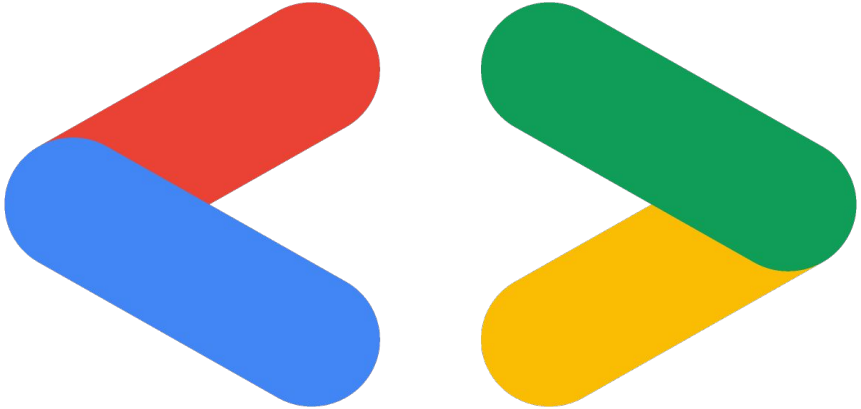


DSC JIIT, Noida

Welcome to Google Cloud Program!

Raise your hands if ...

Cloud Computing

In cloud computing, the capital investment in building and maintaining data centers is replaced by consuming IT resources as an elastic, utility-like service from a cloud "provider" (including storage, computing, networking, data processing and analytics, application development, machine learning, and even fully managed services).

What is Cloud?

Infrastructure

Platform

Software

Infrastructure as a Service

IaaS

PaaS

SaaS

Platform as a Service

IaaS

PaaS

SaaS

Software as a Service

IaaS

PaaS

SaaS


Google Photos
Google Drive
Google Search
Cloud AutoML Vision
Cloud Storage
Cloud BigTable

Why Cloud?

On-demand self-service

No human intervention needed to get resources

Broad network access

Access from anywhere

Resource pooling

Provider shares resources to customers

Rapid elasticity

Get more resources quickly as needed

Measured service

Pay only for what you consume

Google Cloud Platform


Application Development
Quests part of the track
1. Baseline: Deploy & Develop
2. Websites and Web Applications
3. Deploying Applications
4. Cloud Development
5. Exploring APIs
#GCPCrashCourse #cloudstudyjam #cloudfest
/dscjitnoida
/jitofficial
Anurag 9953193724


Quests part of the track
1. Baseline: Data, ML, AI
2. BigQuery for Data Analysis
3. Scientific Data Processing
4. Data Engineering
5. Data Science on the GCP
Data Science
#GCPCrashCourse #cloudstudyjam #cloudfest
/dscjitnoida
/jitofficial
Anurag 9953193724


Quests part of the track
1. Baseline: Data, ML, AI
2. Intro to ML: Language Processing/
Intro to ML: Image Processing
3. BigQuery for Machine Learning
4. Intermediate ML: TensorFlow on GCP
5. Machine Learnng APIs
Machine Learning
#GCPCrashCourse #cloudstudyjam #cloudfest
/dscjitnoida
/jitofficial
Anurag 9953193724

Become a cloud expert with hands-on training.

We give you temporary credentials to Google Cloud Platform and Amazon Web Services, so you can learn the cloud using the real thing – no simulations. From 30-minute individual labs to multi-day courses, from introductory level to expert, instructor-led or self-paced, with topics like machine learning, security, infrastructure, app dev, and more, we've got you covered.

Quest Outline

HANDS-ON LAB

A Tour of Qwiklabs and the Google Cloud Platform

In this first hands-on lab you will access Qwiklabs and the Google Cloud Platform Console and use the basic GCP features: Projects, Resources, IAM Users, Roles, Permissions, APIs, and Cloud Shell.

45 minutes Introductory Free

HANDS-ON LAB

Creating a Virtual Machine

In this hands-on lab, you'll learn how to create a Google Compute Engine virtual machine and understand zones, regions, and machine types. To preview, watch the short video Create a Virtual Machine, GCP Essentials.

40 minutes Introductory 1 Credit

OR

HANDS-ON LAB

Compute Engine: Qwik Start - Windows

Google Compute Engine lets you create and run virtual machines on Google infrastructure. In this lab you create a Windows Server instance in the Google Compute Engine and access it

Quest Complete!

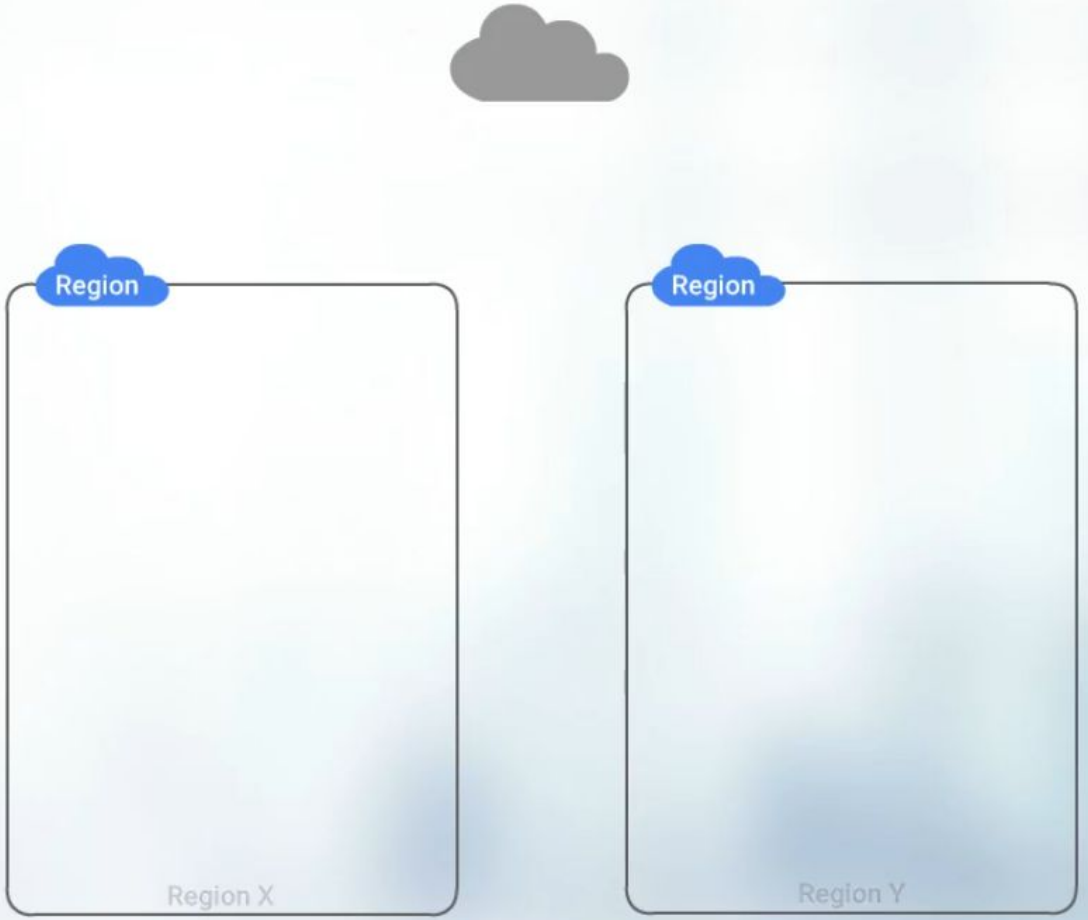
Congrats! You completed this quest and earned a badge. Become a cloud expert and start another.

