Common Protocols And Ports

Protocol	Port	Purpose
HTTP	80	Web browsing
HTTPS	443	Secure web browsing
FTP	20, 21	File transfer
SSH	22	Secure remote login
Telnet	23	Remote login (insecure)
SMTP	25	Send emails
POP3	110	Receive emails
IMAP	143	Read emails online
DNS	53	Domain name resolution
DHCP	67, 68	Assign IP addresses
SNMP	161	Network management
NTP	123	Time synchronization
RDP	3389	Remote desktop access
SMB	445	File sharing
MySQL	3306	Database communication

In computer networking, **protocols** are a set of rules that define how data is transmitted and received over a network.
Each protocol uses a **port number** — a virtual doorway that allows data to be directed to the correct service or application on a device.

Ports are divided into:

- **Well-known ports:** 0–1023
- **Registered ports:** 1024–49151
- **Dynamic/private ports:** 49152–65535

Most Common Protocols and Their Port Numbers

1 . HTTP (Hypertext Transfer Protocol) – Port 80

Used for transferring web pages over the Internet.
It's the foundation of data communication on the web (used by websites without encryption).

2 . HTTPS (Hypertext Transfer Protocol Secure) – Port 443

A secure version of HTTP that encrypts data using SSL/TLS, protecting users' information during transmission.
Used for secure websites (those with a 🔒 lock symbol).

3 . FTP (File Transfer Protocol) – Ports 20 & 21

Used to transfer files between computers over a network.

- Port 21 handles control (commands)
- Port 20 handles actual file data transfer

4 . SSH (Secure Shell) – Port 22

Used for secure remote login and command execution on network devices and servers.
It encrypts all data — often used by network administrators.

5 . Telnet – Port 23

Used for remote command-line connections, but **not secure** (transmits data in plain text).
Now mostly replaced by SSH.

6 . SMTP (Simple Mail Transfer Protocol) – Port 25

Used to **send** emails between mail servers.
When you click "Send" on an email, SMTP handles it.

7 . POP3 (Post Office Protocol v3) – Port 110

Used by email clients to **receive** emails from a mail server and download them locally.

8 . IMAP (Internet Message Access Protocol) – Port 143

Also used to **receive** emails, but allows you to view them directly on the server (better for webmail apps like Gmail).

9 . DNS (Domain Name System) – Port 53

Translates **domain names** (like www.google.com) into **IP addresses** so your device can locate the correct server.

10 . DHCP (Dynamic Host Configuration Protocol) – Ports 67 & 68

Automatically assigns **IP addresses** to devices on a network.
This allows devices to connect easily without manual configuration.

11 . SNMP (Simple Network Management Protocol) – Port 161

Used for network monitoring and managing network devices like routers, switches, and servers.

12 . NTP (Network Time Protocol) – Port 123

Synchronizes the time between computers and network devices.

13 . RDP (Remote Desktop Protocol) – Port 3389

Used to remotely access and control Windows computers with a graphical interface.

14 . SMB (Server Message Block) – Port 445

Used for **file and printer sharing** on Windows networks.

15 . MySQL – Port 3306

Used by MySQL database servers for communication.

16 . HTTPS Alternative: SFTP (Secure File Transfer Protocol) – Port 22

An extension of SSH for secure file transfers.