SEP 720 – Cloud Computing : Assignment 1

Google Bucket and VM

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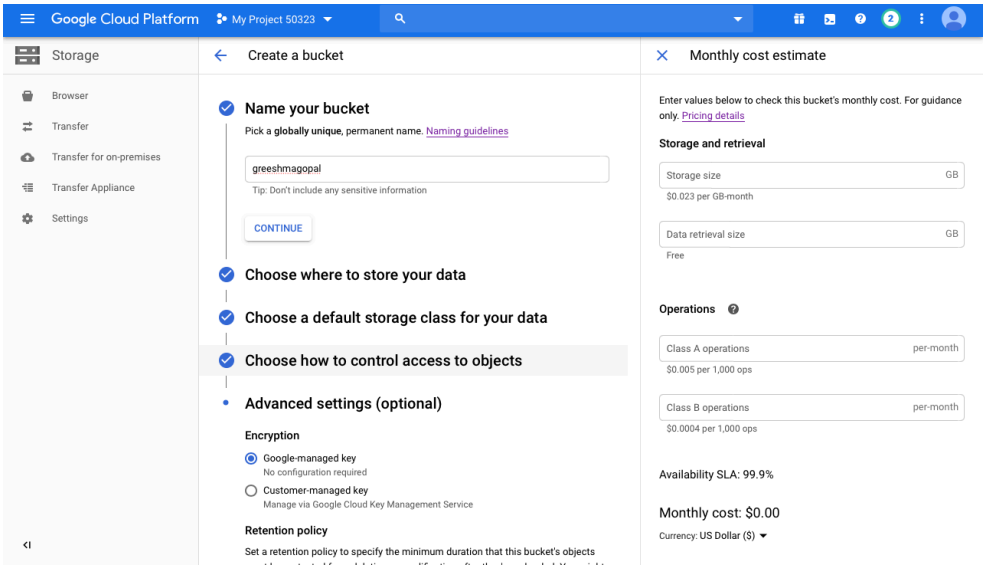
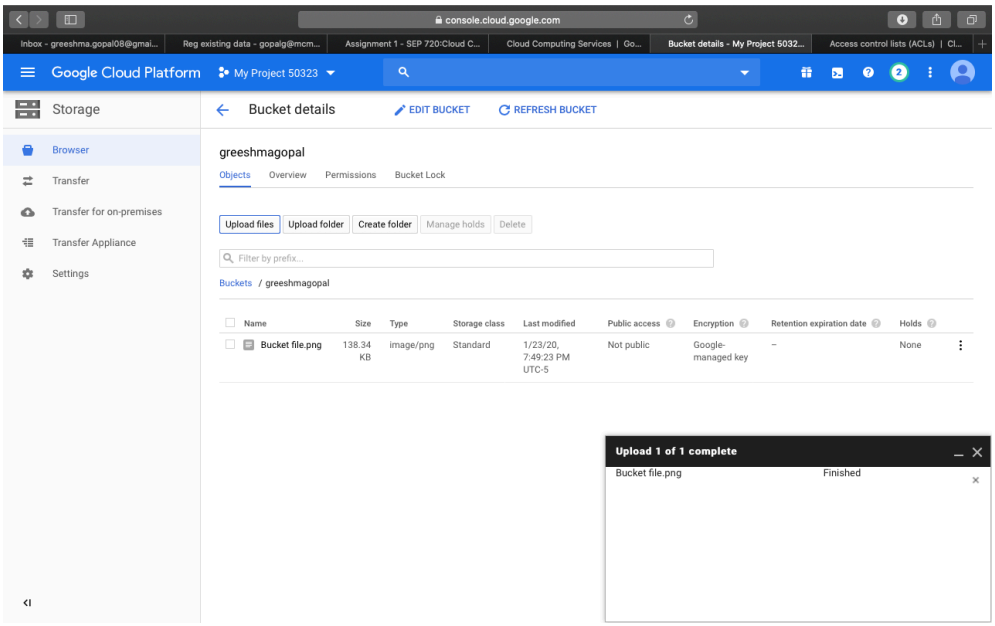
Creating bucket in Google cloud platform

Google cloud bucket is a web service which allows storing the data which can be files, folders or any objects. It also allows fine grained access control of the files and helps the admin to provide access to specific Users .

