

Stepping onto the Google Cloud Platform (GCP)

INTRODUCTION TO GCP



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Let's Google something!



Google Cloud Platform (GCP)

- Founded in 2008
- Third most popular cloud provider in the world



Cloudy with a chance of Google



Google Cloud



ORACLE
CLOUD
Infrastructure



Alibaba Cloud



IBM Cloud

Cloudy with a chance of Google

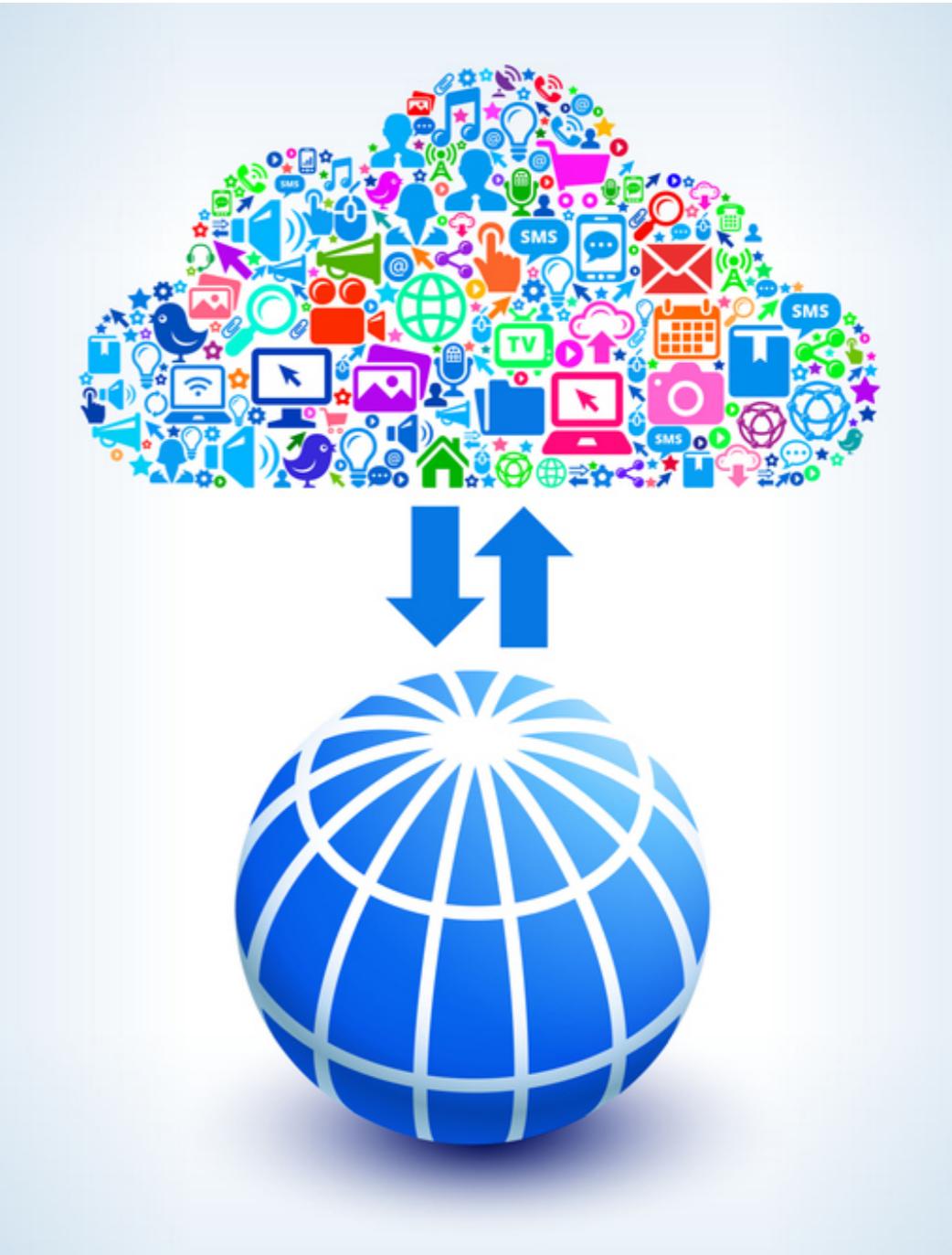


Google Cloud

- Tapping into Google's global infrastructure
- Google and open-source commitment

