220.254
    DHCPv6 IAID . . . . . : 100666409
    DHCPv6 Client DUID. . . . . : 00-01-00-01-30-B0-6E-81-00-0C-29-21-E1-94
    DNS Servers . . . . . : 192.168.220.2
    Primary WINS Server . . . . . : 192.168.220.2
    NetBIOS over Tcpip. . . . . : Enabled
```

- Vendor  
VMware, Inc.



### 1.3. Display the Router's Internal and External IP Addresses (display partially).

- Internal IP

```
Connection-specific DNS Suffix . : localdomain
Link-local IPv6 Address . . . . . : fe80::f4dc:1d62:c410:79ab%6
IPv4 Address. . . . . : 192.168.220.139
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.220.2
```

- External IP

The screenshot shows the 'WhatIsMyIPAddress.com' website. The main content area displays 'My IP Address Is:' with 'IPv4: 103.90.149.160' and 'IPv6: Not detected'. Below this, 'My IP Information:' lists 'ISP: Angkor Data Communication', 'Services: Public Proxy Server', 'City: Phnom Penh', 'Region: Phnom Penh', and 'Country: Cambodia'. A red button labeled 'RATE YOUR PROXY' is visible. To the right, a map of Cambodia is shown with a location pin. The website has a dark blue header with a search bar and navigation links like 'ABOUT', 'PRESS', 'PODCAST', and 'SUPPORT'.

### 1.4. Display Device Names.

```
C:\Users\vanho>systeminfo

Host Name:                HORNVANHONG
OS Name:                  Microsoft Windows 11 Home
OS Version:               10.0.26200 N/A Build 26200
```

### 1.5. Display the DNS and DHCP IP Addresses in your Network.

- DNS

```
C:\Users\vanho>ipconfig/all

Windows IP Configuration

Host Name . . . . . : HornVanhong
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : localdomain

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . : localdomain
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address. . . . . : 00-0C-29-21-E1-94
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::f4dc:1d62:c410:79ab%13(Preferred)
IPv4 Address. . . . . : 192.168.220.139(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Friday, November 21, 2025 8:15:49 PM
Lease Expires . . . . . : Friday, November 21, 2025 8:45:49 PM
Default Gateway . . . . . : 192.168.220.2
DHCP Server . . . . . : 192.168.220.254
DHCPv6 IAID . . . . . : 100666409
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-B0-6E-81-00-0C-29-21-E1-94
DNS Servers . . . . . : 192.168.220.2
Primary WINS Server . . . . . : 192.168.220.2
NetBIOS over Tcpip. . . . . : Enabled
```

- DHCP

```
C:\Users\vanho>ipconfig/all

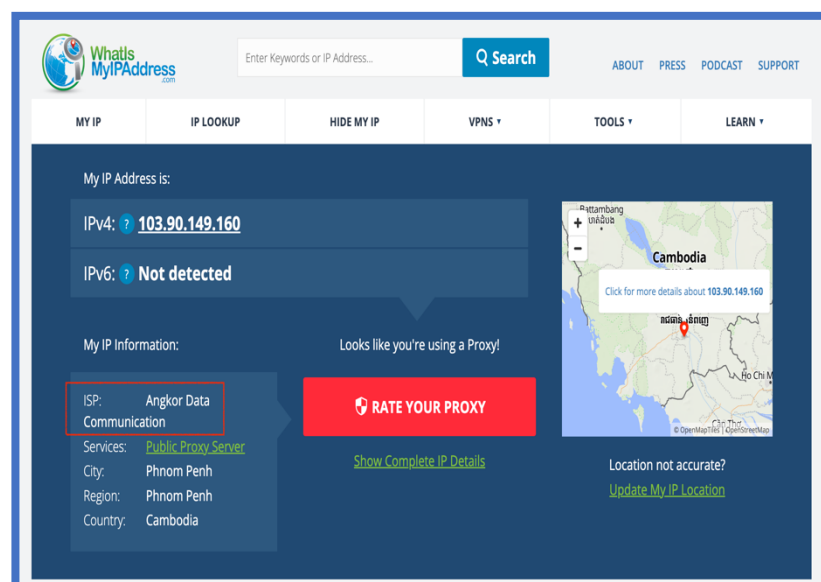
Windows IP Configuration

Host Name . . . . . : HornVanhong
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : localdomain


Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . : localdomain
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address. . . . . : 00-0C-29-21-E1-94
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::f4dc:1d62:c410:79ab%13(Preferred)
IPv4 Address. . . . . : 192.168.220.139(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Friday, November 21, 2025 8:15:49 PM
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Default Gateway . . . . . : 192.168.220.2
DHCP Server . . . . . : 192.168.220.254
DHCPv6 IAID . . . . . : 100666409
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-B0-6E-81-00-0C-29-21-E1-94
DNS Servers . . . . . : 192.168.220.2
Primary WINS Server . . . . . : 192.168.220.2
NetBIOS over Tcpip. . . . . : Enabled
```

## 1.6. Display your Internet Service Provider (ISP).



## 1.7. Display if the Device is Connected via Ethernet or Wireless.

```
C:\Users\vanho>ipconfig/all

Windows IP Configuration

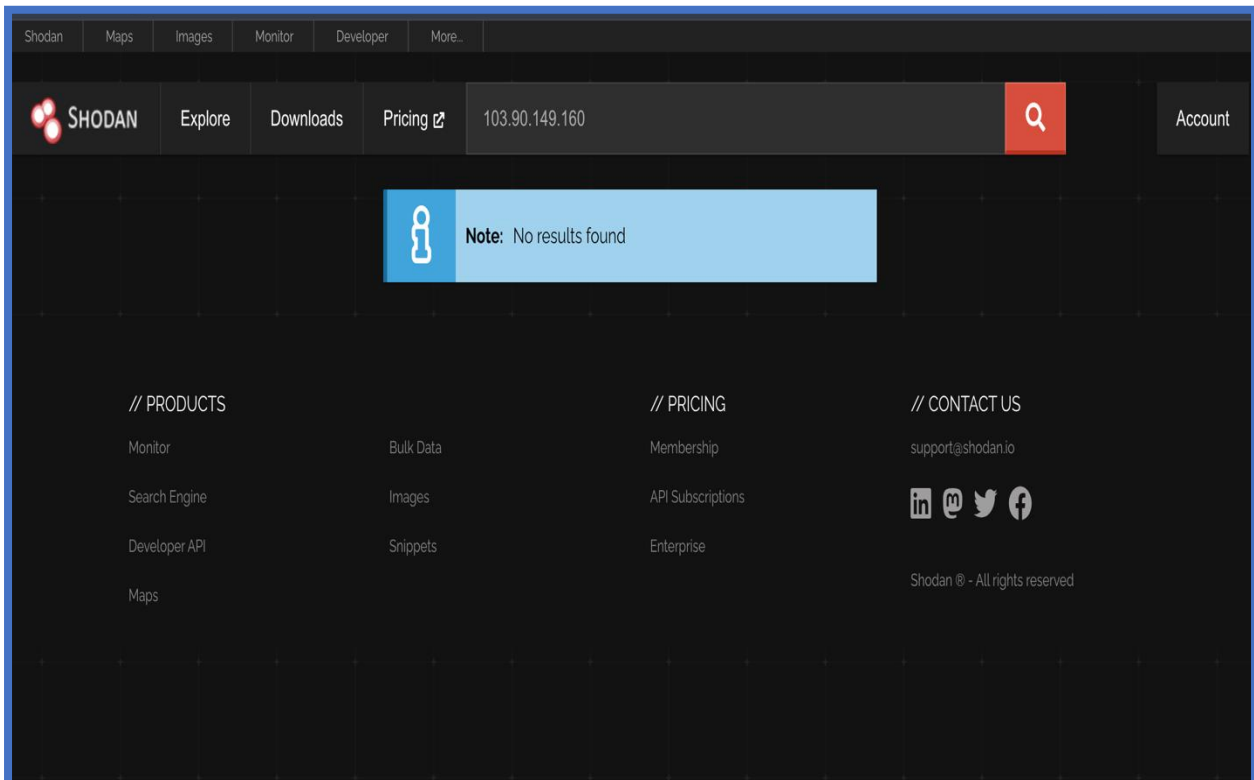
Host Name . . . . . : HornVanhong
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : localdomain