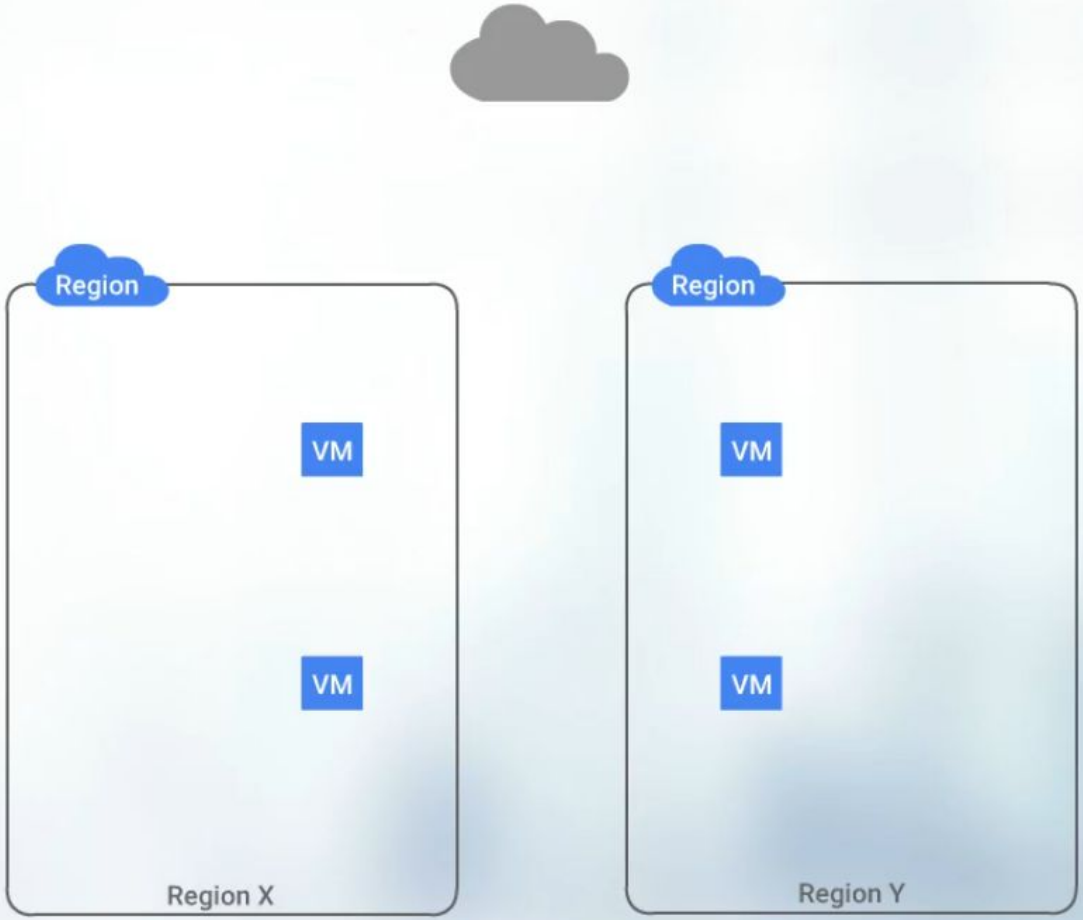
Go Cloud!

