NETWORK SYSTEM ADMINISTRATION

ASSIGNMENT 1

SCT212-0163/2022

In 300 words write a write - up on defference between the 7 layer OSI reference model and the TCP/IP model

The OSI (Open Systems Interconnection) reference model and the TCP/IP model are two fundamental frameworks for understanding and implementing network protocols and communication. While both models aim to facilitate the interconnection of computer systems, they differ in structure and focus.

The OSI model consists of seven layers, each with specific functions and responsibilities. These layers are, from the bottom to the top: Physical, Data Link, Network, Transport, Session, Presentation, and Application. Each layer handles a particular aspect of network communication, from the physical transmission of data to the application-level user interface. The OSI model is comprehensive and theoretical, serving as a blueprint for network design and development.

In contrast, the TCP/IP model, sometimes called the Internet protocol suite, is more compact and practical. It comprises four layers: Network Interface, Internet, Transport, and Application. The TCP/IP model was developed organically as the foundation of the internet, focusing on the real-world needs of data transmission. It combines and simplifies some of the OSI layers to provide a more straightforward approach to networking.

Another significant difference is the development and usage of these models. The OSI model is more of an academic or conceptual tool, while the TCP/IP model has been widely adopted for practical implementation. Internet protocols, such as TCP (Transmission Control Protocol) and IP (Internet Protocol), align closely with the TCP/IP model, making it the de facto standard for network communication in the modern world.

Despite their differences, both models serve as valuable reference points for understanding and discussing network protocols. The OSI model offers a thorough theoretical framework, while the TCP/IP model provides a practical and widely implemented approach. Understanding the distinctions between these models is essential for network engineers, as it facilitates effective communication and problem-solving in the complex world of networking.