Ethernet adapter Ethernet0:

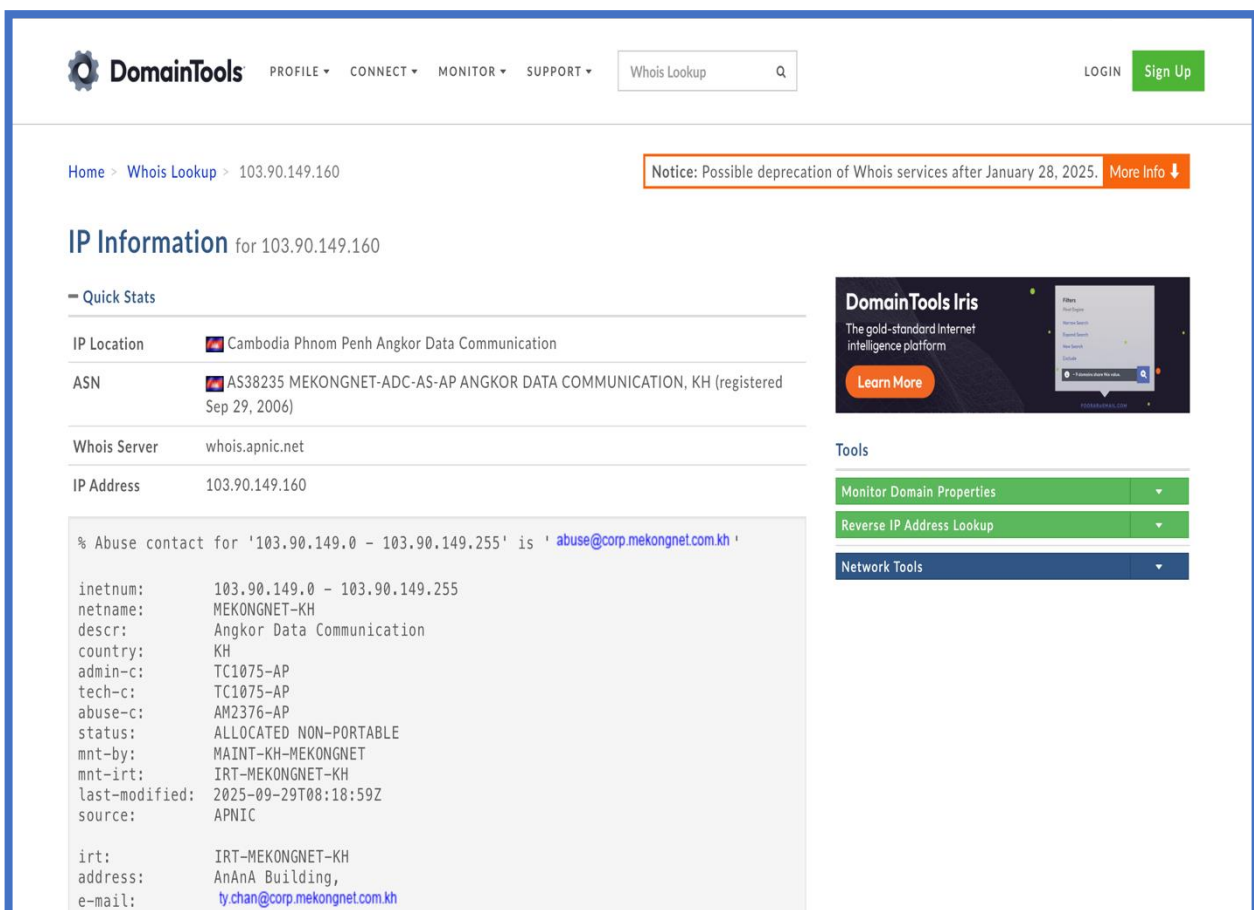
Connection-specific DNS Suffix . : localdomain
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address. . . . . : 00-0C-29-21-E1-94
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::f4dc:1d62:c410:79ab%13(Preferred)
IPv4 Address. . . . . : 192.168.220.139(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Friday, November 21, 2025 8:15:49 PM
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Default Gateway . . . . . : 192.168.220.2