- For creating a bucket click on ‘Create bucket’. Post this, several parameters are chosen
- Location type was selected as zome with location as asia–south1-c
- Storage class was chosen as standard
- Fine grained access control was chosen which would help in a better access control

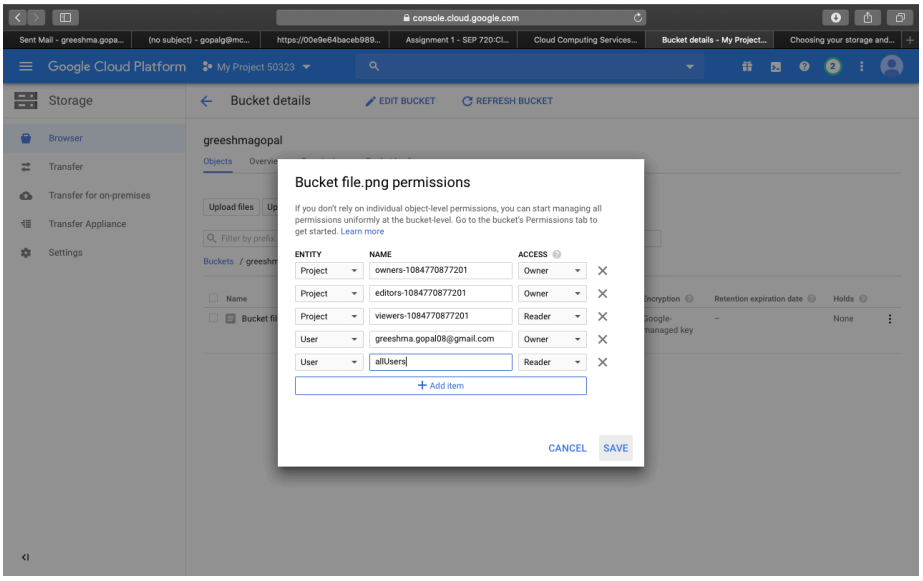


- Add files to the bucket by clicking on upload. Folders can be uploaded as well.

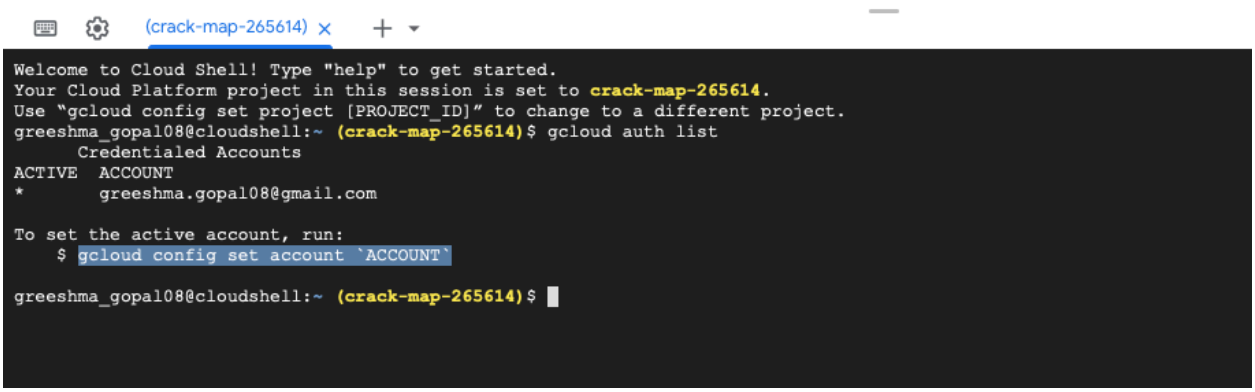


- Give permission to the files. '**allUsers**' were given the access to the file. Below is the URL of the file which was uploaded(Screenshot of the bucket was uploaded)

  https://storage.cloud.google.com/greeshmagopal/Bucket%20file.png



- Activating the cloud shell in the console by running the command <**gcloud auth list**>



- Run the command <gcloud config list project> to get the projectID.

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Use "gcloud config set project [PROJECT_ID]" to change to a different project.
greeshma_gopal08@cloudshell:~ (crack-map-265614)$ gcloud auth list
      Credentialed Accounts
ACTIVE  ACCOUNT
*       greeshma.gopal08@gmail.com

