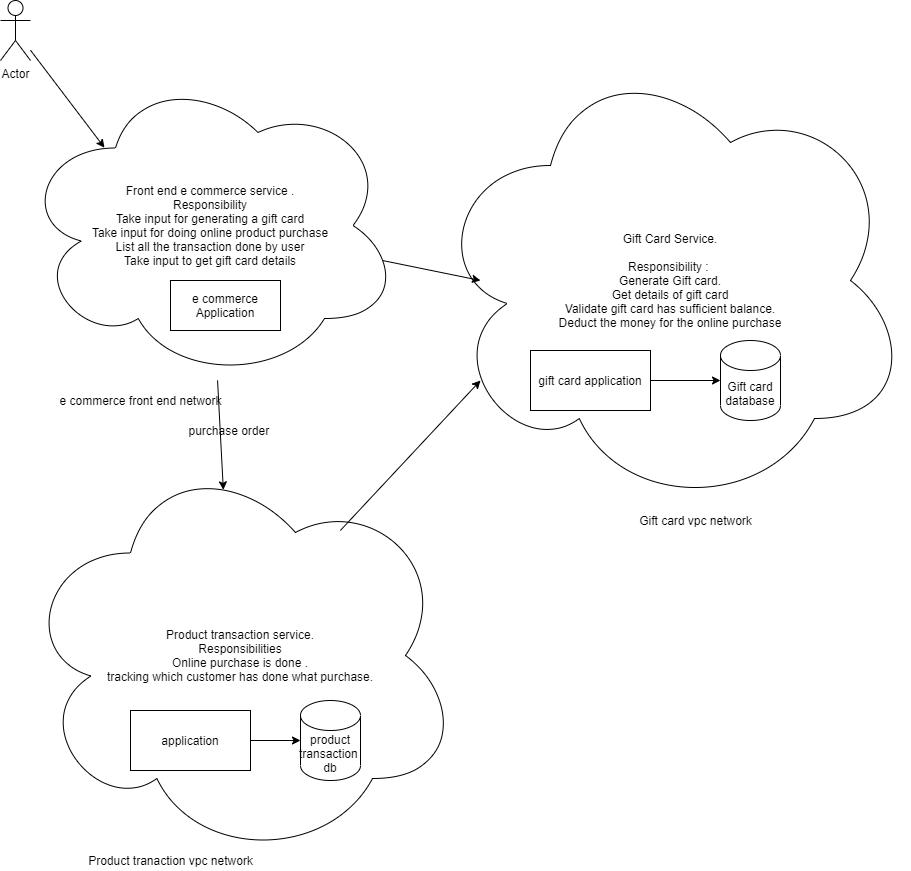
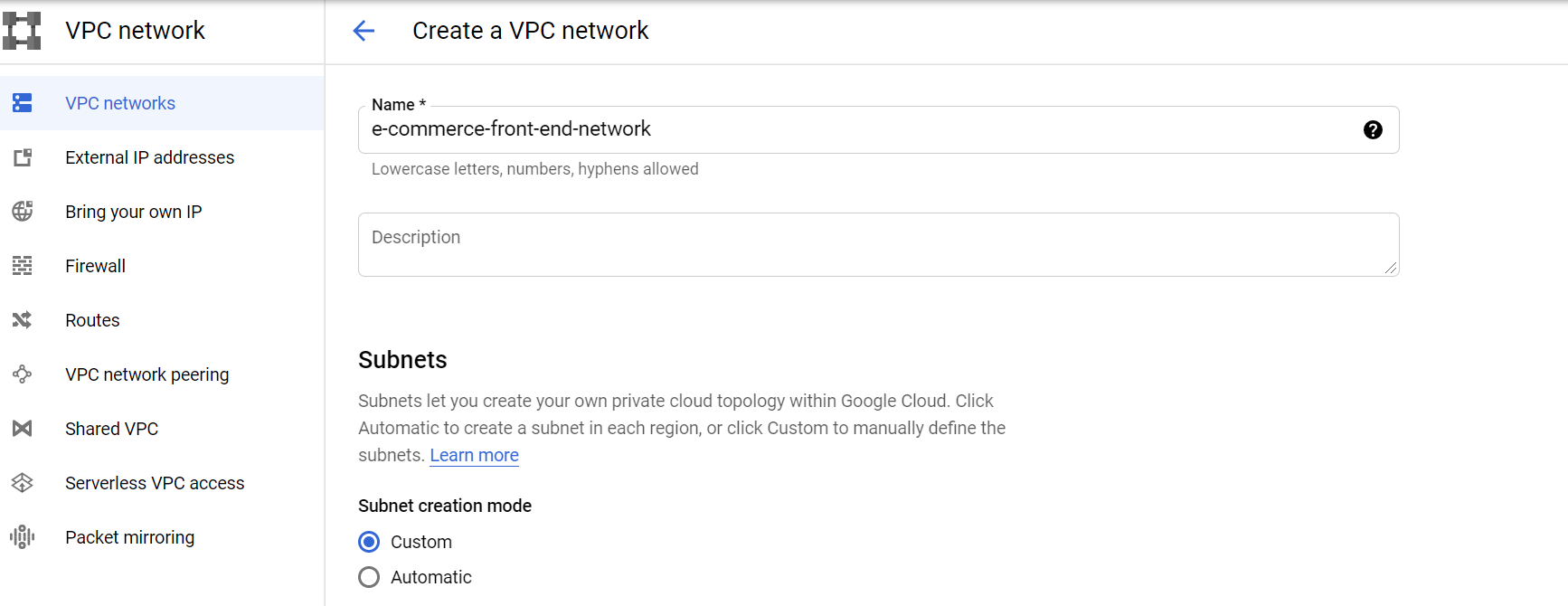
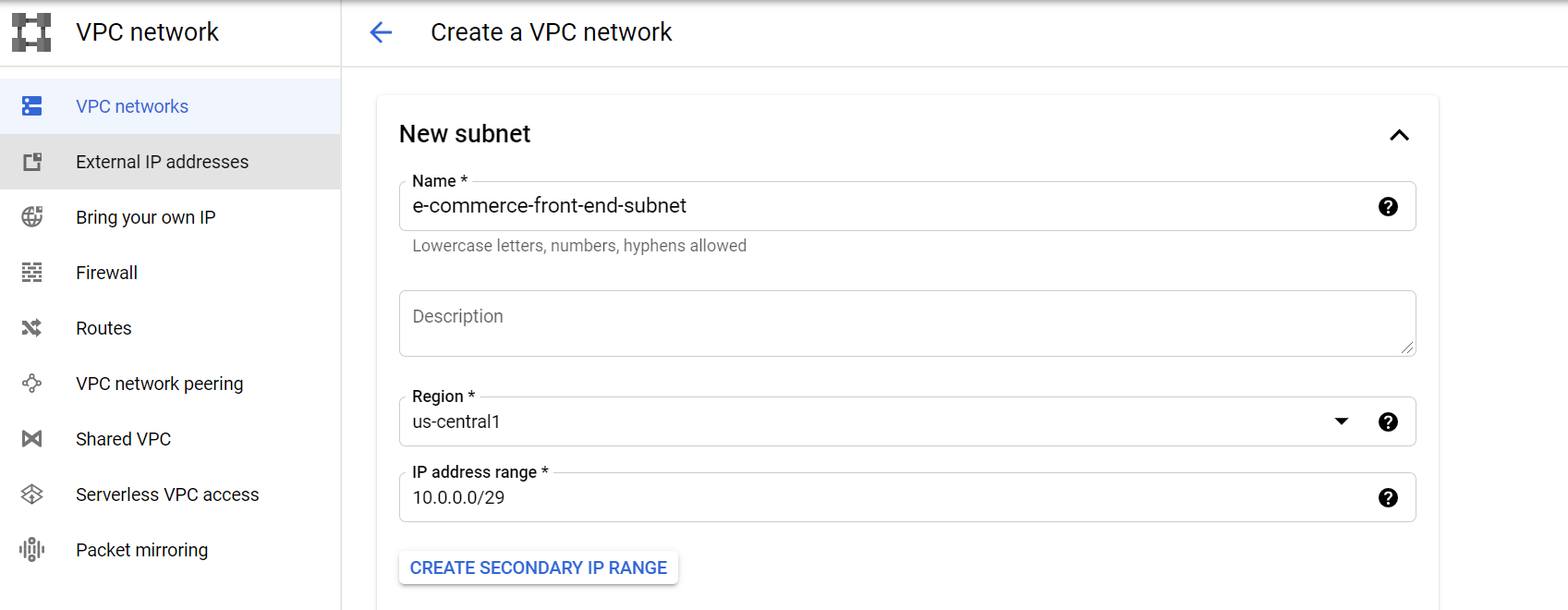
Delete all the vm instances and delete all the custom vpc networks.First delete all vms then delete all vpcs.

