Jonathon Samson-Noble

End of Project 2 Report

Automation

This semester I wanted to try implement some automation solutions since I was unable to achieve this last semester

* Automatic certificate renewal and deployment

After learning about the Azure migration, I then wanted to try automating the deployment of some of the BIT services onto Azure

* GitLab
* VM Creation for papers

I managed to get to the point where I could use Ansible to deploy a series of playbooks that would create a VM in Azure and then install and configure GitLab onto that VM but I still needed to work on the security features but after a week I found out that GitLab was most likely going to be scarped as we moved towards GitHub.

I also managed to create an Ansible playbook that would ask the user to input a number based on how many virtual machines that they wanted to create in Azure it would then take this variable and use that number to run the creation tasks that number of times. After talking with Rob about vRealize and how VM’s are to be generated I came up with the idea to create a website that would get the user to sign in using their polytech credentials and if they had access they could create a VM for their respective papers if that paper required a VM

A link to the GitHub repository containing my create playbook <https://github.com/samsojl1/Otago-Polytechnic/blob/master/ansible/in700.yaml> as well as one to delete <https://github.com/samsojl1/Otago-Polytechnic/blob/master/ansible/in700-delete.yaml>

General Maintenance

As members of the Operations and Security team we would be tasked with performing weekly checks on the D312 kits ensuring that they were all working correctly and if not then try to fix them and log any issues, at the time of writing this report I only had to do this task once but when I did Jae and I managed to have 15 working

I had to assist fellow project 2 members with various issues throughout the semester such as with James Woods who was having an issue with GitHub

Certification

This semester I was able to achieve Fortinet NSE 1 Network Security Associate and Fortinet NSE 2 Network Security Associate which were available to take for free due to Covid-19. The material covered in these certifications was similar to things I already had knowledge of and had learnt in the BIT.

I also looked into doing AZ-104 Microsoft Azure Administrator which covers a lot of things that I did hands on throughout this semester with my experiments with Microsoft Azure, I plan to complete the exam material for this at a later date and hopefully sit the exam.

While I’d like to look into AWS, I believe that New Zealand is more Microsoft focused and that my time would be better spent focusing on Azure

Azure

My approach to Azure was very hands on from the beginning, at first it was simply using the website UI to create resources. As the weeks passed, I learnt about Azure Command-Line Interface (Azure CLI) which allows you to create Azure resources using a command line, from here I learnt about Ansibles cloud modules and the integrations with Azure with blended well with the work I was trying to achieve in my special topic.

Using my ansible playbooks that I created I was able to create a Linux VM in Azure in a few minutes that Damian Pang could use for his virtualisation assignment as his local machine wasn’t able to be used

I also learnt a lot about some of the features of Azure by making mistakes, I discovered Azure serial console ability for virtual machines so that if you make a mistake that prevents you from connecting via SSH you can connect through serial console and reverse you change this can be extremely helpful if you didn’t take snapshots. Azure also has peering’s which you can use to peer multiple different networks together so that those resources in those networks can communicate with each other

Ticketing

During this semester I had to resolve a few tickets that came in on the ticketing site, The first ticket I had to resolve was to create a server for the IoT project team in order to get more experience with Azure I put this server into Azure instead of vRealize.

The second ticket I had to resolve was to double the storage size of another IoT server unfortunately they only gave us an IP address so we had to track down where it was stored in Azure, locally or on vRealize after it was determined that it was on vRealize we needed to change permissions on the server so that the owner was someone in the Operations team so I spoke to Rob about changing the owner to me at the same time we also added an extra disk to the server then configured it. After this was done, I spoke to the client to confirm everything was now working correctly as well as if they were happy with the solution which they were. I then closed the ticket.

I also resolved some of the tickets that were left over from the previous semester they were mostly just tickets that not been closed

CCL

During the semester holidays we had a trip to Computer Concepts Limited (CCL) in Christchurch where we were given a tour of the facility and managed to talk with most of the heads of departments and the managers. It was a fantastic experience to see how a real-world IT company functions along with what CCL offers its customers and the infrastructure behind it. The only downside to the trip was on the flight back down to Dunedin I ended up getting sick and was unwell for the last 2 days of the holidays (most likely the airport food)