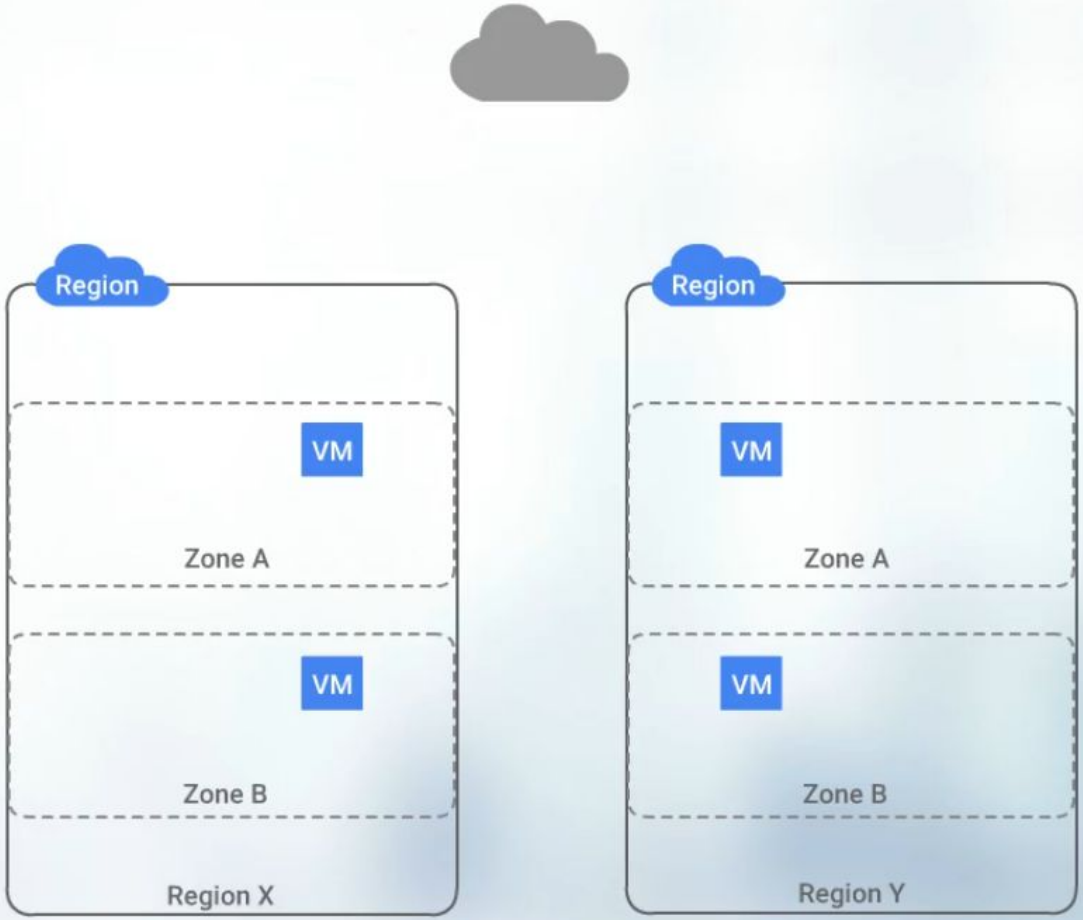
Regions and Zones

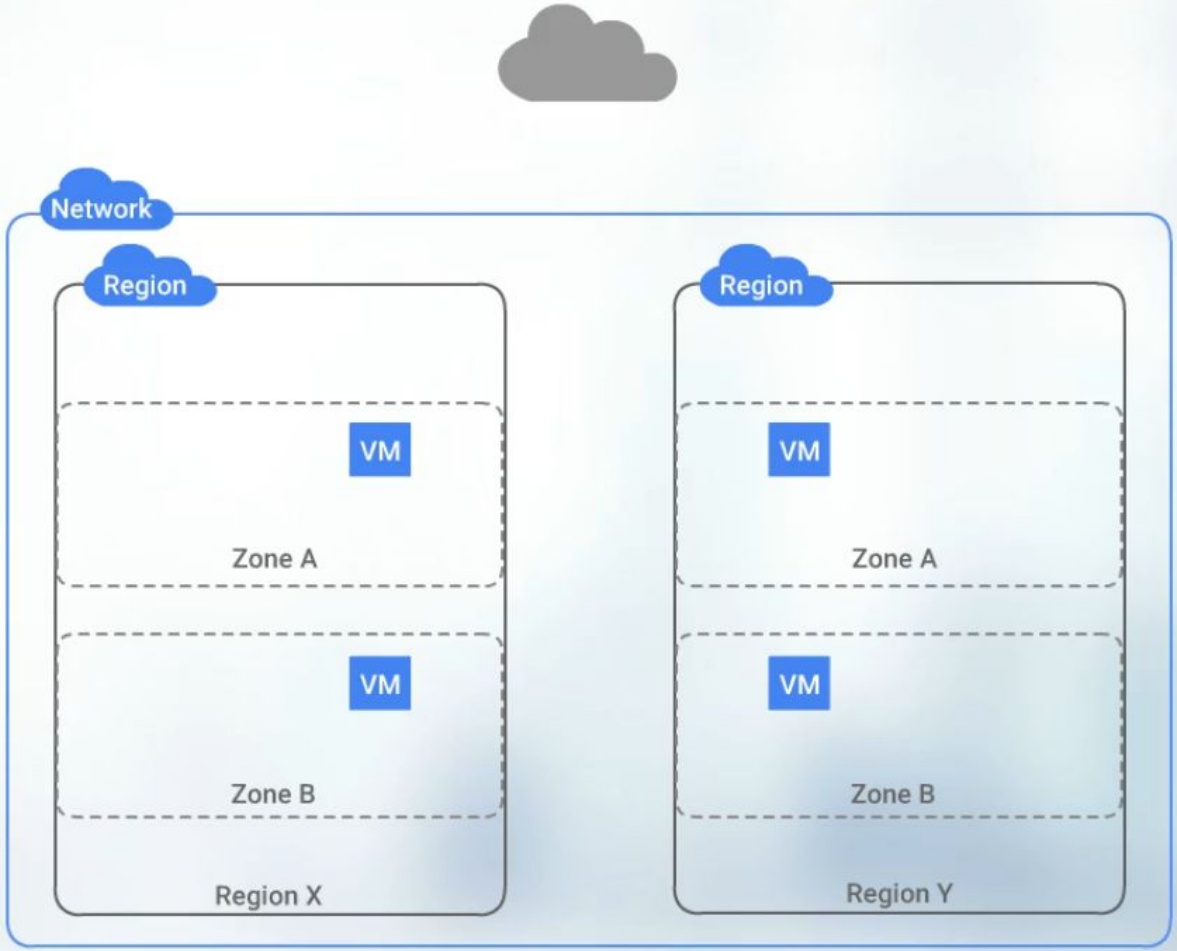
- **Regions**: Collections of zones
  - Specific geographical locations where you can run resources
  - Regions are interconnected using Google's global, meshed backbone network
- **Zones**: Isolated deployment areas in a region

