BIT 2207 NETWORK SYSTEMS ASSIGNMENT

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Comparison between 7 layer OSI reference model and TCP/IP model.

The TCP/IP model and the OSI model both describe how information is transmitted between two devices across a network. Both models define a set of layers, each which performs a specific set of functions to enable the transmission of data. This makes easier to pinpoint where the issues are occurring in the event of a failure. Although the two models have different layers the function of the layers in the TCP/IP model can be mapped to the corresponding layers in the OSI model.

The TCP/IP model is a practical model that addresses specific communication challenges and relies on standardized protocols while on the other hand OSI serves as a comprehensive protocol independent framework designed to encompass various network communication methods. In TCP/IP most applications use all the layers while in OSI model simple applications do not use all seven layers only layer 1, 2 and 3 are mandatory to enable any data communication.

The TCP/IP model has five layers which are the application, transport, network and physical layer while the OSI model has seven layers which are the application, presentation, session, internet, network, data link and physical layer which each performs different functions. The OSI model is designed to be independent of any specific application, while the TCP/IP model is closely tied to the applications that run on top of it. This is a reflection in the naming of the top layer in each model: the OSI model application layer is a generic layer for any application while the TCP/IP model application layer is specific to internet application.

In comparison to the TCPO/IP model, OSI is well documented and explains standard and protocols in more details. To define the routing protocols and standards, TCP/IP model uses the internet layer while OSI model uses the network layer. The OSI model segments different functions that the TCP/IP model groups into single layers. Both application layer and network layer contain multiple layers outlined within the OSI model.