E commerece product flow images

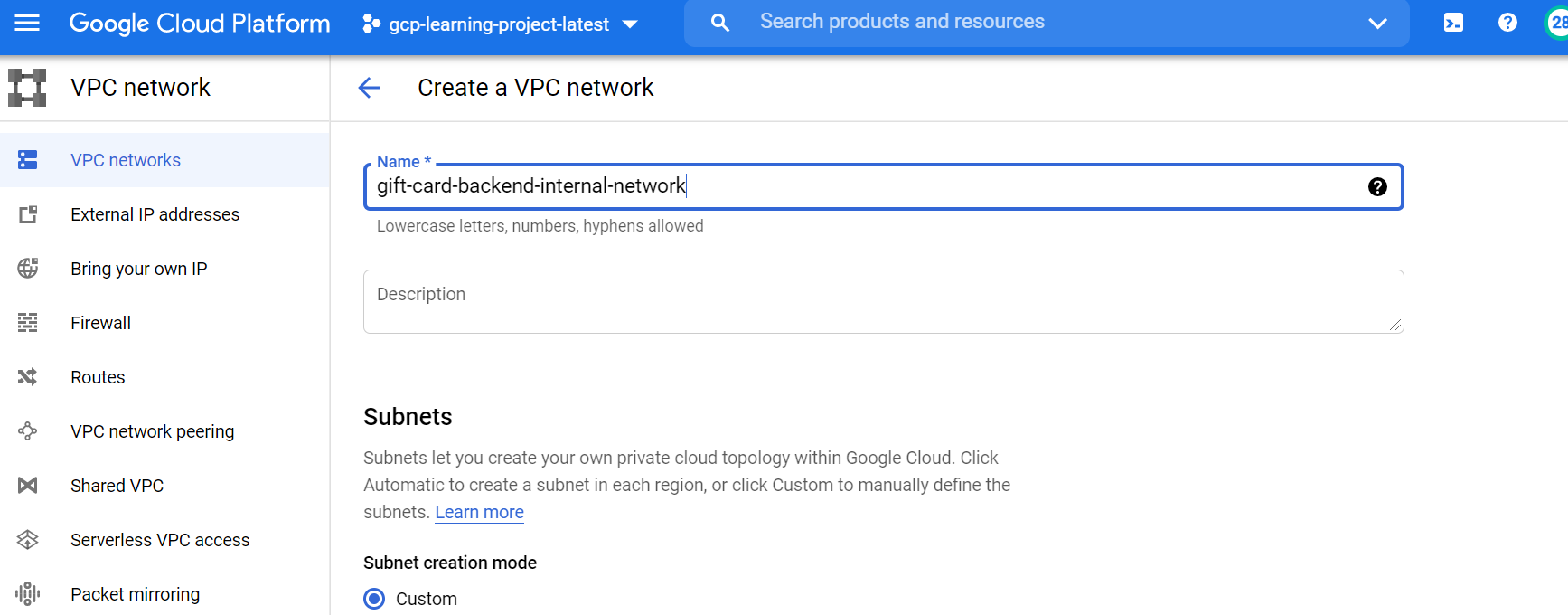


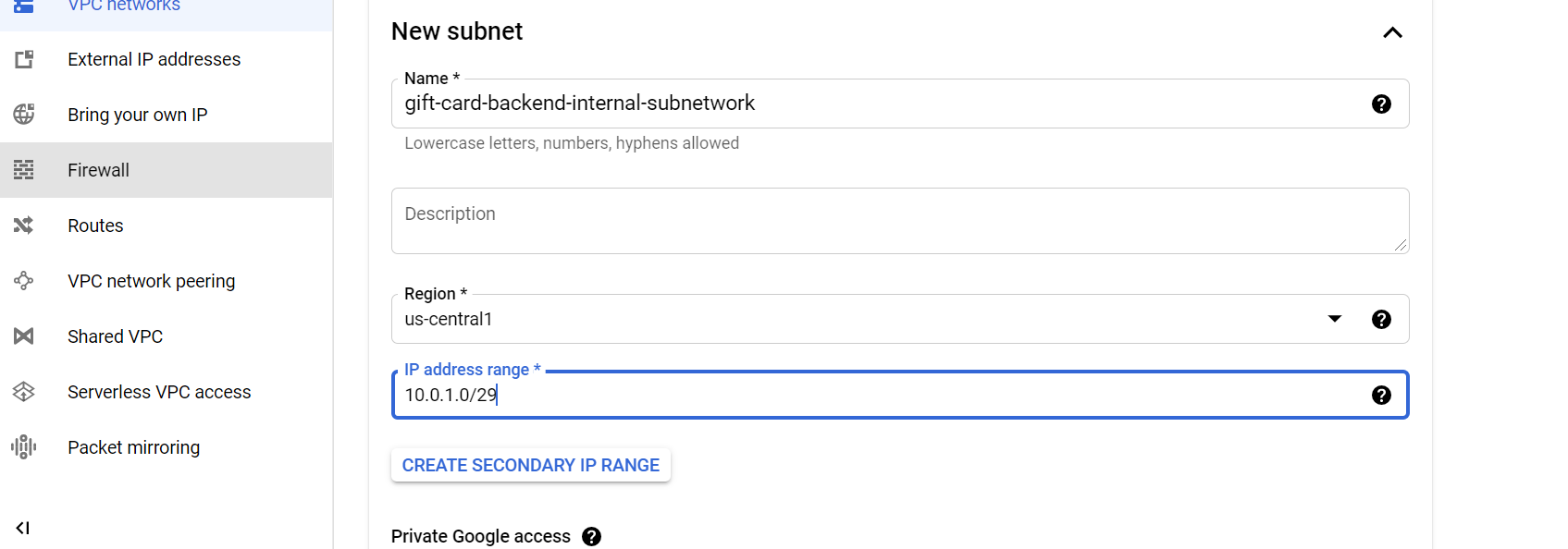
1)Create a custom network for internet facing (e-commerce-front-end-network) having subnet present in us-central-1 .put cidr range as 10.0.0.0/29.Keep rest of things as it is and click create



