Google App Engine

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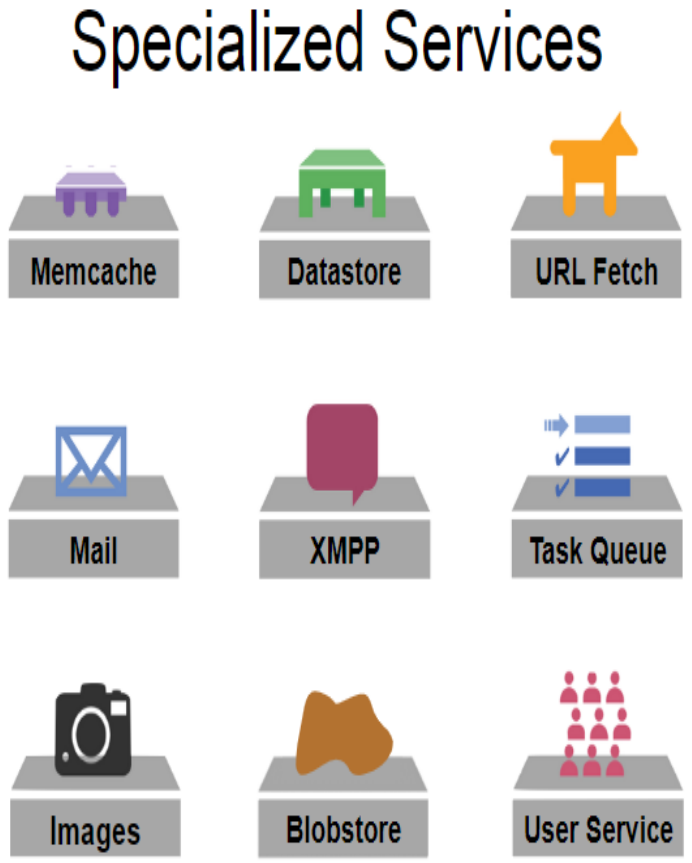
Introduction

- G**oogle App Engine** (often referred to as **GAE** or simply **App Engine**) is a Platform as a Service and cloud computing platform for developing and hosting web applications in Google-managed data centers. 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 primarily supports Go, PHP, Java, Python, Node.js, .NET, and Ruby applications, although it can also support other languages via "custom runtimes“. The service is free up to a certain level of consumed resources and only in standard environment but not in flexible environment. Fees are charged for additional storage, bandwidth, or instance hours required by the application. It was first released as a preview version in April 2008 and came out of preview in September 2011.

Supported features

- **Runtimes and framework**
  - Google App Engine primarily supports Go, PHP, Java, Python, Node.js, .NET, and Ruby applications, although it can also support other languages via "custom runtimes“.
- **Reliability and Support**
  - All billed App Engine applications have a 99.95% uptime SLA.
  - App Engine is designed in such a way that it can sustain multiple datacenter outages without any downtime.
- **Bulk downloading**
- AppEngine provides both a secure execution environment and a collection of services that simplify the development of scalable and high-performance Web applications.
- These services include in-memory caching, scalable data store, job queues, messaging, and cron tasks.



Restrictions

- Developers have read-only access to the filesystem on App Engine. Applications can use only virtual filesystems, like gae-filestore.
- App Engine can only execute code called from an HTTP request (scheduled background tasks allow for self calling HTTP requests).
- Users may upload arbitrary Python modules, but only if they are pure-Python; C and Pyrex modules are not supported.
- Java applications may only use a subset (The JRE Class White List) of the classes from the JRE standard edition. This restriction does not exist with the App Engine Standard Java8 runtime.
- A process started on the server to answer a request can't last more than 60 seconds (with the 1.4.0 release, this restriction does not apply to background jobs anymore).

The App Engine Standard Environment

- The App Engine standard environment is based on container instances running on Google's infrastructure. Containers are preconfigured with one of several available runtimes.
- The App Engine standard environment makes it easy to build and deploy an application that runs reliably even under heavy load and with large amounts of data.
- Applications run in a secure, sandboxed environment, allowing the App Engine standard environment to distribute requests across multiple servers, and scaling servers to meet traffic demands. Your application runs within its own secure, reliable environment that is independent of the hardware, operating system, or physical location of the server.
- **Quotas and limits** The App Engine standard environment gives you 1 GB of data storage and traffic for free, which can be increased by enabling paid applications. However, some features impose limits unrelated to quotas to protect the stability of the system.