

Week 10 lab
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10.1 CDN

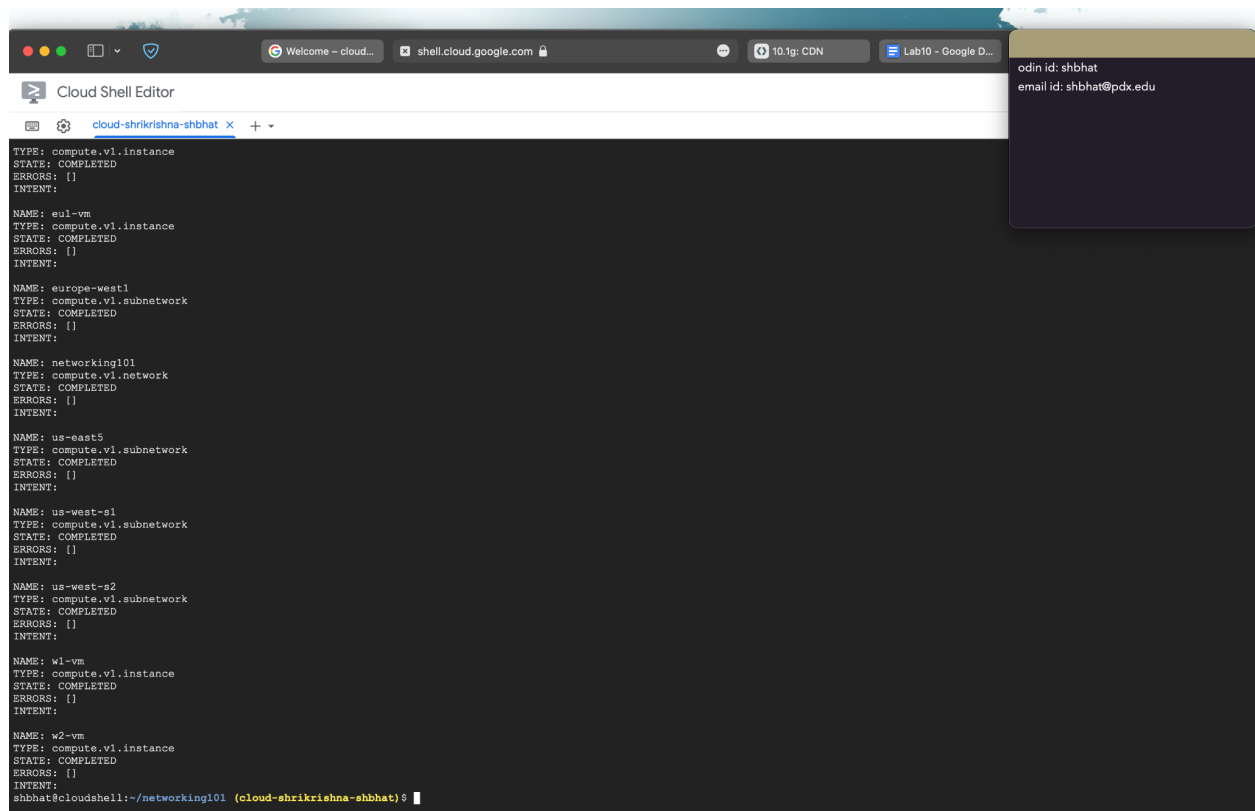
Card 6 - Deployment

Take a screenshot of the output to include in your lab notebook. How many networks, subnetworks, and VM instances have been created?

1 Network

5 Subnetwork

5 VM



```
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: eul-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: europe-west1
TYPE: compute.v1.subnetwork
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: networking101
TYPE: compute.v1.network
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: us-east5
TYPE: compute.v1.subnetwork
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: us-west-s1
TYPE: compute.v1.subnetwork
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: us-west-s2
TYPE: compute.v1.subnetwork
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: w1-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: w2-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:

shbhat@cloudshell:~/networking101 (cloud-shrikriehna-shbhat) $
```

Visit the web console for VPC network and show the network and the subnetworks that have been created. Validate that it has created the infrastructure in the initial figure. Note the lack of firewall rules that have been created.

