

App Engine Long-Term Use

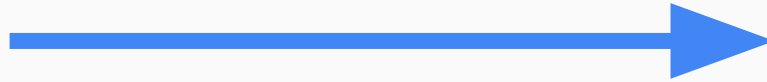
Kariem Hussein



One of the first PaaS



Initial release: April 7, 2008



(8 years and running)

Features

<https://cloud.google.com/appengine/docs/about-the-standard-environment>

Runtimes

Python, Java, PHP, Go, Custom

Storage

Blobstore, Datastore, Cloud Storage, Cloud SQL, Search, Memcache

Network

Channels, Mail/SendGrid, URL Fetch, XMPP, Sockets, Twilio, Cloud Endpoints

Process / Computation

Task Queue, Image Service, MapReduce

Configuration / Management / Administration

App Identity, OAuth, Logs, Multitenancy, Remote, Capabilities, Modules, Traffic Splitting

> 100 B

requests per day on millions of apps

<https://cloudplatform.googleblog.com/2016/04/lessons-from-a-Google-App-Engine-SRE-on-how-to-serve-over-100-billion-requests-per-day.html>

App Engine Environments

<https://cloud.google.com/appengine/docs/the-appengine-environments>

Standard

- Startup in milliseconds
- 60s request timeout
- No local disk
- Network only via services

Flexible

- Startup in minutes
- 24h request timeout
- Ephemeral disks
- Standard network access

(previously “Managed VMs”)

Compute

Think AWS EC2

Example 1: Proof of Concept

Use Case Creator: Diff Service



Why App Engine?

