Google App Engine

Google Cloud Platform

Google Cloud Platform

Agenda

1 App Engine Overview and Features

2 Comparing Compute Options on Google Cloud Platform

3 Managed VMs

4 Lab

App Engine

- **Managed** runtimes for specific versions of Java, Python, PHP & Go
- **Autoscale** your **web** workloads to meet demand
- **Free** daily quota, usage based [pricing](#)
- Local **SDK** for development, testing and deployment
- Need to conform to sandbox constraints:
  - No writing to the local file system
  - Request timeouts at 60 seconds
  - Limit on 3rd-party software installations
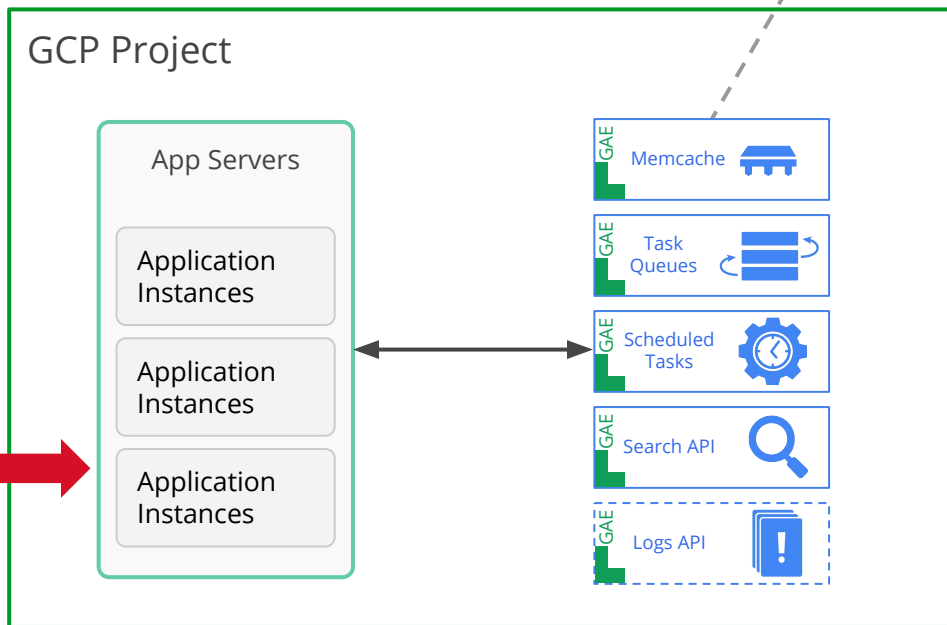
App Engine Workflow - Web Applications

1. **Develop** & **test** the web application locally

2. Use the SDK to **upload** to App Engine

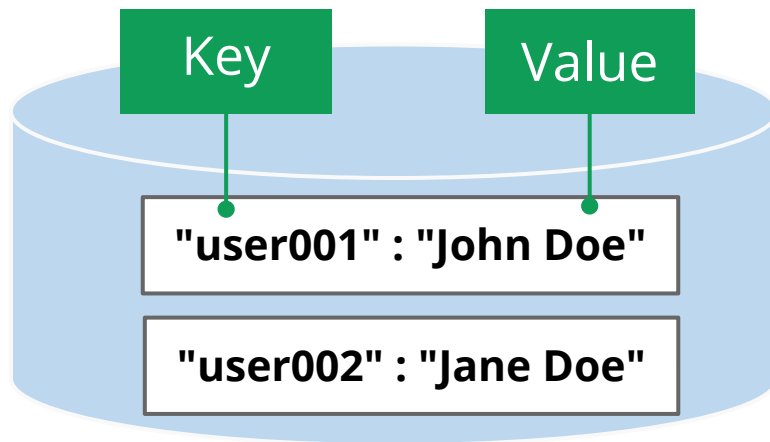3. App Engine automatically **scales & reliably** serves your web application

App Engine can access a variety of services using dedicated APIs

GCP Project

App Servers

- Application Instances
- Application Instances
- Application Instances

GAE Memcache

GAE Task Queues

GAE Scheduled Tasks

GAE Search API

GAE Logs API

App Engine Services

Users API   Allows applications to sign in users with Google Accounts (OAuth 2.0)

Modules API   Factor applications into logical components that can securely communicate and share stateful services

Task Queue   Manage and perform work using small tasks that are executed outside of the scope of a user request

Sockets   Supports outbound sockets from within your application

Search   Perform Google-like searches over structured data such as HTML, dates, and geographic locations

Logs   API access to application and request logs from your application

Mail   Send and receive email from your application

App Engine Supports Memcache

- Used to cache read-heavy operations
  - Database values
  - Tokens
  - API calls

- Key / value pair, **in-memory** datastore

- Improves performance and reduces costs

Key

Value

"user001" : "John Doe"

"user002" : "Jane Doe"

Note: Memcache is not a durable storage.
Plan for your application to function without Memcache.