To set the active account, run:
    $ gcloud config set account `ACCOUNT`

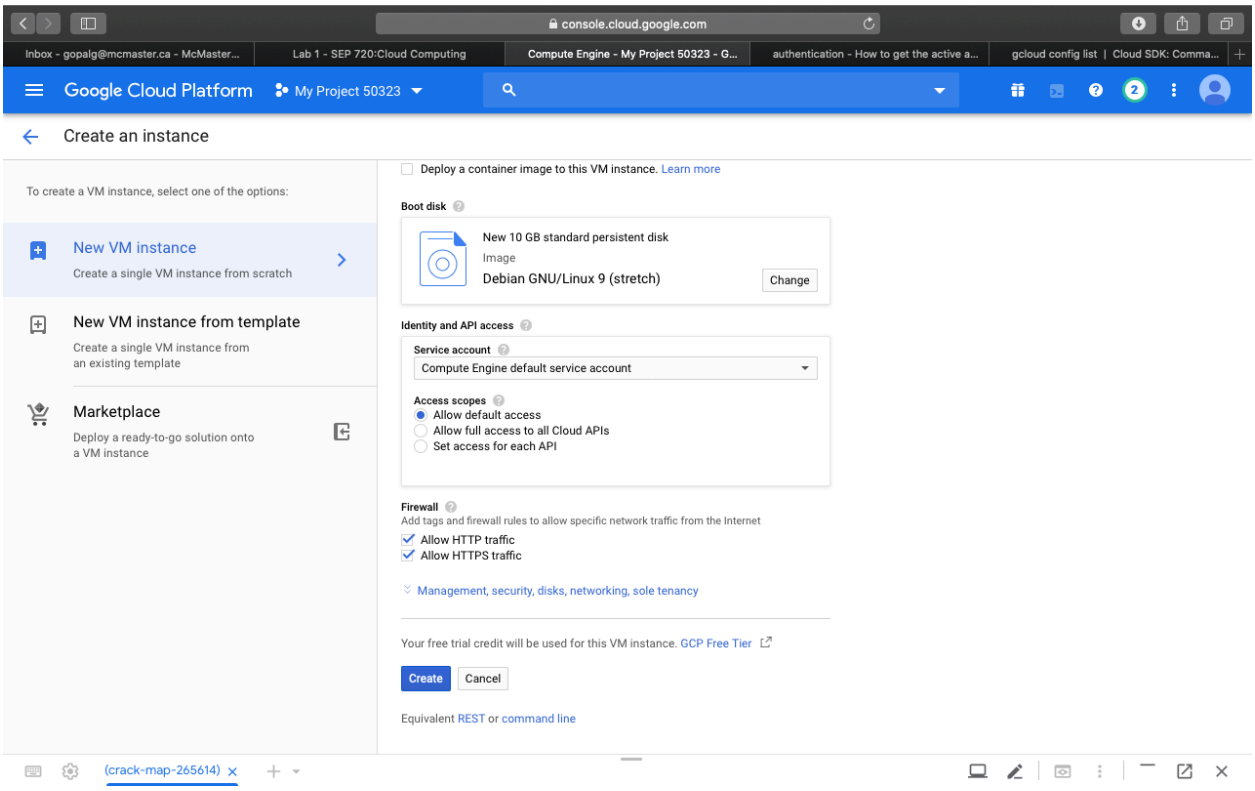
greeshma_gopal08@cloudshell:~ (crack-map-265614)$ gcloud config list project
[core]
project = crack-map-265614