Always on: called from another web service

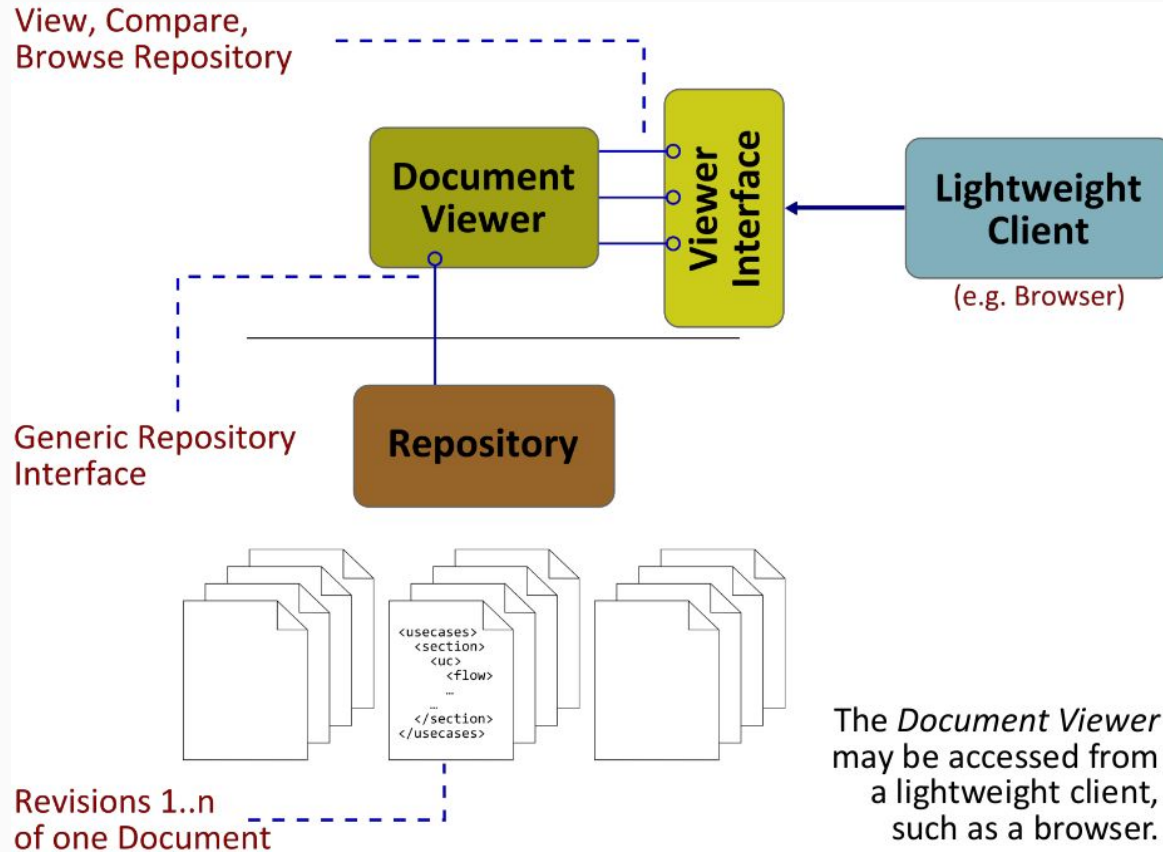
Free hosting

Also:

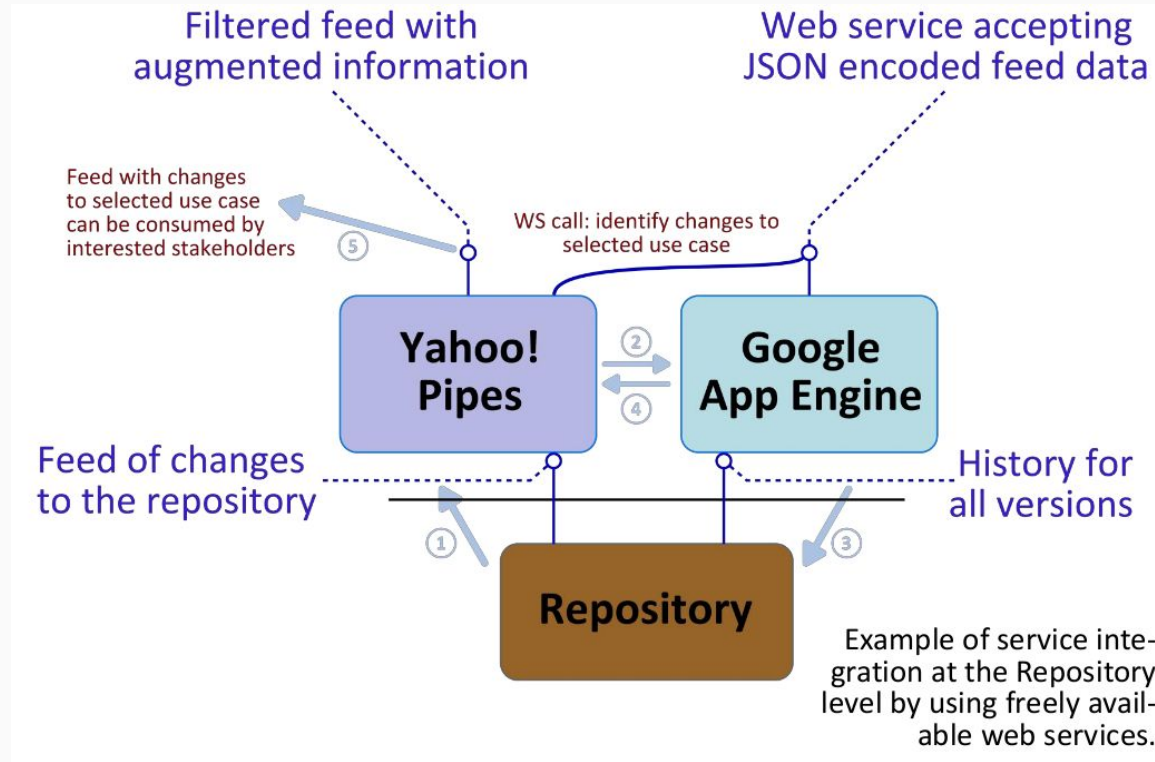
Try out Python

New stuff

What does it do?