The screenshot displays the Google Cloud VPC network console for the project 'cloud-shrikrishna-shbhat'. The left sidebar shows the 'VPC network' menu with options like 'VPC networks', 'IP addresses', 'Bring your own IP', 'Firewall', 'Routes', 'VPC network peering', 'Shared VPC', 'Serverless VPC access', and 'Packet mirroring'. The main panel shows 'VPC network details' for a network named 'None'. The 'SUBNETS' tab is active, displaying a table of subnets:

Name	Region	Stack Type	Internal IP ranges	External IP ranges	Secondary IPv4 ranges
asia-east1	asia-east1	IPv4	10.40.0.0/16	None	None
europa-west1	europa-west1	IPv4	10.30.0.0/16	None	None
us-east5	us-east5	IPv4	10.20.0.0/16	None	None
us-west-s1	us-west1	IPv4	10.10.0.0/16	None	None
us-west-s2	us-west1	IPv4	10.11.0.0/16	None	None

Below the table, there is a section for 'Reserved proxy-only subnets for load balancing' with a table that currently has 'No rows to display'.

A terminal window at the bottom shows the Cloud Shell environment with the following text:

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to cloud-shrikrishna-shbhat.
Use "gcloud config set project [PROJECT ID]" to change to a different project.
shbhat@cloudshell:~ (cloud-shrikrishna-shbhat)$
```

A dark overlay box in the top right corner contains the text:

```
odin id: shbhat
email id: shbhat@pdx.edu
```

Visit the web console for Compute Engine and show all VMs that have been created, their internal IP addresses and the subnetworks they have been instantiated on. Validate that it has created the infrastructure shown in the initial figure.

The screenshot displays the Google Cloud Platform console for the project 'cloud-shrikishna-shbhat'. The 'Compute Engine' section is active, showing a list of VM instances. A dark overlay in the top right corner displays the user's credentials: 'odin id: shbhat' and 'email id: shbhat@pdx.edu'.

Status	Name	Zone	Internal IP	External IP	Network	Connect
Running	asia1-vm	asia-east1-b	10.40.0.2 (nic0)	35.185.135.19 (nic0)	networking101	SSH
Running	e1-vm	us-east5-a	10.20.0.2 (nic0)	34.162.36.186 (nic0)	networking101	SSH
Running	eu1-vm	eu-west1-d	10.30.0.2 (nic0)	35.187.41.0 (nic0)	networking101	SSH
Running	w1-vm	us-west1-b	10.10.0.2 (nic0)	34.168.217.214 (nic0)	networking101	SSH
Running	w2-vm	us-west1-b	10.11.0.100 (nic0)	35.233.148.102 (nic0)	networking101	SSH

Below the table, there are several 'Related actions' such as 'Explore Backup and DR', 'View billing report', 'Monitor VMs', 'Explore VM logs', 'Set up firewall rules', 'Patch management', and 'Load balance between VMs'.

At the bottom, the Cloud Shell terminal is visible, showing the welcome message and the current project ID 'cloud-shrikishna-shbhat'.

Click on the **ssh** button for one of the VMs and attempt to connect. Did it succeed?

It failed to connect.

Card 8 – Update deployment

Take a screenshot that indicates the new rules have been deployed.

The screenshot displays the Google Cloud Platform console interface. The top navigation bar shows the Google Cloud logo, the project name 'cloud-shrkrishna-shbhat', and a search bar. The left sidebar lists various VPC network services, with 'VPC networks' selected. The main content area shows the 'VPC network details' page for the 'cloud-shrkrishna-shbhat' project. The 'FIRE WALLS' tab is active, displaying a table of firewall rules. The table has columns for Name, Enforcement order, Type, Deployment scope, Rule priority, Targets, Source, and Destination. The rules listed are 'vpc-firewall-rules' (Global, VPC firewall rules, Enforcement order 1), 'networking-firewall-allow-internal' (Global, Ingress firewall rule, Rule priority 1000), 'networking-firewall-allow-icmp' (Global, Ingress firewall rule, Rule priority 1000), and 'networking-firewall-allow-ssh' (Global, Ingress firewall rule, Rule priority 1000). A 'Terminal' window is open at the bottom, showing the Cloud Shell environment with the project ID 'cloud-shrkrishna-shbhat' and the command 'gcloud config set project [PROJECT_ID]'.

Google Cloud console showing VPC network details for the project 'cloud-shrkrishna-shbhat'. The 'FIRE WALLS' tab is selected, displaying a list of firewall rules. The rules listed are:

- vpc-firewall-rules** (Global, VPC firewall rules, Enforcement order 1)
- networking-firewall-allow-internal** (Global, Ingress firewall rule, Rule priority 1000)
- networking-firewall-allow-icmp** (Global, Ingress firewall rule, Rule priority 1000)
- networking-firewall-allow-ssh** (Global, Ingress firewall rule, Rule priority 1000)

The terminal window at the bottom shows the Cloud Shell environment with the project ID 'cloud-shrkrishna-shbhat' and the command 'gcloud config set project [PROJECT_ID]'.

Card 9 – Latency measurements

Given this, fill in the table with the measured latencies between the 6 pairs and include it in your lab notebook. Use the shortest latency measured for each pair.

Location pair	Ideal latency	Measured latency
us-west1 us-east5	45	49.47
us-west1 europe-west1	93	134.48
us-west1 asia-east1	114	116.20
us-east5 europe-west1	76	97.02
us-east5 asia-east1	141	165.54
europe-west1 asia-east1	110	249.90

Card 16 – Test groups

Are the instances in the same availability zone or in different ones?

Different zones

List all availability zones that your servers show up in for your lab notebook.

Europe-west1-b, Europe-west1-c, Europe-west1-d, us-east5-a

Card 19 – Test Load balancer

Show a screenshot of the page that is returned. If you get an error, you may need to wait several minutes for the load balancer to finish deploying.

The screenshot displays the Google Cloud console interface for the 'cloud-shrikrishna-shbhat' project. The 'Load balancing' page is active, showing a list of load balancers. A notification banner at the top indicates the successful creation of the 'webserver-frontend-lbb' load balancer. The 'Backends' section shows two backend services, each with two instance groups. A sidebar on the right lists various load balancer tutorials, such as 'Set up a global external HTTP(S) load balancer' and 'Set up an internal TCP/UDP load balancer'. A terminal window at the bottom shows the command 'gcloud compute instances create' being executed.

Terminal output:

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is cloud-shrikrishna-shbhat.
Use "gcloud config set project [PROJECT_ID]" to set the project.
shbhat@cloudshell:~$ (cloud-shrikrishna-shbhat) gcloud compute instances create
```

Which availability zone does the server handling your request reside in?

us-east5-a

webserver-...onte...

10.1g: CDN

Cloud Shell

Lab10 - Google D...

34.160.210.13 — Not Secure

Networking 101 Lab

Client IP

Your IP address : 35.191.23.55

Hostname

Server Hostname: us-east5-mig-f8m2

Server Location

Region and Zone: us-east5-a

odin id: shbhat

email id: shbhat@pdx.edu

asia-east = asia1-vm

us-east = e1-vm

europa = eu1-vm

west1 = w1-vm

west1 = w2vm

Card 20 – Siege part 1

Take a screenshot of the initial traffic distribution

Google Cloud

cloud-shrikishna-shbhat

Search (/) for resources, docs, products, and more

Search

Network services

Load balancing

Cloud DNS

Cloud CDN

Cloud NAT

Traffic Director

Service Directory

Cloud Domains

Private Service Connect

Marketplace

Release Notes

Load balancer details

EDIT

DELETE

VIEW IN NETWORK TOPOLOGY

webservice-frontend-fwrule

URL Rule

Backend Service

webservice-backend-migs

Backend Instance

europa-west1-mig

us-east5-mig

Cloud Shell

Terminal

cloud-shrikishna-shbhat

Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to cloud-shrikishna-shbhat.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
shbhat@cloudshell:~ (cloud-shrikishna-shbhat)\$

