

## OSI (Open System Interconnection) Model

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Grp	Protocol Type	ISO #	ISO Layer (TCP/IP Layer)	PDU Protocol Data Unit	Description	Function	Devices	Examples
Host	Appli-cation	7	Application (Application, Process) <b>All</b>	Data	User Interface File access, printing <i>Email, browsers</i> <i>Network processes for use by application programs.</i>	Establishes availability of intended communication partners. Synchronizes cooperating applications. ID proc for error recovery and control of data integrity.	PC Gateway	Telnet, ftp, TFTP, SMTP HTTP, DNS, SNMP PC to FAX Screen layout, escape sequences, editing functions, file names
		6	Presentation (Application, Process) <b>People</b>		Encoding Encryption Compression <i>Common data format</i> <i>Data representation.</i>		ASCII, EBCDIC, UNICODE PC to IBM Mainframe JPEG Floating point formats Integer formats Data structures	
		5	Session (Transport, Process) <b>Seem</b>	Compartmentalizing Applications <i>Dialogues and conversations</i> <i>Interhost communication.</i>	Hand shaking. Establish, manage, terminate sessions between applications. Efficient data transfer. Class of service. Exception reporting.	Operating System Application Access Scheduling Simplex, duplex, half duplex, remote logon Token management.		
	4	Transport (Transport, Host-to-Host) <b>To</b>	Segment	Receipt Confirmation Error Correction <i>Quality of service, and reliability.</i> <i>End-to-end connections.</i>	Segments and reassembles data stream. Establish, maintain, terminate virtual circuits. Manage connection-oriented circuits Transport error detection and correction. Information flow control.	TCP (Connection-oriented) UDP (Connectionless, streaming)[User Datagram Protocol] SPX Mux, Demux ID msg w/ connection.		
Media	Data Flow	3	Network (Internet) <b>Need</b>	Packet Datagram	Logical Address Groups of Network Addresses = Classes <i>Path selection, routing, addressing.</i> <i>Best path and addressing.</i>	Connectivity and path selection. Does not forward broadcast frames unless specifically directed to. Can connect different Layer 2 technologies (Ethernet, Token Ring, FDDI)	Router	IP, IPX, ICMP, Apple Talk, NWLINK RIP, IGRP, EIGRP, ISDN Ping, tracert, ipconfig Control subnet. Accounting for billing.
		2	Data Link (Network Access, Host-to-Network) <b>Data</b>	Frame	MAC Address Error Detection Path blocking <i>Frames, media access control</i> <i>Access to media.</i>	Network topology. Network media access. Error detection. Line discipline. Ordered delivery of frames. Flow control.	Switch Bridge NIC	802.3/802.2 HDLC NetBeui Create and recognize frame boundaries.
		1	Physical (Network Access Host-to-Network) <b>Processing</b>	Bit	Communication Signal Processing Path provision <i>Signals and media</i> <i>Binary transmission</i>	Activate, maintain, deactivate physical link. Conduction Guided Radiation Free Radiation	Cable Hub Repeater Transceiver	EIA/TIA-232 V.35 Initiate and terminate connections.