DevOps Tech Test

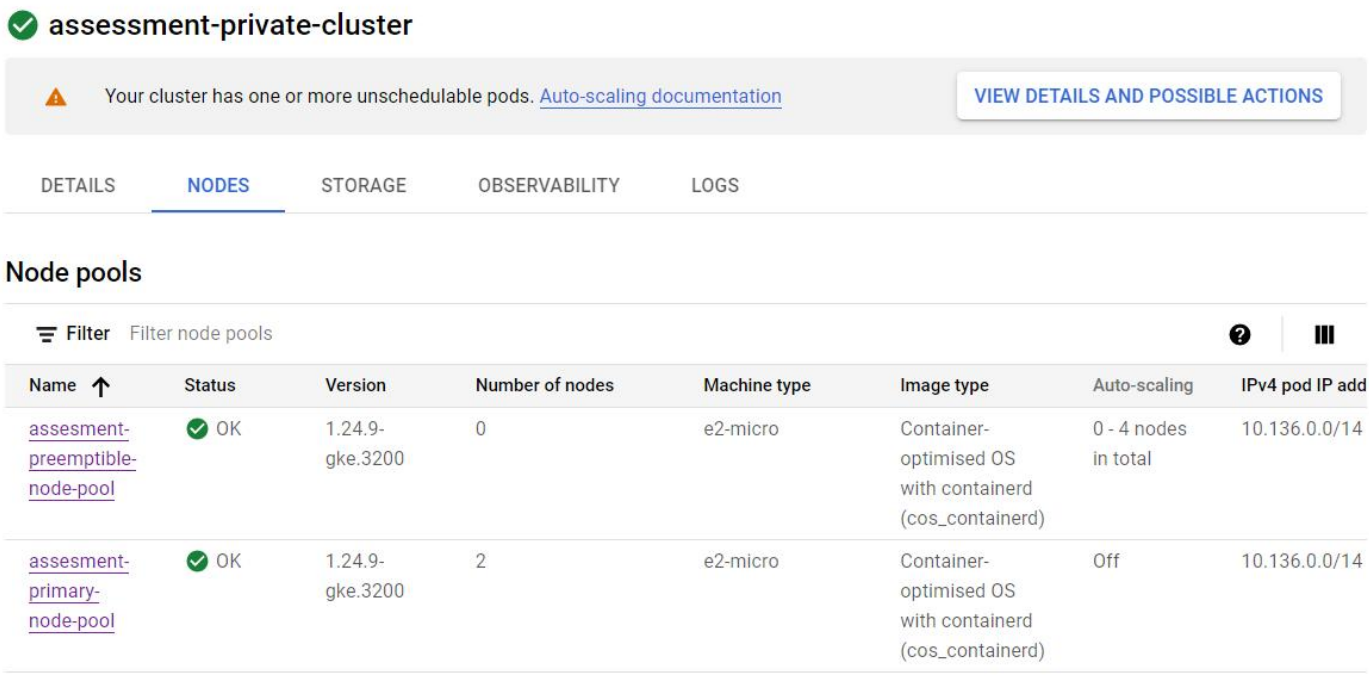
Task 1

Start a new Terraform working directory satisfying the following requirements

1. Provision a regional `private` K8s cluster on GKE
2. A dedicated service account should be used (instead of the default one), and the service account should be created as part of the script
3. It should be creating a `new VPC` instead of using the default one
4. Subnet should be created in the `London` region, and the cluster should use this subnet. Make sure CIDR ranges used by the cluster are in the `RFC1918 24-bit block`
5. Create two node-pools, one with 3 nodes without auto-scaling, another with 0 node by default with auto-scaling enabled. Allow the auto-scaling node-pool to use preemptible nodes4.
6. Allow outbound internet access to the private cluster without assigning external-IP addresses to it.

OUTPUT:

* I am trying to give maximum possible output screenshots on the console.
* Created Private cluster with two node-pools with 2 nodes without auto-scaling, another 0 node with auto-scaling on to use preemptible nodes4.



