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Introduction

The reason that I chose this internship is because of the type of work that is being done in this job. The job description that was given seemed that it would make me a well rounded system administrator. The learning outcomes that I would like is how to make systems secure as well as making do what it needs to do , how to manage my work and be independent with my work without having a deadline, and the third one would be to do software patching different types of applications.

This paper will be about my internship and the things that I did during that and what I learned.

Describe the beginning of your internship:

The type of business that I work for is a consulting firm that specializes in government contracts. I work for General Dynamics Information Technology. This company had this government contract for almost 25 years (which is a long time) and is going through a re-compete year in 2027 which seems far away but is coming up and a lot of pressure comes with it. The type of teams that service this contract is a System administrators team (which is the team that I am on), Senior Engineers , which has to deal with big picture and integration with different applications that help with the contract, Networks teams, they monitor the network as well as change configuration so that some other networks can access our network, and Information Security team , that verifies the people on the network have the right credentials to be on the network. The major products and services that we provide is keeping up the network and making sure that the mission can be completed. The major customer that we service is the Air Force, which makes the organization a little bit confusing but there is a company lead and government lead for each team which is how we get things done.

My initial orientation took a while because I had to wait for my accounts to be approved and then made. I had a lot of broad understanding of the network but each network is different in how they were made and maintained. This network has to do a lot with the tickets that the customer put in then we service it. They had me do easy tickets first with guidance and standards of procedures and then telling me to come back if I needed help. One of the first tickets I did on my own is rebuilding an image on a machine that was a security tamper. The way to do this is written and almost step by step. There were still issues that arose that were not on the paper and when I had a problem , I could ask them but they wanted to know my troubleshooting steps before they gave me the answer. My first impressions of the internship is that it was a small team and that I was happy for the challenge and I was excited to get started.

Describe the management environment:

I have a direct manager , that is SME (subject matter expert) in most of the things that we deal with. He also is my technical manager , someone I go to if I have a corporate issue and he signs my timecards. Rory did my interview , and is the one that gives me my performance feedback. The team is only seven people which is not large. There is a second in charge that gets called upon only when my manager is out of the office or on a different meeting. The supervision is very hands-off , which I very much enjoy because I like being able to work and do my little mistakes without feeling someone over my shoulder. I try to ask my peers around me for help before I make a beeline for my manager. A lot of people on my team have specialized in different things which helps with knowing which way to go. The effectiveness of this internship has helped me with honing my skills as a system administrator, with being a well rounded system administrator and being able to do almost anything that is needed to be a system administrator.

Describe in detail you work duties

I need to ensure overall integration and upkeep of all wide area network and enterprise management services to include all servers, workstations, and access accounting functions inherent to network access on the company architecture. Manage mission data distribution servers providing rapid file transfer across the WAN and to external customers. Manages enterprise IT services such as LDAP, NTP, DNS, and HBSS. Administers a host of unique systems and services specific of the AirForce. Provides Network management of computer systems within the DOC-East and West. Install, configure, analyze, develop, test, modify and maintain solutions for operating systems, hardware, and application software to meet enterprise management and DPA systems analysis and/or integrations requirements IAW established IT and government standards (e.g. network services, operating system patches, application software patches, and maintenance of software licenses).Possesses working knowledge of Windows Active Directory, Group Policies and DNS. Experience with the integration of data centers into existing environments.Tracks and maintains all system authentication and accreditation dates for DOC systems. Maintains the security and integrity of databases.Performs user account, group, and home directory maintenance for Unix and Windows workstations and servers, coordinating with DCGS Network Security (IA) as required. Analyzes, develops, tests, and modifies hardware and software solutions to meet the DOC management and DPA systems analysis and/or systems integration requirements .Reviews and provides system engineering change proposal (ECP) input to integration documentationReviews integration and operational products for correctness, adherence to the design concept and user standards, and progress IAW established IT and government standards. These are all necessary towards my jobs because it needs to ensure that everything is running smoothly and is up for the customer.

Specific use of skills or knowledge of cybersecurity:

The classes that helped with this internship were a Windows Security class and the Linux based classes that I took. While I majored in cybersecurity, I made sure that I took classes that had a linux based environment because I knew what I wanted to do in the workforce. That helped because a lot of the backend of the servers that we do are RHEL , which is Red Hat Linux, it's a little different than the Ubuntu language that we learned at Old Dominion but only a few syntaxes change in that sense. My own job experience has helped actually put the stuff that I learned to use. Seeing all the commands that I have learned by heart actually work and be of use and impress my boss to know was very nice.