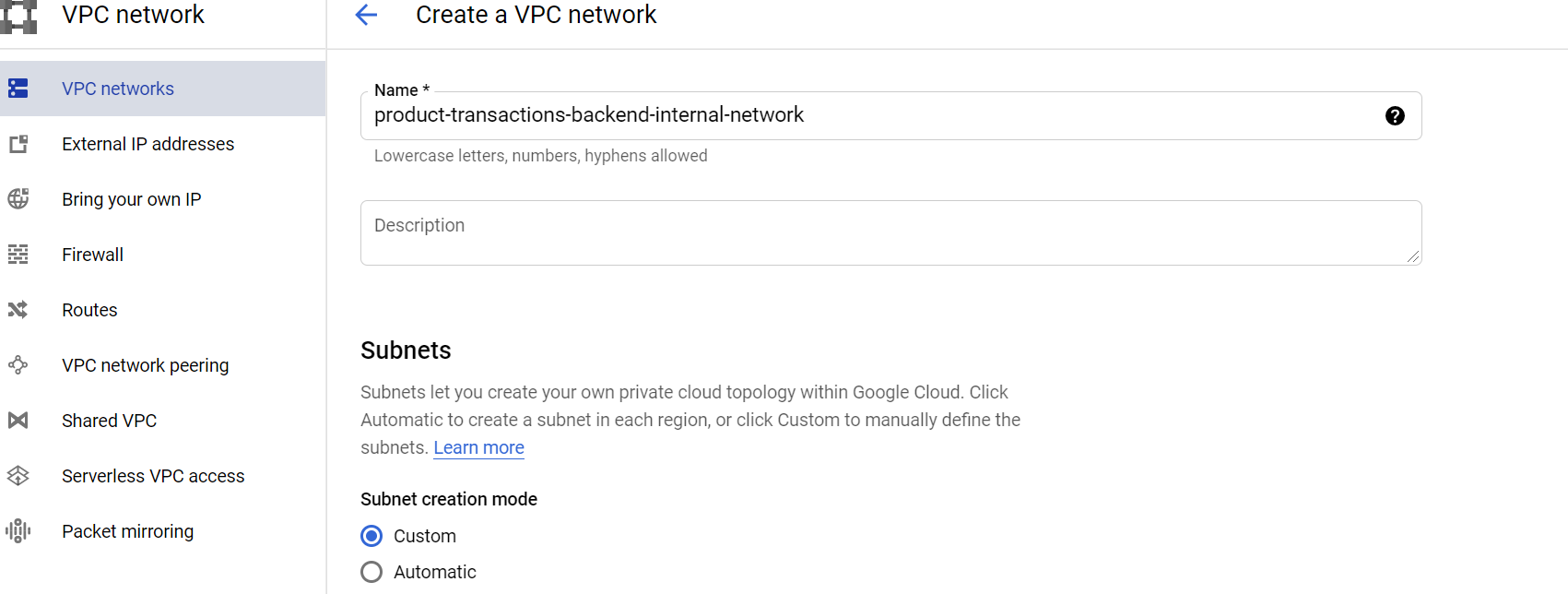


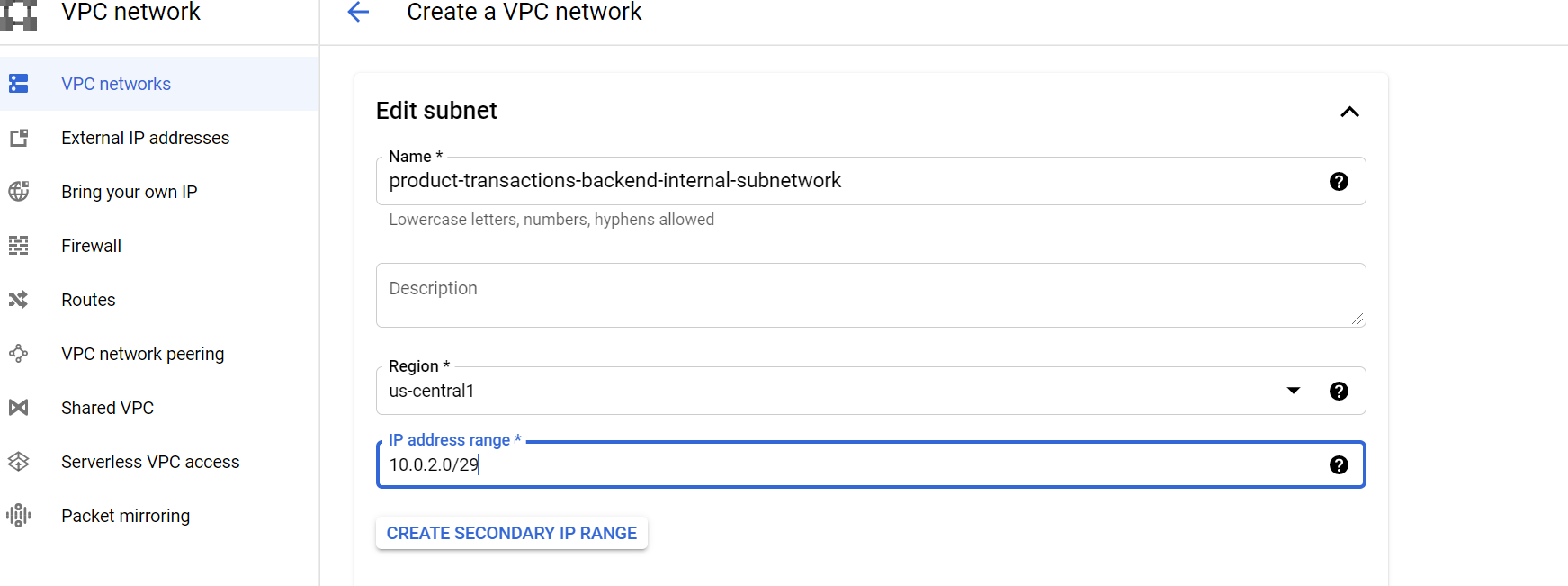
4) Create another network known as gift-card-backend-internal-network with subnet in us-central-1 and cidr range as 10.0.1.0/29.Keep rest of things as it is and click create.



