

The summary of the comparison is illustrated in figure 5 below:

TCP/IP	OSI
Implementation of OSI model	Reference model
Model around which Internet is developed	This is a theoretical model
Has only 4 layers	Has 7 layers
Considered more reliable	Considered a reference tool
Protocols are not strictly defined	Stricter boundaries for the protocols
Horizontal approach	Vertical approach
Combines the session and presentation layer in the application layer	Has separate session and presentation layer
Protocols were developed first and then the model was developed	Model was developed before the development of protocols
Supports only connectionless communication in the network layer	Supports connectionless and connection-oriented communication in the network layer
Protocol dependent standard	Protocol independent standard

Figure 5: Differences between OSI and TCP/IP Model [28].

16. Conclusion

In this paper an attempt has been made to explain the differences in TCP/IP and OSI models. OSI model is an architecture which gives an idea how packets transfer over the network during any communication. The Transmission Control Protocol / Internet Protocol (TCP/IP) was created by the Department of Defense (DoD) to make sure and protect data integrity, and also maintained communications in the time of disastrous war. However, if designed and deployed properly according to standard, a TCP/IP network can be a truly reliable and flexible one. Efficiency and feasibility. The OSI norms tend to be prescriptive (for instance the "layer N" must go through "all layers below it"), whereas the TCP/IP protocols are descriptive, and leave a maximum of freedom for the implementers. One of the advantages of the TCP/IP approach is that each particular implementation can use operating system-dependent features, generally resulting in a greater efficiency (fewer CPU cycles, more throughput for similar functions), while still ensuring "interoperability" with other.

The TCP/IP and OSI architecture models both employ all connection and connectionless models at transport layer. However, the internet architecture refers to the two models in TCP/IP as simply "connections" and data grams. But the OSI reference model, with its penchant for "precise" terminology, uses the terms connection-mode and connection-oriented for the connection model and the term connectionless-mode for the connectionless model. TCP/IP is the older of the two approaches to data communications and is well established throughout the world. The OSI model, however, is a proven concept that is used in all other data communications

protocols. It will continue to be used as a guideline for all other communications applications.

TCP/IP combines the presentation and session layer into its application layer. TCP/IP combines the OSI data link and physical layers into one layer. TCP/IP appears simpler because it has fewer layers. TCP/IP transport layer using UDP does not always guarantee reliable delivery of packets as the transport layer in the OSI model does.

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