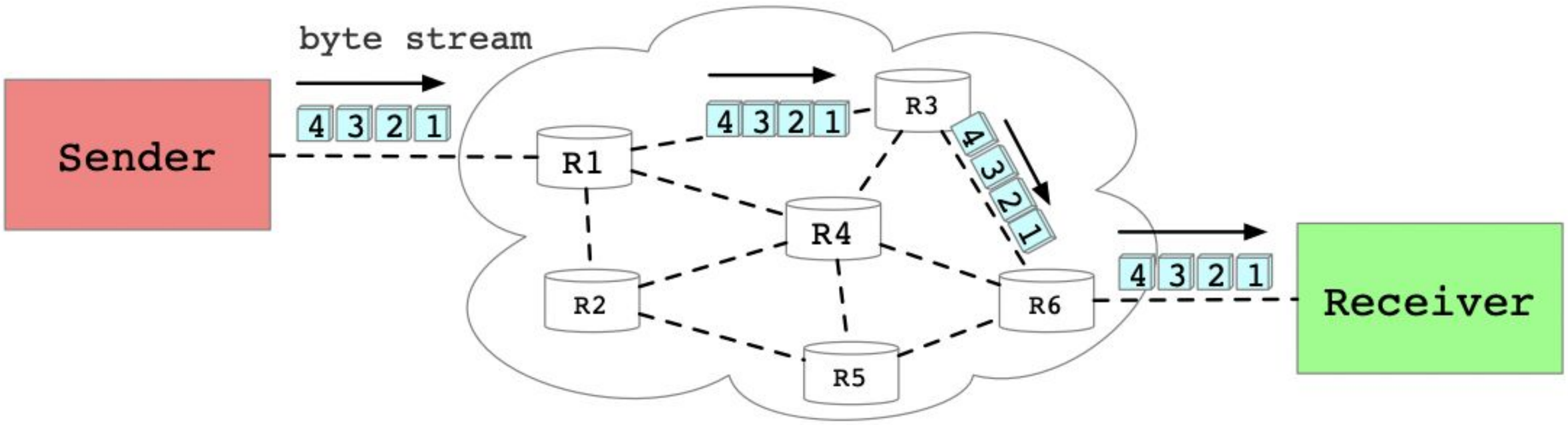
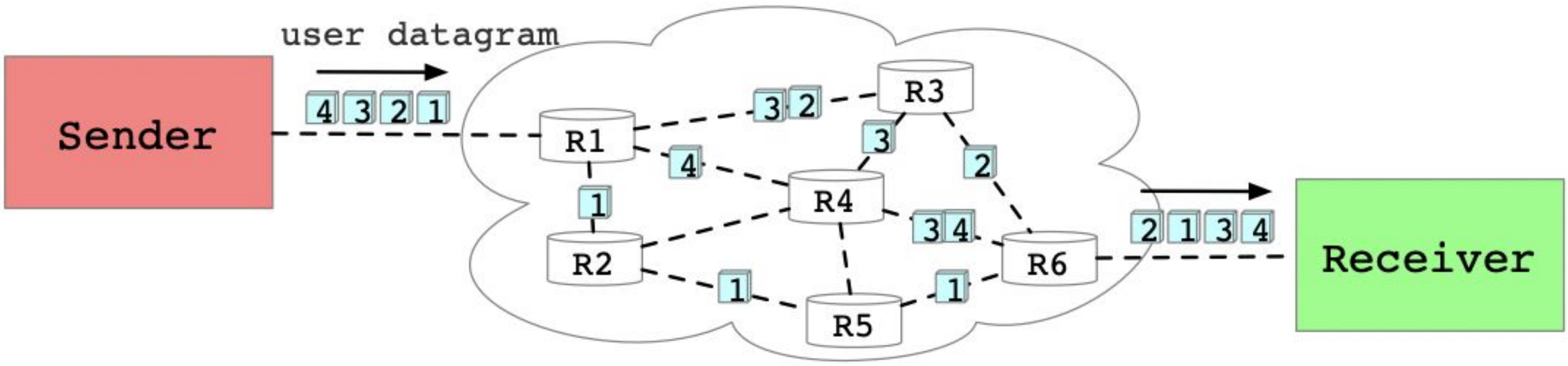
TCP vs. UDP: 7 Differences You Should Know

