TCP/IP v ISO/OSI

TCP/IP

TCP/IP stands for Transmission Control Protocol/ Internet Protocol. It is a network model designed to provide a reliable byte connection between two points. It helps computers to determine how they should be connected to the internet and how they can properly transmit data between each other. TCP/IP is divided into four layers: Application, Transport, Network and Network Interface (Guru99, n.d).

ISO/OSI

ISO/OSI stands for International Organisation for Standardisation/ Open Systems Interconnection. It is a logical model that establishes all network communications used by computers open to connection and communication with other systems. ISO/OSI is divided into seven layers: Application, Presentation, Session, Transport, Network, Data Link and Physical (Guru99, n.d).

Similarities between TCP/IP and ISO/OSI

- Both protocols are based upon a layered architecture (Ram, 2018).
- Both model layers are comparable to one another. The data link layer and the physical layer of the OSI model correspond to the link layer of the TCP/IP model. The Application, Presentation and Session layers of the OSI model correspond to the Application layer of the TCP/IP and finally, both Transport and Network layers are identical to both models (Ram, 2018).
- In both models, data is converted in packages where packets take an individual route from the source to the destination (Ram, 2018).

Differences between TCP/IP and ISO/OSI

- The OSI model has seven layers, while the TCP/IP model has four.
- The TCP/IP model is a protocol-oriented standard, while the OSI model is based on a generic model of the functionalities of each layer (Ram, 2018).
- The OSI model gives guidelines of how intercommunications should be performed, while the TCP/IP model provided the standards on which the Internet was developed (Ram, 2018).

When the OSI protocol was being developed in the early 90s, everything seemed like it would become the default protocol for what we know today as the Internet. However, political, economic and technological difficulties brought the OSI protocol's development at a stall, while resulting in a rise in the TCP/IP protocol usage, a protocol easier and free to implement.

Even though the OSI protocol was more architecture, more complete and more elaborate, it was expensive. The TCP/IP protocol at the time was both available and free to use (Russell, 2013).

References:

Guru99 (n.d) TCP/IP vs OSI Model: What's the Difference? Available from: https://www.guru99.com/difference-tcp-ip-vs-osi-model.html [Accessed 06 June 2021].

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