8 Popular Network Protocols

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Protocol	How does It Work?	Use Cases
HTTP	TCP Connection / HTTP REQ / HTTP RESP	Web Browsing
HTTP/3 (QUIC)	UDP Connection / 1 2 3 / 4 5	IoT, Virtual Reality
HTTPS	TCP Connection / public key / session key / encrypted data	Web Browsing
WebSocket	HTTP Upgrade / Full Duplex	Live Chat, Real-Time Data Transmission
TCP	SYN / SYN + ACK / ACK	Web Browsing, Email Protocols
	REQUEST	

1. HTTP (HyperText Transfer Protocol)

    HTTP is a protocol for fetching resources such as HTML documents. It is the foundation of any data exchange on the Web and it is a client-server protocol.

2. HTTP/3

    HTTP/3 is the next major revision of the HTTP. It runs on QUIC, a new transport protocol designed for mobile-heavy internet usage. It relies on UDP instead of TCP, which enables faster web page responsiveness. VR applications demand more bandwidth to render intricate details of a virtual scene and will likely benefit from migrating to HTTP/3 powered by QUIC.

3. HTTPS (HyperText Transfer Protocol Secure)

    HTTPS extends HTTP and uses encryption for secure communications.

4. WebSocket

   WebSocket is a protocol that provides full-duplex communications over TCP. Clients establish WebSockets to receive real-time updates from the back-end services. Unlike REST, which always "pulls" data, WebSocket enables data to be "pushed". Applications, like online gaming, stock trading, and messaging apps leverage WebSocket for real-time communication.

5. TCP (Transmission Control Protocol)

   TCP is is designed to send packets across the internet and ensure the successful delivery of data and messages over networks. Many application-layer protocols build on top of TCP.

6. UDP (User Datagram Protocol)

   UDP sends packets directly to a target computer, without establishing a connection first. UDP is commonly used in time-sensitive communications where occasionally dropping packets is better than waiting. Voice and video traffic are often sent using this protocol.

7. SMTP (Simple Mail Transfer Protocol)

   SMTP is a standard protocol to transfer electronic mail from one user to another.

8. FTP (File Transfer Protocol)

   FTP is used to transfer computer files between client and server. It has separate connections for the control channel and data channel.

1XX	Informational codes	The server acknowledges and is processing the request.
2XX	Success codes	The server successfully received, understood, and processed the request.
3XX	Redirection codes	The server received the request, but there's a redirect to somewhere else (or, in rare cases, some additional action other than a redirect must be completed).
4XX	Client error codes	The server couldn't find (or reach) the page or website. This is an error on the site's side.
5XX	Server error codes	The client made a valid request, but the server failed to complete the request.