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Comparing Compute Options

	Compute Engine	Container Engine	App Engine
Language support	Any	Any	Java, Python, Go & PHP
Service model	IaaS	Hybrid	PaaS
Primary use case	General computing	Container-based workloads	Web and mobile applications

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Managed VMs

- Standard runtimes for Python, Java, Go, Ruby, and Node.js with **no sandbox constraints**

- Custom runtime support for **any language** that supports HTTP requests

- Currently in beta (US region only)

- Pricing based on underlying **GCE usage**

- Local development relies on **Docker**

- Standard runtimes can access **GAE services**: Datastore, Memcache, task queues, logging and users

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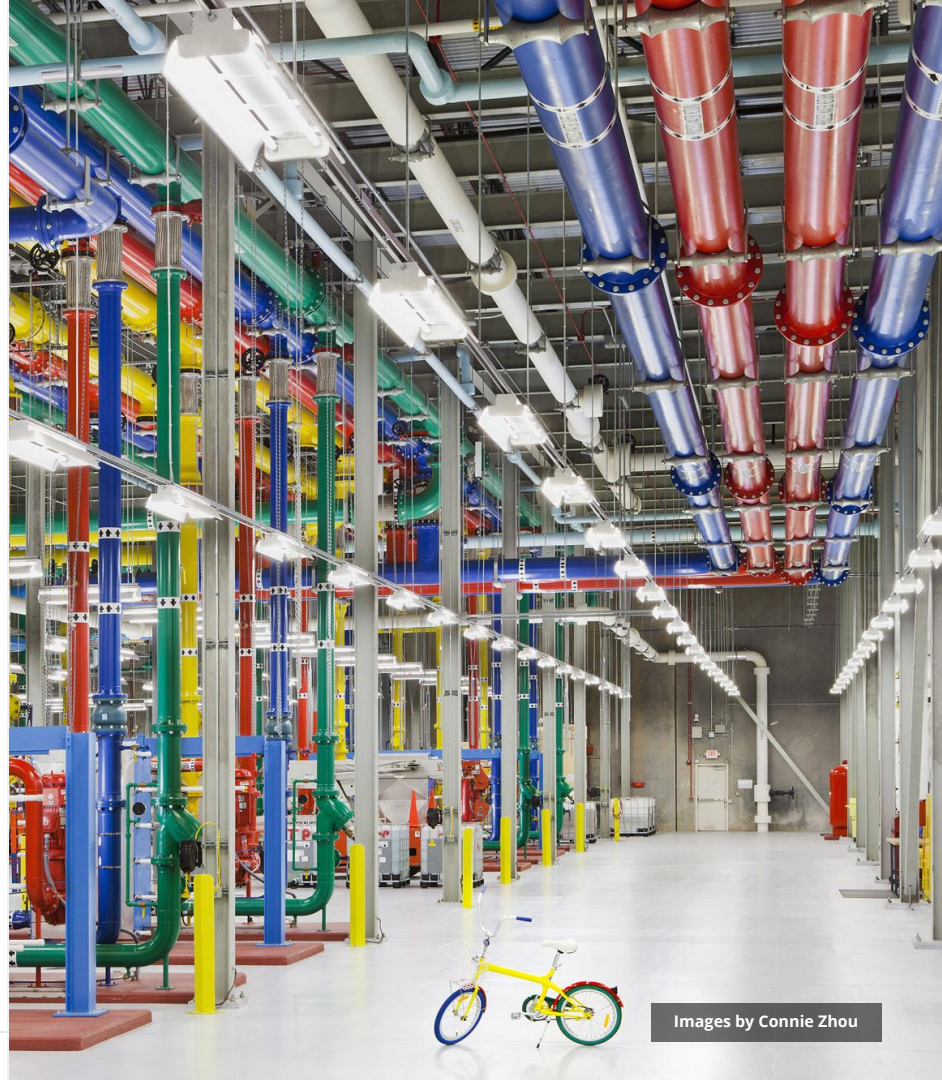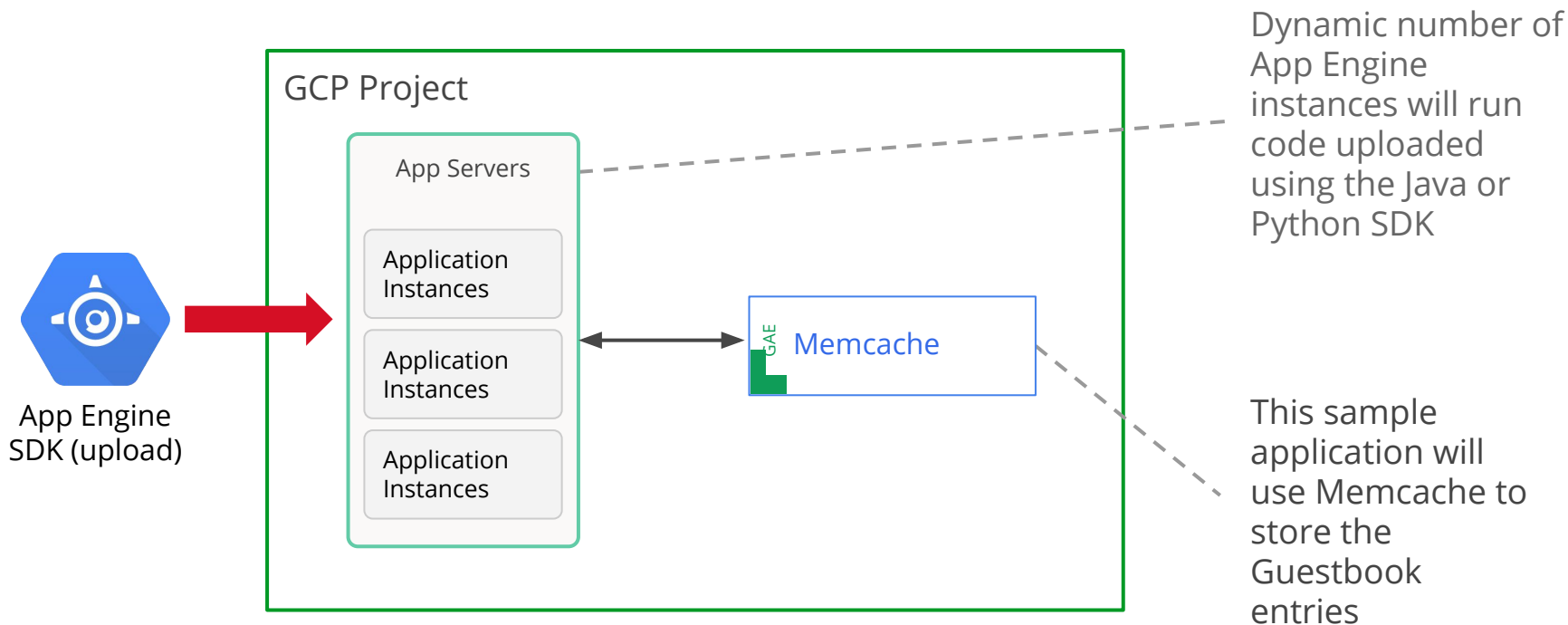
3   Managed VMs

4   Lab

Lab (1 of 2)

Deploy the Guestbook application on App Engine.

1. Deploy a Python frontend

2. Test the application on the development server

3. Upload the application to App Engine

4. Test the application in your browser

Images by Connie Zhou

Google Cloud Platform

Lab (2 of 2)

GCP Project

App Servers

Application Instances

Application Instances

Application Instances

GAE Memcache

App Engine SDK (upload)

Dynamic number of App Engine instances will run code uploaded using the Java or Python SDK

This sample application will use Memcache to store the Guestbook entries

Google Cloud Platform

Resources

- App Engine: features, case studies pricing, & documentation
  https://cloud.google.com/appengine/

- DevBytes - Your App, At Scale with Google App Engine
  https://www.youtube.com/watch?v=ytT2-kL9v2o

- Java Guestbook Tutorial
  https://cloud.google.com/appengine/docs/java/gettingstarted/introduction

- Python Guestbook tutorial
  https://cloud.google.com/appengine/docs/python/gettingstartedpython27/introduction

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