



Understanding Google Cloud Platform

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Agenda

- Introduction to Cloud Computing
- Primary Players
- Introduction to GCP
- Google Cloud Products
- Methods of Interaction - Cloud Console/Cloud shell/cloud SDK
- My First Project
- Introduction to Cloud Storage
- Hands on with Cloud storage with gcloud SDK
- Scaling Up
- Day 1 - Assignment

What is Cloud Computing?

Cloud computing is the delivery of computing services—like servers, storage, databases, networking, software, analytics, and intelligence—**over the internet (“the cloud”)**, rather than using local servers or personal devices.



**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



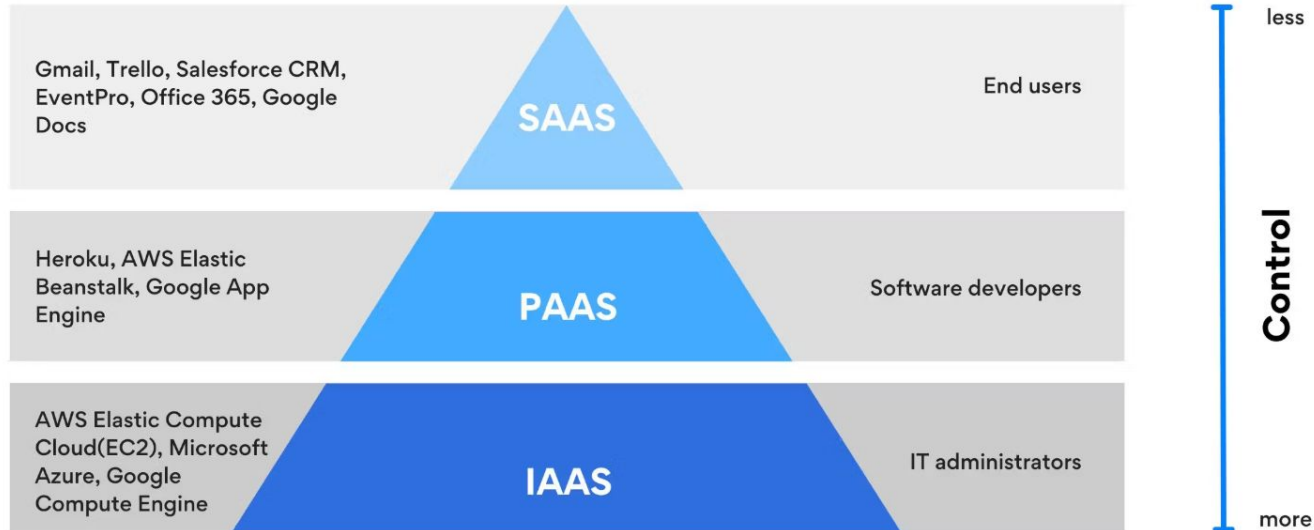
**Measured
service**

Pay only
for what
you
consume

What is Cloud Computing?