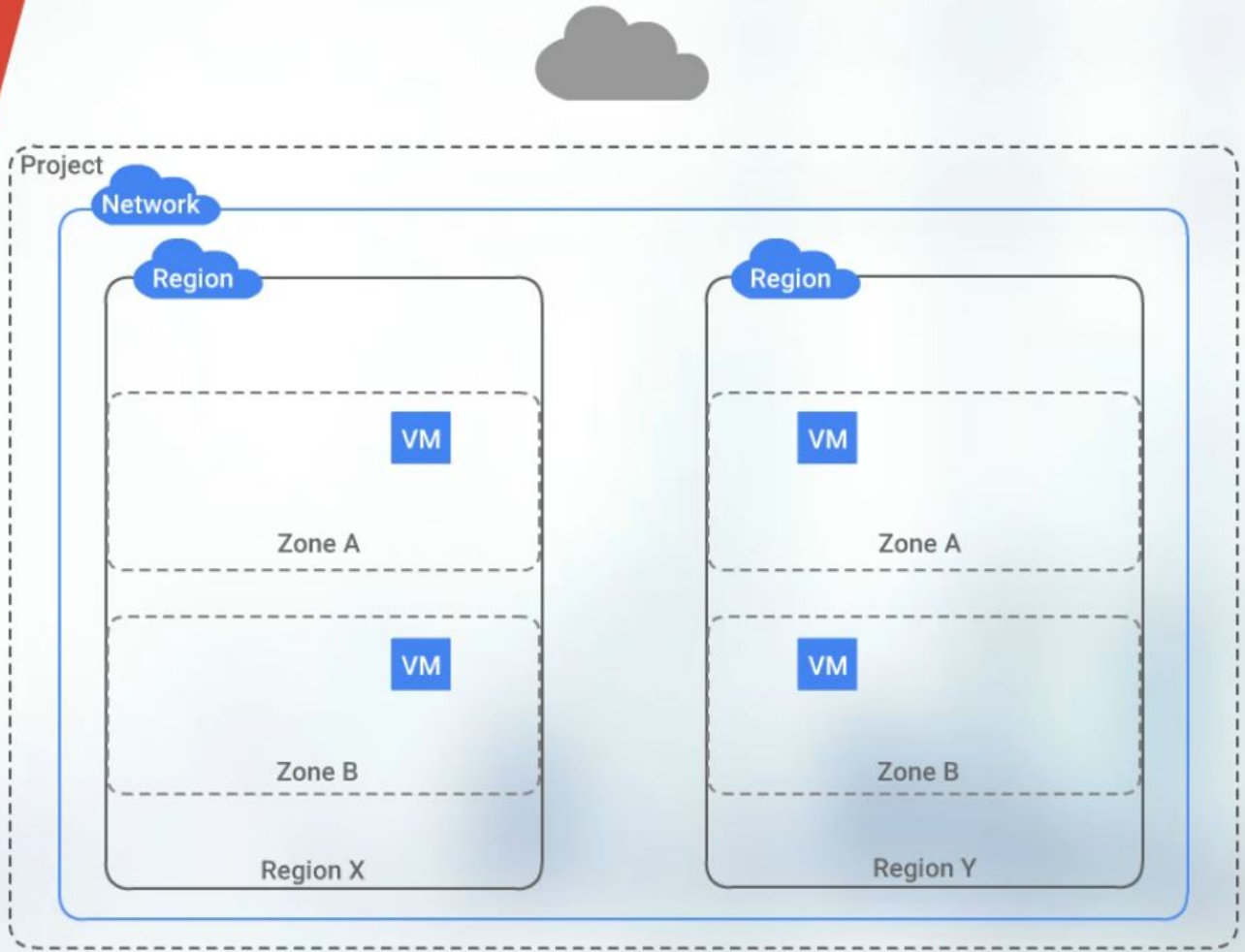
Your resources can be regional, zonal, or in some cases multi-regional

