DevOps Lab

CLOUD COMPUTE - GCP

Compute: Virtual Machine creation

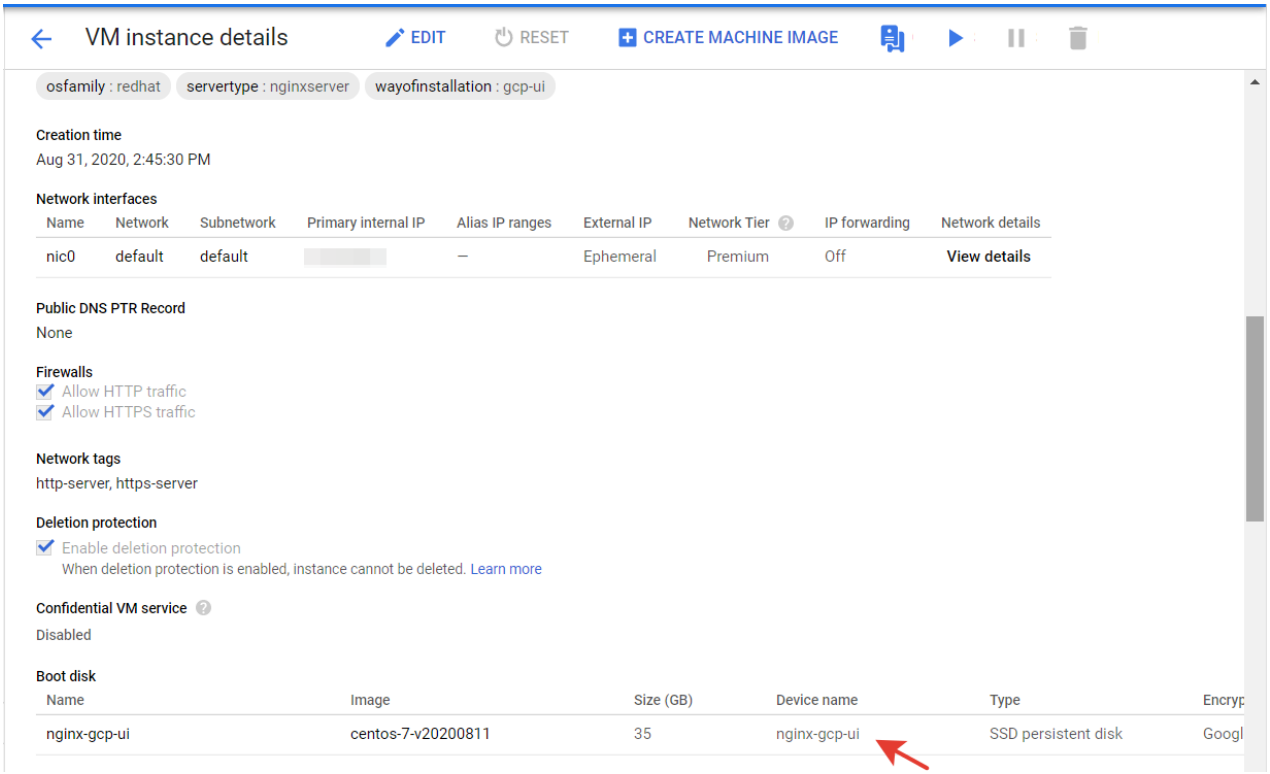
Home task

TASK 1

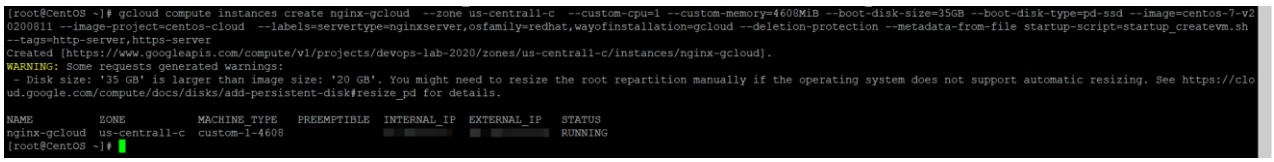
It’s aiming to gain knowledge about the mechanisms of VMs creation in Google Cloud.

