

DAY-1

GCP (Google Cloud Platform)

(1)

console.cloud.google.com

Services:

- IaaS
- SaaS
- PaaS & soon

Public cloud companies

- AWS (Amazon)
- Azure (Microsoft)
- GCP (Google)
- Alibaba

Google → google data centers

Google cloud Infrastructure

35 countries - 61 zones

Mumbai - 3 AZ. ← (Disaster Recovery)

soon they are launching in Delhi

In some region there are 3 or 4 AZ.

Some of the services are not available in some Region

Public Internet → (Multiple companies come together)  
→ This is not secure, not reliable

GCP → have own personal wire (N/w)

- more secure
- Reliable
- No Public Internet
- Private N/w

Google → cloud.google.com/about/locations#network

Compute Engine → Zones

At here you can see all the active zones

## Projects

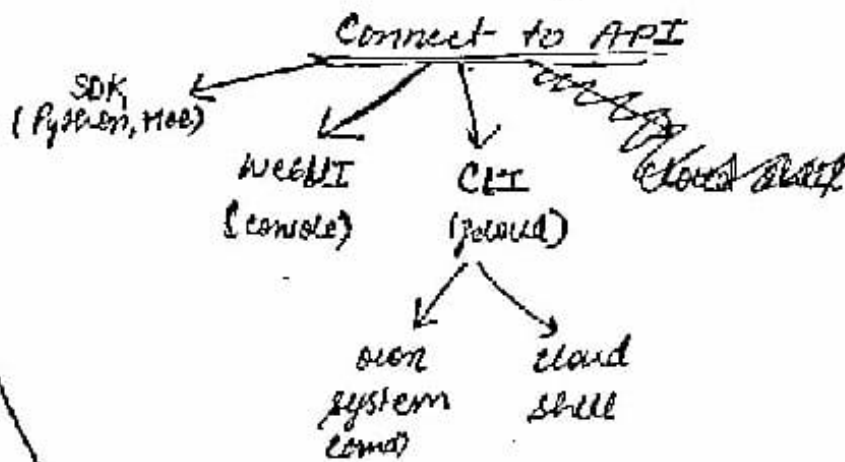
By default there is project named my-first-project

### API

For every service, there is API (url)

These API are disabled, have to enable it.

API & services → Library



☐ activate Cloud Shell.

## Projects

This is a way to manage the services like we create one project for developer team and set some quotas & limits. And one project for production team which has different quotas & limits.

my first Project → New Project  
Project name: devproject

Project ID: devproject-12345

They create project ID where we can even edit it.

This ID should be unique

Now launch other project from CLI.  
activate cloud shell.

```
$ gcloud
```

```
$ gcloud projects list
```


```
$ gcloud projects & --help
```

```
$ gcloud projects create prodproject-78778 --name=prodproject
```

(Either you connect to webUI or CLI, you are connected to API (web))

```
$ gcloud projects list
```

To activate the service of compute engine

→ Billing → Manage →  Enable

```
$ gcloud services list --project devproject-12345
```

(To check ↑ how many services are active)

```
$ gcloud services list --available --project devproject-12345
```

(Give all the enabled & disabled service list)

```
$ gcloud services list list --available --project devproject-12345  
| grep compute
```

```
$ gcloud services enable compute.googleapis.com --project  
prodproject-78778
```

Error → because my billing account is not found

prodproject.

Compute Engine → Enable billing → set account

OR

\$ gcloud services enable compute.googleapis.com  
--project prodproject-1310

devProject

Compute Engine → VM instances → create

→ Name: os1

→ Region: asia-south1 (Mumbai) → Zone: asia-south1-a

→ ~~Zone~~ Machine configuration -

Machine type: n1-st1 (1 vCPU, 8.75 GB memory)

→ Boot disk → change

OS: CentOS

Version: CentOS 7

Boot disk type: Standard persistent disk

↑ (Permanent HDD)

