CS4404 Learning Journal 1

Describe the concepts of confidentiality, integrity, and availability as it pertains to network security. Which of these concepts do you think should be given the greatest consideration while designing your network? Explain.

According to (Sadiqui, 2020), there are three objectives of securing a network,

First is confidentiality, which refers to the ability of the network to protect the data traveling over the network from unauthorized persons.

The second property is the integrity, this maintains the reliability of data. The data shall be identical from the sender to the receiver.

The last property is the availability, the network and service shall be constantly accessible to the users.

It depends on the business requirement on the purpose of the network. Different networks might set different priorities.

In my opinion, integrity shall take precedence over the other two properties if this is for general usage and transmitting non-confidential information.

It will defeat the purpose of sending data through a network if we can not guarantee the data from the sender is identical to the data that receivers get. It just means that the network is not providing the service.

There are various ways to ensure that the data remains unaltered and consistent and the measures include checksums, hashing, and digital signatures that help in verifying the data integrity for transmission over the network.

According to (*What Is Data Integrity and Why Is It Important? – TechTarget.Com*, n.d.) data integrity provides a broader concept that covers data security and data quality. It includes the proper housekeeping regarding the proper data retention, data destruction, and adequate compliance with regulations.

**Reference**

Sadiqui, A. (2020). *Computer Network Security*. John Wiley & Sons, Incorporated. http://ebookcentral.proquest.com/lib/univ-people-ebooks/detail.action?docID=6123268

*What is Data Integrity and Why is it Important? – TechTarget.com*. (n.d.). Retrieved November 19, 2023, from https://www.techtarget.com/searchdatacenter/definition/integrity