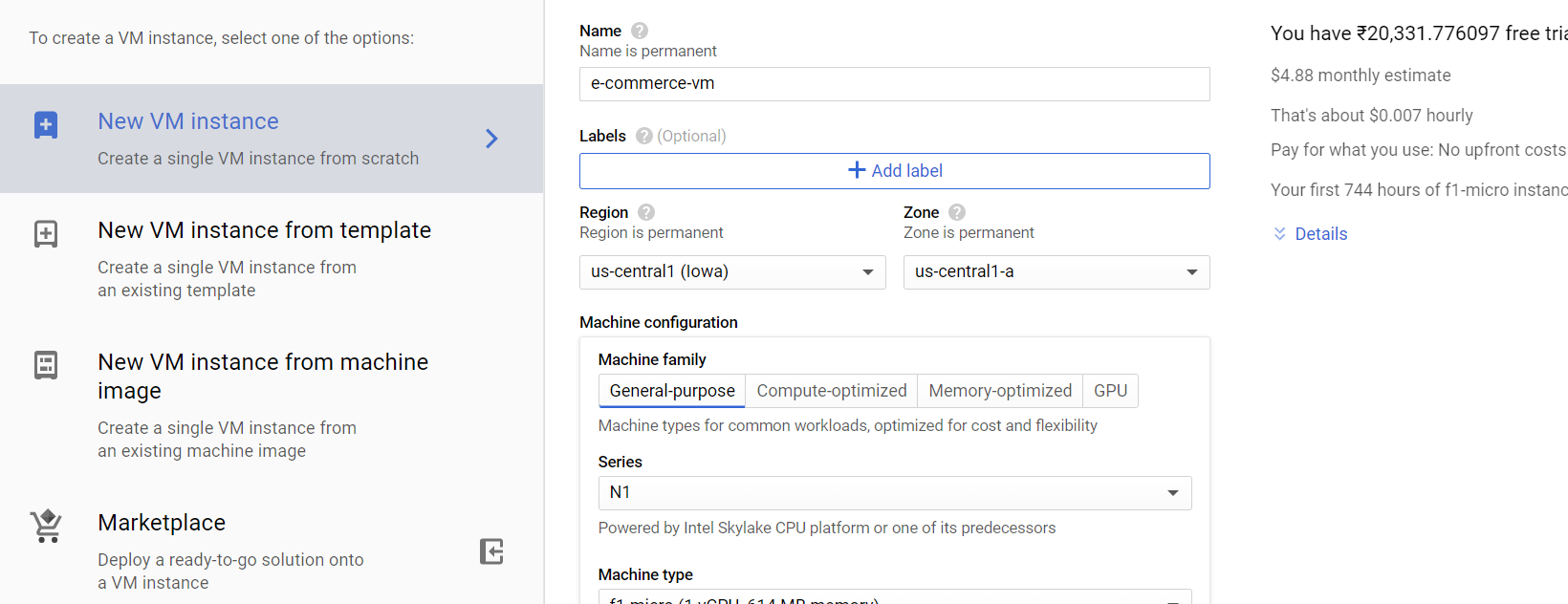


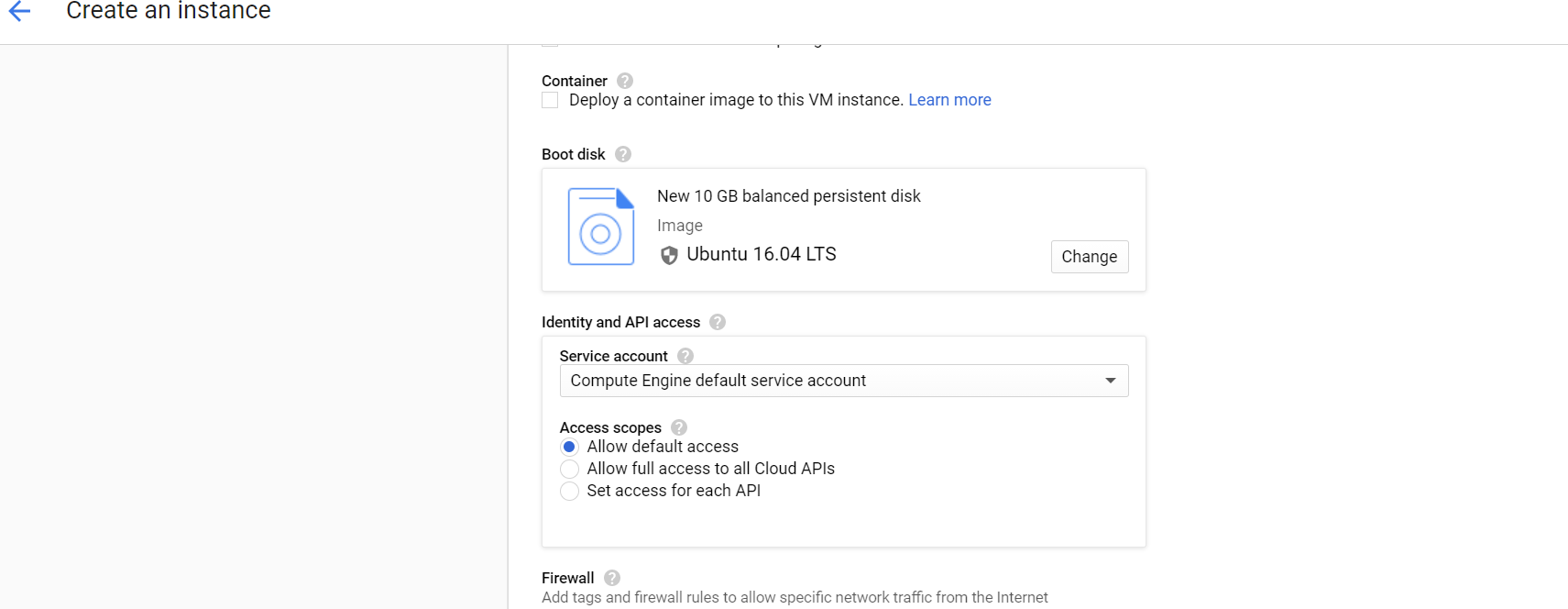
5) Create another network known as product-transactions-backend-internal-network with subnet in us-central-1 and cidr range as 10.0.2.0/29.Keep rest of things as it is and click create.

