CSE - 546 - Project 3 - Portfolio Report
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As part of my role in the project, I was tasked with installing and configuring OpenStack using the DevStack provided through GitHub. I was also involved in utilizing the Glance service to install the latest Ubuntu cloud image and creating a custom image to be used in OpenStack. I then proceeded to create an Ubuntu instance with the custom image that my teammates utilized to run the python script that monitors the S3 buckets in AWS.

Initially, I encountered challenges installing OpenStack using DevStack on my ARM-based MacBook as none of the virtual machine software was compatible. After extensive research, I discovered UTM, which allowed me to run the latest Ubuntu 22.04 LTS release as a virtual machine. However, I soon realized that DevStack was not compatible with ARM-based ISA, and I had to switch to a Windows OS to successfully install OpenStack.

Upon successfully installing OpenStack, I ensured all services such as Neutron, Nova, and Keystone were running correctly. I then proceeded to create a custom image using the latest Ubuntu 22.04 cloud image via Glance. I created an instance with 8 GB RAM and 80 GB volume, which involved creating the volume separately, attaching it to the instance, and modifying the default security group rules to enable SSH and ICMP requests to appropriate ports.

I generated an RSA key pair using ssh-keygen within the VM and imported it into OpenStack before creating the instance using the key pair. I also created a public floating IP in OpenStack to associate with the VM, enabling access to the external network. I tested the configuration by pinging the floating IP address, then successfully SSHed into the instance with the public key.

Throughout the project, I contributed to the testing and evaluation of the application by working collaboratively with the team on each stage, from testing functionality to debugging configurations. When faced with challenges such as DNS resolution issues that hampered our progress with respect to installing various packages inside the VM, we worked together to troubleshoot and resolve the problem, ensuring that the application worked without breaking and was completed within the project's specified timeframe of less than 5 minutes.