OSI MODEL

|             | Application  |  |
|-------------|--------------|--|
| Application | Presentation |  |
|             | Session      |  |
| Transport   | Transport    |  |
| Internet    | Network      |  |
| Link        | Data Link    |  |
|             | Physical     |  |

#### TCP/IP MODEL (MODERN)

| Application | HTTP, SMTP, etc | Messages         | N/A           |
|-------------|-----------------|------------------|---------------|
| Transport   | TCP / UDP       | Segments         | Port Numbers  |
| Network     | IP              | Packet / Diagram | IP Addresses  |
| Data Link   | Ethernet, Wi-Fi | Frames           | MAC Addresses |
| Physical    | N/A             | Bits             | N/A           |

#### **NETWORK CLASSES**

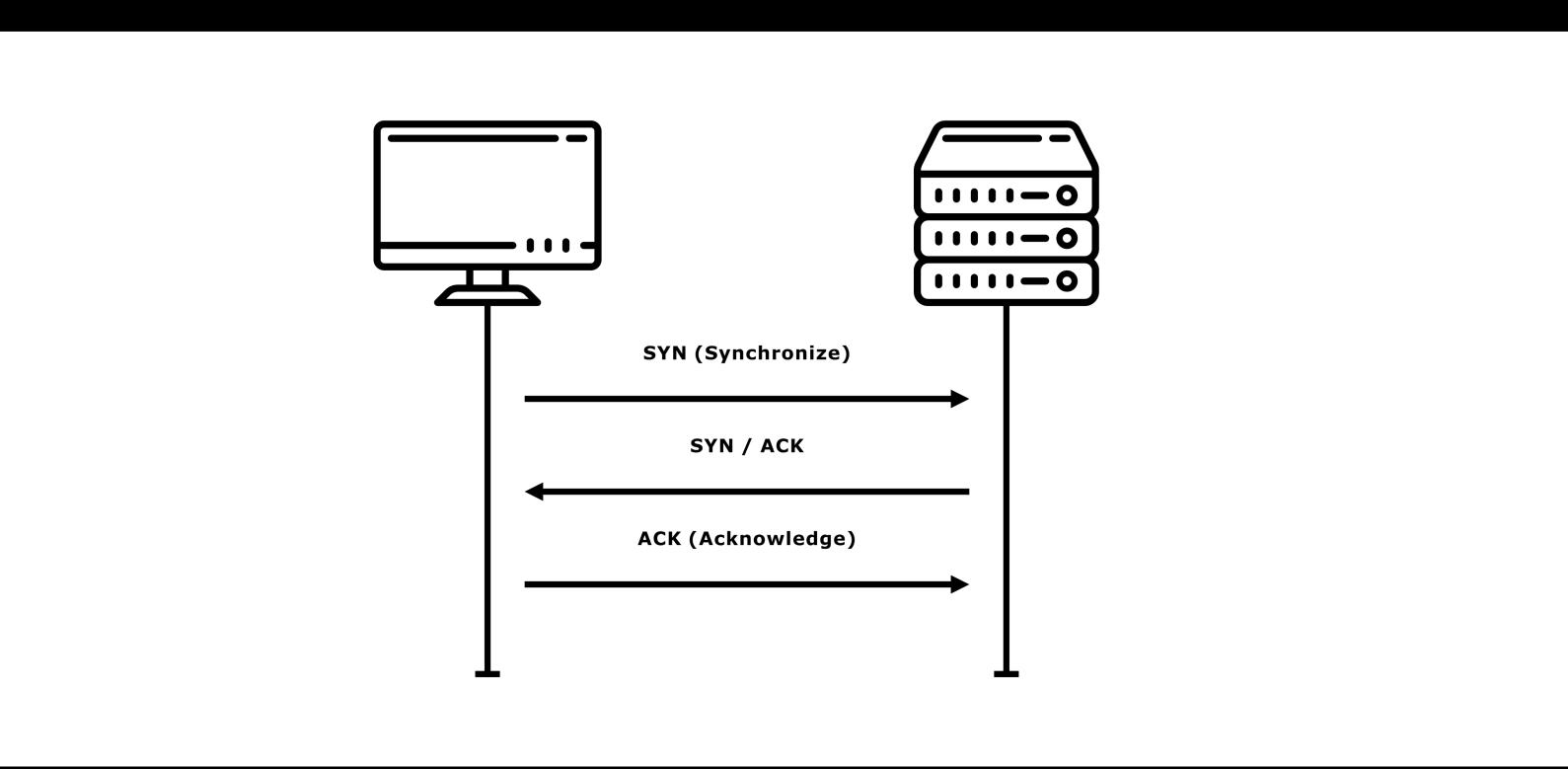
| Classes | Left-most Bit     | Starting IP Add | dress   | Las         | st IP Address |
|---------|-------------------|-----------------|---------|-------------|---------------|
| A       | 0xxx              | 0.0.0.0         |         | 127         | 7.255.255.255 |
| В       | 10xx              | 128.0.0.0       |         | 19:         | 1.255.255     |
| C       | 110x              | 192.0.0.0       |         | 223         | 3.255.255     |
| D       | 1110              | 224.0.0.0       |         | 239         | 9.255.255.255 |
| E       | 1111              | 240.0.0.0       |         | 255.255.255 |               |
|         |                   |                 |         |             |               |
| Classes | Byte 1            | Byte 2          | Byt     | :e 3        | Byte 4        |
| A       | Network ID        | Host ID         |         |             |               |
| В       | Network ID        |                 | Hos     | Host ID     |               |
| C       | Network ID        |                 | Host ID |             |               |
| D       | Multicast Traffic |                 |         |             |               |
|         |                   |                 |         |             |               |

### PRIVATE IP ADDRESSES

| Classes | Starting Private IP Address | Last Private IP Address |
|---------|-----------------------------|-------------------------|
| A       | 10.0.0.0                    | 10.255.255              |
| В       | 172.16.0.0                  | 172.31.255.255          |
| C       | 192.168.0.0                 | 192.168.255.255         |

Reserved

## TCP 3 WAY HANDSHAKE



# DHCP OVERVIEW