Storing files and records

- Cloud allows secure and efficient storage of files and records
- GCP's offers:
 - Secure and fast storage services
 - State-of-the-art databases

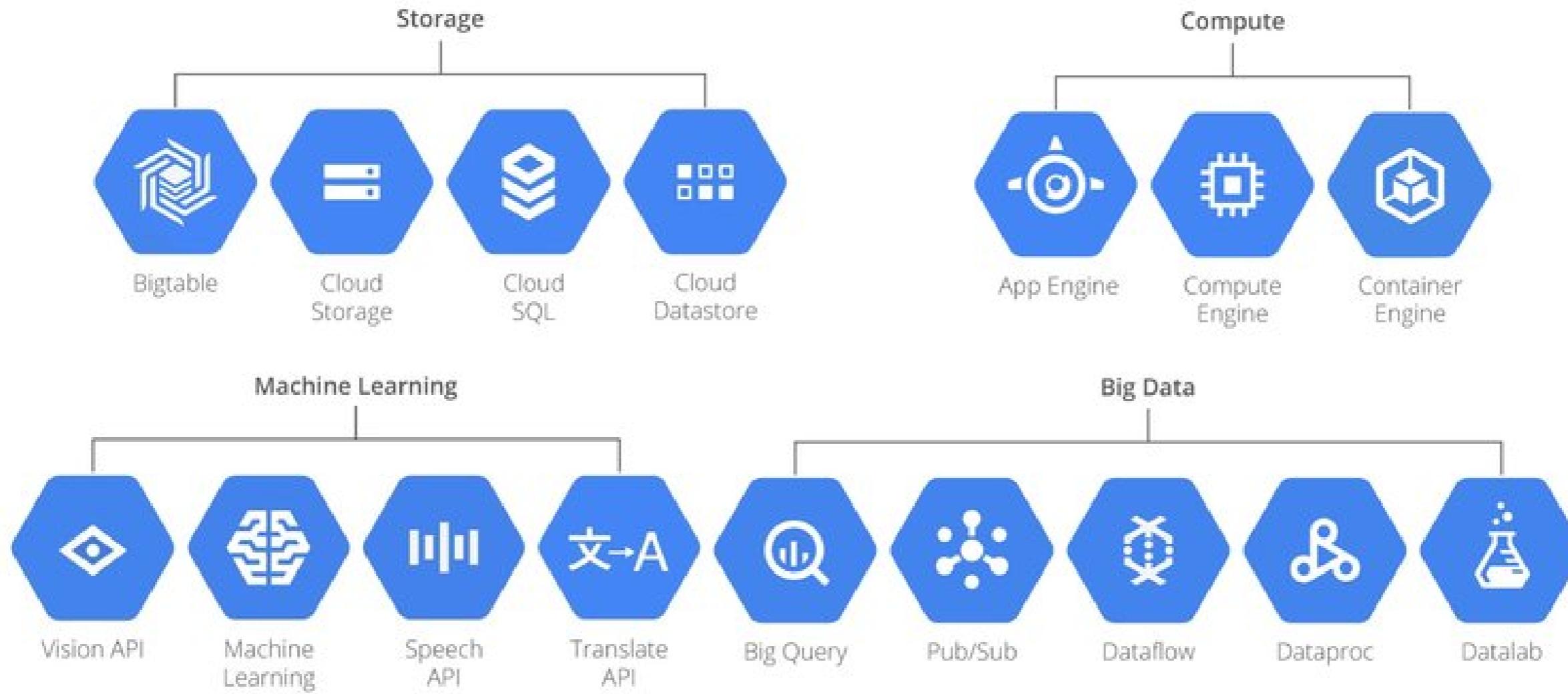


Computational power



Google
Compute
Engine

And much more

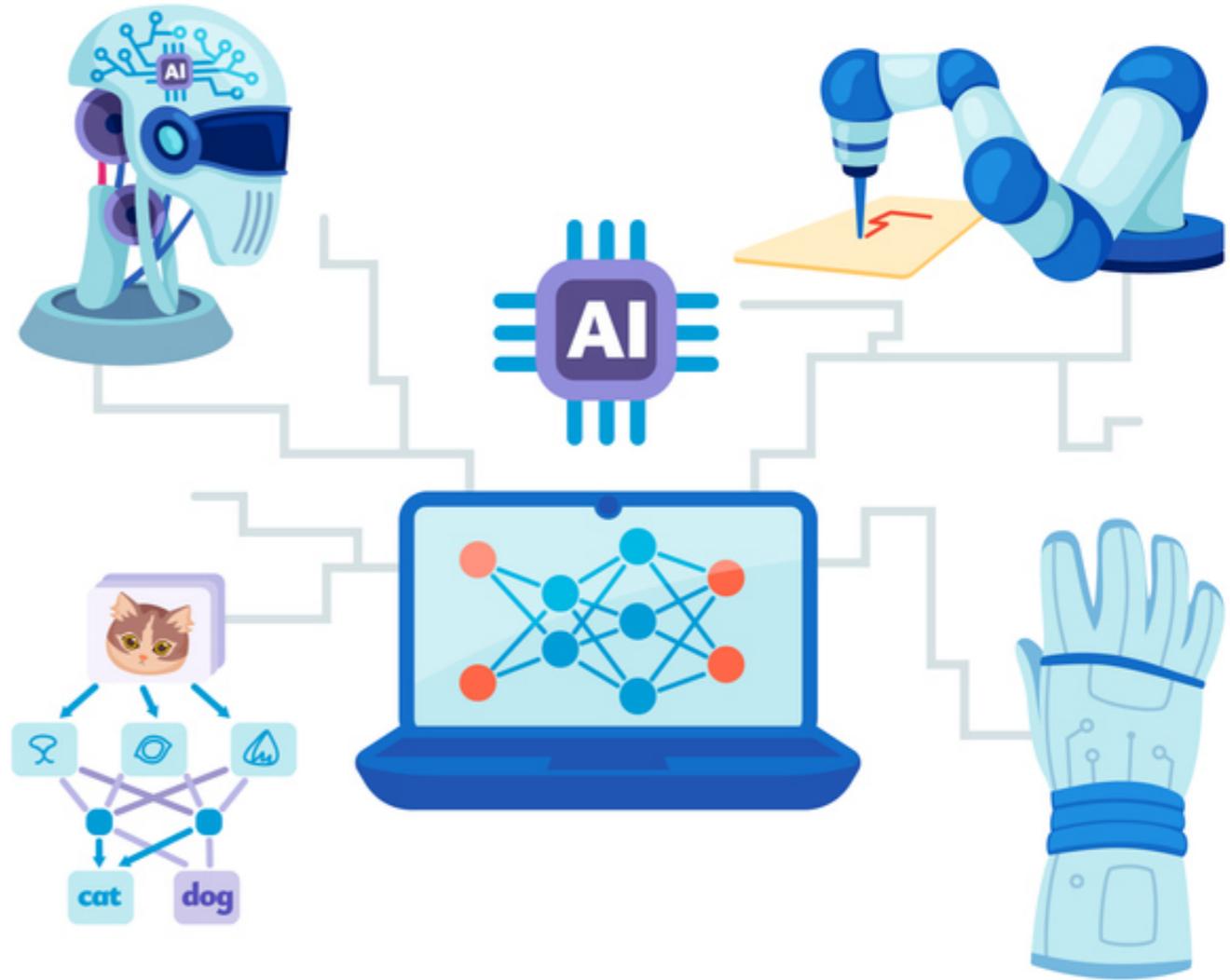


Shaping the future of business

Launch products rapidly



Tools designed for innovation



Shaping the future of business

Scale up and pay as you go



Benefit from top-notch security



The GCP offering

A comprehensive suite of cloud services



- Providing strategic value
- Democratizing digital transformation

Let's practice!

