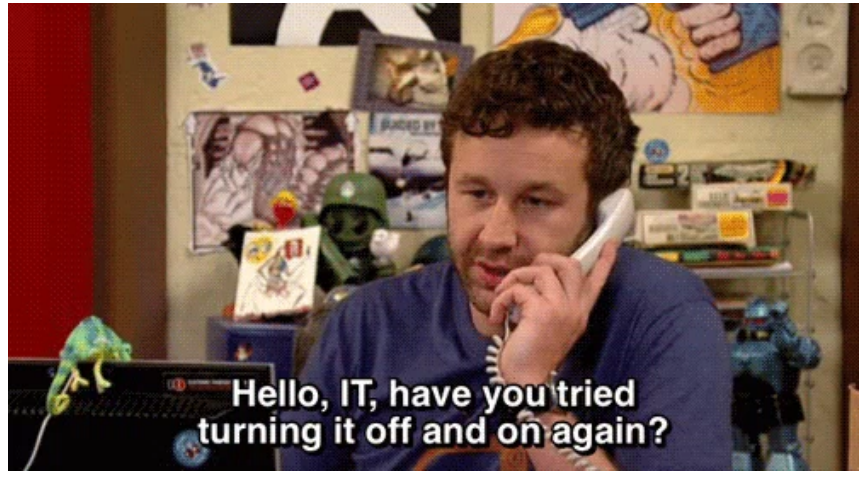
'Bad' Infrastructure



Building Web Apps on Google's Infrastrucutre

Presented by

Eric Jiang

This presentation's code/slides can be found on
https://github.com/lorderikir/googlecloud-techtalk

Google Cloud Platform

Talk Summary

1. Introduction to Google Cloud
2. What is Google App Engine
   a. GAE Environments
   b. What is Scaling and Why is it Important?
3. Deep-Dive
   a. Setting up Google SDK tools
4. Other Tools

[NOTE]: You can play with Google Cloud Platform off your student accounts

Introduction

What is Google Cloud Platform?

