**OSI comparision with TCP/IP Protocol Stack**

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| **OSI #** | **OSI Layer Name** | **TCP/IP #** | **TCP/IP Layer Name** | **Encapsulation Units** | **TCP/IP Protocols** |
| 7 | Application | 4 | Application | data | FTP, HTTP, POP3, IMAP, telnet, SMTP, DNS, TFTP |
| 6 | Presentation | data |  |
| 5 | Session | data |  |
| 4 | Transport | 3 | Transport | segments | TCP, UDP |
| 3 | Network | 2 | Internet | packets | IP |
| 2 | Data Link | 1 | Network Access | frames |  |
| 1 | Physical | bits |  |

**TCP/IP**

TCP/IP was developed during the 1960s as part of the Department of Defense’s (DoD) Advanced Research Projects Agency (ARPA) effort to build a nationwide packet data network. It was first used in UNIX-based computers in universities and government installations. Today, it is the main protocol used in all Internet operations.

TCP/IP also is a layered protocol but does not use all of the OSI layers, though the layers are equivalent in operation and function (Fig. 2). The network access layer is equivalent to OSI layers 1 and 2. The Internet Protocol layer is comparable to layer 3 in the OSI model. The host-to-host layer is equivalent to OSI layer 4. These are the TCP and UDP (user datagram protocol) functions. Finally, the application layer is similar to OSI layers 5, 6, and 7 combined.

For political reasons, the Department of Defense in the US was developing their own model for the same problem (network communication). They came up with almost the same solution, called the "Transmission Control Protocol/Internet Protocol model" (or "TCP/IP model"), although they summarized the tasks into just four layers:   
  
\* TCP/IP1: Link layer (does the same job as OSI1 + OSI2)   
\* TCP/IP2: Network layer (does the same job as OSI3)   
\* TCP/IP3: Transport layer (does the same job as OSI4)   
\* TCP/IP4: Application layer (does the same job as OSI5 - OSI7)