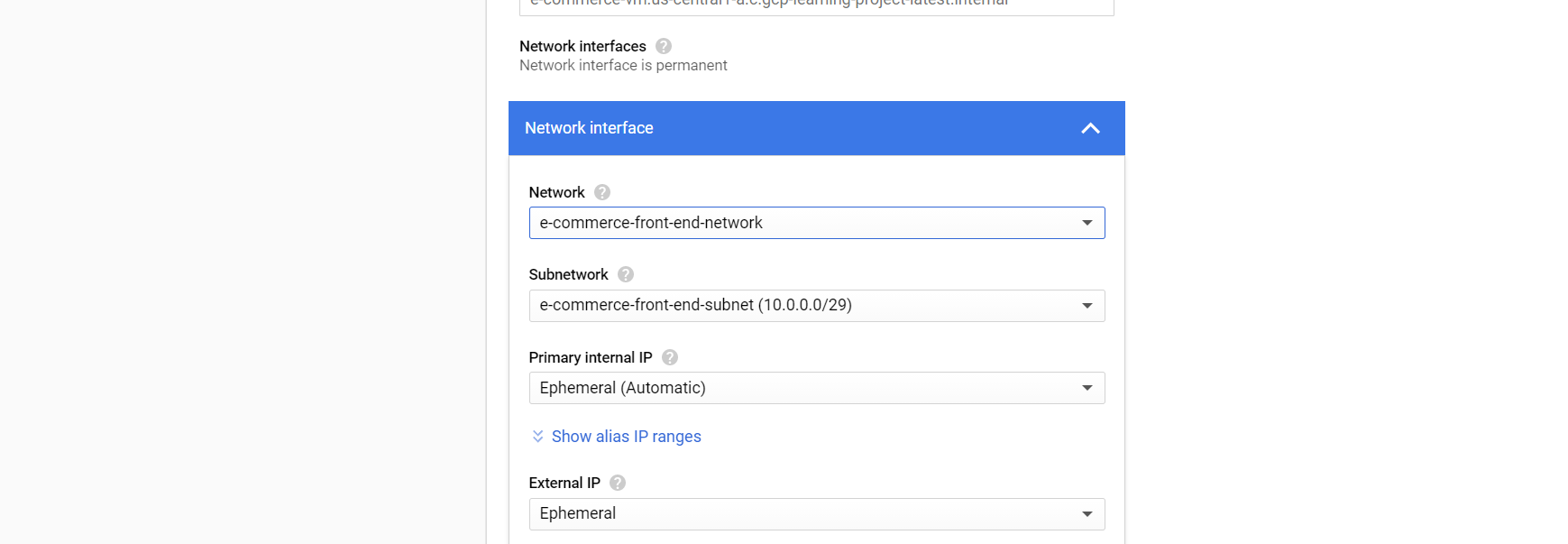




6) Create a virtual machine (e-commerce-vm) in network e\_commerece\_front\_end\_network having N1,g1 small and Ubuntu 18.04.Put network tag as “e-commerce-front-end”.









7) Create a virtual machine (gift-card-vm) in network gift\_card\_backend\_internal\_network having N1,g1 small and Ubuntu 18.04.put network tag as “gift-card-back-end”

8) Create a virtual machine (product-transactions-vm) in network product\_transaction\_backend\_internal\_network having N1,f1 micro and Ubuntu 18.04.put network tag as “product-transaction-back-end”

9) create a firewall rule on tcp port 22 for all the custom VPC networks with source ip as 0.0.0.0/0.

Select target as “all\_instances\_in\_network”

10) Login to e\_commerce\_vm and upload the e\_commerce\_front\_end.py.

Put the respective internal ip of gift card vm and product transaction vm in e\_commerce\_front\_end.py.

