## NETWORK SYSYTEMS ADMINSTRATION

ASSIGNMENT

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## The Difference Between the 7 Layer OSI Reference Model and the TCP/IP Model

The OSI (Open Systems Interconnection) reference model and TCP/IP (Transmission Control Protocol/Internet Protocol) model are both used to understand how data is transmitted over a network. Let's explore the differences between these two models:

### OSI Reference Model

The OSI reference model is a seven-layered model that was introduced by the International Organization for Standardization (ISO). This model is based on the idea of dividing the process of data transfer into different layers so that it can be easily understood and managed. Each layer has a specific function that is responsible for handling its own set of protocols and services. The seven layers of the OSI model from top to bottom are:

1. Application layer
2. Presentation layer
3. Session layer
4. Transport layer
5. Network layer
6. Data link layer
7. Physical layer

### TCP/IP Model

The TCP/IP model is a four-layered model and is the basis of the Internet. This model is simpler than the OSI model and merges the functionality of some of its layers. The four layers of the TCP/IP model, from top to bottom are:

1. Application layer
2. Transport layer
3. Internet layer
4. Link layer

### Key Differences

The key differences between the OSI reference model and the TCP/IP model are as follows:

* The OSI model has seven layers while the TCP/IP model has four layers.
* The OSI model has a separate session layer while the TCP/IP model does not.
* The TCP/IP model combines the functionality of OSI reference models data link and physical layers into a single link layer.
* The TCP/IP model is simpler than the OSI model.
* The OSI model is a theoretical model while the TCP/IP model is a practical model.
* The OSI model is used to develop other network models while the TCP/IP model is used as a standard protocol for the Internet.

In conclusion, understanding the differences between the OSI reference model and the TCP/IP model is crucial for network engineers and administrators to design, implement and troubleshoot network infrastructures. While the OSI model's complexity makes it challenging to use in practical applications, it remains an essential reference model in networking and continues to be widely taught in networking courses.