ROI TRAINING
MAXIMIZE YOUR TRAINING INVESTMENT

Activity:
Creating Kubernetes Clusters

Creating a Google VPC Network

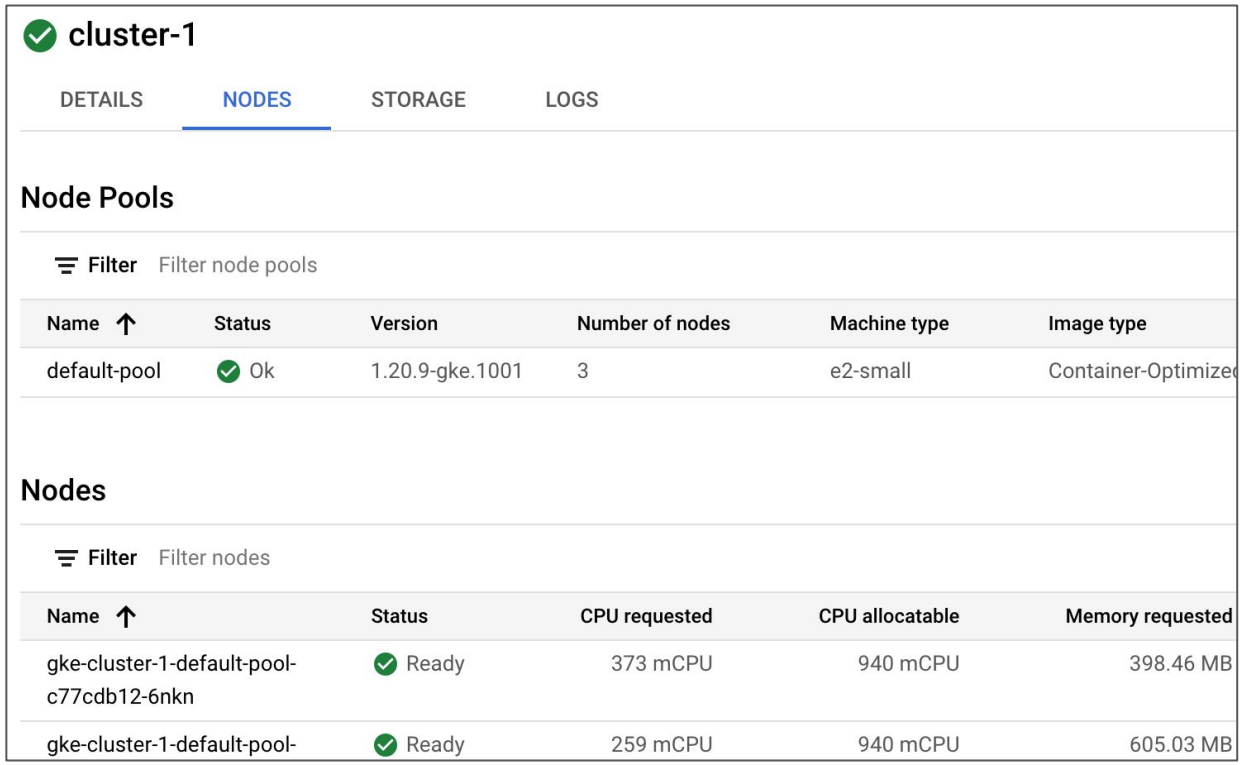
- From the Google Cloud Console:
  - Click the Navigation menu and select **VPC Network**
- If you do NOT have a default network, perform the following steps:
  - Click on **Create VPC Network**
  - Name: **default**
  - Subnets: **Automatic**
  - Firewall rules, check the checkbox on top to select all
  - Click **Create**

Creating a GKE Cluster

- From the Google Cloud Console:
  - Click the Navigation menu and select **Kubernetes Engine**
  - Enable the Kubernetes Engine API if needed
  - Use the Console to create a cluster with following settings:
    - Standard Mode cluster (not Autopilot)
    - Zonal cluster (should be the default)
    - Click **default-pool** and verify the number of nodes is **3**
    - Click **Nodes**, verify the machine type is a **e2-small** (2 CPUs, 2 GB RAM)
    - Check the **Enable preemptible nodes** checkbox
    - Click the **Create** button
- Wait for it to be created (3-5 minutes)

Viewing the Cluster

- Once the cluster is created, click the cluster name (**cluster-1**)
  - Investigate the information provided in the Console
    - Details, nodes, storage, logs



Viewing the Cluster Nodes

- A Kubernetes cluster is comprised of a control plane and a data plane
  - The control plane is a fully managed service by Google Cloud
  - The data plane is a collection of managed virtual machines (nodes)
- From the Google Cloud Console:
  - Click the Navigation menu and select **Compute Engine**
  - You should see the data plane nodes running
- Other cloud providers (AWS, Azure) are very similar

Success

- **Congratulations**! You have successfully created a Kubernetes cluster
  - Cloud-managed clusters are easy to create

Creating a Cluster Command Line

- To create a GKE cluster from the command line that is equivalent to what we did in the console, run the following in cloud shell:

```
gcloud container clusters create "cluster-1" --zone "us-central1-c"
--machine-type "e2-small" --preemptible --num-nodes "3"
```

- You may see some warnings, that is normal
  - Feel free to read the warnings
  - They are just notices of recent default changes since we did not provide values for every option
- It will take between 3-5 minutes for the cluster to create
  - The kubeconfig file will automatically be created by this command
- You can verify your cluster with:

```
kubectl get nodes
```