* Created Private clusterwith europe-west2 zone for primary node-pool with 2 nodes
* Here I have used the trial version of the GCP , which came with a 250GB credit. As per the task requirements, I was unable to create 3 nodes as each node consumes 100GB. Therefore, I specified 2 nodes in the code.

assesment-primary-node-pool

Cluster	assessment-private-cluster
Node version	1.24.9-gke.3200

Size

Number of nodes	2
Auto-scaling	Off
Node zones	europe-west2-a

Nodes

Image type	Container-optimised OS with containerd (cos_containerd)
Machine type	e2-micro
Boot disk type	Balanced persistent disk
Boot disk size (per node)	100 GB
Boot disk encryption	Google-managed
Provisioning model	Standard
Compact placement	Disabled

* Mentioning error when tried to minimize the disk size.

Manage disk

CREATE INSTANCE | CREATE SNAPSHOT | [+]CREATE IMAGE

gke-assessment-priva-assesment-primar-516a868a-hmd5

Properties

Size *
80 GB

Disk size can't be smaller than 100 GB

Snapshot schedule

Select or create a snapshot schedule

Labels

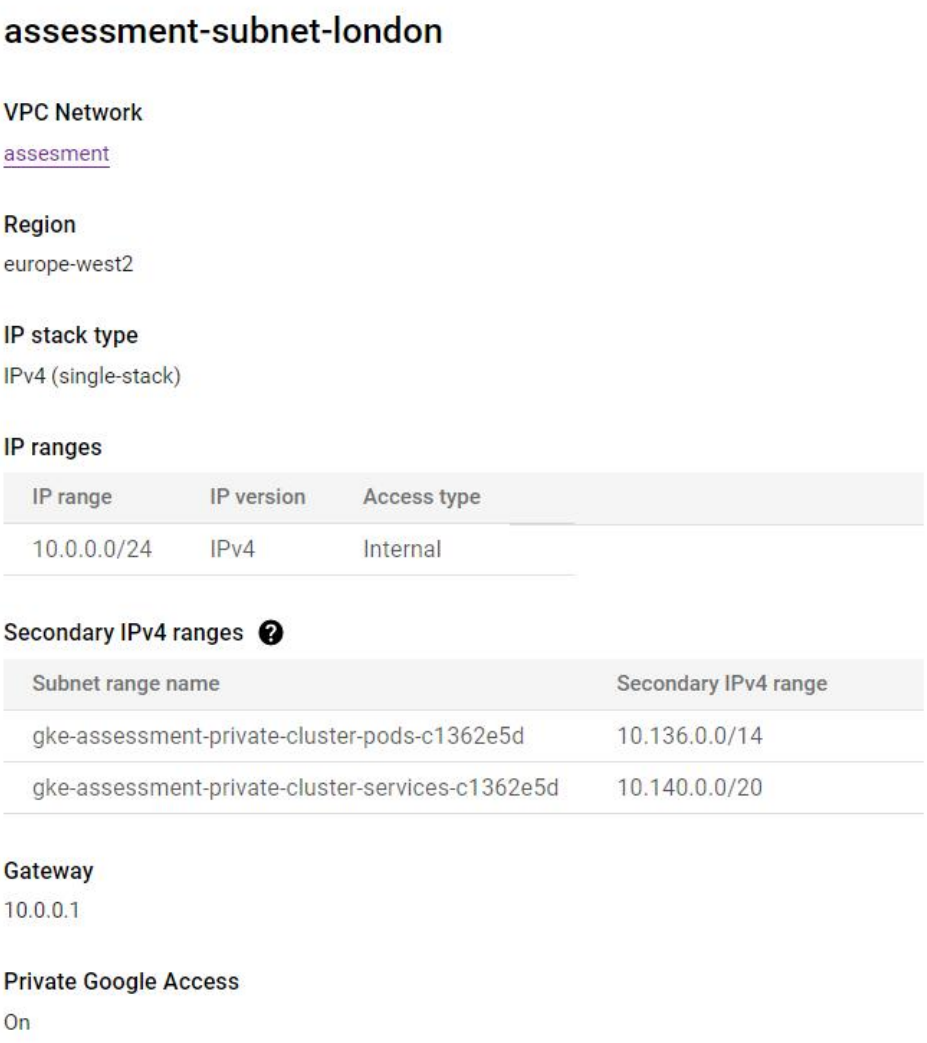
Key 1
goog-gke-node
Value 1

Key 2
goog-gke-volume
Value 2

+ ADD LABEL

Type	Balanced persistent disk
Architecture	x86/64
Zone	europe-west2-a
In use by	gke-assessment-priva-assesment-primar-516a868a-hmd5
Source image	gke-1249-gke3200-cos-97-16919-235-1-v230120-c-pre