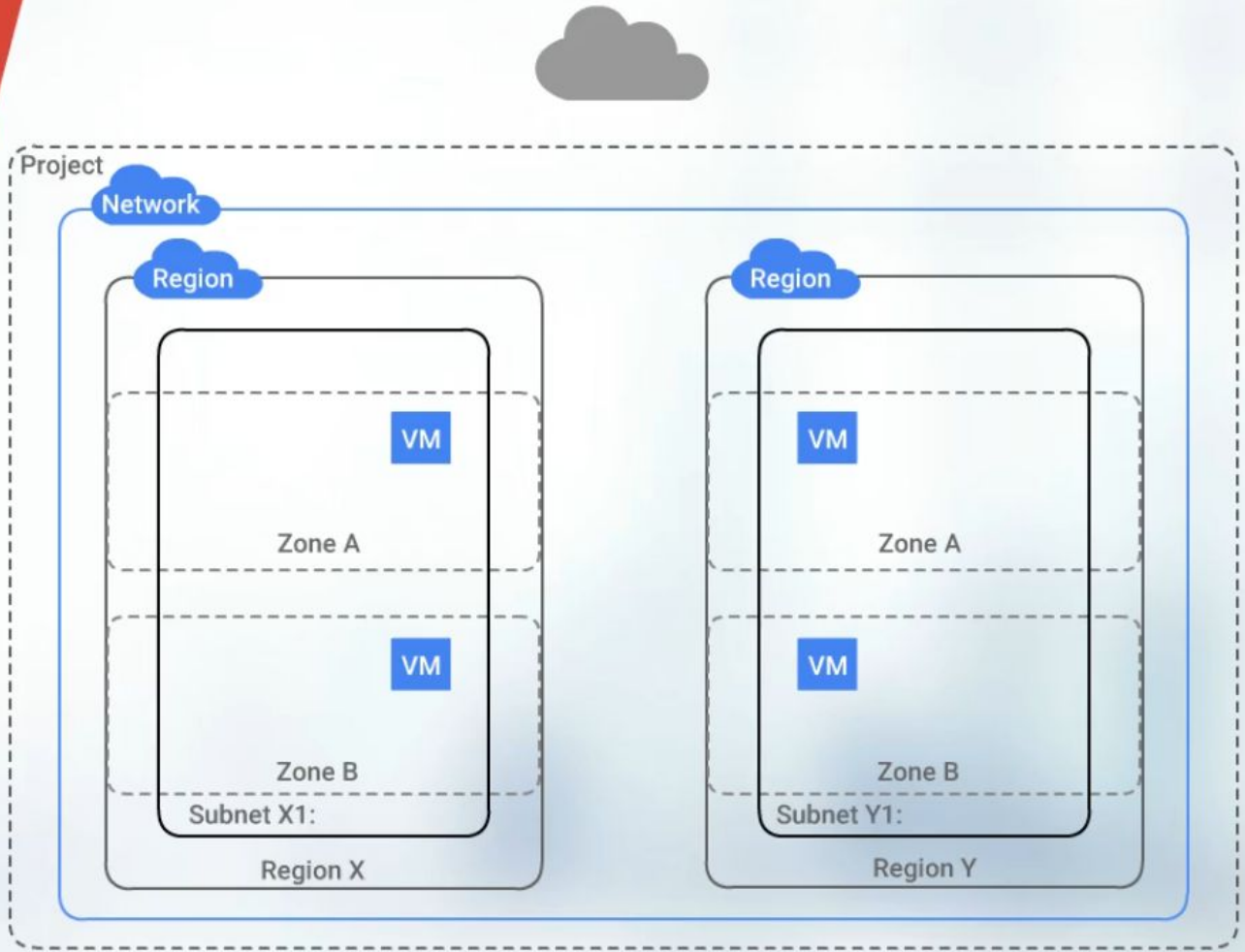

Region
Region X
Region
Region Y

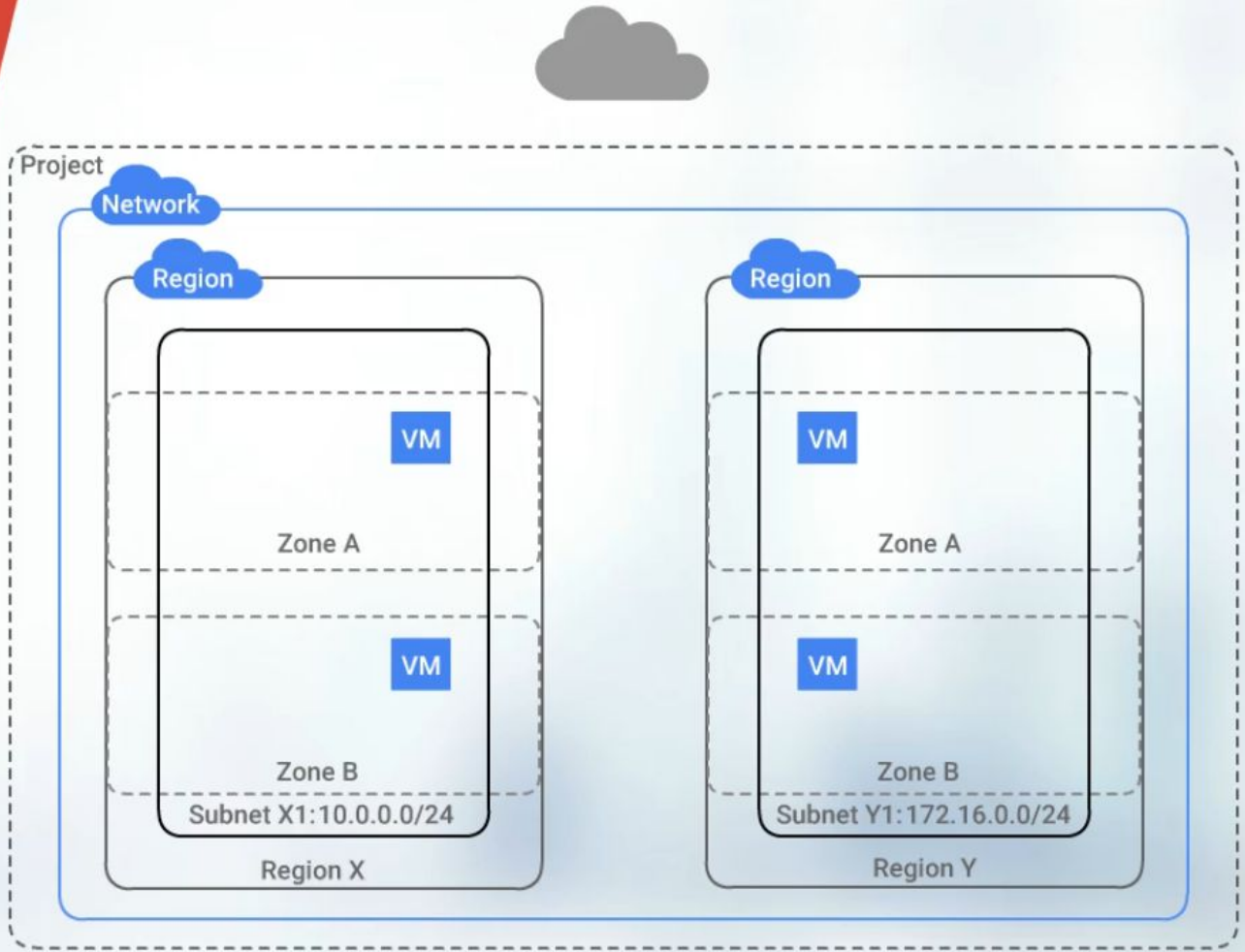

Region
VM
VM
Region X
Region
VM
VM
Region Y

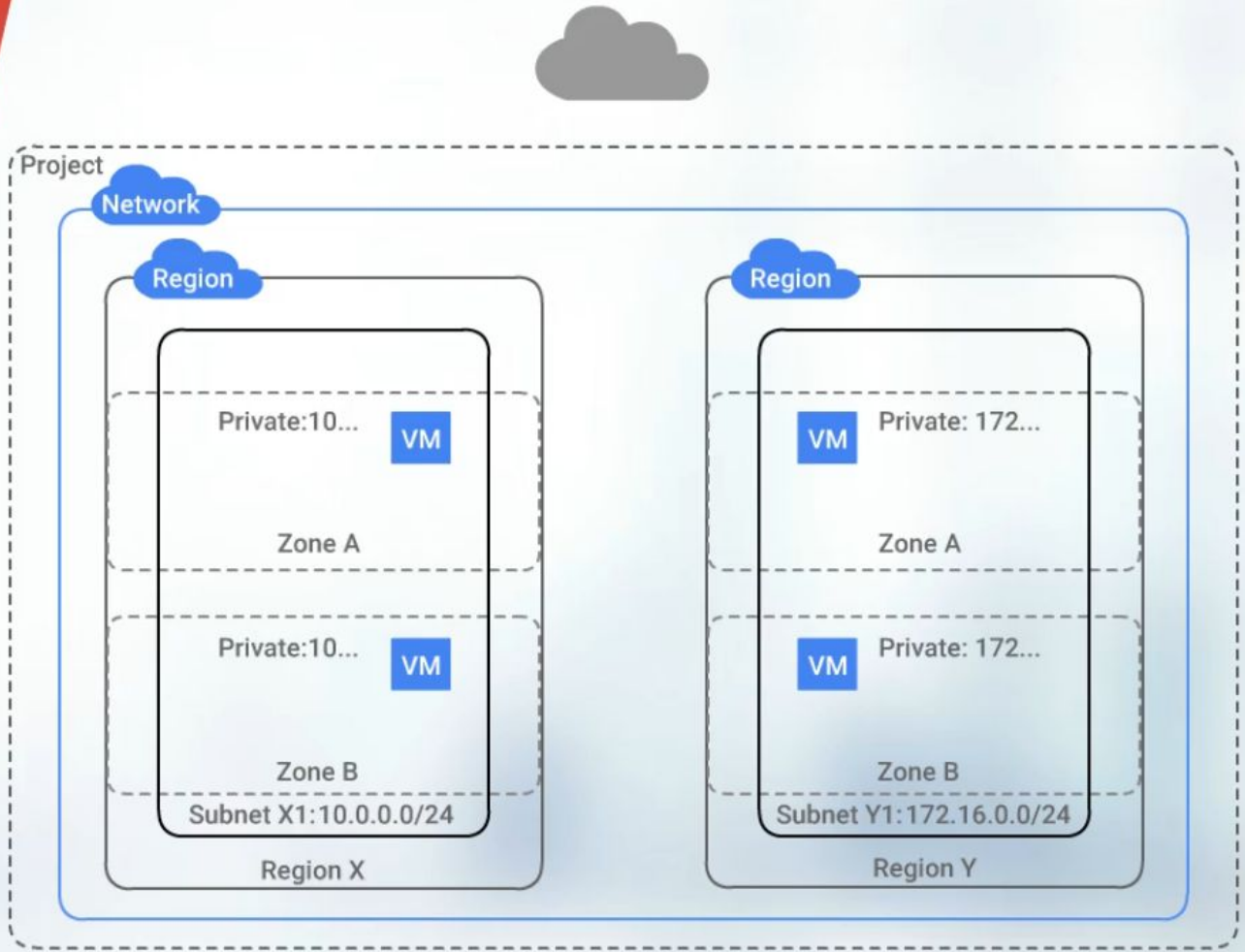

Region
VM
Zone A
VM
Zone B
Region X
Region
VM
Zone A
VM
Zone B
Region Y

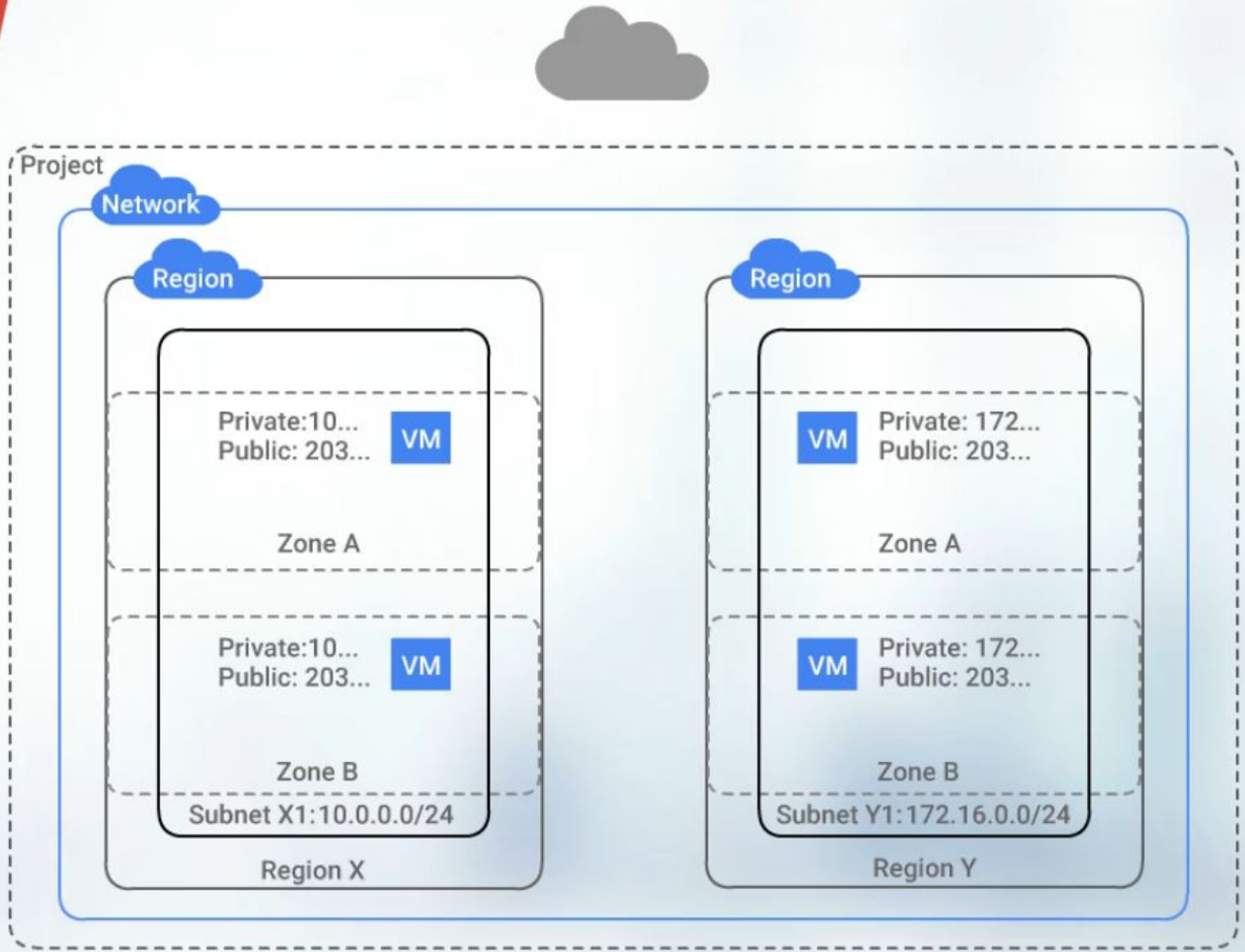

Network
Region
VM
Zone A
VM
Zone B
Region X
Region
VM
Zone A
VM
Zone B
Region Y


Project
Network
Region
Region
VM
VM
VM
VM
Zone A
Zone A
Zone B
Zone B
Region X
Region Y


Project
Network
Region
Region
VM
VM
VM
VM
Zone A
Zone A
Zone B
Zone B
Subnet X1:
Subnet Y1:
Region X
Region Y


Project
Network
Region
Region
VM
VM
VM
VM
Zone A
Zone A
Zone B
Zone B
Subnet X1:10.0.0.0/24
Subnet Y1:172.16.0.0/24
Region X
Region Y


Project
Network
Region
Region
Private:10...
VM
Zone A
Private:10...
VM
Zone B
Subnet X1:10.0.0.0/24
Region X
VM
Private: 172...
Zone A
VM
Private: 172...
Zone B
Subnet Y1:172.16.0.0/24
Region Y


Project
Network
Region
Private:10...
Public: 203...
VM
Zone A
Private:10...
Public: 203...
VM
Zone B
Subnet X1:10.0.0.0/24
Region X
Region
VM
Private: 172...
Public: 203...
Zone A
VM
Private: 172...
Public: 203...
Zone B
Subnet Y1:172.16.0.0/24
Region Y

Google Cloud Identity and Access Management defines...

Who

can do what

on which resource

IAM policies can apply to any of four types of principals

Google account or Cloud Identity user
test@gmail.com test@example.com

Service account
test@project_id.iam.gserviceaccount.com

Google group
test@googlegroups.com

Cloud Identity or G Suite domain
example.com

There are three types of IAM roles

Primitive

Predefined

Custom

IAM primitive roles offer fixed, coarse-grained levels of access

Owner

- Invite members
- Remove members
- Delete projects
- And...

Editor

- Deploy applications
- Modify code
- Configure services
- And...