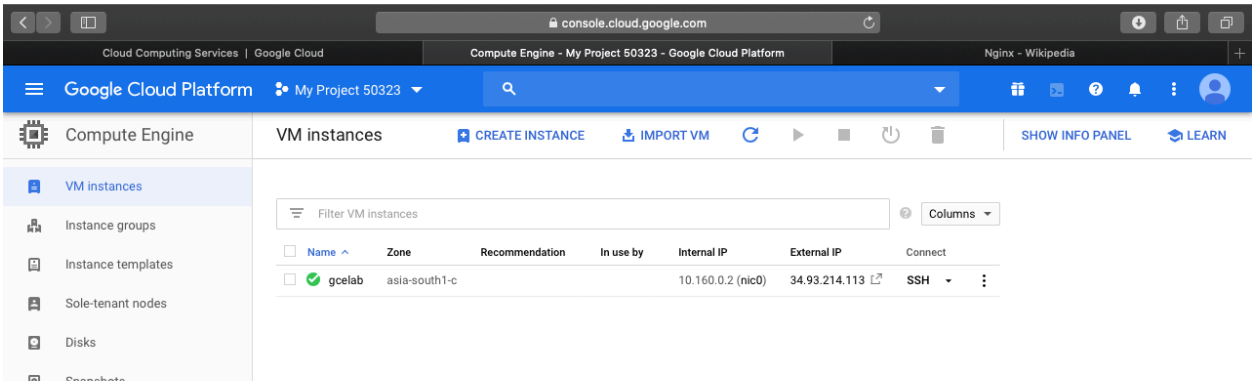
Your active configuration is: [cloudshell-4656]
greeshma_gopal08@cloudshell:~ (crack-map-265614)$
```

Creating the VM

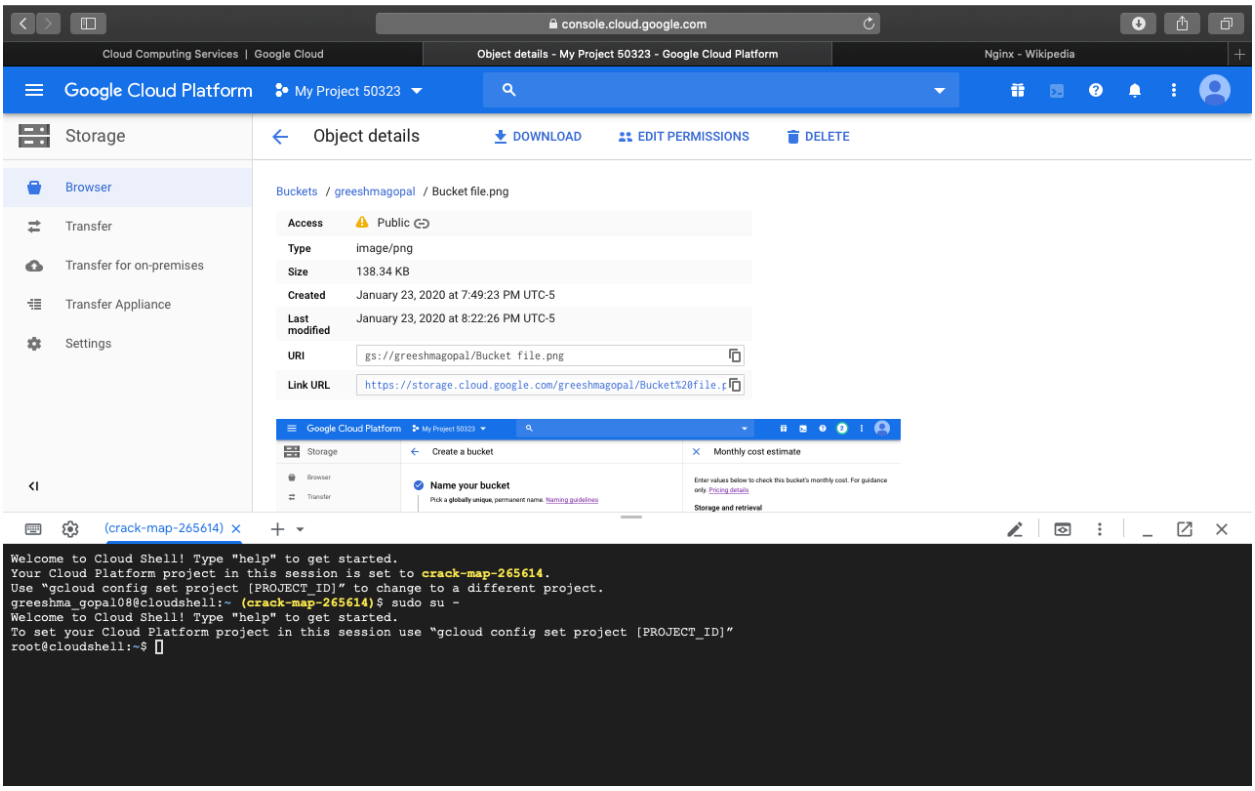
Virtual machines are something which allows us to run an operating system in an app window on a desktop that acts like a separate computer. It allows us to use different operating systems and also helps in running software which the primary operating system cannot do.

- Creating the new virtual machine(Menu>Compute engine>VM Instances) by giving parameters such as region, zone, boot disk and machine type. The firewall was checked for HTTP and HTTPS traffic.