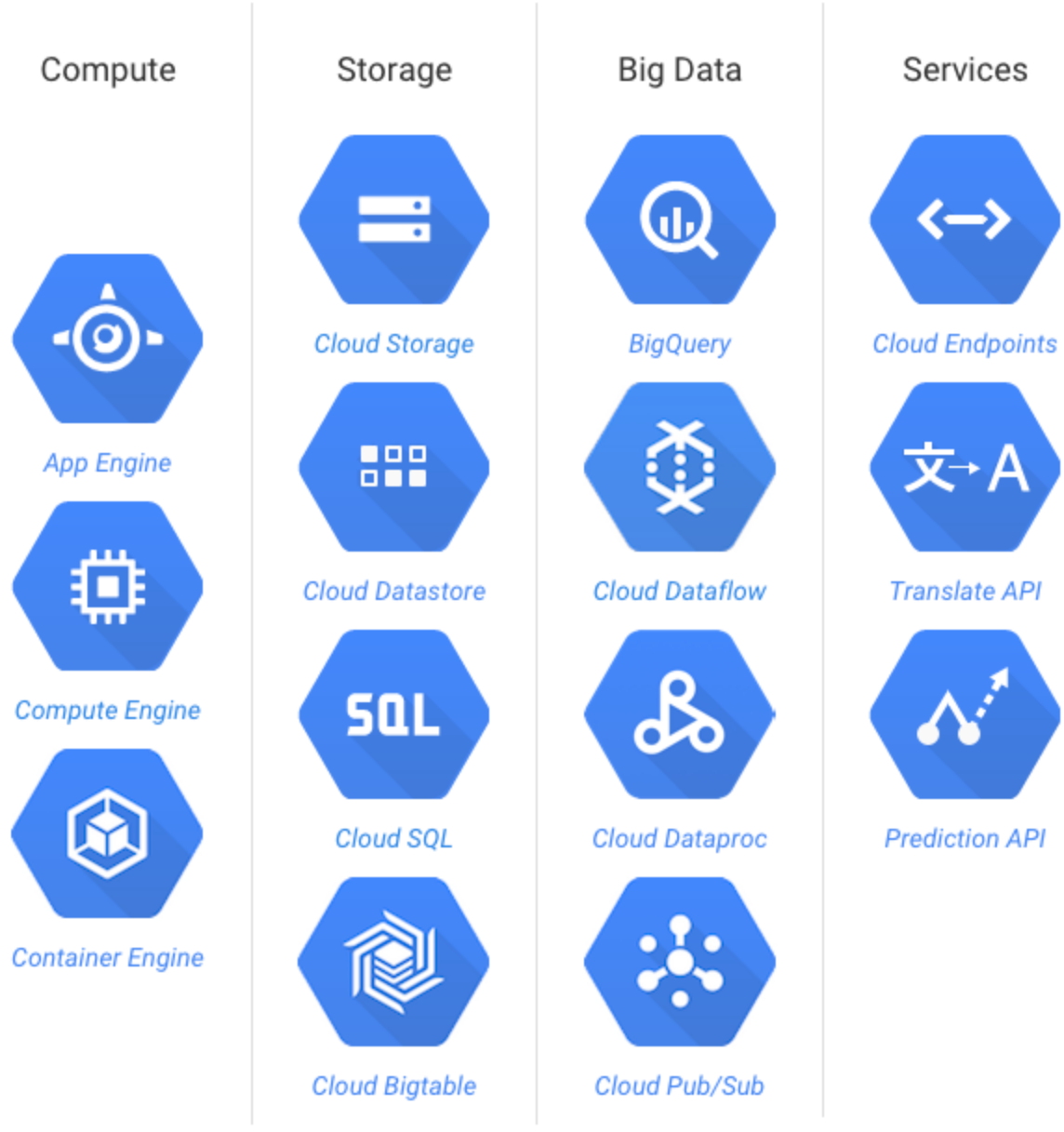
> Google Cloud Platform lets you build and host applications and websites, store data, and analyze data on Google's scalable infrastructure.

Composes of many applications, such as:

- Google App Engine (GAE)
- Google Container Engine (GCE)
- Google DataStore
- Cloud ML (built off *TensorFlow*)
- and much more

> Did you know that Firebase and API.AI are both on GCP

Some Products on GCP



Google App Engine

- designed around the fact that *Google just can't send everyone into their datacentre(s) and update applications across their many datacenters*
- Built off Remote Deployments

Language	Environment
Java 7 (and Kotlin[1])	Standard
Java 8	Standard (Beta)/Flexible
Node.js	Flexible
Python 2.7	Standard
Python 3.5	Flexible