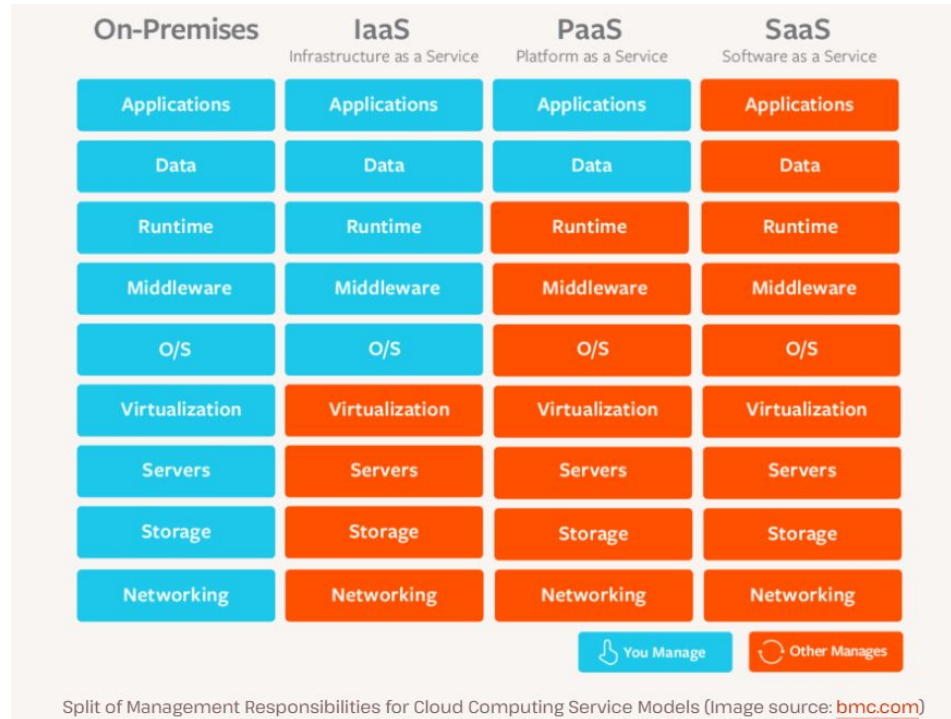
Types of Cloud Services

- **IaaS (Infrastructure as a Service):** Virtual machines, storage (e.g., GCP Compute Engine)
- **PaaS (Platform as a Service):** App hosting and development tools (e.g., App Engine)
- **SaaS (Software as a Service):** Ready-to-use apps (e.g., Google Workspace, Gmail)



What is Cloud Computing?

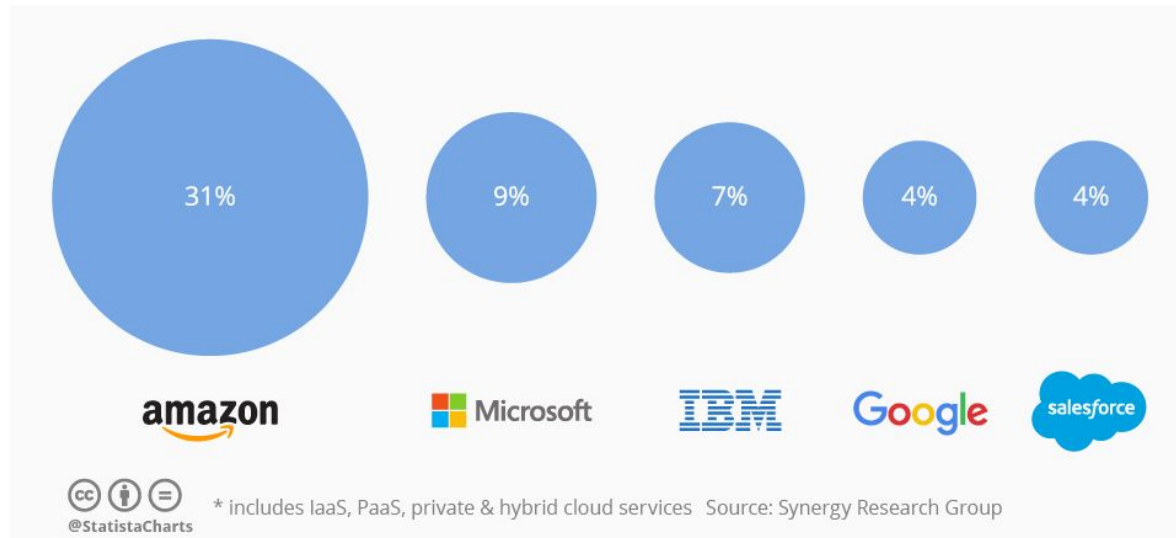
Types of Cloud Computing Models



What is Cloud Computing?

Primary Cloud Service Providers

- **Amazon Web Services (AWS)**
- **Microsoft Azure**
- **Google Cloud Platform (GCP)**



