# **TCP and UDP — Meaning, Differences, and Common Web Ports**

TCP (Transmission Control Protocol) and UDP (User Datagram Protocol) are two of the main protocols used in networking. They both work on top of the Internet Protocol (IP) but handle data transmission differently.

**TCP** is connection-oriented. Before any data is sent, a connection is established between the sender and receiver. It ensures that data arrives in the correct order and without errors, using acknowledgments and retransmissions if needed. This makes TCP reliable, but also slightly slower due to the extra overhead.

**UDP** is connectionless. Data is sent without establishing a dedicated connection first, and there is no guarantee of delivery, order, or error correction. This makes UDP faster and suitable for applications where speed matters more than perfect accuracy, such as live video streams or online gaming.

**Key differences**

* TCP is reliable, ordered, and connection-based
* UDP is fast, lightweight, and connectionless
* TCP is used where accuracy matters
* UDP is used where speed and low latency are more important

## **Commonly Used Web Ports**

Here are some of the most common ports you will see in web and remote access work:

* HTTP — Port 80 (TCP)
* HTTPS — Port 443 (TCP)
* SSH — Port 22 (TCP)
* Telnet — Port 23 (TCP)
* FTP — Port 21 (TCP)
* SFTP — Port 22 (TCP), uses SSH for secure file transfer
* SMTP — Port 25 (TCP) for sending email
* DNS — Port 53 (UDP for lookups, TCP for larger queries)

In short, TCP focuses on accuracy and reliability while UDP focuses on speed and efficiency. Choosing one over the other depends on the type of application and its requirements.