

Capturing My IP Address in Wireshark

IP Address: 192.168.1.37

Question: What are the values and descriptions for each of the IPv4 header fields?

Key Header Fields for an IPv4 Packet:

1. **Version:** 4 bits
 - **Value:** 0100
 - **Description:** Specifies the IP protocol version, which is IPv4 in this case.
2. **Header Length:** 20 bytes
 - **Value:** 5
 - **Description:** Indicates the length of the IP header. A value of 5 means $5 * 4 = 20$ bytes.
3. **Differentiated Services Field:**
 - **Value:** 0x00
 - **Description:** Used for Quality of Service (QoS).
 - Differentiated Services Codepoint (DSCP): CS0 (Class Selector 0)
 - Explicit Congestion Notification (ECN): Not-ECT (Not ECN-Capable Transport)
4. **Total Length:**
 - **Value:** 52 bytes
 - **Description:** The total length of the IP packet, including both header and data, in bytes.
5. **Identification:**
 - **Value:** 0xa523 (42275)
 - **Description:** Uniquely identifies the group of fragments of a single IP datagram.
6. **Flags:**
 - **Value:** 0x2, Don't fragment
 - **Description:** A 3-bit field used to control or identify fragments.
 - Bit 0: Reserved; must be zero
 - Bit 1: Don't fragment (1 = Set, 0 = Not set)
 - Bit 2: More fragments (1 = More fragments, 0 = Last fragment)
7. **Fragment Offset:**
 - **Value:** 0
 - **Description:** Indicates the offset of a fragment relative to the beginning of the original unfragmented IP datagram. Zero means it is not fragmented, and it is measured in 8-byte units.
8. **Time to Live (TTL):**
 - **Value:** 128
 - **Description:** Limits the lifespan of the packet. It is decremented by each router it passes through and the packet is discarded when TTL reaches zero.
9. **Protocol:**
 - **Value:** TCP (6)

- **Description:** Specifies the protocol used in the data portion of the IP datagram.

10. Header Checksum:

- **Value:** 0x670c (validation disabled)
- [Header checksum status: Unverified]
- **Description:** Used for error-checking the header. If the checksum does not match, the packet is discarded.

11. Source Address:

- **Value:** 192.168.1.37
- **Description:** The IP address of the originating device (source host).

12. Destination Address:

- **Value:** 192.168.1.1
- **Description:** The IP address of the receiving device (destination host).