This demo will create the network load balancer and distribute the traffic between different zones within the region.

Open Cloud Shell and Perform the Demo Step by Step:

gcloud auth list

ACTIVE: *
ACCOUNT: xyz@gmail.com
To set the active account, run:
$ gcloud config set account `ACCOUNT`

Task 1: Set the default region and zone for all resources

Declare a variable for region and zone instead:
Select any zone or region you want
declare zone=australia-southeast1-b
declare region=australia-southeast1

Task 2: Create multiple web server instances

For this load balancing scenario, create three Compute Engine VM instances and install Apache on them, then add a firewall rule that allows HTTP traffic to reach the instances.

1. Create three new virtual machines in your default zone and give them all the same tag. Setting the tags field lets you reference these instances all at once, such as with a firewall rule. These commands also install Apache on each instance and give each instance a unique home page.

```
gcloud compute instances create www1 \
  --image-family debian-9 \
  --image-project debian-cloud \
  --zone $zone \
```

```
  --tags network-lb-tag \
  --metadata startup-script="#! /bin/bash
        sudo apt-get update
        sudo apt-get install apache2 -y
        sudo service apache2 restart
        echo '<!doctype html><html><body><h1>www1</h1></body></html>' |
tee /var/www/html/index.html"

gcloud compute instances create www2 \
  --image-family debian-9 \
  --image-project debian-cloud \
  --zone $zone \
  --tags network-lb-tag \
  --metadata startup-script="#! /bin/bash
        sudo apt-get update
        sudo apt-get install apache2 -y
        sudo service apache2 restart
        echo '<!doctype html><html><body><h1>www2</h1></body></html>' |
tee /var/www/html/index.html"

gcloud compute instances create www3 \
  --image-family debian-9 \
  --image-project debian-cloud \
  --zone $zone \
  --tags network-lb-tag \
  --metadata startup-script="#! /bin/bash
        sudo apt-get update
        sudo apt-get install apache2 -y
        sudo service apache2 restart
        echo '<!doctype html><html><body><h1>www3</h1></body></html>' |
tee /var/www/html/index.html"
```

1. Create a firewall rule to allow external traffic to the VM instances:

```
gcloud compute firewall-rules create www-firewall-network-lb \
        --target-tags network-lb-tag --allow tcp:80
```

Now you need to get the external IP addresses of your instances and verify that they are running.

1. Run the following to list your instances. You'll see their IP addresses in the EXTERNAL_IP column:

```
gcloud compute instances list
```

1. Verify that each instance is running with curl, replacing [IP_ADDRESS] with the IP address for each of your VMs:

```
curl http://[IP_ADDRESS]
```

Task 3: Configure the load balancing service

When you configure the load balancing service, your virtual machine instances will receive packets that are destined for the static external IP address you configure. Instances made with a Compute Engine image are automatically configured to handle this IP address.

1. Create a static external IP address for your load balancer:

```
gcloud compute addresses create network-lb-ip-1 \
 --region $region
```

Example Output:
Created
[https://www.googleapis.com/compute/v1/projects/qwiklabs-gcp-03-xxxxxxxxxxx/regions/us-central1/addresses/network-lb-ip-1].

1. Add a legacy HTTP health check resource:

```
gcloud compute http-health-checks create basic-check
```

1. Add a target pool in the same region as your instances. Run the following to create the target pool and use the health check, which is required for the service to function:

```
gcloud compute target-pools create www-pool \
    --region $region --http-health-check basic-check
```

1. Add the instances to the pool:

```
gcloud compute target-pools add-instances www-pool \
    --instances www1,www2,www3
```

1. Add a forwarding rule:

```
gcloud compute forwarding-rules create www-rule \
    --region $region \
    --ports 80 \
    --address network-lb-ip-1 \
    --target-pool www-pool
```

Task 4: Sending traffic to your instances

Now that the load balancing service is configured, you can start sending traffic to the forwarding rule and watch the traffic be dispersed to different instances.

