

Hw 8 DS

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Github: https://github.com/Bryce-Hiraoka/DS_561/tree/main/8-HW-DS561

I followed this tutorial:

<https://cloud.google.com/load-balancing/docs/network/setting-up-network#gcloud>

Server1 VM Creation:

```
gcloud compute instances create server1 \
--zone=us-east1-b \
--tags=network-lb-tag \
--machine-type=e2-micro \
--image-family=debian-11 \
--image-project=debian-cloud \
--metadata=startup-script='#!/bin/bash
gsutil cp gs://hw8-vm-bucket/main1.py .
gsutil cp gs://hw8-vm-bucket/requirements.txt .
sudo apt-get update
sudo apt-get install -y python3 python3-pip
pip3 install -r requirements.txt
python3 main1.py'
```

Server2 VM Creation:

```
gcloud compute instances create server2 \
--zone=us-east1-c \
--tags=network-lb-tag \
--machine-type=e2-micro \
--image-family=debian-11 \
--image-project=debian-cloud \
--metadata=startup-script='#!/bin/bash
gsutil cp gs://hw8-vm-bucket/main2.py .
gsutil cp gs://hw8-vm-bucket/requirements.txt .
sudo apt-get update
sudo apt-get install -y python3 python3-pip
pip3 install -r requirements.txt
python3 main2.py'
```

Create Firewall:

```
gcloud compute firewall-rules create www-firewall-network-lb \
```

```
--target-tags network-lb-tag --allow tcp:8080
```

Added static IP:

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

--region us-east1

Add legacy http health check:

gcloud compute http-health-checks create basic-check

Add target pool:

gcloud compute target-pools create server-pool \

--region us-east1 --http-health-check basic-check

Add instances to target pool

gcloud compute target-pools add-instances server-pool \

--instances server1 \

--instances-zone us-east1-b

gcloud compute target-pools add-instances server-pool \

--instances server2 \

--instances-zone us-east1-c

Create Forwarding rules

gcloud compute forwarding-rules create server-rule \

--region us-east1 \

--ports 8080 \

--address network-lb-ip-1 \

--target-pool server-pool

Looking up the IP address:

gcloud compute forwarding-rules describe server-rule --region us-east1

Looked up the external IP

```
bhiraoka@cloudshell:~ (ds-561-398918) $ gcloud compute forwarding-rules describe server-rule --region us-east1
IPAddress: 35.237.24.20
IPProtocol: TCP
creationTimestamp: '2023-11-20T16:17:26.663-08:00'
description: ''
fingerprint: oPThHXR8c6E=
id: '6053122048785795577'
kind: compute#forwardingRule
labelFingerprint: 42WmSpB8rSM=
loadBalancingScheme: EXTERNAL
name: server-rule
networkTier: PREMIUM
portRange: 8080-8080
region: https://www.googleapis.com/compute/v1/projects/ds-561-398918/regions/us-east1
selfLink: https://www.googleapis.com/compute/v1/projects/ds-561-398918/regions/us-east1/forwardingRules/server-rule
target: https://www.googleapis.com/compute/v1/projects/ds-561-398918/regions/us-east1/targetPools/server-pool
bhiraoka@cloudshell:~ (ds-561-398918) $
```

When running the VM and shutting off vm-b it switched to vm c almost instantly then rerunning vm b it switch back to vm b almost instantly

```
us-east1-c 2023-11-20 18:16:53
us-east1-b 2023-11-20 18:16:54
us-east1-b 2023-11-20 18:16:54
us-east1-b 2023-11-20 18:16:55
us-east1-b 2023-11-20 18:16:56
us-east1-b 2023-11-20 18:16:56
us-east1-b 2023-11-20 18:16:57
us-east1-c 2023-11-20 18:16:57
us-east1-b 2023-11-20 18:16:58
us-east1-b 2023-11-20 18:16:58
us-east1-c 2023-11-20 18:16:59
us-east1-b 2023-11-20 18:16:59
None 2023-11-20 18:17:00
us-east1-c 2023-11-20 18:17:00
us-east1-b 2023-11-20 18:17:01
us-east1-c 2023-11-20 18:17:01
us-east1-b 2023-11-20 18:17:02
us-east1-b 2023-11-20 18:17:03
None 2023-11-20 18:17:03
us-east1-c 2023-11-20 18:17:03
us-east1-c 2023-11-20 18:17:04
us-east1-b 2023-11-20 18:17:05
us-east1-b 2023-11-20 18:17:08
us-east1-c 2023-11-20 18:17:09
us-east1-c 2023-11-20 18:17:09
us-east1-c 2023-11-20 18:17:10
us-east1-b 2023-11-20 18:17:10
```

Note: I was getting kind of inconsistent results and sometimes the vm used would just switch randomly and sometimes it would not switch at all.