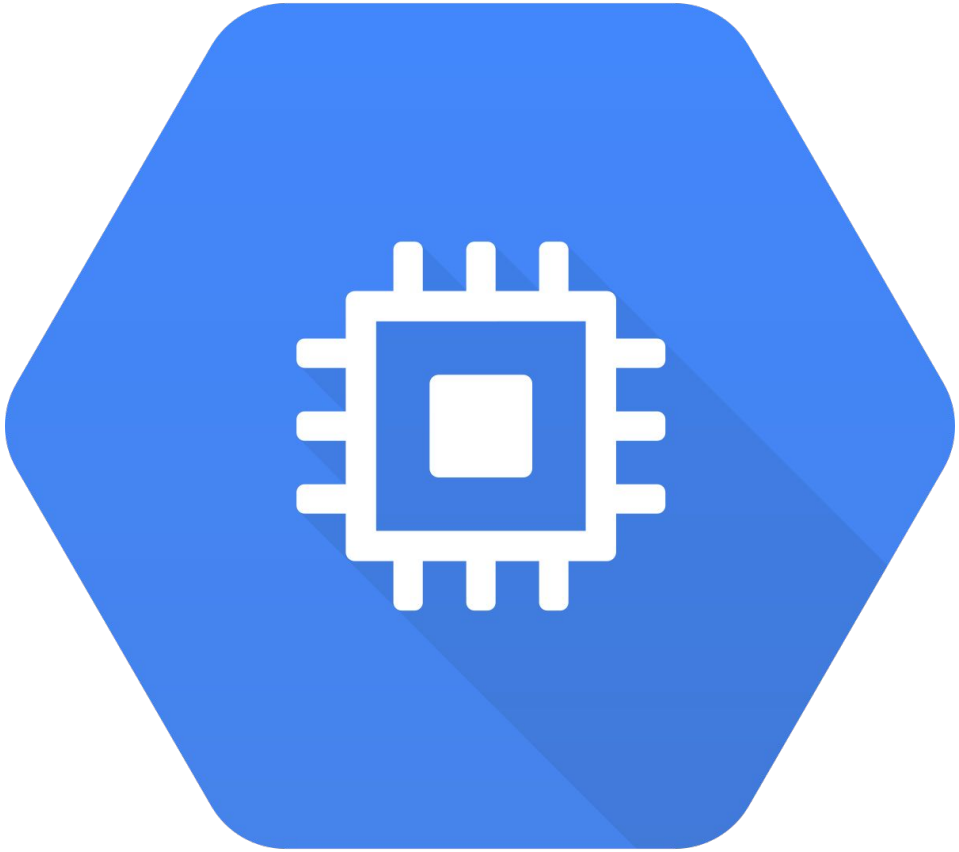
Viewer

- Read-only access

Billing administrator

- Manage billing
- Add and remove administrators

A project can have multiple owners, editors, viewers, and billing administrators.

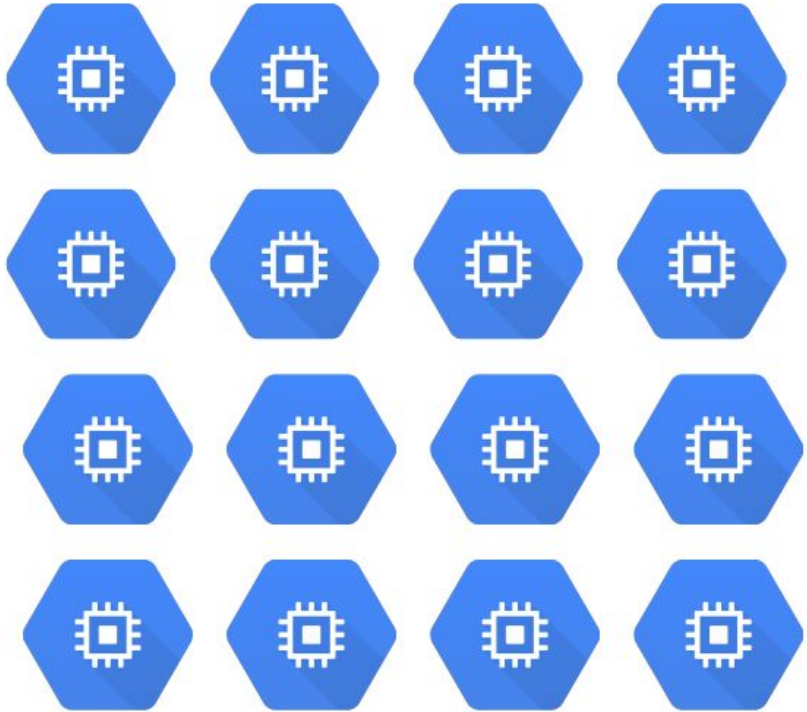


Compute Engine offers managed virtual machines

- High CPU, high memory, standard and shared-core machine types
- Persistent disks
  - Standard, SSD, local SSD
  - Snapshots
- Resize disks with no downtime
- Instance metadata and startup scripts

Scale up or scale out with Compute Engine

Use big VMs for memory- and compute-intensive applications



Use Autoscaling for resilient, scalable applications

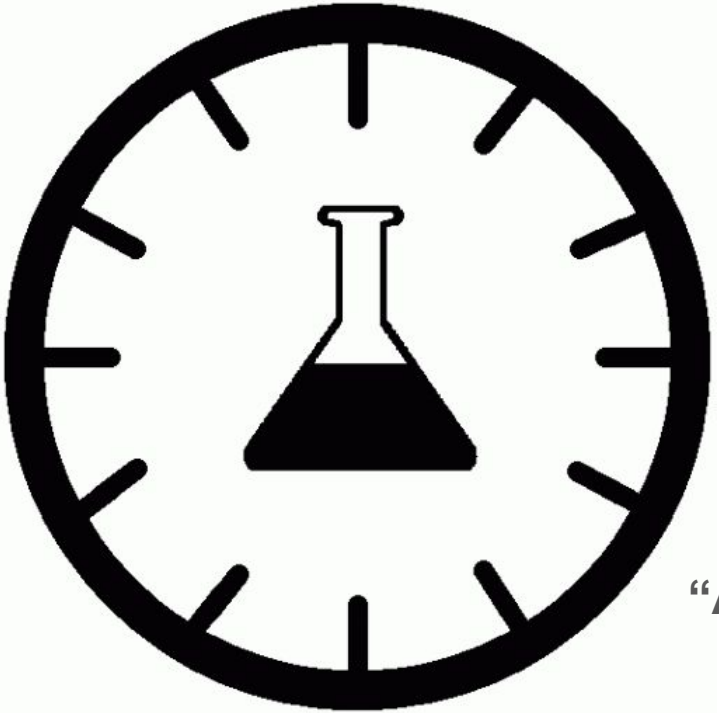
Comparing storage options: technical details