The windows based classes helped because our workstations use Windows 10 as the software. Being able to use powershell and know how to access the setting and know what I am actually looking at is nice. I do not feel uncomfortable with the commands that I am doing.

Some of the new things that I learned are patching workstations and different types of software. Pushing these updates and learning how to do these is hard because it seems like each software has a different way of doing things. Being able to differentiate between how to push these patches is what I am proud of learning.

Being able to see all the classes that I took, actually help with my job is the best and showed that I learned something.

How did the ODU curriculum prepare me

The Old Dominion curriculum did prepare me for some things and did not prepare me for other things. The curriculum prepared me with the certain classes that I took such as windows security, python network security classes , and linux based classes that helped with the technical side of the job. These classes and the test that I had to take also helped me with the interview process, which I had been told that I did very well on. Some of the other classes that I have taken such as cybersecurity ethics and other written based classes helped with ticket writing and technical writing for manuals to help with documentation. These classes helped because it made me learn how to write in a technical sense and it made sense to other people that could follow the manual that I wrote. The linux stuff that I learned in school has helped reinforce what I have learned in school, such as basic commands like "ls" and "cd". Also other things that are basic troubleshooting that I have learned. The new experiences that I learned that I could not do is customer service, I could not learn how to do that in school because it was all theory. Learning how to explain very technical things to a non technical person is a learning curve.

Did my internship fulfill the outcomes that I put out?

The outcomes that I wanted to achieve from this internship is making sure that the systems are secure as well as working like how the consumer wants it to. There are some vulnerabilities that can arise which makes the application less secure and unable to be on the network unless it is patched or moved offline. I learned how to do that will one application when it came out through a CVE that there has been a vulnerability that needed an emergency patch and if it was not complete than it was non compliant and should not be on the network. The second thing that I wanted to learn is to be more independent with more work without needing as much oversight. The supervision for this job is very hands-off and made it so that we asked our peers for some insight before we asked our manager. There was also looking at past tickets where the errors are the same and therefore could be treated the same without asking for much help. The last thing that I learned is patching and updating different applications, we use applications such as Splunk and VMWare which gets the updates from the applications website but since we are on an offline environment , a lot of things are done differently and learning that process was one of the hardest one but once learned gave a lot of accomplishments.

Describe the motivating and exciting aspects of the internship

The most motivating part of the internship is when I did not have to ask for help when I was working on a problem. I needed to fix a workstation that was running very slow, if this were at the beginning of my internship I would not know where to start with the troubleshooting process. With having done so many tickets with this same issue I knew exactly where to start and going from the least invasive to basically resetting the workstation to get rid of the session that is stalling up the machine and taking up all the same to learn. Another thing is when I caught the issue before the customer and went through the basically troubleshooting process such as restarting the server , making sure that services that need to be on are on and the services that need to be off are off and then with the last resort is running a certain wizard that would basically reset the database of the application which usually will fix the issue.

Describe the most discouraging aspects of the internships

There was nothing that discouraged me during my internship. Everyday I went to work I felt that I was learning something different or how to apply something that I have learned in school and then was able to do that to the job that I have now. Being able to learn something new everyday made me feel very accomplished and that I was able to keep up with the people at my job that seemed to have much more experience than me.

Describe the most challenging aspects of the internship

One of the most challenging things about my internship is how broad the job title is. We had to learn a lot of things, some of those things being specialized that are hard to do with no vendor support sometimes. There was a new application that we got approved for that had to store and manage our back drives that we had to build from the ground up. There are some servers that were not backing up and with no vendor support all we had was a manual and the internet. Having to put together something from knowing other things and then testing and it still not working was the most frustrating thing about this job.

Conclusion

The main takeaways that have from this internship is that you need to be able to learn quickly and if you cannot learn quickly make sure that you take notes , so that you can remember and if something different happens that you have not seen you can jot it down and ask someone more senior and write that down and pass it on to someone else. Another thing that you need is to be flexible in this job , there are moments that I was on call and that if something happened it my responsibility on my own to fix the issue and get it back up running with reasonable down time. This internship helped with classes by using some of the things that I have learned in my job to what I am learning in class, with the job being an almost lab environment and gave me both on the job training and study time.