Below ip need to be changed in e\_commerce\_front\_end.py

gift\_card\_ip="127.0.0.1"  
product\_store\_ip="127.0.0.1"

Do the application level set up on this machine

sudo su

apt update

apt install python3-pip

pip3 install flask

pip3 install requests

Start the application e\_commerce\_front\_end.py

python3 e\_commerce\_front\_end.py

11) Login to vm gift\_card\_vm and upload file gift\_card\_engine.py

sudo su

apt update

apt install python3-pip

pip3 install flask

pip3 install requests

apt-get install libpq-dev

pip3 install psycopg2-binary

apt-get install postgresql

sudo -u postgres psql

create table gift\_card\_info (customer\_id text,amount int,gift\_card\_no text);

alter user postgres password '123456';

\q (to come out of database)

Start application

python3 gift\_card\_engine.py

12)Login to product transaction vm and upload file product\_transaction\_engine.py

Change the ip of gift\_card to internal ip of gift card vm in the file.

Below gift\_card\_ip need to be changed in file product\_transaction\_engine.py

gift\_card\_ip="127.0.0.1"

sudo su

apt update

apt install python3-pip

pip3 install flask

pip3 install requests

apt-get install libpq-dev

pip3 install psycopg2-binary

apt-get install postgresql

sudo -u postgres psql

create table product\_transaction(products text,customer\_id text,total\_amount int ,transaction\_id text);

alter user postgres password '123456';

\q

Start the application of product transaction

python3 product\_transaction\_engine.py

13) Create a firewall on port 3000 to allow external traffic in network e-commerece-front-end-network.

Put target tag as “e-commerce-front-end” source ip range is “0.0.0.0/0” .Tcp 3000

