

OSI Reference Model



7 – Application Interface to end user. Interaction directly with software application.		Software App Layer Directory services, email, network management, file transfer, web pages, database access.	FTP, HTTP, WWW, SMTP, TELNET, DNS, TFTP, NFS
6 – Presentation Formats data to be "presented" between application-layer entities.		Syntax/Semantics Layer Data translation, compression, encryption/decryption, formatting.	ASCII, JPEG, MPEG, GIF, MIDI
5 – Session Manages connections between local and remote application.		Application Session Management Session establishment/teardown, file transfer checkpoints, interactive login.	SQL, RPC, NFS
4 – Transport Ensures integrity of data transmission.	Segment	End-to-End Transport Services Data segmentation, reliability, multiplexing, connection-oriented, flow control, sequencing, error checking.	TCP, UDP, SPX, AppleTalk
3 – Network Determines how data gets from one host to another.	Packet	Routing Packets, subnetting, logical IP addressing, path determination, connectionless.	IP, IPX, ICMP, ARP, PING, Traceroute
2 – Data Link Defines format of data on the network.	Frame	Switching Frame traffic control, CRC error checking, encapsulates packets, MAC addresses.	Switches, Bridges, Frames, PPP/SLIP, Ethernet
1 – Physical Transmits raw bit stream over physical medium.	Bits	Cabling/Network Interface Manages physical connections, interpretation of bit stream into electrical signals	Binary transmission, bit rates, voltage levels, Hubs