**Infrastructure Setup on GCP with Terraform**

**Installing Terraform**

Run the command below to install Terraform 0.12.26

wget https://releases.hashicorp.com/terraform/0.12.26/terraform\_0.12.26\_linux\_amd64.zip

unzip terraform\_0.12.26\_linux\_amd64.zip

sudo mv terraform /usr/local/bin/

terraform --version

**Preparing GCP Environment for Deployment**

* Create a new project in your GCP Account. Take note of the Project ID
* Create a Service account for Terraform by following the steps below:
  + Select the project you created in the previous step.
  + Under "Service account", select "New service account".
  + Give it a name
  + For the Role, choose "Project -> Editor".
  + Leave the "Key Type" as JSON.
  + Click "Create" to create the key and save the key file to your system.

**Provisioning Resources**

The attached Terraform configuration file *main.tf* will provision a custom VPC, firewall rules and Compute Engine instance to run the docker containers. Some variables (the gcp project id and the service account key) in this file are referenced in an accompanying *variable.tf* file.

Create a directory containing the two files and move your service account key to the same directory

* Run ***terraform init*** to initialise your configuration
* Run ***terraform apply*** to apply your configuration and enter yes when prompted. The specified resources will now be created.

**Running the Specified Docker Containers**

* Log into the provisioned linux machine via SSH. You can simply do this by clicking on the SSH tab on the console
* Run the attached script *docker\_install.sh* to install docker on the machine.

*Chmod +x docker\_install.sh*

*./docker\_install.sh*

* Log in again and run the attached *docker-script.sh* file to create the specified docker images and run containers from them.

*Chmod +x docker-script.sh*

*./docker-script.sh*

* Enter your IP address in a browser to see the
* Don’t forget to run ***terraform destroy*** when you are done to delete all the provisioned infrastructure