How does it work?



```
def check(self, entry):
    ... # parse entry into rev/old_rev, loc/old_loc
    logging.debug("Checking rev %s for %s.", rev, loc)
    content = self.retrieve(loc)
    if content == None: return False
    content_old = self.retrieve(old_loc)
    if content_old == None: return True

    range = ... # parse (new) content for changes

    s = SequenceMatcher(None, content_old, content)
    for tag, i1, i2, j1, j2 in s.get_opcodes():
        if tag == "equal": continue
        if (...): # check range for actual changes
            return True
    return False
```

[uccreator/src/changefinder.py](https://github.com/uccreator/src/changefinder.py)

Example 2: Web Errors

Webapp Logs: Save browser errors, send notifications



What does it do? aka “alternatives”

There are a lot of good alternatives out there

- Monitoring
- Error insight
- Crash reporting

Bugsnag

bugsnag.com

Crittercism

aptelligent.com

NewRelic Browser

newrelic.com/browser-monitoring

Sentry

getsentry.com

Why App Engine? (again)

Always on: no setup, no maintenance

Reliability: if it works, it works

Maintenance: easy upgrade path and rollback

Capabilities:

- ✓ call via AJAX
- ✓ store everything we need
- ✓ send notification

Version	Default	Deployed	Delete
<input type="radio"/> 0-1 instances 101.23 MBytes java	No	1111 days, 1:05:24 ago by kariem.hussein@gmail.com	<input type="button" value="Delete"/>
<input type="radio"/> 0-2 instances 16.94 MBytes java7	No	1048 days, 21:10:06 ago by kariem.hussein@gmail.com	<input type="button" value="Delete"/>
<input type="radio"/> 0-3 instances 17.01 MBytes java7	No	1030 days, 2:09:03 ago by kariem@insposo.com	<input type="button" value="Delete"/>
<input type="radio"/> 1-1-1 instances 22.96 MBytes java7	No	611 days, 1:21:53 ago by kariem@insposo.com	<input type="button" value="Delete"/>
<input type="radio"/> 1-1-2 instances 22.96 MBytes java7	No	382 days, 23:51 ago by kariem@insposo.com	<input type="button" value="Delete"/>
<input checked="" type="radio"/> 1-1-3 instances 14.09 MBytes java7	Yes	34 days, 20:26:30 ago by kariem@insposo.com	Cannot delete default version.
<input type="radio"/> 1-1 instances 22.96 MBytes java7	No	623 days, 13:26:38 ago by kariem@insposo.com	<input type="button" value="Delete"/>

2.66 months

7.52 months

11.44 months

13.38 months

Low-maintenance (Test → Deploy → Forget)

Webapp Logs - Admin Console

Free Tier

Daily limits and sometimes rate restrictions.

<https://cloud.google.com/appengine/pricing>

<https://cloud.google.com/appengine/docs/quotas>

Instance Hours Frontend Instance Hours Backend	28h/d 9h/d
Mail API Calls Task Queue API Calls UrlFetch API Calls	100, 32/min 100k 657k, 3k/min
Bandwidth Incoming Bandwidth Outgoing	1 GB/d, 56 MB/min 1 GB/d, 56 MB/min
Logs data Logs data retrieval	1 GB 100 MB
Code / Static Storage Cloud Storage Bucket Blobstore	1 GB 5 GB 5 GB
Data Store Data Read/Write Ops Small Ops (allocate id, keys-only queries)	1 GB 50k/50k 50k

Links

Official Documentation, Pricing Quota

cloud.google.com/appengine

Questions

stackoverflow.com/questions/tagged/google-app-engine

More

cloudplatform.googleblog.com

plus.google.com/+googlecloudplatform

Examples and Libraries

Official Examples

github.com/GoogleCloudPlatform?query=appengine

Use Cases

github.com/kariem/usecases

Persistence

github.com/objectify/objectify

Thank you