Introduction to Google Cloud Platform

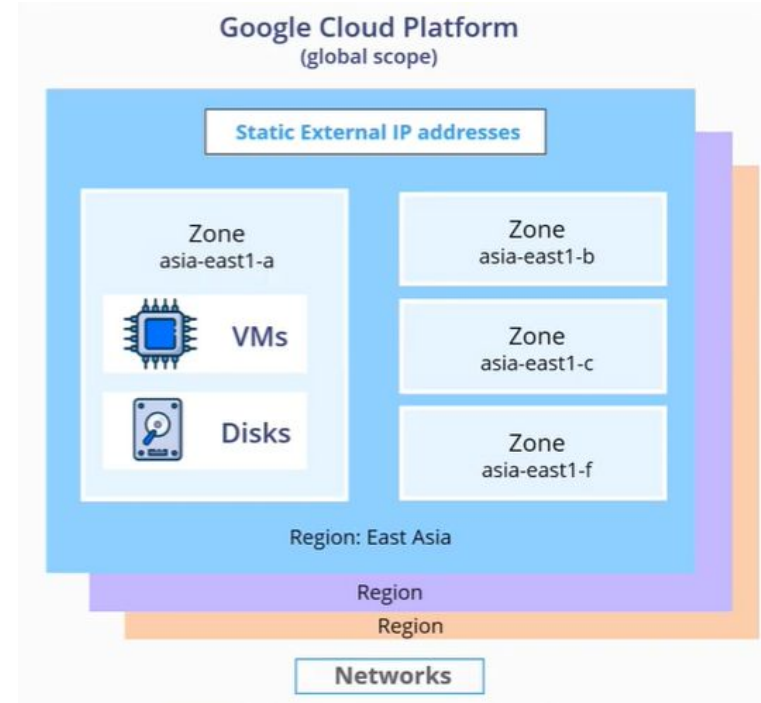
Google Cloud consists of a set of physical assets, such as computers and hard disk drives, and virtual resources, such as virtual machines (VMs), that are contained in data centers around the globe.

Each data center location is in a region.

Regions are available in Asia, Australia, Europe, Africa, the Middle East, North America, and South America.

Each region is a collection of zones

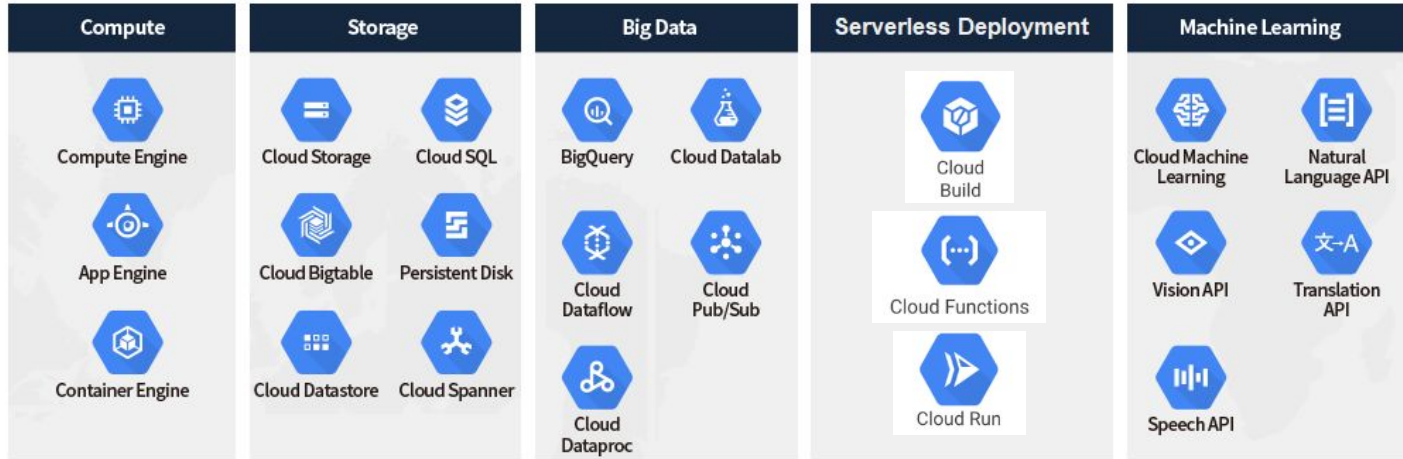
The main focus of GCP is AI/ML, Big Data, Open-source friendliness



Introduction to Google Cloud Platform

Core product categories:

