Wireshark Lab: Getting Started

From my windows start menu, I selected the Run application and typed “cmd” to open the command prompt, then I typed in the command “ipconfig” to display the Windows IP configuration. The system I have been using uses IPv6 and IPv4.

Example 1: With IPv4 version.

Where The first captured frame is of the IPv4 version.

# Capture the IP address in the command prompt and the Wireshark, application attach the screenshot of both.

Here we can observe that the IPv4 Address is 192.168.1.127

Text

Description automatically generated

Now I have opened the Wireshark application that has been downloaded. Selected the Wi-Fi option to capture the packets. Below is the IP information from a packet that was captured. In the Internet Protocol Version 4 section, we can see the destination Address, which is the same as the IP in the command prompt.

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

# What is the source and destination address of the first request in the wire shark?

Below is the First Frame that was captured. The source and destination address can be found in the Internet Protocol Version 4 section.

Source Address: 13.107.42.12

Destination Address: 192.168.1.127

The source address is the IP address of the device that sent the packet, which is some other device that sent the packet, while the destination address is the address of my device that received the packet.

Graphical user interface, text, application

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# What internet protocol version is used?

In frame 1, the IP protocol version that is being used is IPv4, we can find the version field in the Internet Protocol Version 4 section.

Graphical user interface, text, application

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# What is the source port in the UDP?

The source port is a port number that is chosen by the sending device to identify the specific application that is sending the data. The receiving device uses the source port to identify which application on the sending device is responsible for generating the data.

UDP Source Port: 55502

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# What is the destination port in the UDP?

The destination port is a number that identifies the specific application that the data is intended for on the receiving device. This allows the receiving device to deliver the data to the correct application.

UDP Destination Port: 53

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# What is the header length?

The header contains information that is required to route the packet through the network. In IPv4, the header length is variable and can range from 20 to 60 bytes in length, in the below frame the header length is 20 bytes.

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UDP Header Length: 71

Graphical user interface, text, application

Description automatically generatedGraphical user interface, application

Description automatically generated

Example 2: With IPv6 version.

Where The first captured frame is of the IPv6 version.

# Capture the IP address in the command prompt and the Wireshark, application attach the screenshot of both.

Here we can observe that the IPv6 has 3 different IP Addresses, the temporary IPv6 Address is 2600:6c56:7ff0:8c00:459:761f:15f3:5c3b

Text

Description automatically generated

Now I have opened the Wireshark application that has been downloaded. Selected the Wi-Fi option to capture the packets. Below is the IP information from a packet that was captured. In the Internet Protocol Version 6 section, we can see the source Address, which is the same as the IP in the command prompt.

Graphical user interface, text, application

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Graphical user interface, text, application, email

Description automatically generated

# What is the source and destination address of the first request in the wire shark?

Below is the First Frame that was captured. The source and destination address can be found in the Internet Protocol Version 6 section.

Source Address: 2600:6c56:7ff0:8c00:459:761f:15f3:5c3b

Destination Address: 2600:6c56:7ff0:8c00::1

The source address is the IP address of the device that sent the packet which is my device, while the destination address is the IP address of the device that received the packet.

Graphical user interface, text, application

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Graphical user interface, text, application, email

Description automatically generated

# What internet protocol version is used?

In frame 1, the IP protocol version that is being used is IPv6, we can find the version field in the Internet Protocol Version 6 section.

Text

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

# What is the source port in the UDP?

The source port is a port number that is chosen by the sending device to identify the specific application that is sending the data. The receiving device uses the source port to identify which application on the sending device is responsible for generating the data.

UDP Source Port: 53365

Graphical user interface, text, application, email

Description automatically generated

# What is the destination port in the UDP?

The destination port is a number that identifies the specific application that the data is intended for on the receiving device. This allows the receiving device to deliver the data to the correct application.

UDP Destination Port: 53

Graphical user interface, text, application, email

Description automatically generated

# What is the header length?

The header contains information that is required to route the packet through the network. In IPv6, the header length is fixed at 40 bytes unlike in IPv4, where the header length can vary. However, within the IPv6 header, there is a "Payload Length" field that specifies the length of the payload, the payload length field value plus the fixed 40-byte header length will give the total length of the IPv6 packet.

Graphical user interface, text, application, email

Description automatically generated

UDP Header Length: 63

Graphical user interface, text, application

Description automatically generated