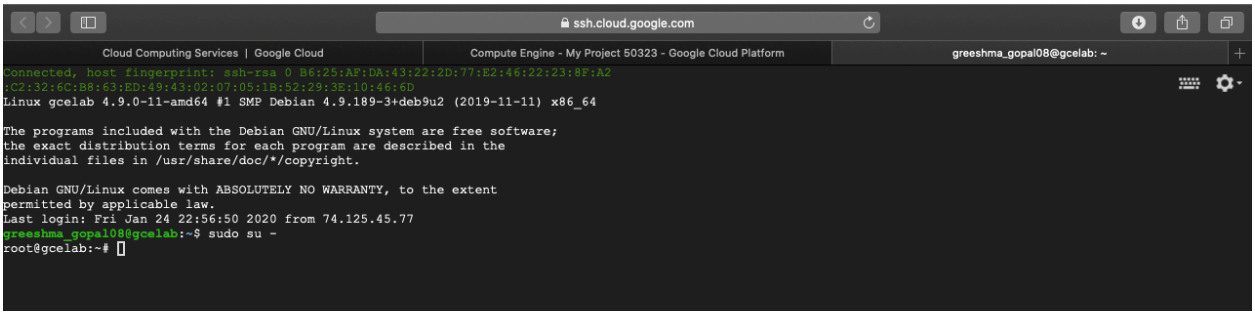




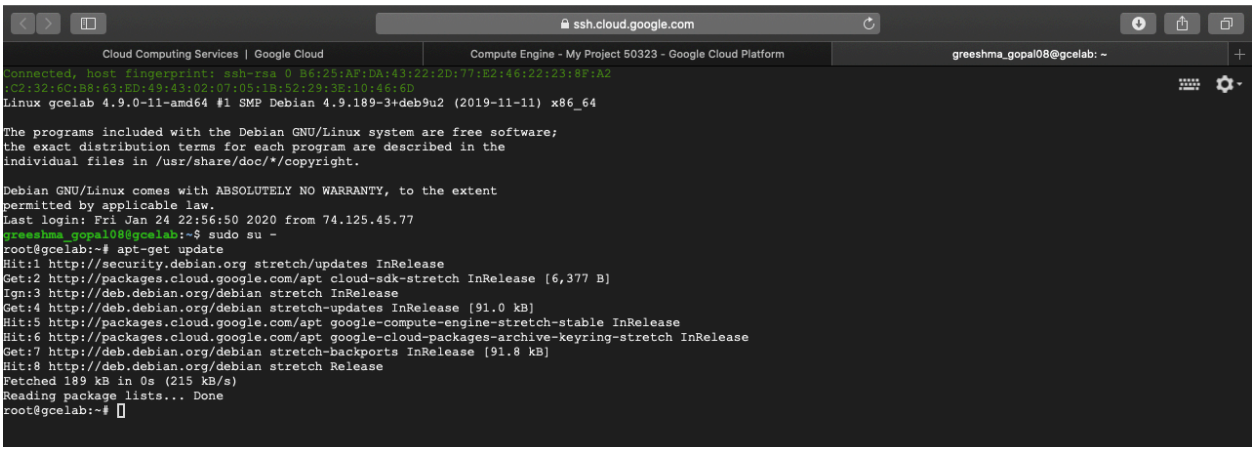
- Activating the gcloud shell to work on commands



- Accessing root in sudo using the command



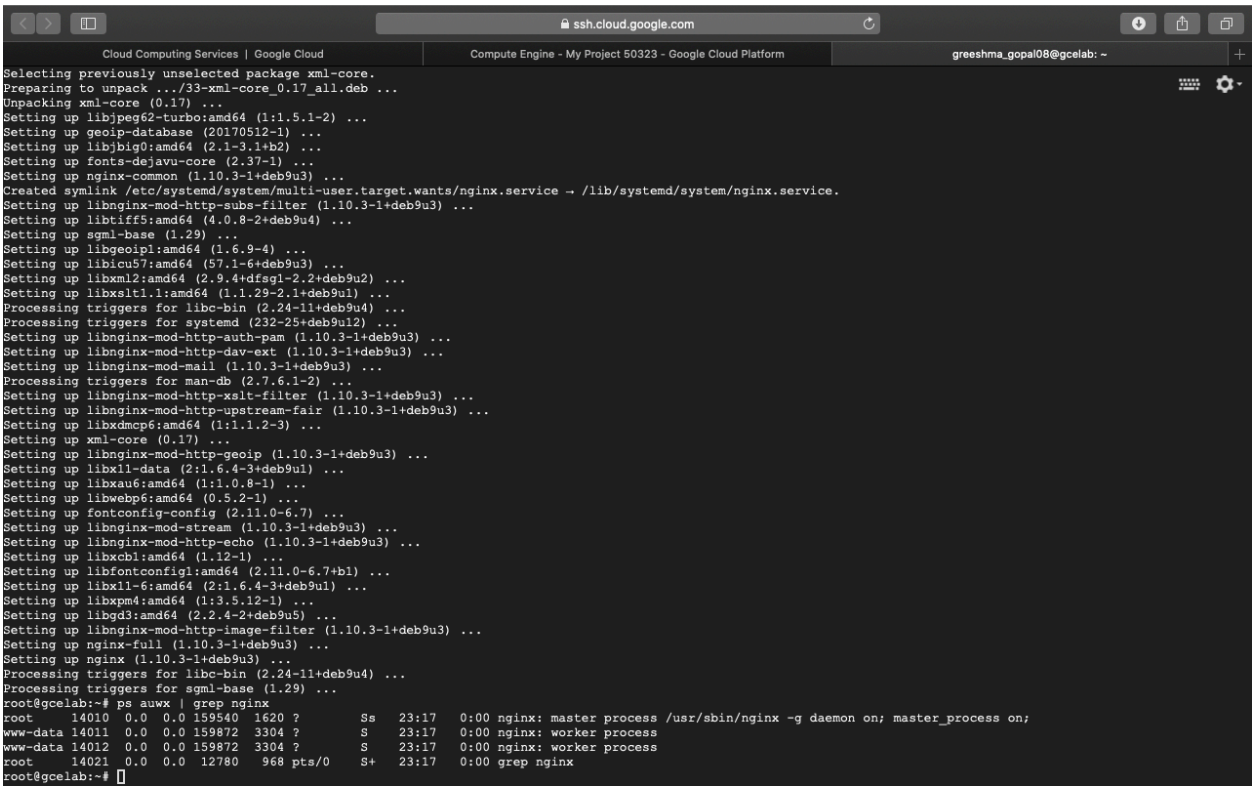
- Updating the OS using the command <apt-get update>



NGINX installation

NGINX is a web server which also acts as a load balancer. The features of NGINX include security, high availability and scalability.

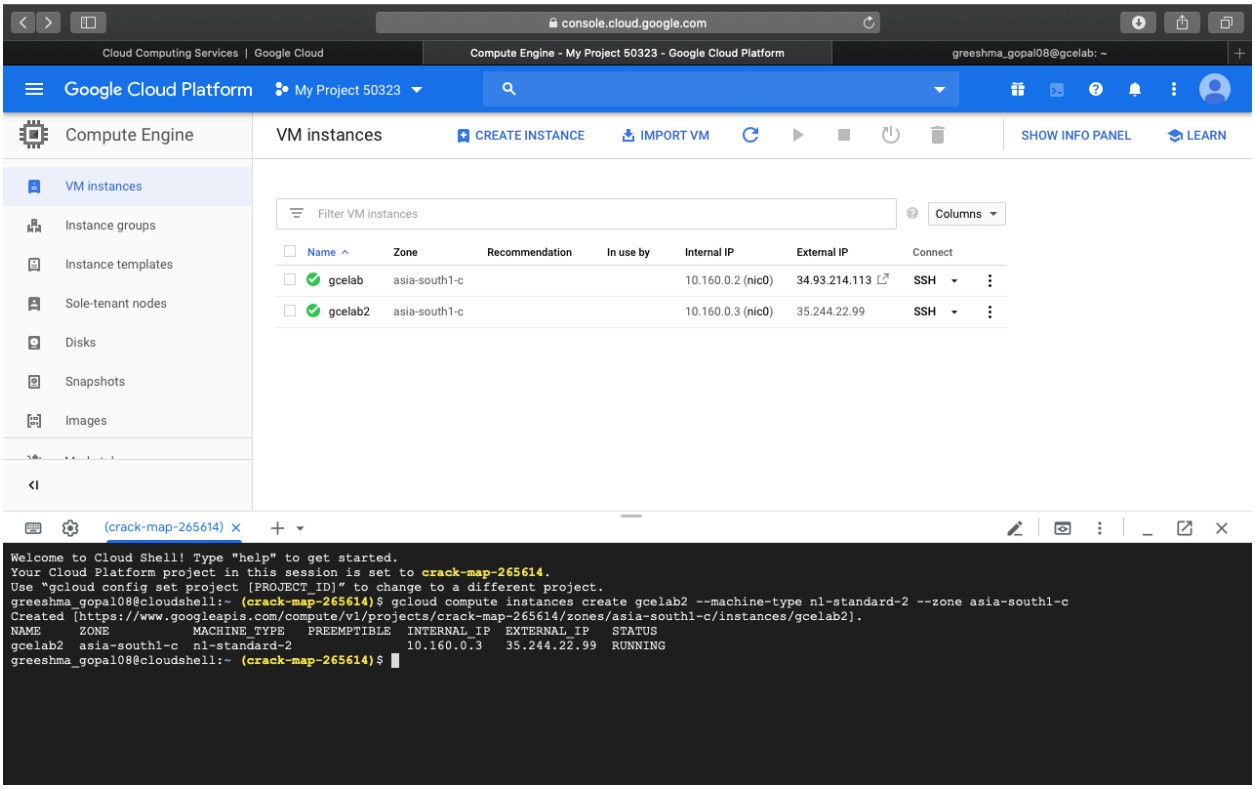