In-order vs. out of order

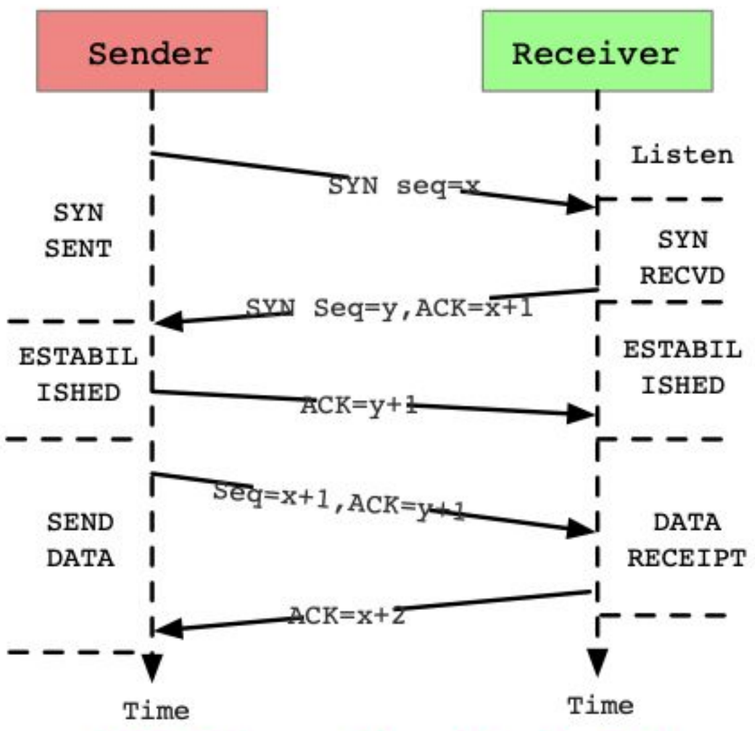


TCP connection-oriented
Data arrives in-order

