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Overview

This assignment is an extension of assignment 1. This assignment consists of a Vagrantfile which brings three virtual machines online in the cloud. The repository represents Infrastructure as Code (IaC). This assignment was treated as a proof of concept as I ran into technical limitations running the project on my laptop and I was running out of time to extend this project further.

Contents

This repository contains all the files from the previous assignment (a pdf, php, conf and sql files). In addition the repository contains a README text file and this pdf. The Vagrantfile has been modified since the previous assignment and thusly it will not launch virtual machines locally when launched.

Running the Application

To run this application you need to export your AWS credentials as for security reasons my credentials were not stored in the Vagrantfile. Additionally you may need to modify to keypair details (creating your own keypair to store locally and insert manually into the Vagrantfile) and you may wish to modify the availability zones details depending on the condition of the Amazon Web Services servers, ie. using nearby servers. When Vagrant is ran if all the preconditions have been met, it will boot up three ubuntu micro instances of EC2 remotely and allow for secure shell access.

Building the Application

I basically took lab 9 and assignment 1 and combined the repositories so Vagrant would launch three dummy instances of EC2. I did not add any additional functionality beyond that point, as my laptop could not handle the necessary code to get this project running (I couldn't identify and subnets as I couldn't get the aws command to run on the Vagrant instant from lab 8 on my laptop). After I had tested my code and had gotten my instances running from my IaC repository I stripped my Vagrantfile of comments and wrote this document outlining my assignment.

Extending this Assignment

To extend this I would add back the code for running a web server and the code for the database server and code for docker on the docker server respectively. I would create or find some Docker containers which contained interesting code for my application (I'm assuming I could find or build code to run all the internal operations of my application from docker. My project could contain a product database. The web home queries the database, docker performs computation to the database as well as updating product details. Then the results of the query are displayed on the web home for the end user. All of these servers will communicate with an internal security group. Data flow between components could be managed with Amazon's messaging services (the packet sending one). This in term could inform users when they have actions to perform.

Conclusion

This assignment demonstrates some virtual machines which can be deployed to AWS EC2 remotely and not much else.