The four layers of the TCP/IP model

Now that we've discussed the structure of a network and how communications takes place, it's important for you to know how the security professionals identify problems that might arise.

The TCP/IP model is a framework that is used to visualize how data is organized and transmitted across the network. The TCP/IP model has four layers. The four layers are: the network access layer, the internet layer, the transport layer, and the application layer.

Knowing how the TCP/IP model organizes network activity allows security professionals to monitor and secure against risks.

Let's examine these layers one at a time.

Layer one is the network access layer. The network access layer deals with creation of data packets and their transmission across a network. This includes hardware devices connected to physical cables and switches that direct data to its destination.

Layer two is the internet layer. The internet layer is where IP addresses are attached to data packets to indicate the location of the sender and receiver. The internet layer also focuses on how networks connect to each other. For example, data packets containing information that determine whether they will stay on the LAN or will be sent to a remote network, like the internet.

The transport layer includes protocols to control the flow of traffic across a network. These protocols permit or deny communication with other devices and include information about the status of the connection. Activities of this layer include error control, which ensures data is flowing smoothly across the network.

Finally, at the application layer, protocols determine how the data packets will interact with receiving devices. Functions that are organized at application layer include file transfers and email services.

Now you have an understanding of the TCP/IP model and its four layers. Meet you in the next video.

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what are the Layers of the TCP/IP model?

1. Network access layer
2. Internet layer
3. Transport layer
4. Application layer

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