- Installing NGINX using the command <apt-get install nginx -y>. Post installation, verifying if the NGINX is running fine using the command <ps auwx | grep nginx>



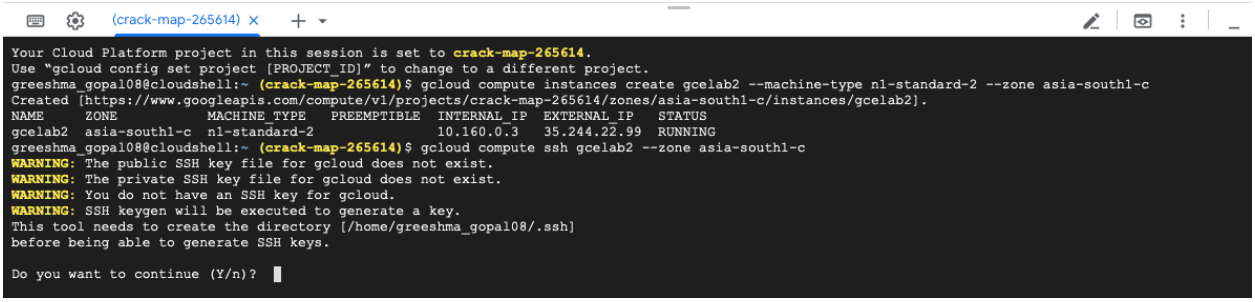
- Click on the external IP to see the default web page of nginx

Creation of the second VM(gcelab2) using commands in the google cloud shell

- Run the command <gcloud compute instances create gcelab2 --machine-type n1-standard-2 --zone asia-south1-c> to create a new VM **gcelab2**



- Add SSH to the instance by running the code <gcloud compute ssh gcelab2 --zone asia-south1-c>