	Cloud Datastore	Bigtable	Cloud Storage	Cloud SQL	Cloud Spanner	BigQuery
Type	NoSQL document	NoSQL wide column	Blobstore	Relational SQL for OLTP	Relational SQL for OLTP	Relational SQL for OLAP
Transactions	Yes	Single-row	No	Yes	Yes	No
Complex queries	No	No	No	Yes	Yes	Yes
Capacity	Terabytes+	Petabytes+	Petabytes+	Terabytes	Petabytes	Petabytes+
Unit size	1 MB/entity	~10 MB/cell ~100 MB/row	5 TB/object	Determined by DB engine	10,240 MiB/ row	10 MB/row

Comparing storage options: technical details

	Cloud Datastore	Cloud Bigtable	Cloud Storage	Cloud SQL	Cloud Spanner	BigQuery
Type	NoSQL document	NoSQL wide column	Blobstore	Relational SQL for OLTP	Relational SQL for OLTP	Relational SQL for OLAP
Best for	Semi-structured application data, durable key-value data	"Flat" data, Heavy read/write, events, analytical data	Structured and unstructured binary or object data	Web frameworks, existing applications	Large-scale database applications (> ~2 TB)	Interactive querying, offline analytics
Use cases	Getting started, App Engine applications	AdTech, Financial and IoT data	Images, large media files, backups	User credentials, customer orders	Whenever high I/O, global consistency is needed	Data warehousing

Lab time!



Go to qwiklabs.com

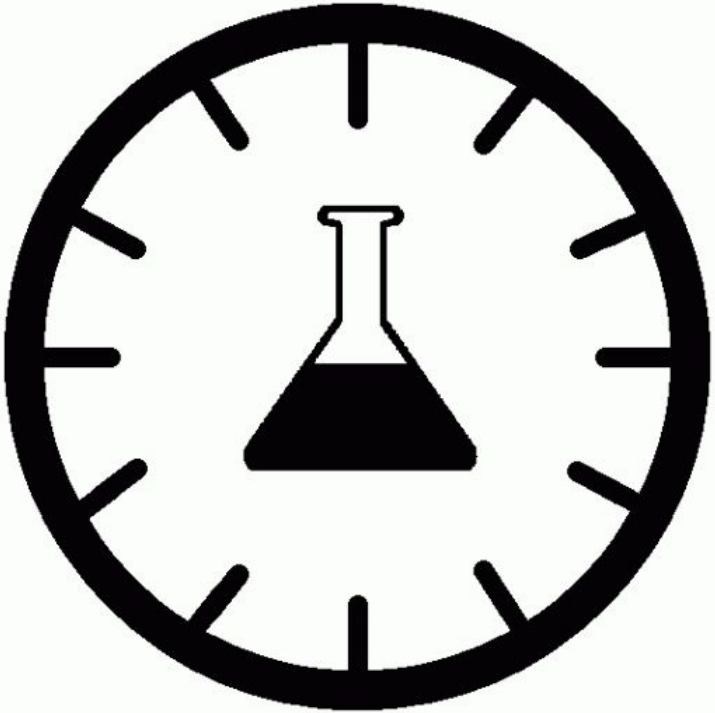
- Go to qwiklabs.com
- Sign-In / Log-In
- In the search bar, look for ***"GCP Essentials"***
- Enroll in the quest.
- Start the first lab.

"A tour of Qwiklabs and Google Cloud Platform"

Time to get the monthly subscription!

- Data and ML Track
  - https://google.qwiklabs.com/quests/34
- Application Development Track
  - https://google.qwiklabs.com/quests/37

Lab time … v2.0!



Go to qwiklabs.com

- Go to qwiklabs.com
- Sign-In / Log-In
- In the search bar, look for ***“GCP Essentials”***
- Start the second lab.

“Creating a Virtual Machine”

Machine types	Memory (per vCPU)	vCPUs	Custom machine types?	Sustained-use discounts?	Local SSDs?	Processors
General-purpose (N2)	0.5–8 GB	2–80	Yes	Yes	Yes	• Cascade Lake
General-purpose (N1)	0.95–6.5 GB	1–96	Yes	Yes	Yes	• Skylake • Broadwell • Haswell • Ivy Bridge • Sandy Bridge
Compute-optimized	4 GB	4–60	No	Yes	Yes	• Cascade Lake
Memory-optimized	28 GB	40–416	No	Yes	No	• Broadwell E7 • Cascade Lake
Shared-core	0.60 GB	0.2–0.5	No	No	No	• N/A

Prepare yourself for careers in a cloud-first world!

Google Cloud Career Readiness Program

You are on your way!




Complete the remaining labs

GCP Essentials quest qwiklabs.com/quests/23 .

Earn your online badge and one additional month of free access to Qwiklabs.

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On social media. Go to: google.qwiklabs.com/dashboard and click “View Public Profile” and our social media hashtag: **#GCPCrashCourse**

Decide on additional badge(s)

you will go for from google.qwiklabs.com/catalog . Remember that your free Qwiklabs access has an expiration date.

Get Career Ready

Work with your institution to apply for the Google Cloud career readiness program.

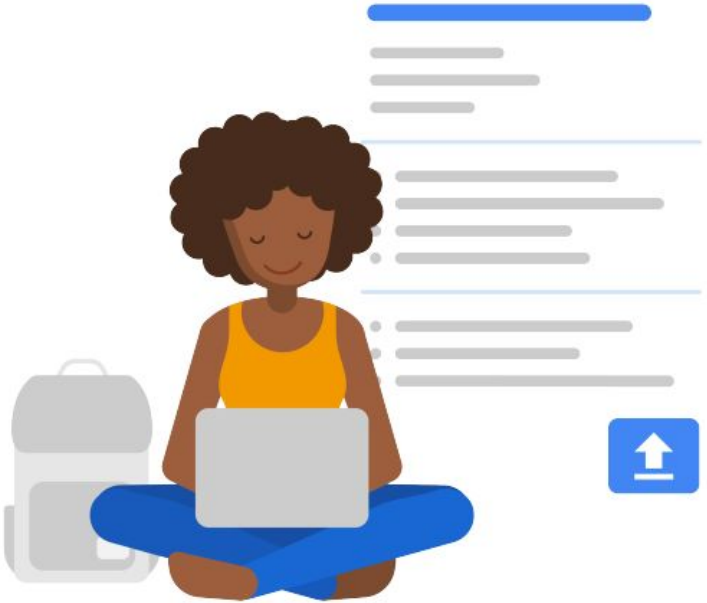
1 week to complete

1 Quest on Qwiklabs

Developer Student Clubs

Complete 1 track

Fill form & Get swags



Win cool swags!

- As a **learner** you win a cool Hoodie!
  - Complete 1 track to get a Hoodie, Stickers, Pen, Badges.

Yayy!

Thank you.
Very much!

Google Cloud

Cloud Developer Community

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