

Walt Bower
LIS4488
OC #4
02.07.2008

OSI Model: Layer 2 Versus Layer 3

Summary

In researching both Layer 2 and Layer 3 of the OSI Model, there are noticeable differences, but also similarities between the two layers. The primary difference between the two layers is that Layer 3 uses logical addressing and Layer 2 uses physical addressing. This is accomplished by the fact Layer 3 uses IP address, whereas Layer 2 uses the MAC address. A MAC address is an address that cannot be changed, but an IP address can be reassigned to a different piece of hardware.

There are also similarities between these two layers. Primarily, both are means of identifying a piece of hardware by means of an address. These addresses provide a point of reference of how to find the hardware when connected to a network. In addition, an IP address links to a MAC address. You cannot have an IP address without linking to a MAC address. Both components are required in the installation of a network.

Benefit

By doing this research and understanding the different between physical and logical topologies, I believe I am better prepared in the networking field. By being able to understand the OSI Model in terms of physical and logical topologies, it makes it easier to understand how the components of a network fit together. It is important to understand that only the logical addresses can be changed and the MAC address cannot be.

Value to Intended Audience

The intended audience for this particular area would be individuals in the networking field. In order to properly install or maintain a network, you must have a concept of how the addressing is done for components on a network. This research is also targeted at security administrators as well. In order to track a hacker, you must be able to link the IP address from Layer 3 to the MAC address at Layer 2. This is crucial when you are trying to find out who has compromised your network and need to pursue them legally.

Value to You

As a college student, this information helps me prepensely. In order to understand the technology of networks, it is imperatively to understand the underlying concept of logical and physical topologies. This is helpful it not only setting up a network, but also to protect your network from unauthorized access. In addition, using IP addresses are important in networks in terms of server administration. You must have the IP address in order to connect to the physical piece of hardware.

Conclusion

After reading this article, I have gained a better understanding of the network topologies that are used today. Without this knowledge, I believe that I would not have the skills to understand when one is used versus when the other is used. This is the basic premises for installing a network in the workplace and at home.

Citation:

OSI Model- Wikipedia. 7 Feb 2008 <http://en.wikipedia.org/wiki/OSI_model>.