Andrew Song - 1204822

Assignment 3

CIS4010

03/12/23

Ease of Programming:

AWS offers the AWS SDK, Azure provides the Azure SDK, and GCP offers the Cloud SDK. In terms of ease of programming, I found that AWS had a steeper learning curve due to its overly verbose documentation. However, the boto3 docs were decent enough and it provided a very easy to use interface to interact with its APIs. Azure and GCP, on the other hand, were more difficult to use for me because I had a hard time using the SDKs, so I had to rely on piping command outputs with the subprocess module. In terms of VM creation, I found Azure to be the most straightforward of the three, with AWS coming second and GCP being the last.

Features:

AWS offers a wide range of EC2 instances, including instances optimized for compute, memory, storage, and GPU-intensive workloads. Azure provides a similar range of VM instances with its Azure Virtual Machines service, and GCP offers the Google Compute Engine service. All three platforms provide a range of storage and networking options to support VMs. AWS and Azure offer a wide range of additional services like load balancing, auto-scaling, and container services, while GCP offers similar services with Google Kubernetes Engine.

Cost:

AWS, Azure, and GCP all have different pricing models for their VMs. AWS has a complex pricing model with various discounts and reservation options available. Azure and GCP also offer discounts based on usage, but their pricing models were more straightforward. I liked that all three platforms had free trials / free tiers and also allowed you to pay for only what you needed. From what I researched, I found AWS to be the most expensive option out of the three, with Azure and GCP being more affordable.

Selecting a Platform for a Major Deployment:

If the deployment requires a wide range of services beyond just VMs, AWS may be a good choice due to its large ecosystem of services. If ease of programming is a priority, Azure or GCP may be a better choice due to their simpler APIs, though boto3 alone may be enough of a factor to convince me otherwise. I did not enjoy working with piping command-line outputs because, as mentioned earlier, I could not get the SDKs to work properly – granted I did most of this assignment in a time crunch which is my own fault. And since AWS was generally more expensive than the other two options, I may opt for Azure.

In conclusion, AWS, Azure, and GCP all offer a great set of robust tools for creating and managing VMs. As outlined in this report, all three platforms have their pros and cons in terms of ease of programming, features, and cost. When selecting a platform for a major deployment, I would opt for Azure because of it’s affordability, ease of use (although boto3 is still better until I figure out how to work with the SDK properly) and plethora of features and services.