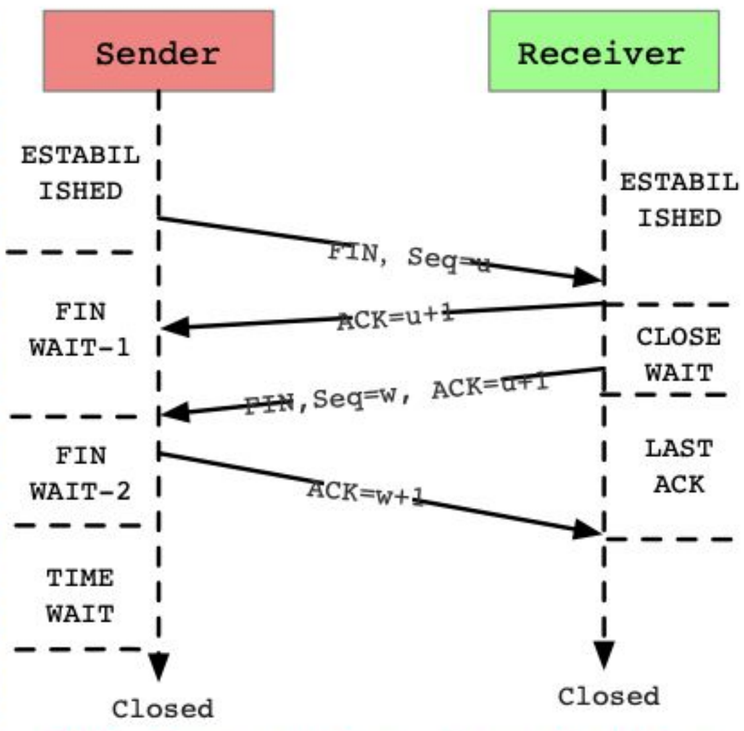


UDP connectionless
Data could be out of order

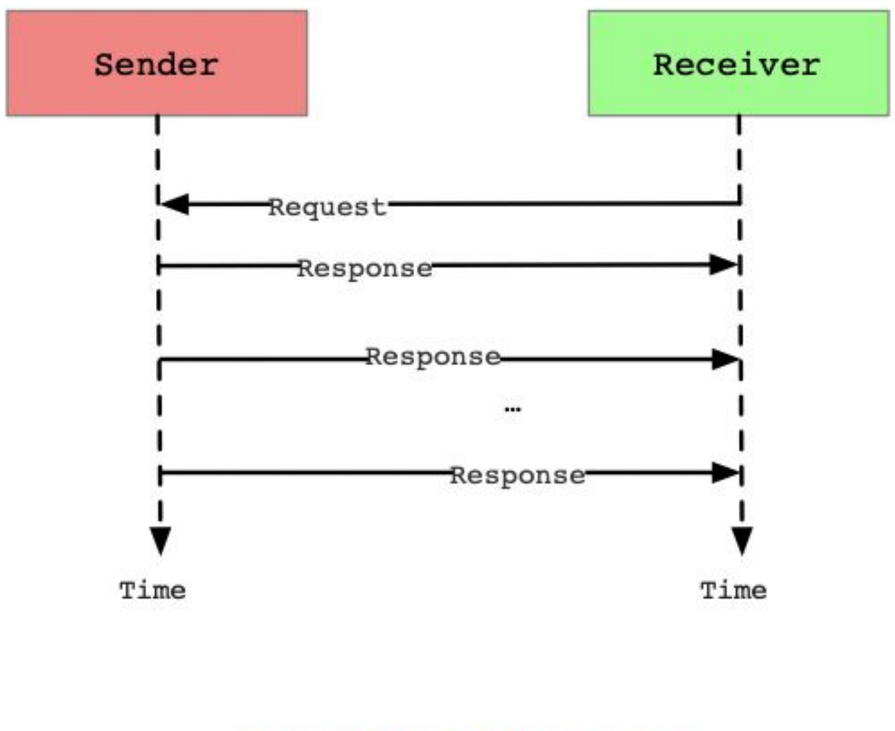