//Skip step no 14 & 15

14)From Postman access the url

<http://EXTERNAL_IP:3000/healthcheck>

where EXTERNAL\_IP is external ip of e-commerce front end

This is to ensure that we are able to access our application from outside

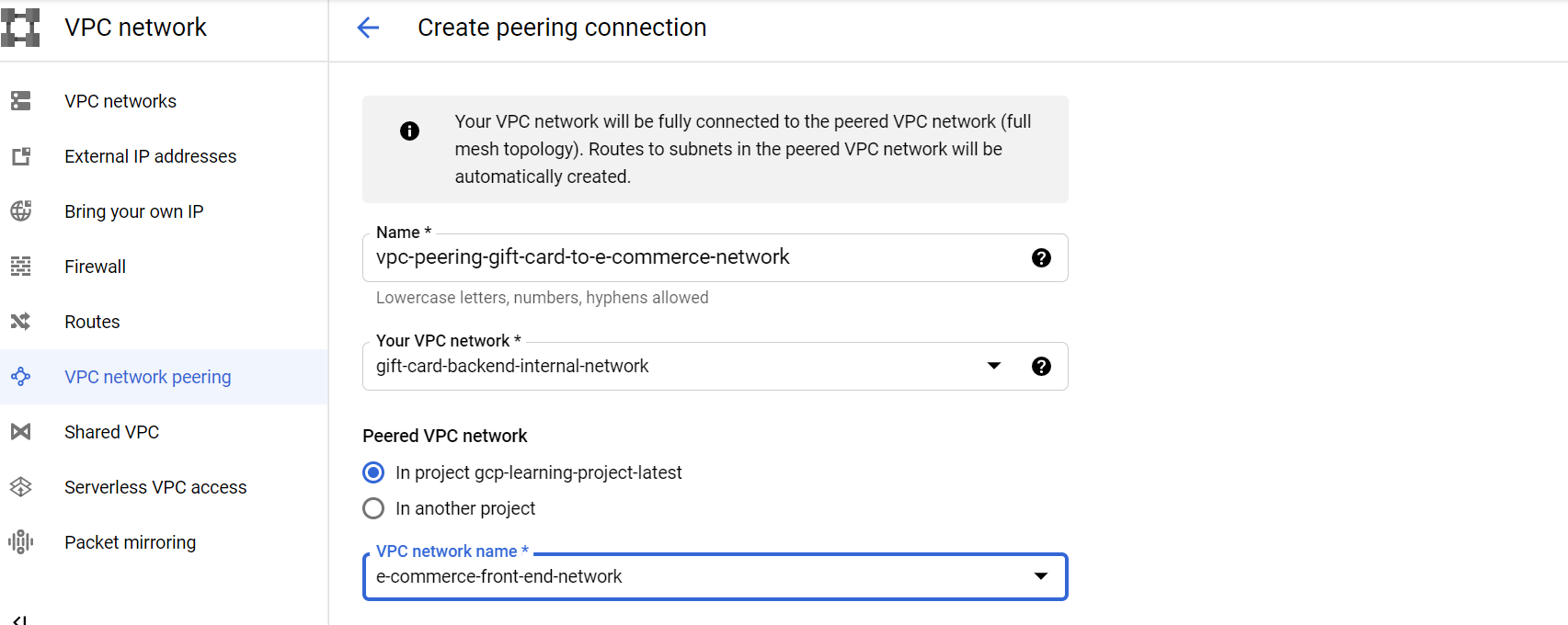
15)Hit the url from postman

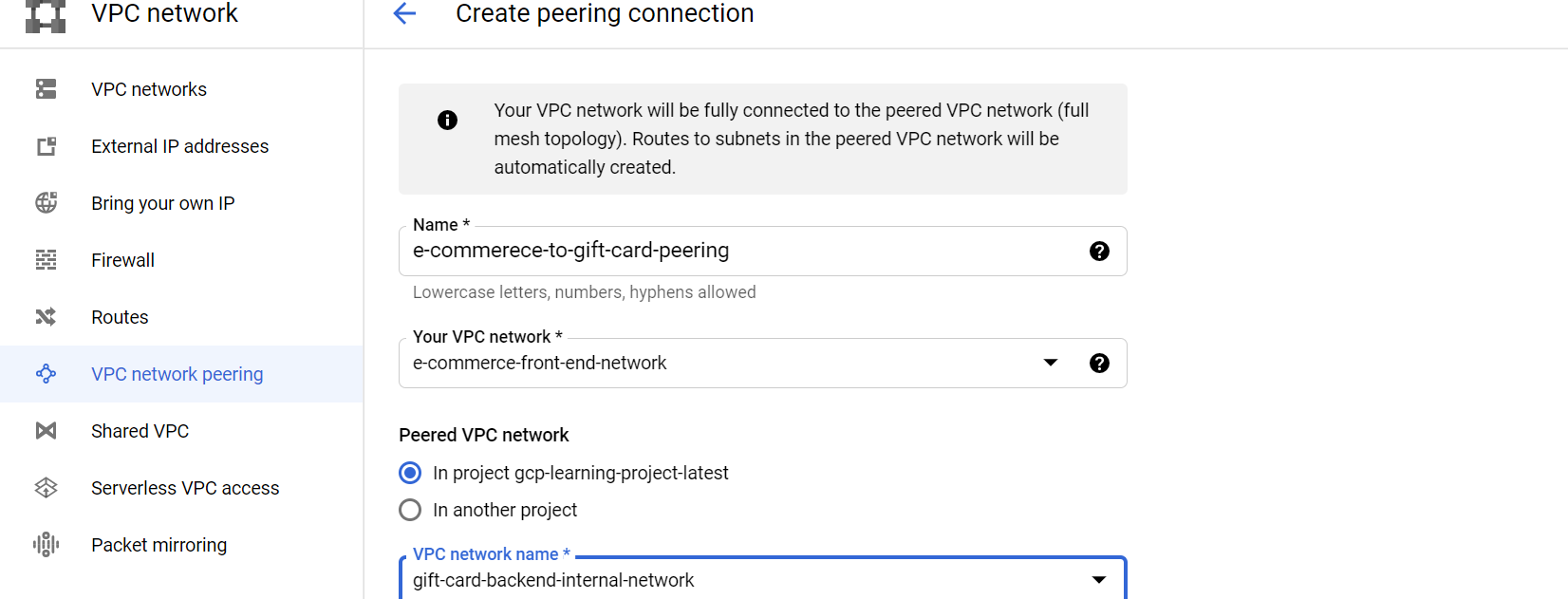
External\_ip:3000/generate\_gift\_card?customer\_id=999&amount=10000.

Observe all the application windows, we shall not be able to get response from cloud.

16)Create a VPC peering from e-commerce-network to gift-card-network and vice versa.

Enter the below detail and keep rest as default.





17)Verify VPC peering is done on both sides (green tick shall come).

18)Take a new login session of e\_commerece\_vm and do telnet on internal\_ip of gift\_card\_vm on port 3001.

telnet internal\_ip\_gift\_card 3001

19)verify Telnet shall not go through as there is no firewall to allow the connect.

20)Create a firewall in network (gift\_card\_backend\_internal) .Specify target tag as “gift-card-back-end” and source ip range as 10.0.0.0/29. Tcp port is 3001

21)Verfiy now telnet from e\_commerece\_vm to gift\_card\_vm shall work fine now.

22)Hit the url

External\_ip:3000/generate\_gift\_card?customer\_id=999&amount=10000

And

External\_ip:3000/get\_gift\_card?gift\_card\_no=1620757142

Here External\_ip is external ip address of e\_commerece\_vm .

We shall be able to get the response.

//skip step no 23

23)Hit the URL