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GCP's building blocks

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Core components

Cloud Storage, a secure vault for files



Cloud SQL stores and manages tabular data



Compute Engine is the virtual machine hub



App Engine runs web applications



A secure framework



A secure framework

Analytics
Artificial intelligence



Storage



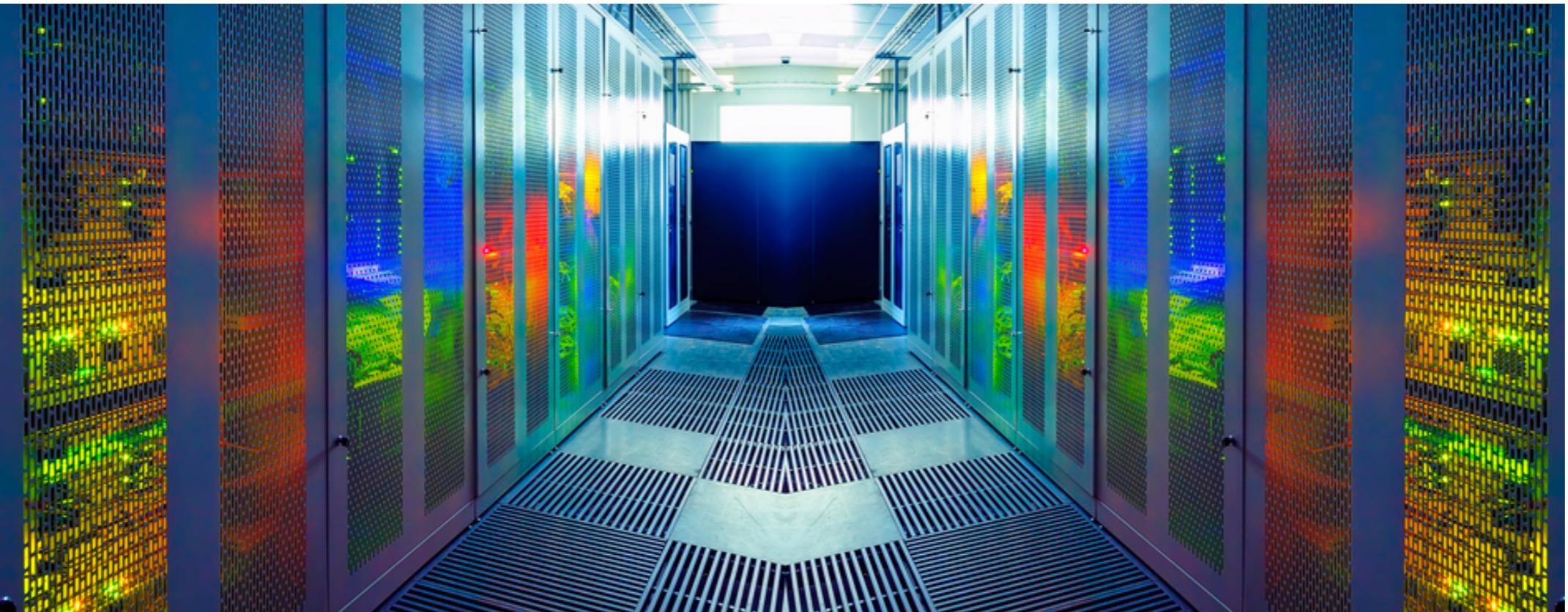
Compute



Security

The infinite disk

- Storage that grows with your needs
- Secure and private



The infinite disk

- Data is stored at multiple locations



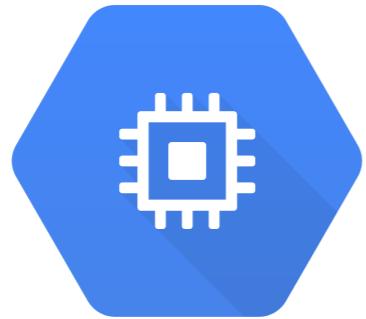
Compute

- A digital workspace
- Customizable and accessible



Compute

Compute Engine



- Virtual machines with flexible CPU and memory
- Flexible infrastructure-as-a-service (IaaS)
- Ideal for custom software

App Engine



- Platform-as-a-service (PaaS) with support for various programming languages
- Scales automatically to suit the needs of the application
- GCP manages the infrastructure

BigQuery

- Data warehousing tool
- Access vast databases efficiently
- Fully managed by GCP



Vertex AI

- One-stop shop for exploration and prediction
- Option to use no-code or bespoke models



Services in harmony



Services in harmony

Storage is residence



Compute services perform functions



Services in harmony

BigQuery is the library that turns data into information



Vertex AI is the university



Let's practice!