Enter the following command to view the external IP address of the www-rule forwarding rule used by the load balancer:

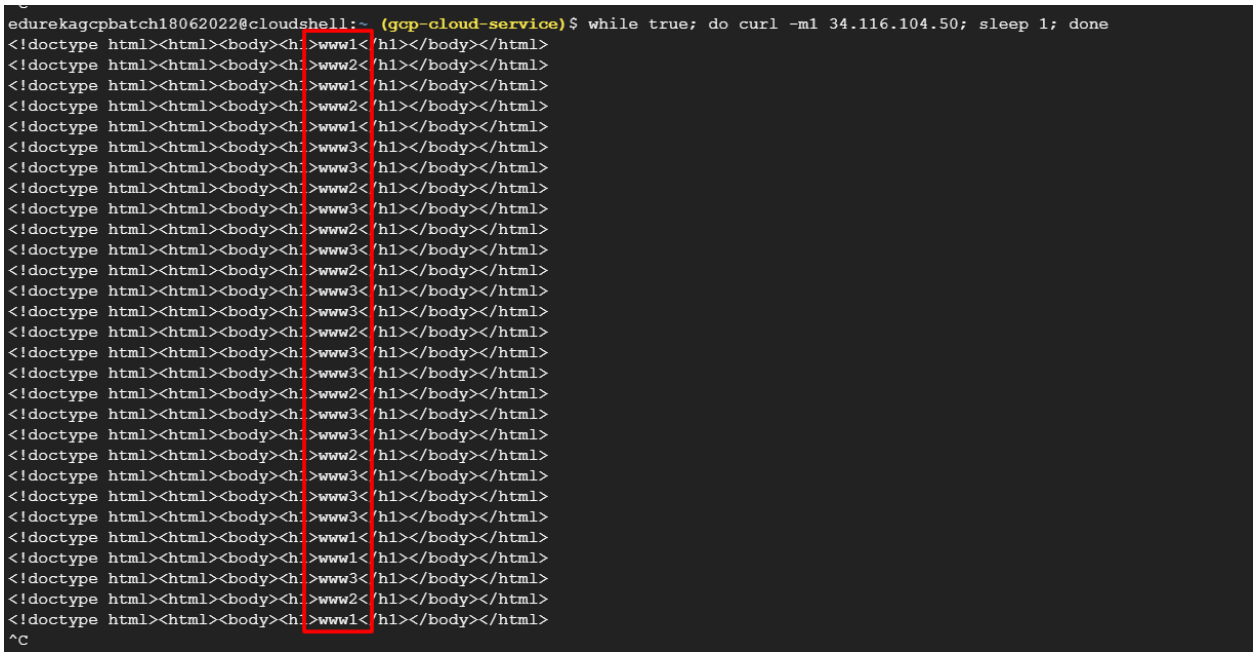
```
gcloud compute forwarding-rules describe www-rule --region $region
```

Use curl command to access the external IP address, replacing IP_ADDRESS with an external IP address from the previous command:

```
while true; do curl -m1 34.116.104.50; sleep 1; done
```

The response from the curl command alternates randomly among the three instances. If your response is initially unsuccessful, wait approximately 30 seconds for the configuration to be fully loaded and for your instances to be marked healthy before trying again.

Use Ctrl + c to stop running the command.



Release all resources:

Delete fw rule:

gcloud compute forwarding-rules delete www-rule --region $region

Delete target pool:

gcloud compute target-pools delete www-pool --region $region -q

Delete basic health check:

gcloud compute http-health-checks delete basic-check -q

Delete VMs:

gcloud compute instances delete www1 --zone $zone -q

gcloud compute instances delete www2 --zone $zone -q

gcloud compute instances delete www3 --zone $zone -q

Delete external IP:

```
gcloud compute addresses delete network-lb-ip-1 --region $region -q
```