**Network and Troubleshooting**

Matthew Powers

Grand Canyon University

College of Engineering

CST-111

Professor Dilts

2/21/2021

For this assignment, Fing and Nmap were used to gather all sorts of data. The type of data that they could gather includes but is not limited to, IP addresses, device info, how many devices are connected and so on. This info gathered plays a key role into the explanation of How Fing and Nmap are so valuable in the world of trouble shooting. Take IP addresses for example, an IP address is arguably one of the most valuable services that a device has to offer when troubleshooting. Once recognizing this, it can be seen how valuable services like fing and Nmap can be.

An Ip address can be used for a multitude of things but from what can be noticed on Fing and Nmap, it plays a key role in device identification. With an IP address, these devices can connect to a router and share data with it and so on. Fing and Nmap can then connect to the same router and in turn the router allows it to gather the data it needs to see the kind of load that the router may be under. These services can then discover how many addresses (devices are connected to it and see if there could be a shortage of bandwidth/ see the kinds of routes a device may be going trough using traceroute on Nmap. The devises over a four-hour period are listed below to see how they may change over time. An analogy to put this in perspective is if there is a pipe that has water flowing through it from a bucket, if the bucket keeps getting more water but the pipe is still the same size, ultimately the water coming out is what will have to be shared. In this analogy, the demand for internet is the water, and the pipe is the bandwidth, these services allow for an individual to see if a larger pipe (more bandwidth) may be necessary as users increase, demanding an increased flow of water. Moreover, after knowing if there is an IP address consuming too much bandwidth or not doing things that it should be, one could then block that IP address from the router. While Nmap and Fing cannot do this, they can play a key role in discovering the necessary steps.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Time: | 6:00 pm | 7:00 pm | 8:00 pm | 12:00 pm |
| Number of devices on Fing | 1,095 | 1,235 | 3,459 | 3,686 |
| Number of hosts on Nmap | 256 | 256 | 256 | 256 |

References

Geek University. (n.d.). Install nmap on windows: Nmap. Retrieved February 22, 2021, from https://geek-university.com/nmap/install-nmap-on-windows/

Fing desktop. (n.d.). Retrieved February 22, 2021, from https://www.fing.com/products/fing-desktop