odin id: shbhat

email id: shbhat@pdx.edu

asia-east = asia1-vm

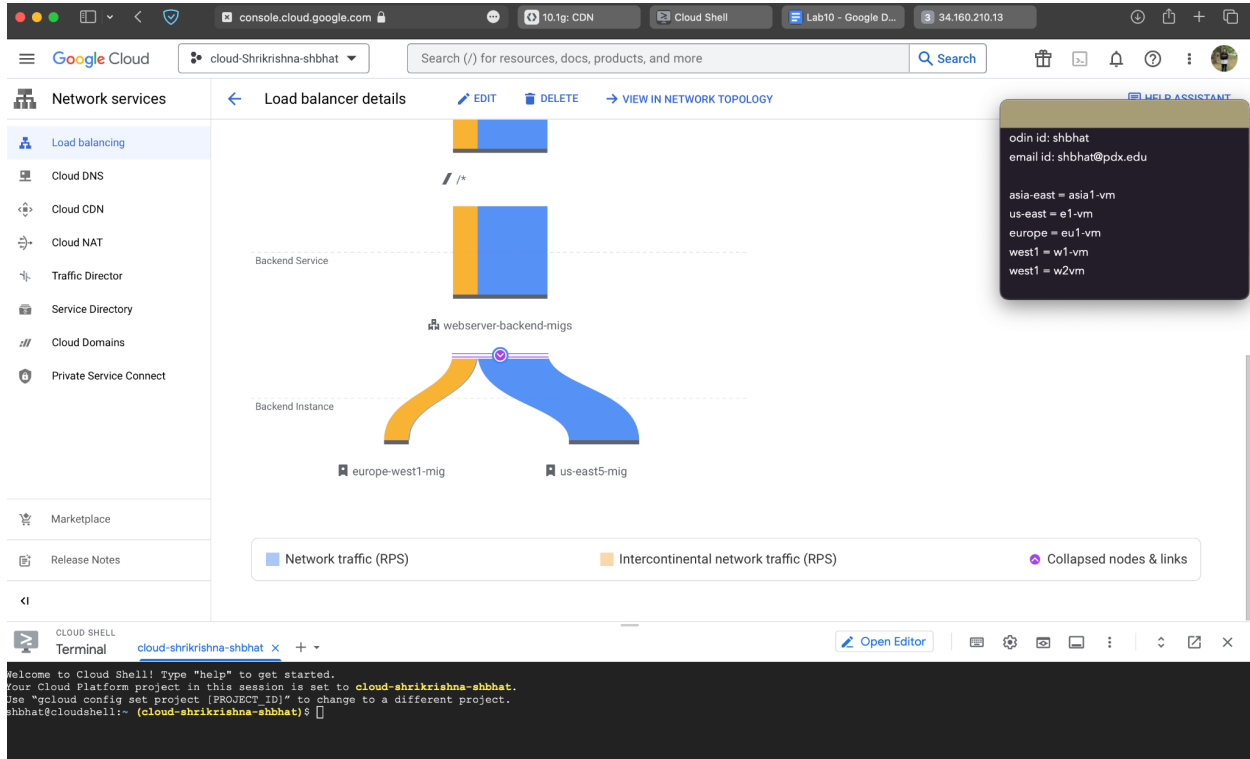
us-east = e1-vm

europa = eu1-vm

west1 = w1-vm

west1 = w2vm

Take a screenshot of the UI as additional instances are brought up and show that the traffic distribution shifts



Card 21 – Siege part 2

Show a screenshot of the final traffic distribution.