Size: 20 GB

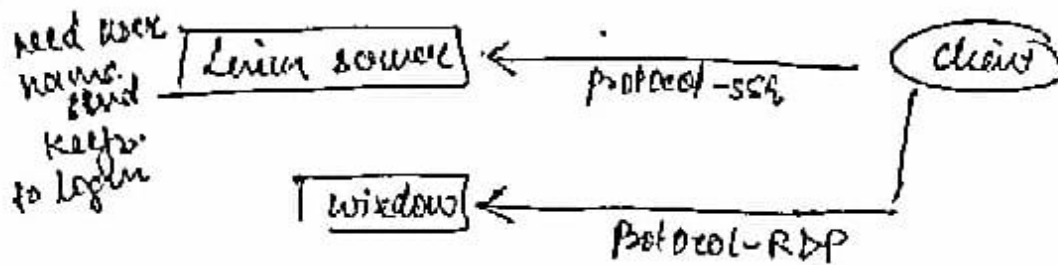
Whatever you have selected, you google have given pre-create  $\beta$  command, in last there is option

command line ← click here.

OR

You can create your own command on CLI with the help of --help.

Most of the time, in Mumbai region, there is not enough resources to launch the instance. (5)  
So, change the region



In AWS you need username & key but google can connect without these.

say v

→ open in browser window

```
$ whoami  
aws  
$ sudo su - root  
$ whoami  
root  
# yum install httpd  
# cd /var/www/html/  
# ls  
# cat > index.html  
my website by LW  
# ls  
index.html  
# systemctl restart httpd
```

To connect to this website, GCP has given public IP (external IP). Copy & paste public IP.  
But it fails becoz of Firewall

⑥

But we can ping to this public IP  
(aws) access(80) - x      windows(RDP)(3389) - ✓  
(icmp) ping - ✓  
SSH (22) - ✓

→ Setup Firewall rules → create Firewall rule

Name: weballow

① Ingress

~~② Egress~~

③ Allow

Target: All instances in the new

Destination IP: 0.0.0.0/0

④ Specified protocols & ports

Port: 80

now, finally you can connect

✗ Now using external IP connect to website → fails  
Because your firewall is not connect to nic (N/w card)  
(updated)  
→ click on (nic)

⇒ you install docker

NAAS → VPC (Virtual Private Cloud)

when you launch OS, it is launched inside a subnet (VPC)

→ VPC Network.

Have default VPC which have multiple  
labs (subnet) in different regions.

ex: prod: default

DevProject

→ VPC N/w → Create VPC networks

Name: vpc-devproject

New subnet → Name: Lab1

Region: asia-southeast1 (Singapore)

IP address range: 10.0.1.0/24

ProdProject

→ VPC N/w → Create VPC n/w

vpc-prodproject

Lab2

us-east1 (US)

10.0.2.0/24

## Prod Project

⑧

Compute Engine → create

Name: asprod

Region: us-east1 (South Carolina) Zone: us-east1-b

Centos, Centos7, 20

→ Networking

(default) & edit

Network: vpc-prod-project

## Dev Project

Compute Engine → create

osdev, asia-southeast1 (Singapore), 1-a

Centos, Centos7, 20

→ Networking

Network: vpc-dev-project

## Dev VPC

(nic) → VPC → vpc-dev-project → firewall rules

→ Create Firewall Rule

Name: myvpcfirewall

① Ingress

② Allow

Target → All instances in the network

Source IP → 0.0.0.0/0

③ Allow all

Create



Now you can ping + ssh.

(9)

ProdProject:

(nico) → myfwallvpc2.

create

Not able to ping back  
In this VPC there  
is no firewall rule.  
← So, set firewall rule

Private IP ← Google N/w (full speed + security)

Public IP ← Public Internet

osdev → ping external IP of osprod ✓

✗ ping internal IP of osprod ✗

↓  
It is not able to ping they are in  
different VPC.

↓  
we have to do VPC peering  
(ping private IP → private IP)  
without Public Internet

ProdProject

VPC network → VPC network peering → (create connection)

connect 2 VPC networks which can reduce latency,  
cost & increase security. (Using Google N/w)

→ continue →

Name's prodpeering  
for the network vpcprodproject

⊙ In another project

Project ID & devproject-131078

VPC New name: vpcdevproject

Create

Status → InActive

↳ You need to configure to other side also

Devproject

VPC network peering.

Name: devpeering

Your VPC No: vpcdevproject

Project ID: prodproject-12345

VPC New name: vpcprodproject

---

Now ping from dev to prod ✓

Status → Active ✓