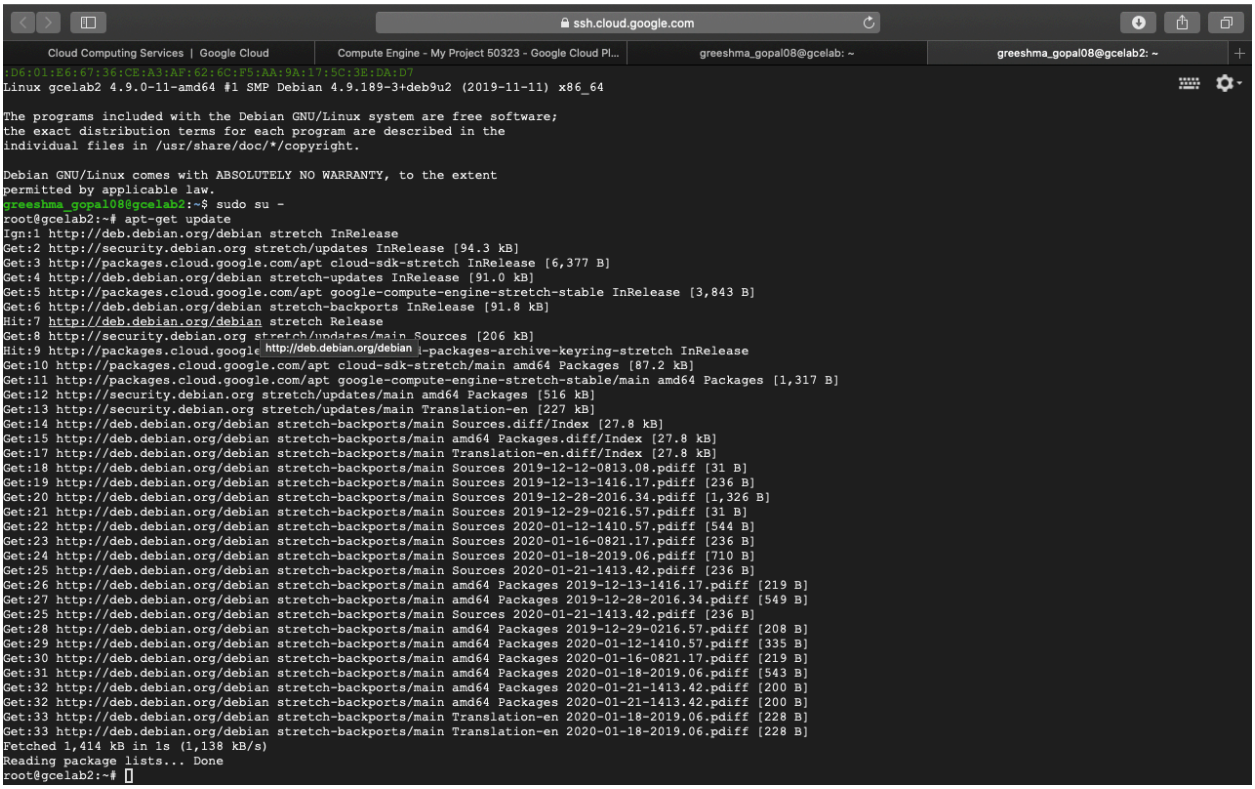
- Type 'Y' to continue. Press enter twice and exit the shell.

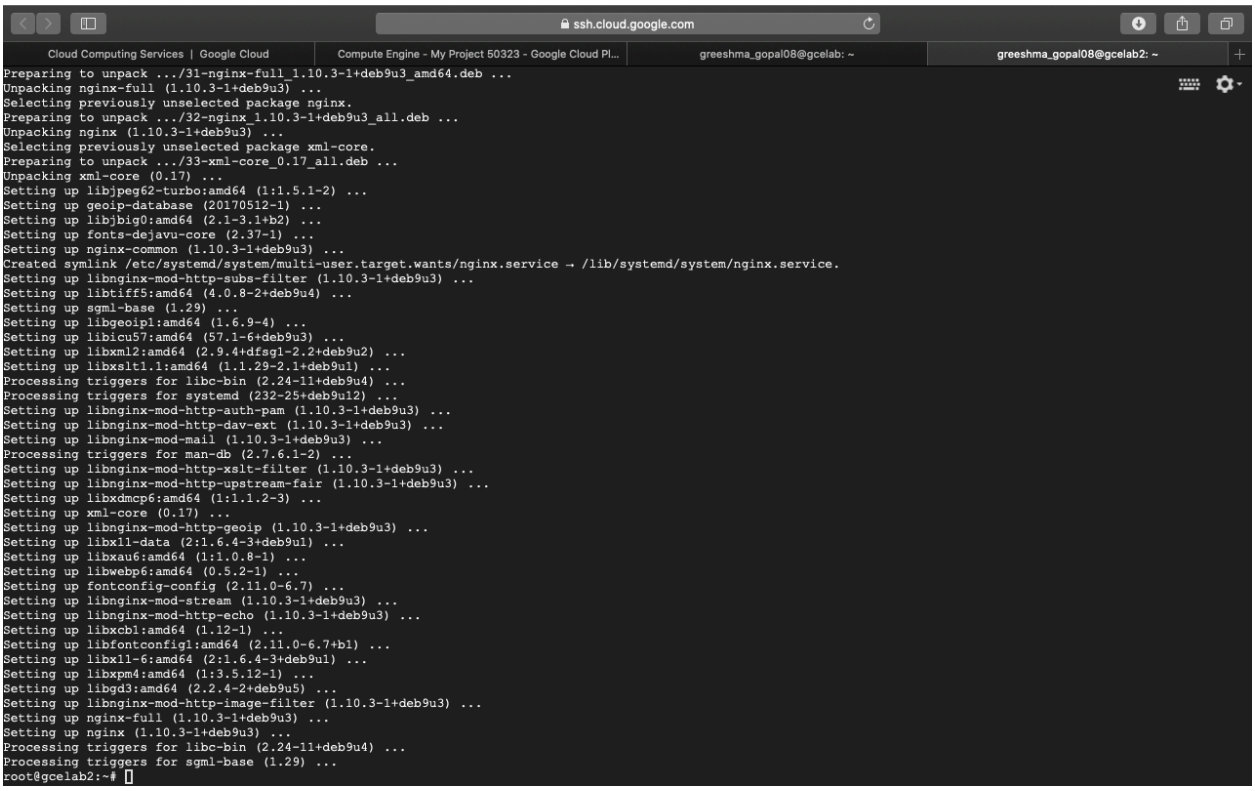
```
Created [https://www.googleapis.com/compute/v1/projects/crack-map-265614/zones/asia-south1-c/instances/gcelab2].
NAME     ZONE           MACHINE_TYPE   PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP   STATUS
gcelab2  asia-south1-c  n1-standard-2               10.160.0.3   35.244.22.99  RUNNING
greeshma_gopal08@cloudshell:~ (crack-map-265614)$ gcloud compute ssh gcelab2 --zone asia-south1-c
WARNING: The public SSH key file for gcloud does not exist.
WARNING: The private SSH key file for gcloud does not exist.
WARNING: You do not have an SSH key for gcloud.
WARNING: SSH keygen will be executed to generate a key.
This tool needs to create the directory [/home/greeshma_gopal08/.ssh]
before being able to generate SSH keys.

Do you want to continue (Y/n)?  Y

Generating public/private rsa key pair.
Enter passphrase (empty for no passphrase):
```

Additionally I have installed nginx in the second VM gcelab2 as well.





- Verifying if nginx is running in the second VM gcelab2 which was created using cloud shell.