[1] This for you Kotlin fans out there

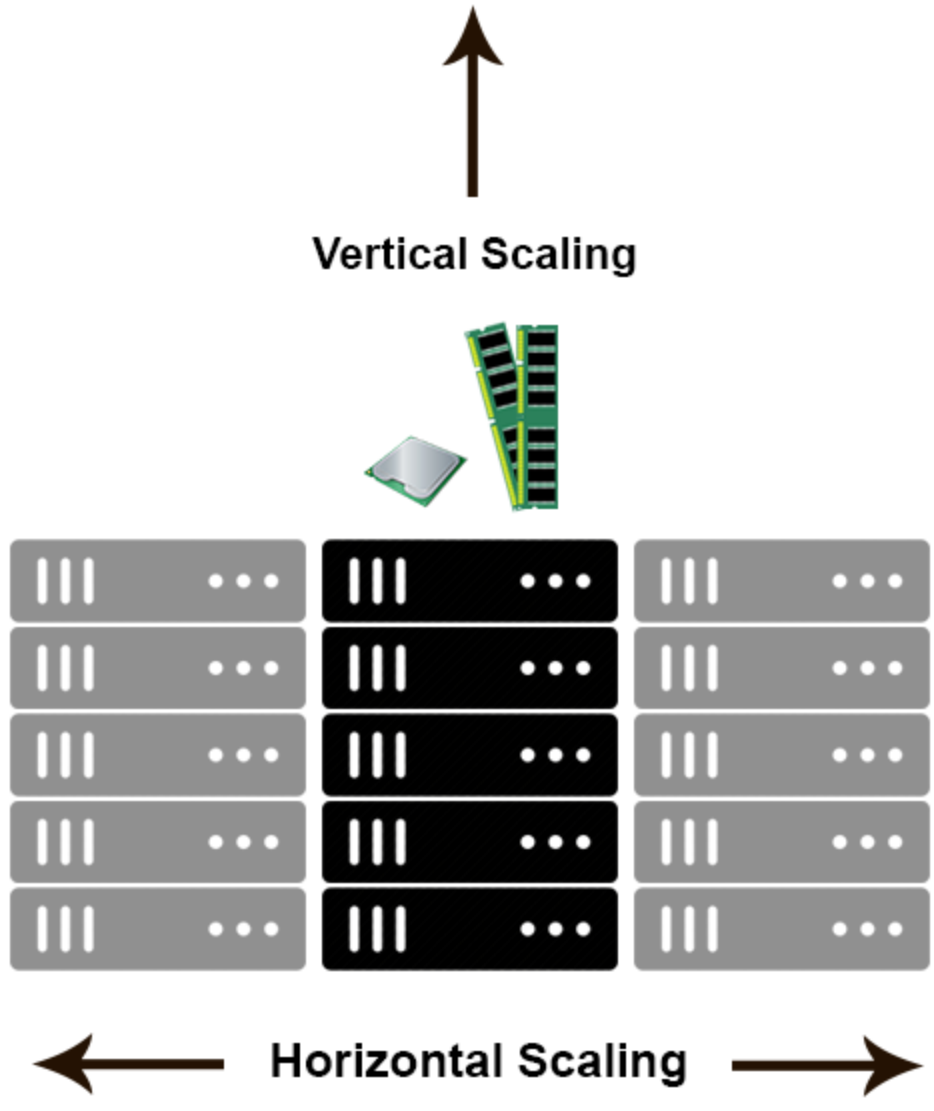
Standard Environments run in a specialised envrionment. Though building the application is more constrained then other environments, it means scaling up is faster.

Flexible Environment applications run off a Docker container, it is designed for applications that recieve constant traffic. When deployed they are Google Compute Engine VM[2]

[2] Because they run off Docker, you can write your own Dockerfile Configuration to deploy