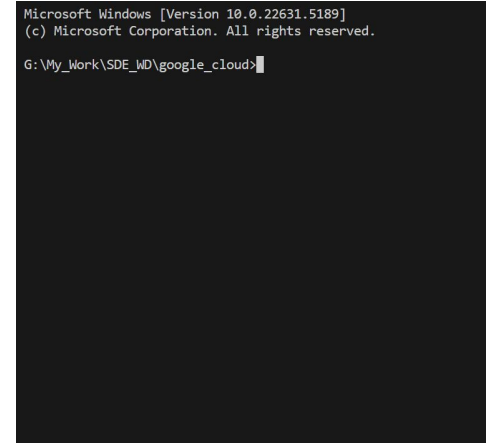
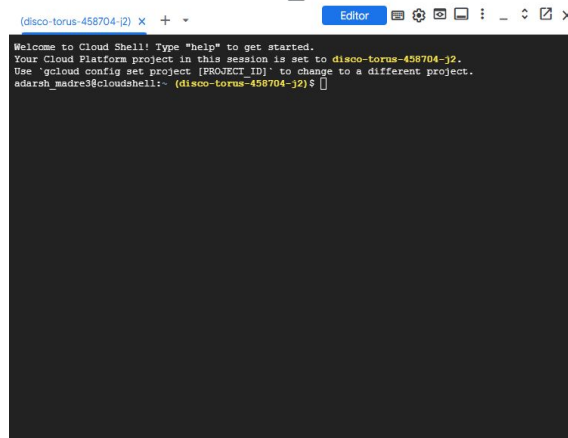
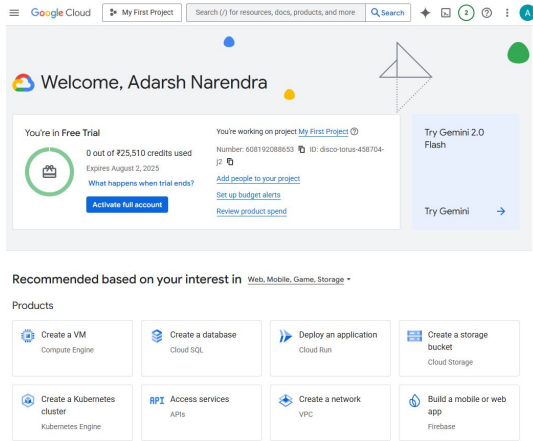
- **Compute:** Compute Engine, App Engine, Kubernetes Engine
- **Storage:** Cloud Storage, Cloud SQL, Cloud Big Table
- **Serverless Deployment:** Cloud Build, Cloud Run
- **Big Data & ML:** BigQuery, AI Platform, AI APIs



Introduction to Google Cloud Platform

Methods for interaction with Google Cloud:

- **Cloud Console:** Web-based GUI
- **Cloud Shell:** Browser-based terminal with pre-configured SDK
- **Cloud SDK (gcloud):** CLI tool for automation and scripting



Introduction to Cloud Storage

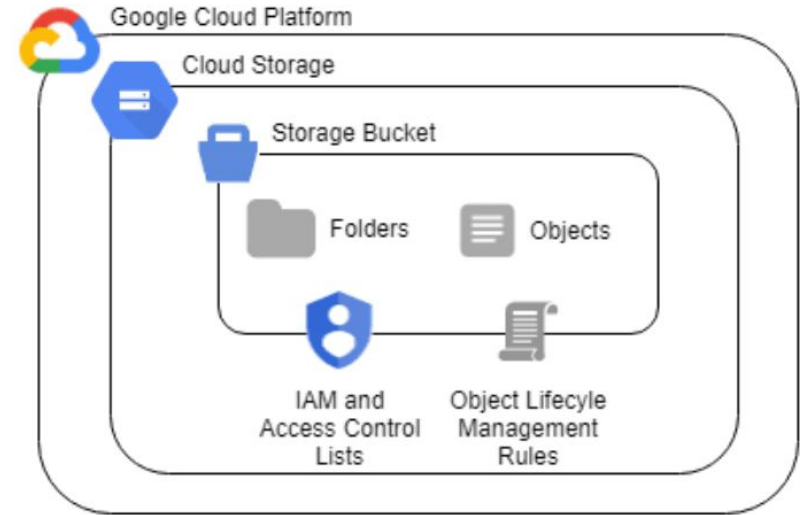
Uses remote servers to save data, such as files, business data, videos, or images.

Users upload data to servers via an internet connection, where it is saved on a virtual machine on a physical server.

Provides availability and redundancy, by spreading data to multiple virtual machines in data centers located across the world.

If storage needs increase, the cloud provider will spin up more virtual machines to handle the load.

Data accessible on browsers, mobile app via an application programming interface (API).



Introduction to Cloud Storage

Setup:

- Install **cloud SDK**
- `gcloud auth login`
- `gcloud config set project [PROJECT_ID]`

```
G:\My_Work\SDE_WD\google_cloud>gcloud --version
Google Cloud SDK 452.0.0
bq 2.0.98
core 2023.10.23
gcloud-crc32c 1.0.0
gsutil 5.26
Updates are available for some Google Cloud CLI components.  To install them,
please run:
  $ gcloud components update
```

Thank You!