Three-way handshake vs. No Handshake



TCP Three-Way Handshake



TCP Connection Termination

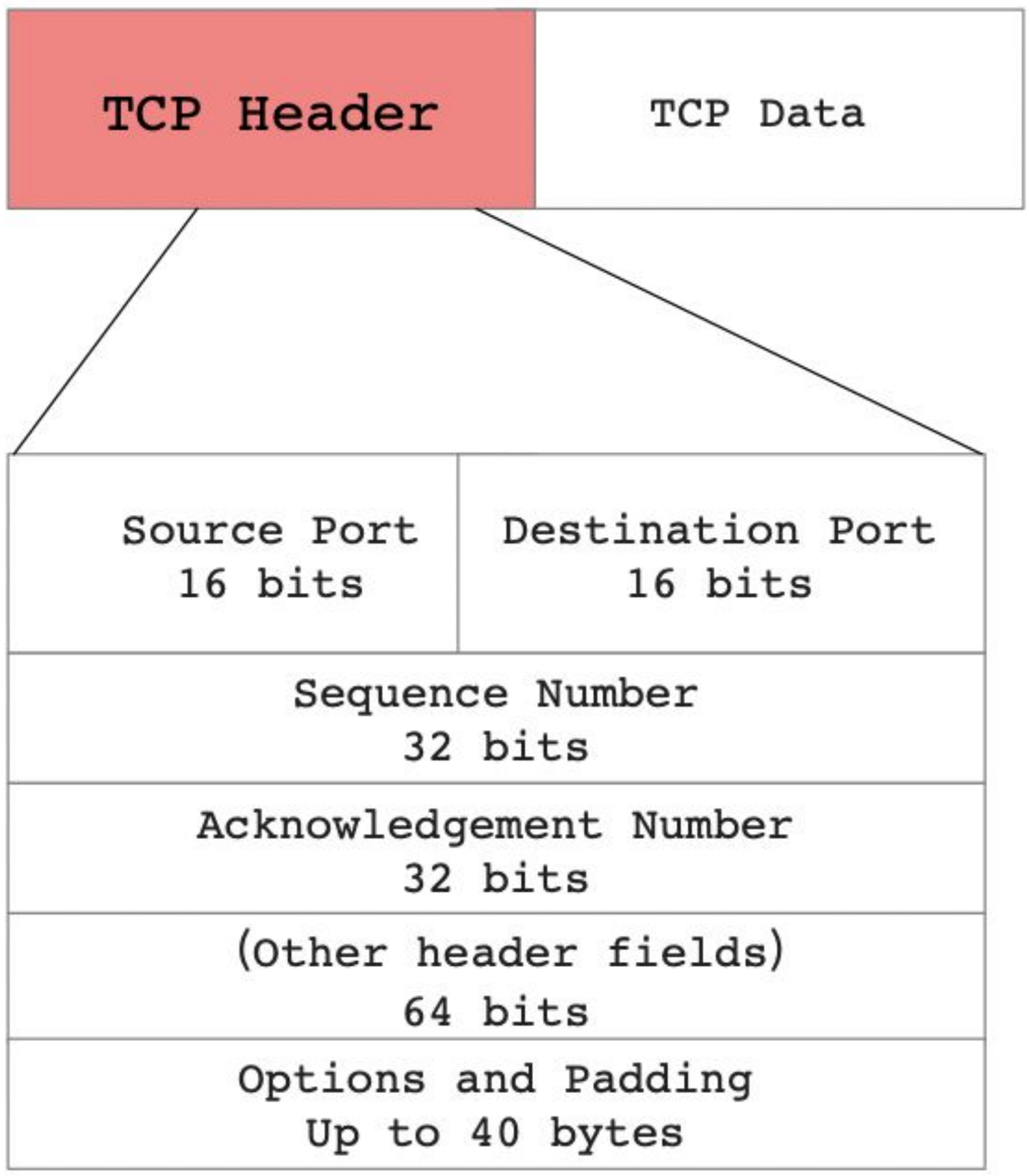


UDP Data Transfer

