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**NETWORKING SYSTEMS & ADMINISTRATION**

**ASSIGNMENT**

The TCP/IP Model and the OSI  Reference Model are two key frameworks for comprehending and arranging network communication protocols. These models differ significantly from one another despite having the same goal.

**Differences:**

* **Number of Layers:**

Seven layers make up the OSI, which offers a thorough and extensive structure for networking.

TCP/IP: It has four layers and is frequently seen as a more straightforward and useful method of internet communication.

* **Nomenclature for Layers**

The Physical, Data Link, Network, Transport, Session, Presentation, and Application levels are among the OSI's layers, which are called numerically.

TCP/IP: The layers are known by their more practical names, Network Interface (or Link), Internet, Transport, and Application layers.

* **Continuity of Separation**:

OSI: The layers are clearly distinct from one another and have distinct roles to play.

TCP/IP: Some protocols span the gaps between layers, allowing for a less rigorous separation of the layers.

* **Numerous Uses:**

Although OSI had a significant impact on networking standards development, it is not as commonly used as the TCP/IP architecture.

TCP/IP: The TCP/IP model serves as the cornerstone of the contemporary internet and serves as the inspiration for the majority of networking techniques and protocols.

**Similarities:**

1. **A hierarchy of levels**

Both models have a hierarchical structure in which lower layers supply services that higher tiers rely on.

1. **Applied Layer:**

An application layer is present in both models and is in charge of end-user communication and application-specific protocols.

1. **Transmission Layer:**

The end-to-end connection is managed by a transport layer in both models, assuring data integrity, flow management, and error handling.

1. **System Layer:**

A network layer is present in both models and is in charge of directing data between devices connected to various networks.

1. **Data link and physical layers:**

The lowest levels, which deal with hardware and physical media, are covered by both models.

1. **Interoperability:**

Both paradigms are frequently combined by devices and networks for compatibility and utility. The difference between the two models is filled by protocols like Ethernet, TCP, and IP.

In conclusion, the TCP/IP Model and the OSI Reference Model act as conceptual frameworks for comprehending network communication.