**Question 2: Unsecured Web Server**

Suppose you find a server running HTTP on port 80, despite compliance guidelines requiring encryption in motion. What do you do? ​​

Accessing the internet using HTTP (port 80) is permissible in situations where security is not of much importance, such as using social media or any other location where private information is not transferred. Using HTTP in cases that require a certain level of security can have negative results. For instance, this can lead to a person or a company being susceptible to various cyber attacks. A Denial-of-Service attack, in which an attacker floods networks with traffic with the intent of shutting it down, is far more likely if data is being transferred over port 80. In order to avoid problems similar to this one, it is preferred to use HTTPS (port 443), a more secure way to access the internet.

If I were to encounter the issue of a server running on HTTP even though it is not the best practice, I would use this project as a guide because during this project we took numerous steps to ensure the servers we created were as secure as possible. The use of the jump box was one of the tools used in order to provide security. The jump box prevented the virtual machines from being exposed to the public and by implementing a network security group we regulated which IP addresses were allowed to communicate to the jump box. Although we were initially using HTTP, we were required to log in to our jump box server via secure shell (ssh) which is a secure way to access a computer over an unsecure network. This can information would definitely be helpful if this situation were to arise.

As added security one can look into Virtual Private Networks (VPNs). A VPN establishes a secure connection between a computer and the internet while also encrypting the data transferred. The implementation of a VPN could quell some of the concerns regarding various cyber problems including DDoS and Man-in-the-middle attacks. Though, high quality VPNs can be a little pricey the benefits that are received by having a VPN justifies the cost. Even a proxy server, even though it doesn’t provide the encryption that a VPN would offer, offers a layer of security that is not there otherwise.