TCP/IP Model Protocols with Ports and Descriptions

Application Layer

Protocol	Port No.	Full Form	Description
HTTP	80	HyperText Transfer Protocol	Used for web page communication.
HTTPS	443	HyperText Transfer Protocol Secure	Secure version of HTTP.
FTP	20 (data), 21 (control)	File Transfer Protocol	Transfers files between systems.
SFTP	22	SSH File Transfer Protocol	Secure file transfer over SSH.
SMTP	25	Simple Mail Transfer Protocol	Sends emails to servers.
POP3	110	Post Office Protocol v3	Downloads and deletes emails from server.
IMAP	143	Internet Message Access Protocol	Accesses emails on the server.
DNS	53	Domain Name System	Translates domain names to IP addresses.
DHCP	67, 68	Dynamic Host Configuration Protocol	Assigns IP addresses dynamically.
Telnet	23	-	Insecure remote login protocol.
SSH	22	Secure Shell	Secure remote login and command execution.
SNMP	161, 162	Simple Network Management Protocol	Manages network devices.
NTP	123	Network Time Protocol	Synchronizes system clocks.
LDAP	389	Lightweight Directory Access Protocol	Accesses directory services.
SIP	5060, 5061	Session Initiation Protocol	Initiates VoIP calls.
RTP	16384-32767	Real-Time Transport Protocol	Delivers audio/video streams.
TFTP	69	Trivial File Transfer Protocol	Lightweight file transfer protocol.

Transport Layer

Protocol	Port No.	Full Form	Description
TCP	-	Transmission Control Protocol	Reliable, connection-based transmission.
UDP	-	User Datagram Protocol	Fast, connectionless transmission.
SCTP	-	Stream Control Transmission Protocol	Supports multi-streaming and reliability.

Internet Layer

Protocol	Port No.	Full Form	Description
IP	-	Internet Protocol	Handles addressing and routing.
IPv4	-	Internet Protocol v4	32-bit addressing system.

IPv6	-	Internet Protocol v6	128-bit addressing system.
ICMP	-	Internet Control Message Protocol	Sends error/control messages.
IGMP	-	Internet Group Management Protocol	Manages multicast groups.
ARP	-	Address Resolution Protocol	Resolves IP to MAC address.
RARP	-	Reverse Address Resolution Protocol	Resolves MAC to IP address (obsolete).

Network Access Layer

Protocol	Port No.	Full Form	Description
Ethernet	-	-	LAN hardware communication standard.
Wi-Fi	-	Wireless Fidelity	Wireless LAN communication.
PPP	-	Point-to-Point Protocol	Encapsulates network layer over serial.
ATM	-	Asynchronous Transfer Mode	High-speed switching and multiplexing.
Frame Relay	-	-	Frame-based WAN protocol.
DSL	-	Digital Subscriber Line	Internet over telephone lines.
ISDN	-	Integrated Services Digital Network	Digital data/voice over telephone.