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The GCP family

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The storage cousins

Cloud Storage



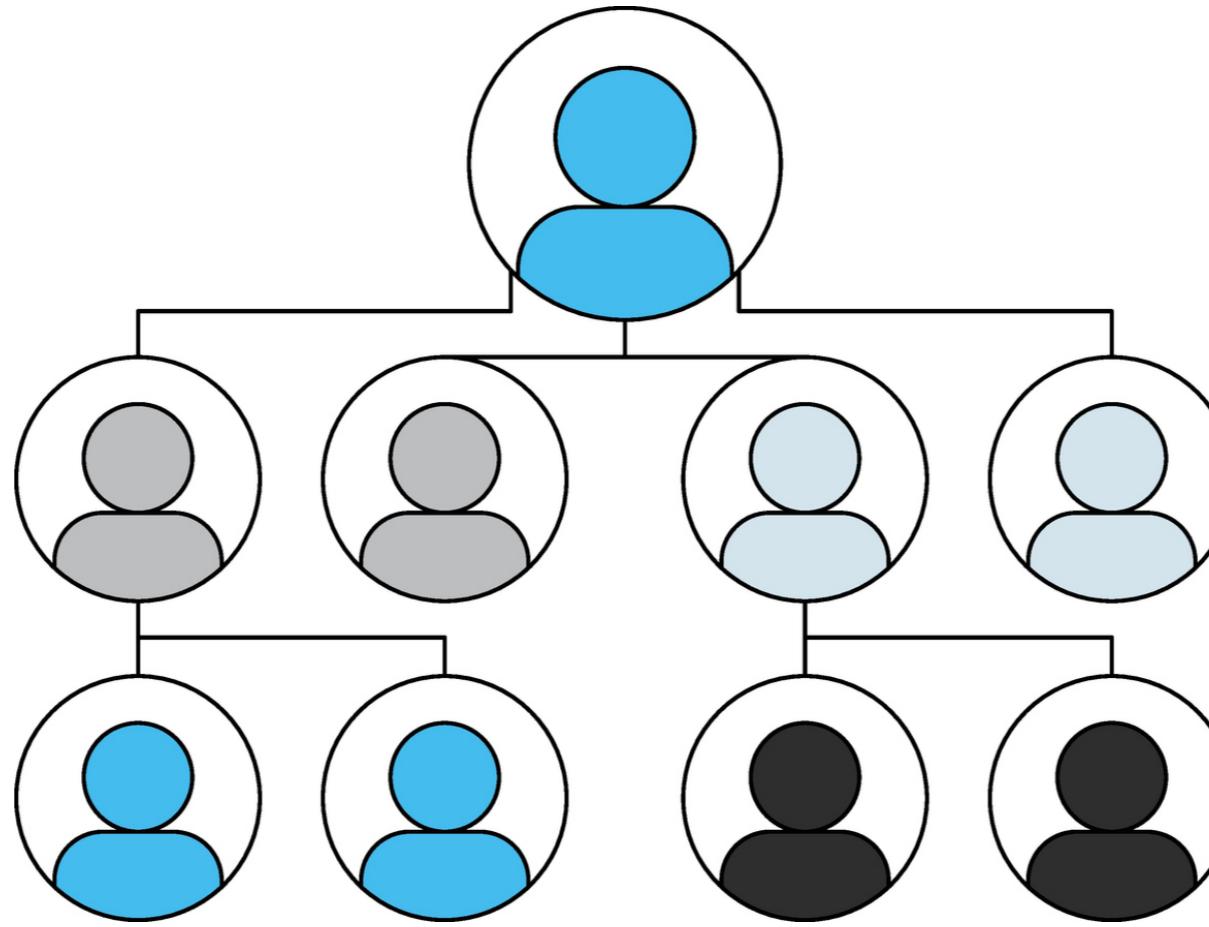
- Files and data objects

Cloud SQL



- Tables and structured data

Where do the trees go?



- Trees are non-relational
- They lack row-column relationships

Say hello to Bigtable

- Designed to accommodate non-relational data
- Optimized for large workloads
 - Low latency and high throughput
 - Ideal for applications in IoT, finance, and ad tech



App dilemma

- App Engine: the application hosting service by GCP
- E.g.: an app that converts documents
 - Should it be hosted on App Engine?



Cloud Functions

- Built for single-purpose functions
- Runs only when called upon
- Charged per request
 - Cheaper than App Engine in this scenario



Going serverless

- App Engine and Cloud Functions are serverless
 - They don't need hardware setup or management
- Like ordering a coffee rather than making it yourself
 - No equipment needed, barista handles everything
 - Only pay for the result



Containers

- Some applications have specific requirements
- Developers package them into virtual "containers"
- Like a tiny home for an application
 - Contains everything needed to run it



So what were virtual machines?

