

Bryant Watkins

Reflection Paper 5

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Internship Reflection Paper: Fifth 50 Hours

Virginia Dept of State Police

In the fifth 50-hour period, I was able to get some more experience with password management as well as gain more insight into additional networking operations. The great benefit of being at these RF sites is that there are literally over a dozen different devices I can learn about and/or practice software management tasks. Considering some other miscellaneous tasks we may conduct during the week, I set out to learn/get hands-on experience with at least two different devices each 50-hour period. During this most recent 50-hour experience, I was able to learn about the networking role of the Cisco 4221 router, as well as get more user access and software management experience with the Motorola GTR 8000.

The Motorola GTR 8000 mainly serves the purpose of providing radio repeater services for RF communications. These devices have a vast software system that includes the ability to configure – user accounts, passwords, and DNS services. I was introduced to these devices and given the opportunity to gain valuable hands-on experience. The GTR devices are connected by way of ethernet connection upon initial installation, but since they are already installed across all sites I was able to configure device software through other means remotely. Once already installed, these devices can be further configured through the use of Configuration/Service

Software. I was able to download this software program for my laptop and was successfully able to access the software of the device remotely.

I conducted changes to the device's password through the password configuration window, and I was even able to set how often a password change was required. I also was able to add myself as an SNMPv3 user, allowing me to access the device directly by ethernet connection if I so desire. The Motorola GTR device also has an incredibly reliable security method – all cybersecurity patches are automatically downloaded. Having security patches downloaded automatically ensures that the issue of delayed patch updates is essentially eliminated. Failure to or the delaying of security patch updates is an incredibly dangerous vulnerability amongst many users worldwide.

I also got to learn some insight into what exactly a Cisco 4221 router device provides for the Virginia State Police as well as its importance. Of course, routing services are a major service provided, but these devices also provide both switching and security services. These devices help link Virginia State Police locations across the commonwealth through the use of software defined wide area network. Cisco 4221 routers also have the capability to be programmed and monitored remotely, an important feature in networking and security.

There are also multiple cybersecurity features that further enhance the security of Virginia State Police networks and data. Secure booting software allows these devices to be secure during the initial booting and initialization process, preventing malicious software from infiltrating. There is also the presence of Dynamic Multipoint Virtual Private Network, allowing a privatized network secure from adversaries. Then there is the presence of code signing in the transmission of data, requiring the verification of digital signatures. These cybersecurity features are amongst some of the most common and important in the cybersecurity field.