Create Virtual Machine in Google cloud by the following ways:

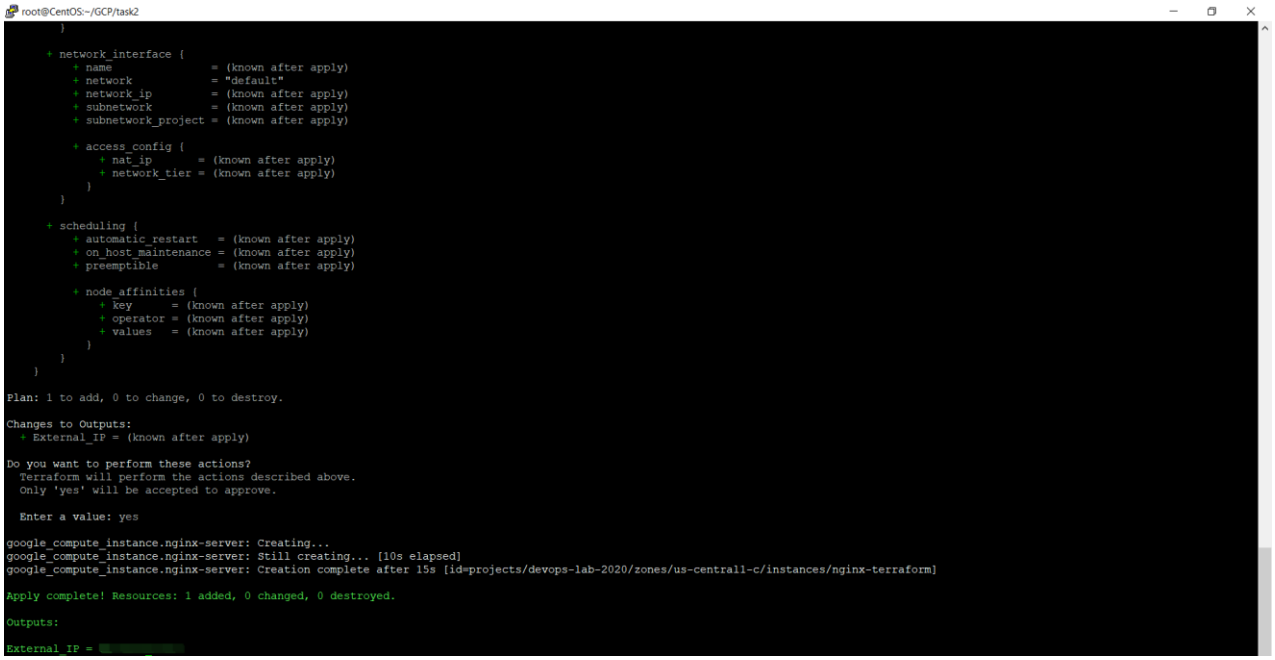
- gcp-ui (complete Lab: google codelabs: VM creation)
-



- gcloud



- terraform (all settings should be provided via variables (tfvars), add URL (“http://IP. Address/” to output)



TASK 2

It’s aiming to gain knowledge about the mechanisms of Persistent disk creation in Google Cloud.

Create Persistent Disk and attach it to one of existing Virtual machine (nginx-gcp-ui).

