Cloud Restriction Solver: a Refactoring-based Approach to Migrate Applications to the Cloud

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- Google App Engine Google App Engine (GAE) is the Google's cloud PaaS used to develop, in general, web and mobile applications.
- It was designed to deal with high request traffic rates, serving several users through the automatic scalability feature.
- It was selected as the target cloud environment of this work since it is a robust platform, has a great adoption in the market
- It provides development and execution environments (APIs and SDKs) to Java, Python, Go and PHP applications
- The simplified GAE architecture can be seen in Figure 8. Among the main services and structures available are:
- Google Load Balancer, which manages the load balancing of the applications;
- Front End App, responsible for redirecting requests for appropriate services;
- Memcache, the cache memory shared between instances of GAE, generating high speed in the availability of the information on the server;
- Task Queues, mechanism that provides redirection of long tasks to back-end servers, making front-end servers free for new user requests.
- In addition, GAE also has static and dynamic storage solutions. The former provides the file storage service called Cloud Storage, whereas the latter provides relational database services such as Cloud SQL, and non-relational NoSQL such as Cloud Datastore

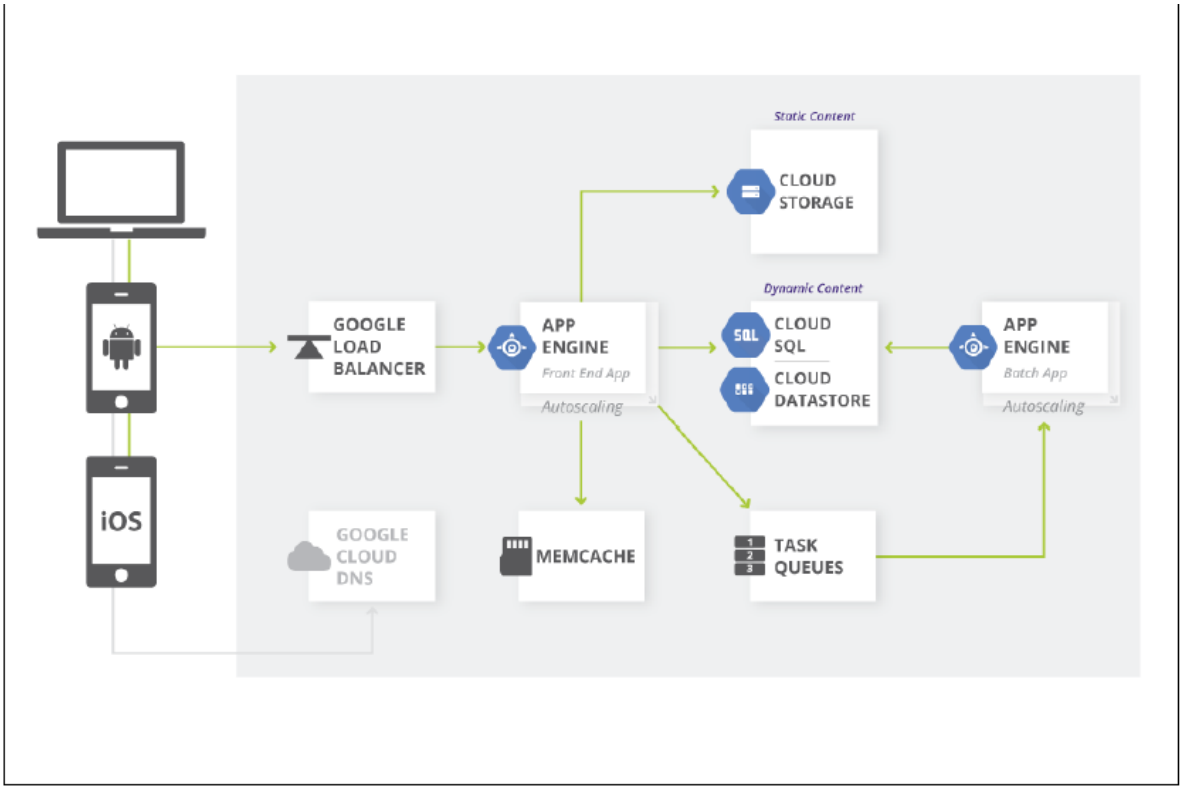


Figure 8: *Google App Engine* platform architecture [44]

WHAT IS GAE?

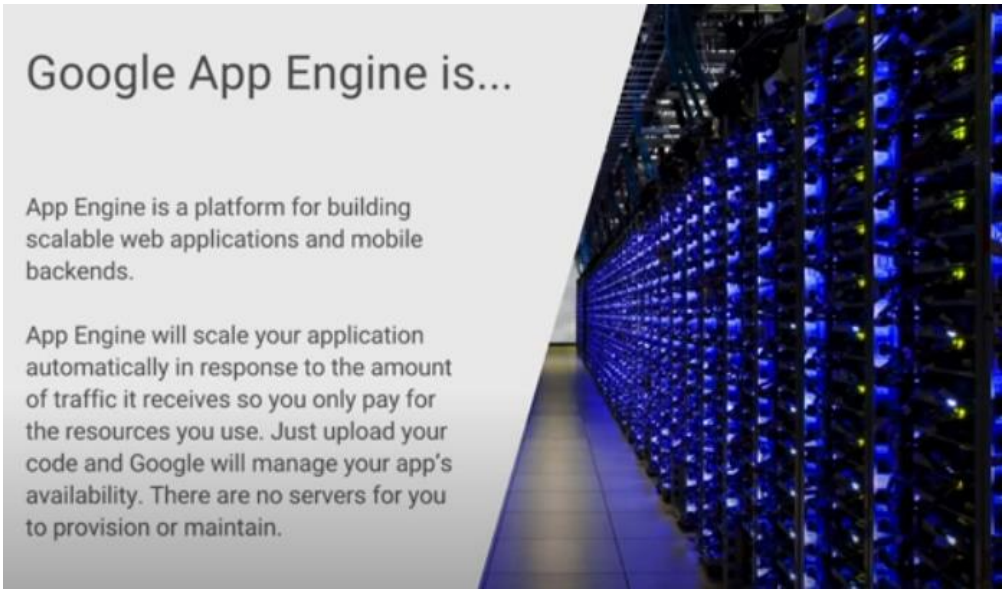
- **Google App Engine** (often referred to as GAE or simply App Engine) is a Platform as a Service (**PaaS**) cloud computing platform for **developing** and **hosting web applications** in Google-managed data centres.

- Applications are **sandboxed** and run across multiple servers. App Engine offers **automatic scaling** for web applications as the number of **requests increases** for an application, App Engine automatically **allocates** more **resources** for the web application to handle the additional demand.

- Google App Engine is **free up** to a **certain** level of consumed resources. **Fees** are charged for **additional storage**, **bandwidth**, or instance hours required by the application.
- The **App Engine** requires that apps be
  - Written in **Java** or **Python**
  - Store data in **Google** BigTable and use the **Google** query language.

Note:
- Google App Engine primarily supports

Go, PHP, Java, Python, Node.js, .NET, and Ruby applications.



Google App Engine?
https://www.youtube.com/watch?v=aZXd8C7I8DM

You can run that on App Engine? (Google Cloud Next '17)
https://www.youtube.com/watch?v=sATG0OfdP4g