**CA9 Case Project 7**

**Case Project 7-1**

The OSI model is a useful tool in troubleshooting a network because it enables you to isolate a problem to a particular software module or piece of hardware. In this project, after reading the description of a problem, identify the OSI model layer or layers that are most likely involved.

• A computer won’t connect to the network. After some investigation, you find that the patch cable isn’t terminated correctly.

Physical

• A computer can access resources on the local LAN but not on a different subnet. You find that the computer’s default gateway isn’t configured correctly.

Network

• You can ping a computer you’re trying to transfer files to via FTP, but you can’t communicate by using FTP.

Application

• All computers connected to a particular hub have lost network connectivity. You determine that the hub is the problem.

Data Link

• You receive an encrypted text file, but when you open it, the text is unreadable. You determine that decryption didn’t take place as it should have.

Presentation

• You check some statistics generated by a network-monitoring program and discover that an abnormally high number of CRC errors were detected.

Physical

• One of your servers has been exhibiting sluggish network performance. You use a network-monitoring program to try to evaluate the problem. You find considerable TCP retries occurring because the server is being overwhelmed by data, and packets are being discarded.

Transport

• A user is trying to connect to another computer, but the logon attempt is continually rejected.

Session

• You try to access a Linux server to share files by using NFS. You can communicate with the server, but the shared files don’t appear to be available.

Application

• You inspect a computer that isn’t able to communicate with other computers. You find that IPv6 instead of IPv4 is installed on that computer.

Network

**Case Project 7-2**

Your instructor might want you to organize in groups for this project. This chapter included a few real-world examples that use a layered approach to describing a process. See whether you can come up with another process that can be described in layers. You should give a presentation to the class with a detailed description of the layered process you decide on.

**Buying and Installing a video game**

* The game must first be bought
* The must then be delivered to the place where the console is located
* The game case must be opened to access the game disc
* The game disc must be inserted into the console
* The console must be able to read what is on the disc
* The console must then transfer the disc’s data to its storage
* The console must then install the game from its saved data
* The console must then the run the game for the player to play the game

**Case Project 7-3**

You want to transfer a document from one computer to another, and *you want the document to be encrypted.* The destination computer is on another network, so you *know data has to travel through one or more routers*. The network *technology on your network is Ethernet*, but the technology *on the destination network is Wi-Fi*. From what you have learned about networking, should this document transfer work? Why or why not? Which layers of the OSI model are involved in the italicized parts of this description?

Yes, the document transfer should work. The routers know the route between the networks and the WAP will convert the ethernet to wireless, and the encryption takes place higher up in the OSI model, which will not affect the data reaching its destination from the its origin. The WAP is in Layer 2 (Data Link), networks are in layer 3 (Network), and encryption is in layer 6 (Presentation).