

## How to check Number of Mac Address:

- **Mac:** networksetup -listallhardwareports
- Windows: getmac /v /fo list

## Range of Port Numbers

- Port numbers are represented as 16-bit unsigned integers, which means they can range from 0 to 65535.
- They are typically divided into three ranges:
  - **Well-Known Ports (0-1023):** These are reserved for specific services and protocols, such as:
    - Port 80: HTTP
    - Port 443: HTTPS
    - Port 22: SSH (Secure Shell)
    - Port 25: SMTP (Simple Mail Transfer Protocol)
  - **Registered Ports (1024-49151):** These are assigned by the Internet Assigned Numbers Authority (IANA) for specific services that are not considered standard. Applications can use these ports for their services.
  - **Dynamic or Private Ports (49152-65535):** These are typically used for client-side applications or dynamically assigned ports by the operating system

**Comparison Table: TCP vs. UDP**

<b>Feature</b>	<b>TCP</b>	<b>UDP</b>
<b>Connection</b>	Connection-oriented (three-way handshake)	Connectionless (no handshake)
<b>Reliability</b>	Reliable (guaranteed delivery, retransmission)	Unreliable (no guarantees on delivery)
<b>Ordering</b>	Ensures packet order	No ordering of packets
<b>Error Checking</b>	Error checking with retransmission	Basic error checking (but no correction)
<b>Flow &amp; Congestion Control</b>	Yes (adjusts based on network conditions)	No flow or congestion control
<b>Speed</b>	Slower due to overhead (error checking, etc.)	Faster due to less overhead
<b>Common Use Cases</b>	Web browsing, email, file transfer	Streaming, gaming, DNS, VoIP
<b>Data Segmentation</b>	Breaks data into segments	Sends data as independent datagrams
<b>Data Size</b>	Supports larger data packets	Typically used for small, quick data packets

Hardware Port: Ethernet Adapter (en4)

Device: en4

Ethernet Address: 7a:cb:f1:3f:db:23

Hardware Port: Ethernet Adapter (en5)

Device: en5

Ethernet Address: 7a:cb:f1:3f:db:24

Hardware Port: Thunderbolt Bridge

Device: bridge0

Ethernet Address: 36:77:f5:36:3a:80

Hardware Port: Wi-Fi

Device: en0

Ethernet Address: 80:a9:97:1c:c5:34

Hardware Port: Thunderbolt 1

Device: en1

Ethernet Address: 36:77:f5:36:3a:80

Hardware Port: Thunderbolt 2

Device: en2

Ethernet Address: 36:77:f5:36:3a:84

Hardware Port: Thunderbolt 3

Device: en3

Ethernet Address: 36:77:f5:36:3a:88