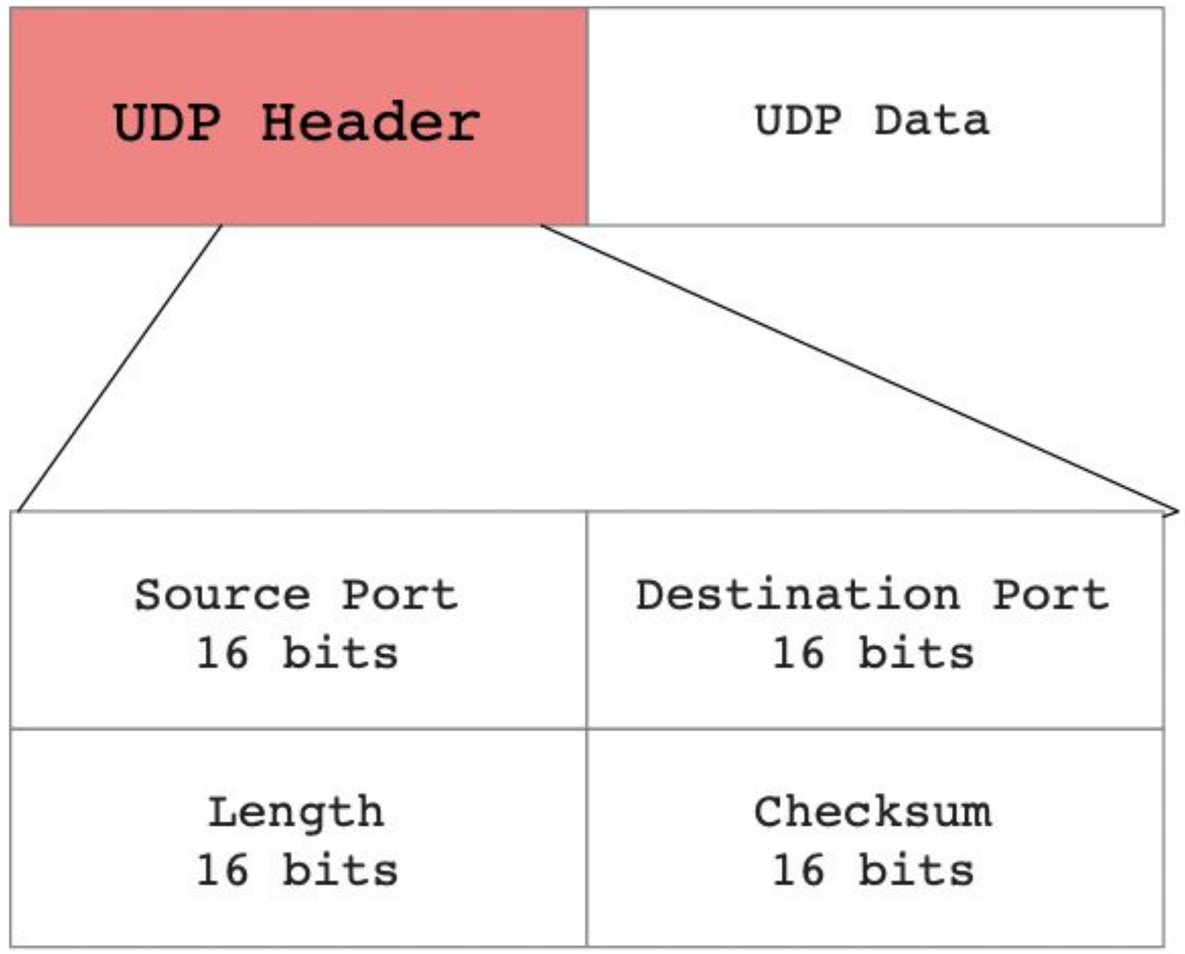
TCP vs. UDP: 7 Differences You Should Know

header (20 bytes) vs. header (8 bytes)