Horizontal vs Veritcal Scaling

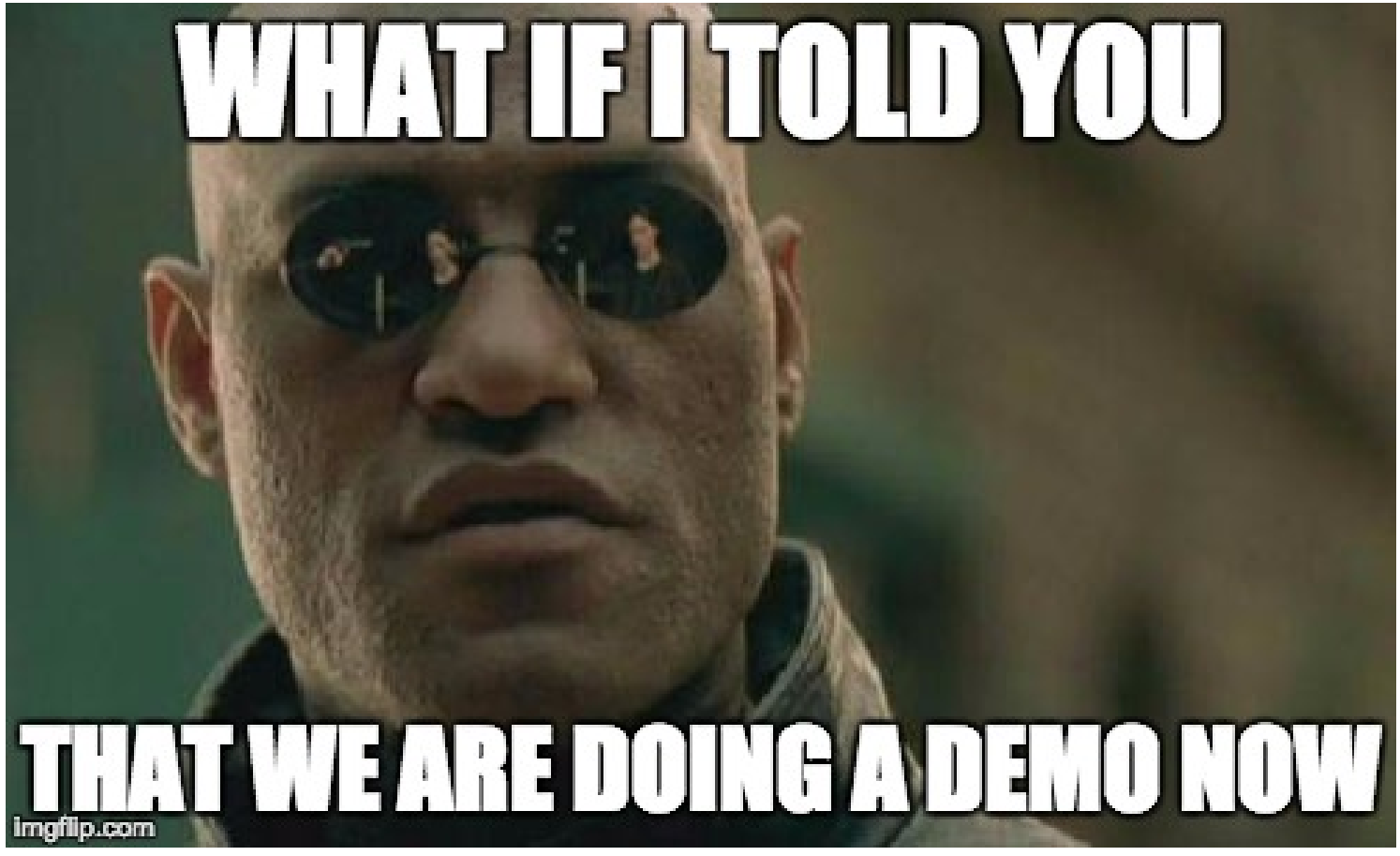
Me when I look at Scaling:


Vertical Scaling
Horizontal Scaling

Benefits of Horizontal Scaling

- Dynamic scaling allows spinning up more instances and nodes faster, i.e. if you suddenly get a influx of traffic
- Vertical Scaling is limited to capacity of resources, simply adding more resources
- Good examples include Niantic (PokemonGo) and Australian Census 2016

Demo Section



Installing the SDK

1. Install the SDK over https://cloud.google.com/sdk/downloads
2. Authenticate Using `gcloud init` (login using your Monash Student Account)
3. You may need Java (JDK 1.8) and Maven (MVN) Installed if you are using the package provided.

> If you are interested in developing on the framework provided I strongly suggest for you to read the docs.

Framework: http://tinyurl.com/mplan-baseapi

Deploying the App

Other Tools Available on GCP

- Cloud ML (Google Cloud Machine Learning) which is built off TensorFlow
- Compute Engine - Google VMs
- Container Engine - built off Kubernetes and allows deployment of custom applications
- Cloud Storage - CDN provider of files (like *Amazon S3*)
- Network Balancer - for Load Balancing of traffic for your applications
- Cloud APIs such as NLP, Sentiment Analysis, DLP, etc.
- and Much more

Questions