External\_ip:3000/buy\_products?products=soap,mask,hand-sanitizers&customer\_id=999&total\_amount=500&gift\_card\_no=1620757142.

This shall also fail as there is no VPC peering yet between e\_commerece\_to\_product\_transaction

24)Establish vpc peering between e\_commerece to product\_transaction and vice versa.

25)Do a telnet from e\_commerece\_vm to product\_transaction on internal ip on port 3002.

It shall not go through.

26)Create a firewall rule in network (product-transactions-backend-internal) with target tag as “product-transaction-back-end” and source ip cidr is “10.0.0.0/29) on port 3002

//skip step no 27 and 28

27) verify now telnet is going through from e\_commerece to production transaction on port 3002.

28) Hit the URL

External\_ip:3000/buy\_products?products=soap,mask,hand-sanitizers&customer\_id=999&total\_amount=500&gift\_card\_no=1620757142.

This shall again fail as there is dependency product\_transaction and gift\_card.

29)Create a network vpc peering between product\_transaction and gift\_card and vice versa.

30)create a firewall rule in network “gift-card-internal-backend” with target tag as “gift-card-back-end” and source ip range is “10.0.2.0/29” port 3001

31)Hit all the urls

External\_ip:3000/buy\_products?products=soap,mask,hand-sanitizers&customer\_id=999&total\_amount=500&gift\_card\_no=1620757142.

External\_ip:3000/list\_all\_transactions?customer\_id=999

Now all the end point shall work properly