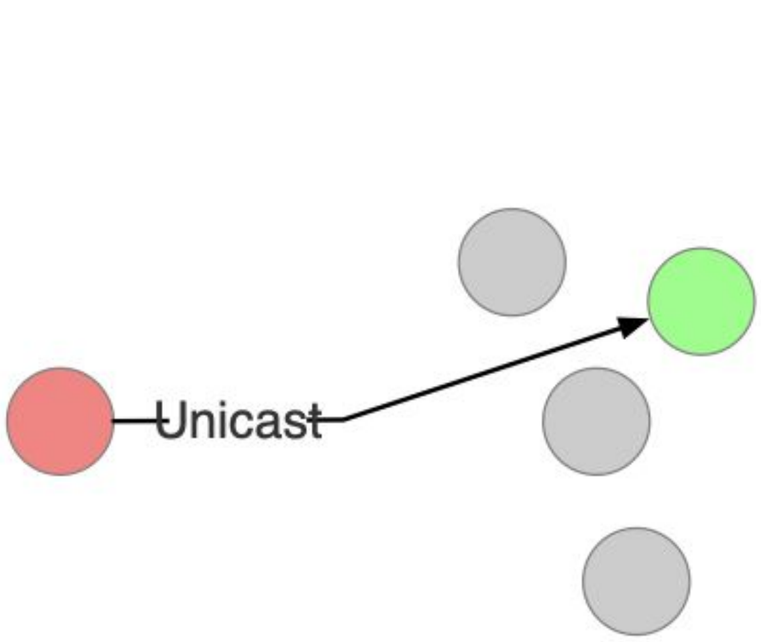
20->60 bytes



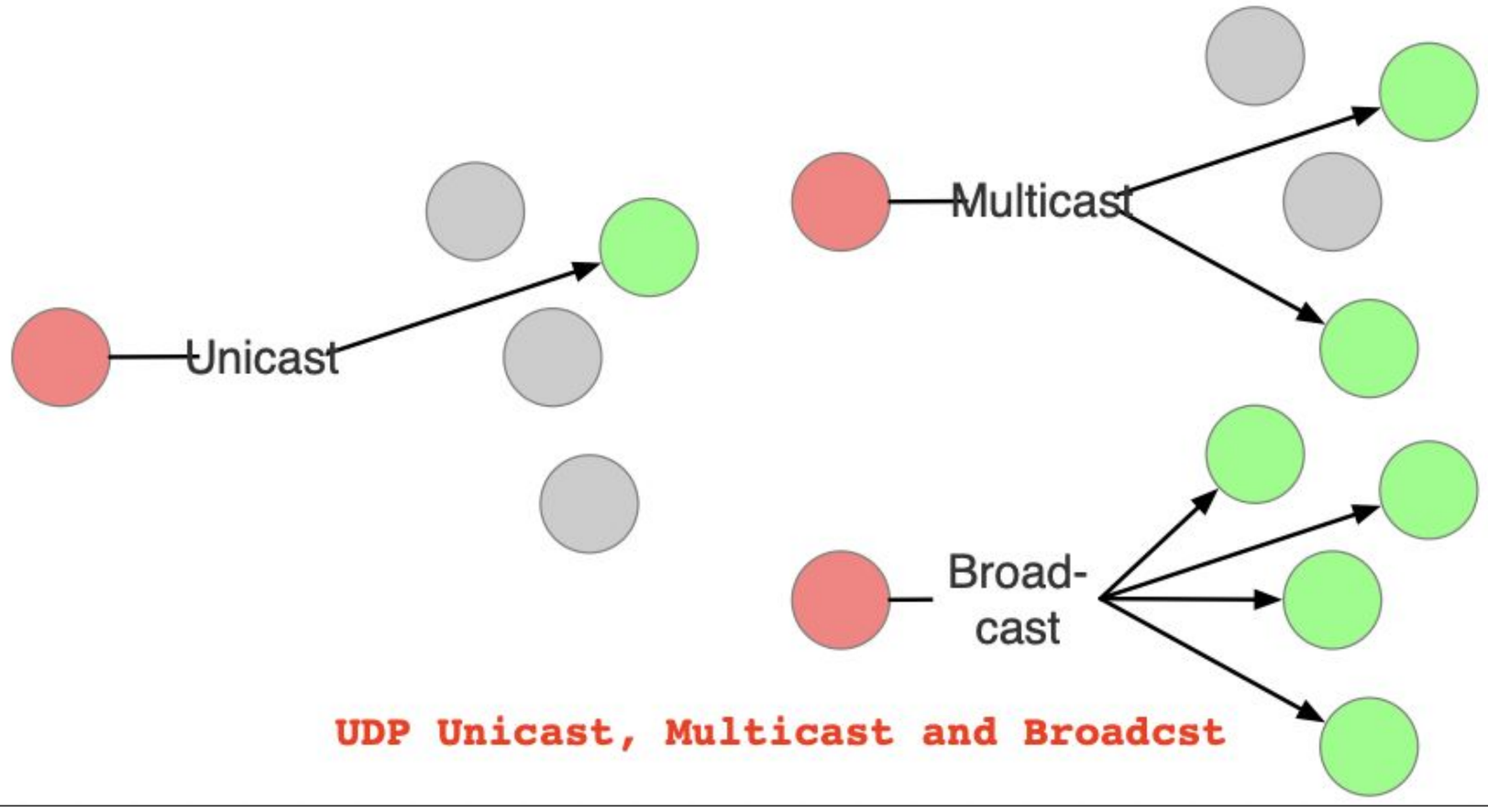
8 Bytes



Point to point vs. Unicast & Multicast & Broadcast

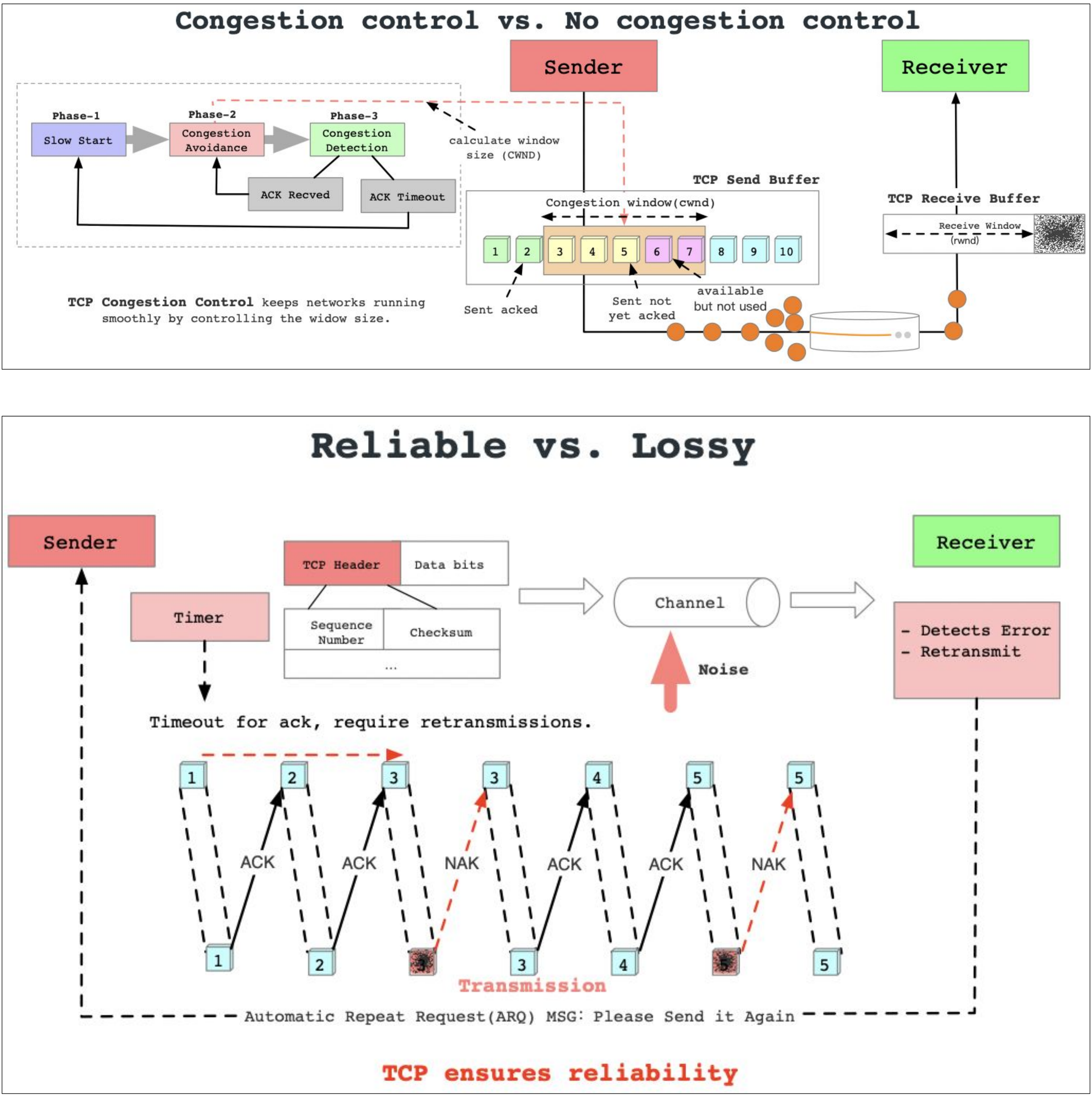


TCP Unicast



UDP Unicast, Multicast and Broadcst

TCP vs. UDP: 7 Differences You Should Know



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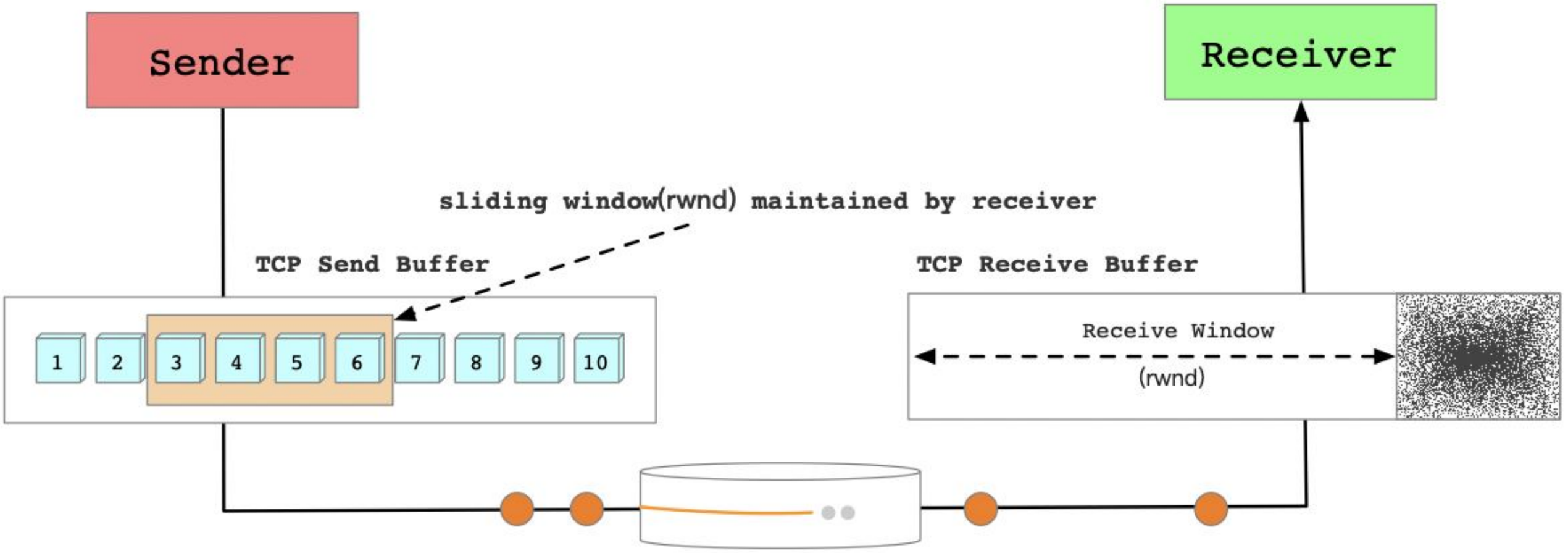

Typical Use Cases

TCP is commonly used for:

- Serving up a web page using **HTTPS**
- Downloading a file via **FTP**
- Sending an email report using **SMTP**
- Connecting a service technician via **Telnet**
- Machine-to-Machine via DDS
- Sensor data flow via **MOTT**

UDP is commonly used for:

- Resolving a domain name using **DNS**
- Automating configuration of a local network with **DHCP**
- Quick and lightweight data file transfer with **TFTP**
- Network management with **SNMP**
- Internet routing with **RIP**
- Telephony using **VOIP**
- **M2M** via **DDS**

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A timeline for the development of TCP and UDP