* Created subnet in london region.



assessment-subnet-london

VPC Network

assesment

Region

europe-west2

IP stack type

IPv4 (single-stack)

IP ranges

IP range	IP version	Access type
10.0.0.0/24	IPv4	Internal

Secondary IPv4 ranges

Subnet range name	Secondary IPv4 range
gke-assessment-private-cluster-pods-c1362e5d	10.136.0.0/14
gke-assessment-private-cluster-services-c1362e5d	10.140.0.0/20

Gateway

10.0.0.1

Private Google Access

On

Task 2

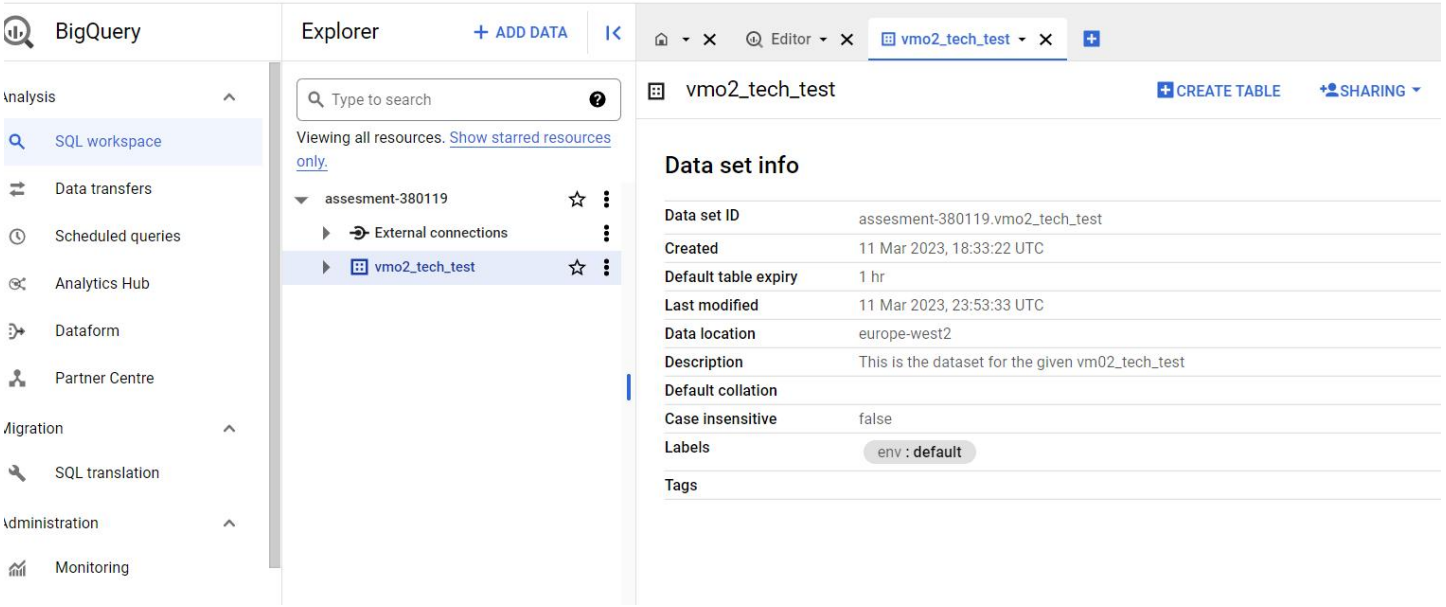
In the same Terraform working directory, add the following:

1. Create another resource for a new big query dataset called vmo2_tech_test (No need to create a table or add any data).
2. Create a local module that assigns specific roles to specific datasets using google_bigquery_dataset_access resource
3. The requirement for the module is to support the following variable type:

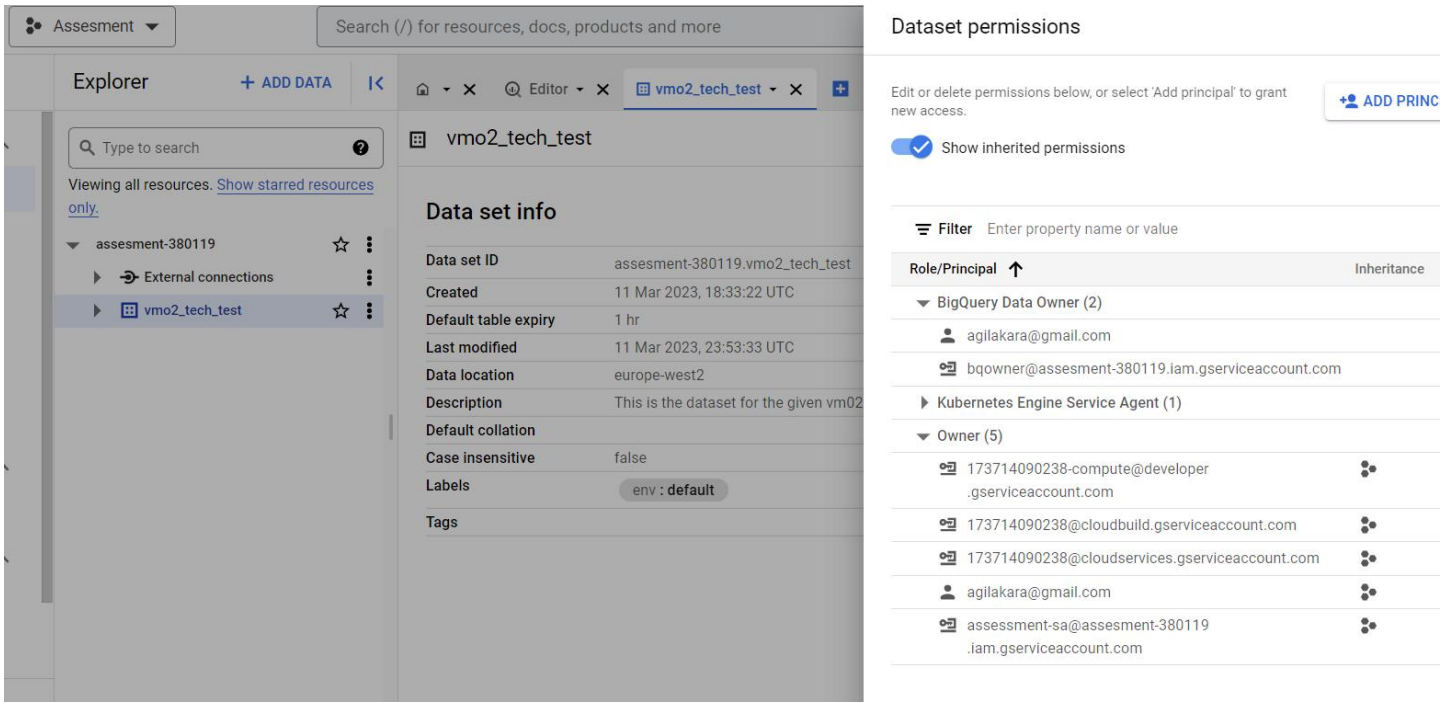
```
bigquery_role_assignment = {
  vmo2_tech_test = {                # dataset name
    role = "roles/bigquery.dataEditor"  # gcp role
    user = "<your_email_address>"       # google email address of user
  }
}
```

OUTPUT:

* Created Big query dataset named vm02_tech_test.



* Assigned specific roles to specific datasets using google_bigquery dataset_access resource. Assigned owner.



* Output in the terraform after successful code apply.