Virtual machine (VMs)

- Complete environment
- Includes full operating system

Containers

- Contains only what is needed for the application
- Lightweight, can run up to 20 in a single machine!

Containerized applications

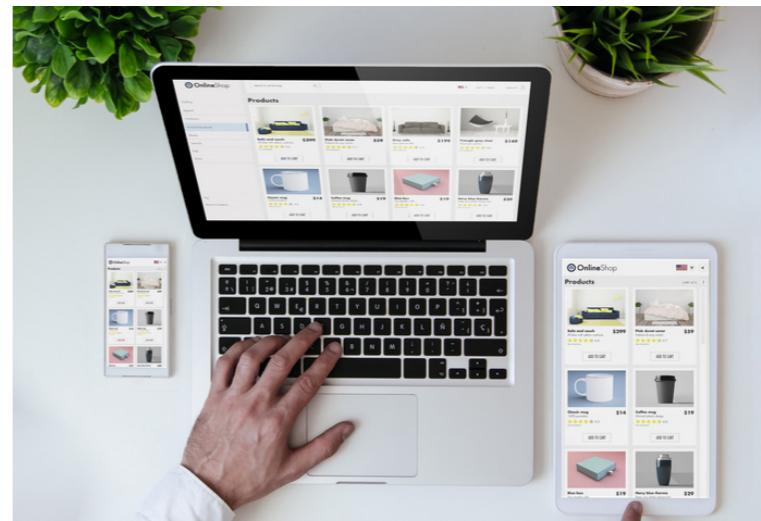
Container 1: User authentication



Container 3: Payment processing



Container 2: Product listings

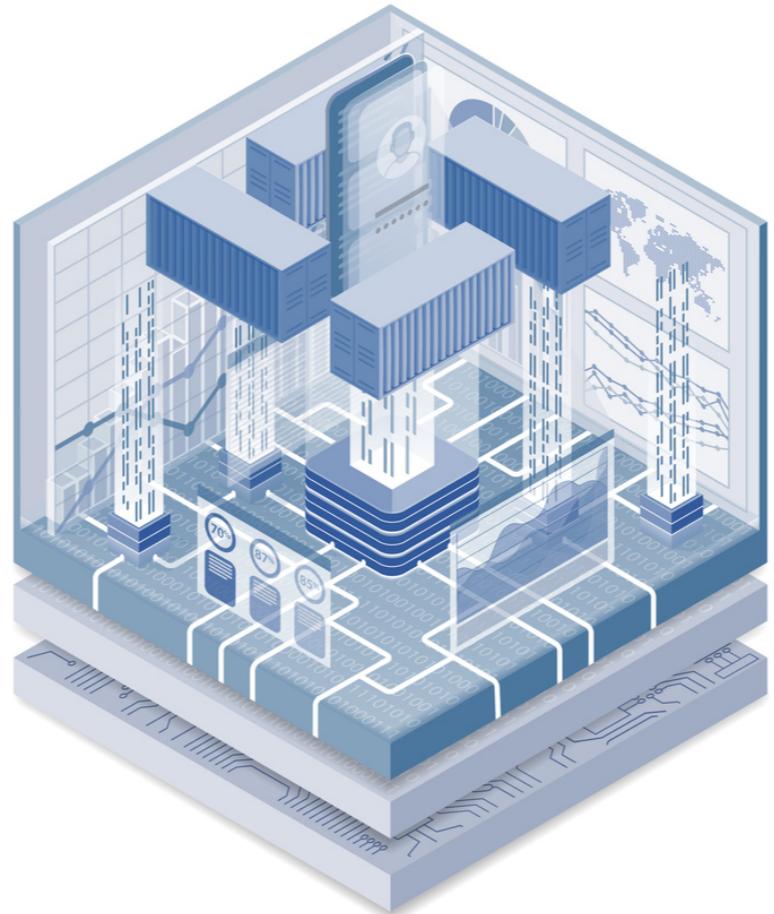


And so on...

Each container provides a "microservice"

The power of microservices

- Microservices break large services into smaller manageable units
- Can be scaled more efficiently
- Less prone to system-wide failure



Let's practice!

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