1) Complete Lab [goolge codelabs: persistent disk](#) with using your VM name

```
[redacted]@nginx-gcp-ui ~]$ sudo mkdir /mnt/mydisk
[redacted]@nginx-gcp-ui ~]$ ls -l /dev/disk/by-id
total 0
lrwxrwxrwx. 1 root root  9 Aug 31 18:22 google-nginx-gcp-ui -> ../../sda
lrwxrwxrwx. 1 root root 10 Aug 31 18:22 google-nginx-gcp-ui-part1 -> ../../sda1
lrwxrwxrwx. 1 root root 10 Aug 31 18:22 google-nginx-gcp-ui-part2 -> ../../sda2
lrwxrwxrwx. 1 root root  9 Aug 31 18:33 google-persistent-disk-1 -> ../../sdb
lrwxrwxrwx. 1 root root  9 Aug 31 18:22 scsi-0Google_PersistentDisk_nginx-gcp-ui -> ../../sda
lrwxrwxrwx. 1 root root 10 Aug 31 18:22 scsi-0Google_PersistentDisk_nginx-gcp-ui-part1 -> ../../sda1
lrwxrwxrwx. 1 root root 10 Aug 31 18:22 scsi-0Google_PersistentDisk_nginx-gcp-ui-part2 -> ../../sda2
lrwxrwxrwx. 1 root root  9 Aug 31 18:33 scsi-0Google_PersistentDisk_persistent-disk-1 -> ../../sdb
[redacted]@nginx-gcp-ui ~]$ sudo mkfs.ext4 -F -E \
> lazy_itable_init=0,lazy_journal_init=0,discard \
> /dev/disk/by-id/scsi-0Google_PersistentDisk_persistent-disk-1
mke2fs 1.42.9 (28-Dec-2013)
Discarding device blocks: done
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
13107200 inodes, 52428800 blocks
2621440 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2199912448
1600 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624, 11239424, 20480000, 23887872

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
```

```
[redacted]@nginx-gcp-ui ~]# df -H
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        2.3G     0  2.3G   0% /dev
tmpfs           2.3G     0  2.3G   0% /dev/shm
tmpfs           2.3G  8.9M  2.3G   1% /run
tmpfs           2.3G     0  2.3G   0% /sys/fs/cgroup
/dev/sda2        38G  2.3G   36G   6% /
/dev/sda1       210M   12M  198M   6% /boot/efi
tmpfs           451M     0  451M   0% /run/user/1000
tmpfs           451M     0  451M   0% /run/user/0
/dev/sdb        212G   63M  201G   1% /mnt/mydisk
[redacted]@nginx-gcp-ui ~]#
```

2) Create terraform configuration to do the same via terraform (use VM: nginx-gcp-terraform).
   For reference:
   - [google_compute_disk](#)
   - [google_compute_attached_disk](#)

```
root@CentOS:~/GCP/task2
      + id                = (known after apply)
      + instance          = "projects/devops-lab-2020/zones/us-central1-c/instances/nginx-terraform"
      + mode              = "READ_WRITE"
      + project           = (known after apply)
      + zone              = (known after apply)
    }

  # google_compute_disk.nginx-server will be created
  + resource "google_compute_disk" "nginx-server" {
      + creation_timestamp       = (known after apply)
      + id                       = (known after apply)
      + label_fingerprint        = (known after apply)
      + last_attach_timestamp    = (known after apply)
      + last_detach_timestamp    = (known after apply)
      + name                     = "mydisk1"
      + physical_block_size_bytes = (known after apply)
      + project                  = (known after apply)
      + self_link                = (known after apply)
      + size                     = 200
      + source_image_id          = (known after apply)
      + source_snapshot_id       = (known after apply)
      + type                     = "pd-standard"
      + users                    = (known after apply)
      + zone                     = "us-central1-c"
    }

Plan: 2 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

google_compute_disk.nginx-server: Creating...
google_compute_disk.nginx-server: Still creating... [10s elapsed]
google_compute_disk.nginx-server: Creation complete after 13s [id=projects/devops-lab-2020/zones/us-central1-c/disks/mydisk1]
google_compute_attached_disk.nginx-server: Creating...
google_compute_attached_disk.nginx-server: Still creating... [10s elapsed]
google_compute_attached_disk.nginx-server: Creation complete after 12s [id=projects/devops-lab-2020/zones/us-central1-c/instances/nginx-terraform/mydisk1]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.

Outputs:

External_IP = [redacted]
```