Day 4

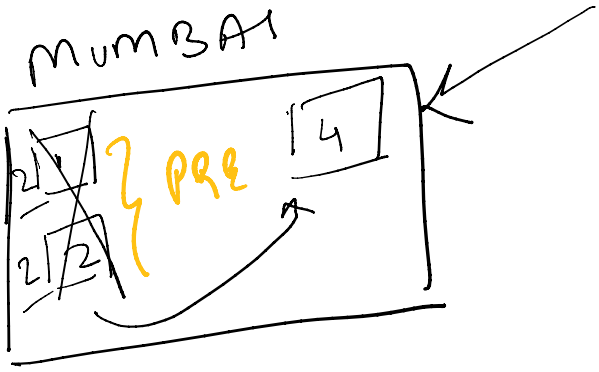
19 January 2025 20:26

TOPICS COVERED

1. Compute Engine
2. Compute Options
3. Storage
4. Machine Types
5. Pricing
6. Images
7. Disk Options
8. Demo
    1. Create VM - GUI and Cloud Shell
    2. **Homework Demo** - Create a Windows VM and do RDP.
    3. Images vs Snapshots

What is Compute?

- Compute = VM service that GCP offers.
- Windows/Linux server
- Gives you the utmost flexibility:
    - Run any language
    - Run your specific OS.
- **IAAS**



Features:

- Recommendation engine on GCP - optimize your compute.
    - 24 hours.
- Preemptible VMs - 80% discount.
    - No SLA.
    - Not to use it for Production use case.
    - Batch processing.
    - Sustainable use discounts
    - Committed use discounts
    - Non -prod , testing

Linux Instance - The creator will have SSH capacity
Windows Instance - GCP console to generate the username and password and then take RDP to that compute with the genarated username and password.

Machine Type - Combination of vcpu + Memory + Processing units that GCP has curated for you to be used.

A custom machine type will also be expensive when we compare it with its equivalent on a predefined machine type.

On GCP -- Your data is encrypted by default.
It not being used.
It is in transit
It is being processed

Custom Image

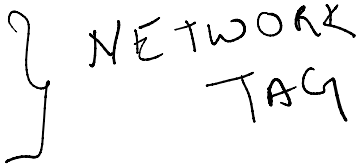
- VM on premise.
- Take machine image.
- Upload it to GCP.
- Then select it from the custom image center.

Snapshot

- Just in time state of the vm.
- Data / app /user state.
- Snapshots for recovery of my vm.
- Stateful.

Network Tags

1. Deny - Incoming -port 80
2. Allow - incoming - port 22
3. Deny - Outgoing - port 443



Observability

- Logging and monitoring option given to you on vm.
- BY DEFAULT monitorin and logging is already enabled !!!
- But if you want additional logs and insights you can enabled the monitoring agent

Service Accounts

- All the service that we have on GCP will talk to another service as well.
- Database VM - Front End VM ????
- Service accounts come in place.
- By default we get a compute service account already created.
- IAM.

Shielded VMs

- Protection at the root kernel level.

CLI Command Line

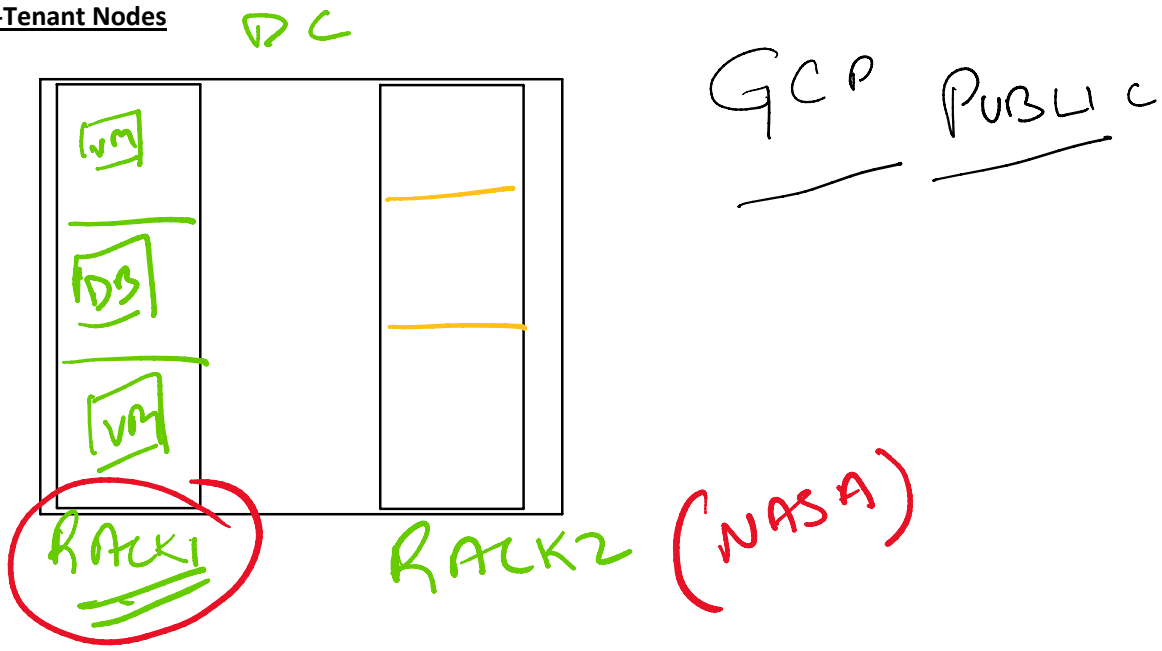
```
gcloud compute instances create my-vm \
> --zone=us-central1-a \
> --machine-type=e2-micro \
> --image-family=debian-11 \
> --image-project=debian-cloud \
> --boot-disk-size=10GB
```

Instance Template

- I need a vm with ubantu installed already.

- I need to spin up 100 similar vms.

Sole-Tenant Nodes



Sole Teanat nodes are physcial compute engine servers dedicated solely to your workload

Machine Image vs Instance Template

Use machine in Disaster recovery, pre-configured environment

TPU - Machine Learning

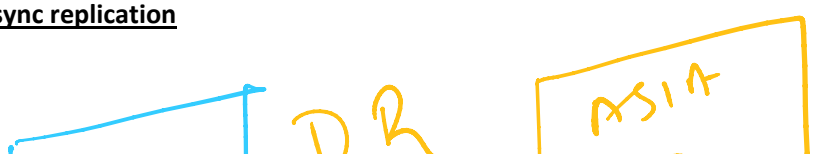
- Specialize hardware by Google to support ML workflows/workloads

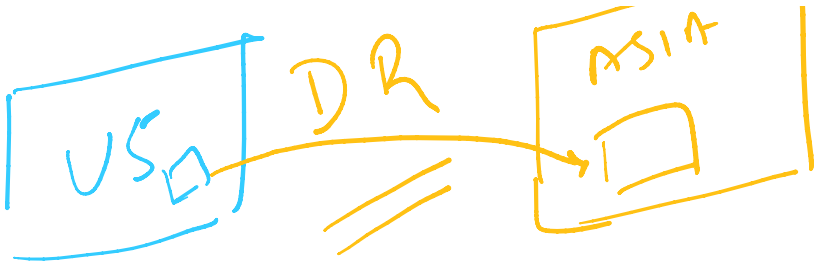
CUD - Committed Use Discount

DO NOT Buy any commitments. It is not reversible/delete.

CUD do NOT mean guarantee of a resource to your project.

Async replication

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