DHCP Server . . . . . : 192.168.220.254
DHCPv6 IAID . . . . . : 100666409
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-B0-6E-81-00-0C-29-21-E1-94
DNS Servers . . . . . : 192.168.220.2
Primary WINS Server . . . . . : 192.168.220.2
NetBIOS over Tcpip. . . . . : Enabled
```

## 2. Collecting Information

### 2.1. Use Shodan to Check Your Public IP Address.

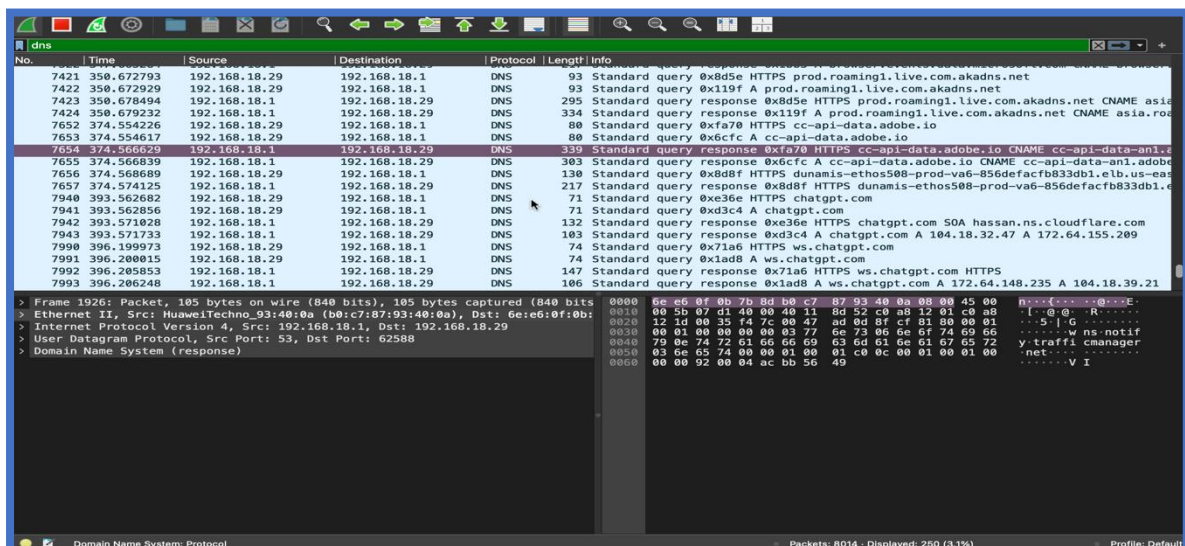
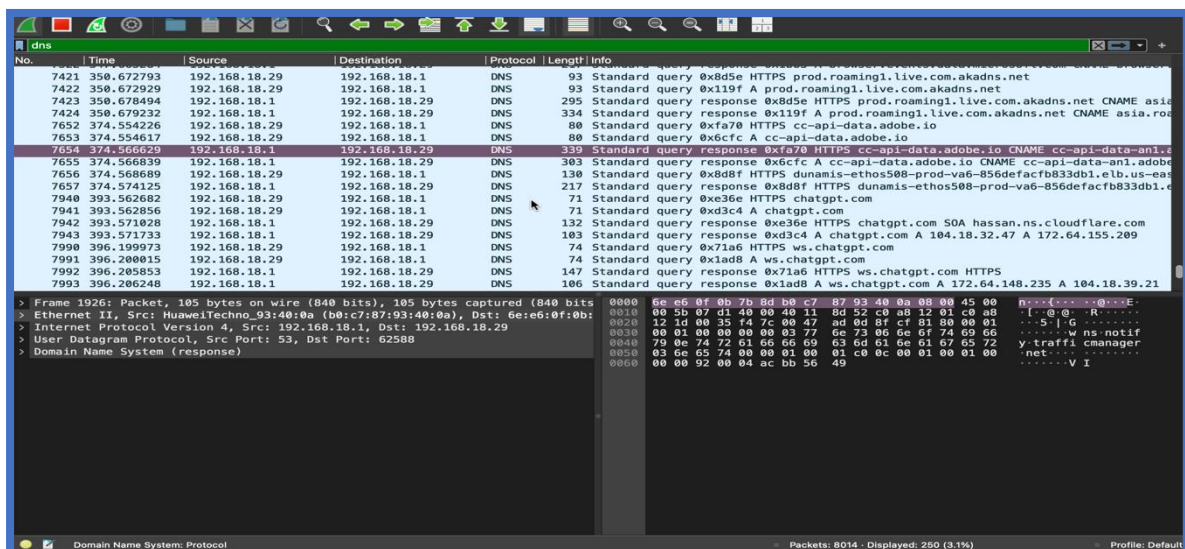
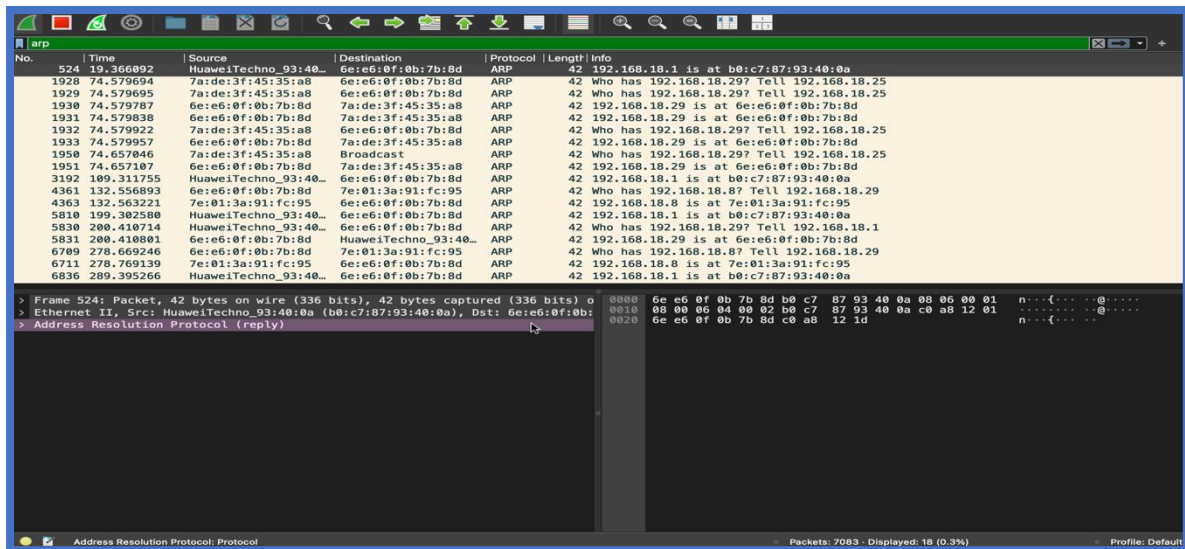


### 2.2. Use WHOIS to Check Who is Registered on Your Public IP Address.





## 2.3. Sniff Your Network and Identify Three (3) Used Protocols.



## 2.4. For Each Protocol Explain Its Usage.

- DHCP: Automatically assigns IP addresses and network settings to devices.
- DNS: Resolves domain names (like google.com) into IP addresses.
- ARP: Maps IP addresses to MAC addresses within the local network.

## 2.5. For Each Protocol, Find the Used Port Number.

- DHCP: UDP 67 (server), UDP 68 (client)
- DNS: UDP 53, TCP 53
- ARP: No port used (Layer 2 protocol)

## Network Diagram

