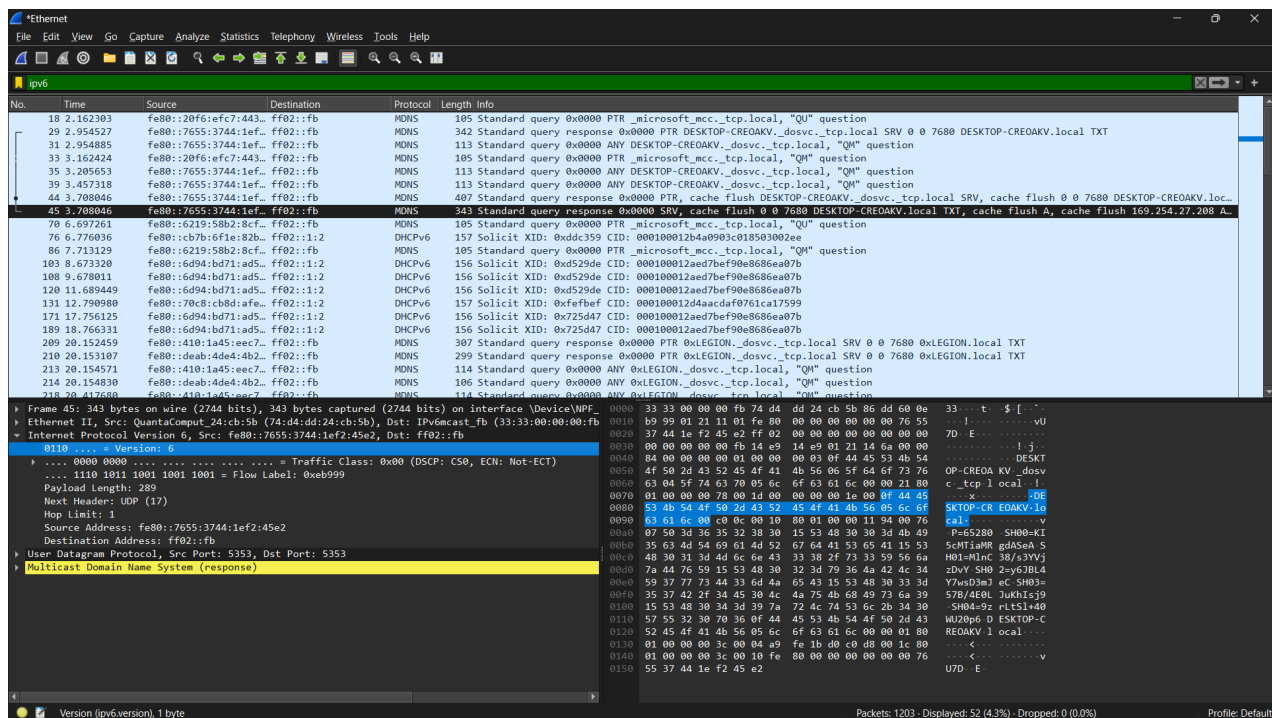


Filter a wireshark capture in IPV6 and explain why its field has the value it does.



Version: 6

- Explanation: This field indicates the version of the IP protocol. For IPv6, it is always 6.

Traffic Class: 0x00

- Explanation: The Traffic Class field is used to differentiate the traffic type. It includes:
 - DSCP (Differentiated Services Code Point): 0x00 means it is using Class Selector 0 (CS0), which has the default behavior and does not specify any special treatment.
 - ECN (Explicit Congestion Notification): 00 indicates that no explicit congestion notification is requested (Not-ECT, meaning "Not ECN Capable Transport")

Flow Label: 0xeb999

- Explanation: The Flow Label field is used to identify packets that belong to the same flow. The value 0xeb999 is a hexadecimal representation, which converts to 973233 in decimal. This label can be used to handle packets with the same flow label consistently

Payload Length: 289

- Explanation: This field indicates the length of the payload (data portion) in bytes. The payload length of 289 means the packet's data is 289 bytes long, not including the IPv6 header.

Next Header: UDP (17)

- Explanation: The Next Header field indicates the type of the next header following the IPv6 header. The value 17 corresponds to UDP (User Datagram Protocol), meaning the packet is using UDP as the transport layer protocol.

Hop Limit: 1

- Explanation: The Hop Limit field is similar to the TTL (Time To Live) in IPv4. It specifies the maximum number of hops a packet can take before being discarded. A value of 1 indicates that the packet will not be forwarded beyond its current network segment

Source Address: fe80::7655:3744:1ef2:45e2

- Explanation: This is a link-local IPv6 address, meaning it is only valid within the local network segment. The fe80::/10 prefix denotes a link-local address.

Destination Address: ff02::fb

- Explanation: This is a multicast address used for all DHCPv6 servers on the local network. The ff02::/16 prefix indicates it's a link-local multicast address, and fb specifies the specific multicast group.