

## USE CLOUD SHELL TO CREATE A VIRTUAL PRIVATE CLOUD

### PROJECT DESCRIPTION

In this lab, I learnt how to use cloud shell to create a custom VPC network with subnets.

### SCENARIO

An Institution finalized its migration to a hybrid cloud environment. The new cloud network infrastructure has been successfully architected and is ready to be deployed. Before this, I conducted research to explore the security of the configuration settings of the new cloud network setup.

### First Step: Activate Cloud Shell And Create a Network

I need to first create a network for my test environment before I can begin testing security functionality, experimenting with configurations. Here I used software defined networking to easily set up a network in Google Cloud.

```
ACTIVE: ~
ACCOUNT: student-00-043baee8661c@qwiklabs.net

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

student_00_043baee8661c@cloudshell:~ (qwiklabs-gcp-04-6d901f079606)$ gcloud config list project
[core]
project = qwiklabs-gcp-04-6d901f079606

Your active configuration is: [cloudshell-3097]
student_00_043baee8661c@cloudshell:~ (qwiklabs-gcp-04-6d901f079606)$
```

I created an initial custom mode VPC network by inputting the following command;

**gcloud compute networks create labnet --subnet-mode=custom**

```
Created [https://www.googleapis.com/compute/v1/projects/qwiklabs-gcp-04-6d901f079606/global/networks/labnet].
NAME: labnet
SUBNET_MODE: CUSTOM
BGP_ROUTING_MODE: REGIONAL
IPV4_RANGE:
GATEWAY_IPV4:

Instances on this network will not be reachable until firewall rules
are created. As an example, you can allow all internal traffic between
instances as well as SSH, RDP, and ICMP by running:
```

```
IPV4_RANGE:
GATEWAY_IPV4:

Instances on this network will not be reachable until firewall rules
are created. As an example, you can allow all internal traffic between
instances as well as SSH, RDP, and ICMP by running:

$ gcloud compute firewall-rules create <FIREWALL_NAME> --network labnet --allow tcp,udp,icmp --source-ranges <IP_RANGE>
$ gcloud compute firewall-rules create <FIREWALL_NAME> --network labnet --allow tcp:22,tcp:3389,icmp

student_00_043baee8661c@cloudshell:~ (qwiklabs-gcp-04-6d901f079606)$
```

This command creates a custom mode network called “labnet”

### Second Step: Create a Subnet

I created a subnet within the newly created custom mode VPC network.

```
--range 10.0.0.0/28
Created [https://www.googleapis.com/compute/v1/projects/qwiklabs-gcp-04-6d901f079606/regions/us-west-1/subnetworks/labnet-sub].
NAME: labnet-sub
REGION: us-west1
NETWORK: labnet
RANGE: 10.0.0.0/28
STACK_TYPE: IPV4_ONLY
IPV6_ACCESS_TYPE:
INTERNAL_IPV6_PREFIX:
EXTERNAL_IPV6_PREFIX:

student_00_043baee8661c@cloudshell:~ (qwiklabs-gcp-04-6d901f079606)$
```

### Third Step: View Networks

I listed the available networks to ensure that I have successfully created them.

I inputted the following command into the cloud shell terminal;

**“gcloud compute networks list”**

```
NAME: default
SUBNET_MODE: AUTO
BGP_ROUTING_MODE: REGIONAL
IPV4_RANGE:
GATEWAY_IPV4:

NAME: labnet
SUBNET_MODE: CUSTOM
BGP_ROUTING_MODE: REGIONAL
IPV4_RANGE:
GATEWAY_IPV4:
student_00_043baee8661c@cloudshell:~ (qwiklabs-gcp-04-6d901f079606)$
```

This command lists the networks in my project.

The output lists the **“default”** and **“labnet”** networks.

### Final Step: List Subnets

I listed all the subnets within the networks of my project.

I inputted the following command into the terminal;

**“gcloud compute networks subnets list - - networks = labnet”**

```
GATEWAY_IPV4:
student_00_043baee8661c@cloudshell:~ (qwiklabs-gcp-04-6d901f079606)$ gcloud compute networks subnets
list --network=labnet
NAME: labnet-sub
REGION: us-west1
NETWORK: labnet
RANGE: 10.0.0.0/28
STACK_TYPE: IPV4_ONLY
IPV6_ACCESS_TYPE:
INTERNAL_IPV6_PREFIX:
EXTERNAL_IPV6_PREFIX:
student_00_043baee8661c@cloudshell:~ (qwiklabs-gcp-04-6d901f079606)$
```

This command lists the subnets in the **“labnet”** network.

As shown above, the name of the subnet in the labnet network is **“labnet-sub”**

### CONCLUSION

By completing this lab activity, I have gained hands-on-experience in setting up a test VPC network and subnet. This is the first step of creating a test environment which will help me eventually secure the production environment that will need to protect company data.

Thereafter, I was able to confirm the network and subnet’s successful creation.

Through observing the network and its subnetworks in the testing environment, you can gather significant data for research. This data is highly beneficial when configuring and creating security plans for the production environment.