# Transmission Control Protocol

#### principal protocol used to stream data across an IP network

TCP, or Transmission Control Protocol, is a connection-oriented protocol that ensures reliable, ordered data transmission over a network by using techniques like a three-way handshake, error control, and flow control. It works in conjunction with the Internet Protocol (IP) for addressing and routing data packets, breaking down data into small bundles and reassembling them into the original message on the receiving end to ensure each message reaches its target location intact.35

TCP establishes a reliable connection between sender and receiver using a three-way handshake (SYN, SYN-ACK, ACK) and it uses a four-step handshake (FIN, ACK, FIN, ACK) to close connections properly.3 It ensures error-free, in-order delivery of data packets and uses acknowledgments (ACKs) to confirm receipt, preventing data overflow by adjusting the data transmission rate according to the receiver’s buffer size