Developing with Google App Engine

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Introduction
Google App Engine
Challenges building web apps
Run your web applications on Google Infrastructure
Easy to start.
Easy to scale.
1. Scalable Serving Architecture
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Incoming Requests

- App Engine Front End
  - App Server
  - App Server
  - App Server

Load Balancer
1. Scalable Serving Architecture

Incoming Requests

- App Engine Front End
- App Engine Front End
- App Engine Front End

Load Balancer

App Server

API Layer

App

Other Google Infrastructure
- Bigtable
- Google Accounts
- Memcache
- Image manipulation
Wow. That is one big table.
2. Distributed Datastore

- A sharded, sorted array
- Supports queries, transactions
- It’s not SQL!
class Shout(db.Model):

    message = db.StringProperty(required=True)

    who = db.StringProperty()

    when = db.DateTimeProperty(auto_now_add=True)
db.GqlQuery("SELECT * FROM Shout "
              "WHERE who = 'brett'"
              "ORDER BY when DESC").fetch(100)
3. Python Runtime & (most) Libraries
4. Open Source SDK
5. Web-based Admin

![Web-based Admin Chart]

- **CPU Used**: 5.49 of 1487.89 Gigacycles (0%)
- **Data Sent**: 0.41 of 614.40 Megabytes (0%)
- **Data Received**: 0.01 of 614.40 Megabytes (0%)
- **Emails Sent**: 0.00 of 600.00 Emails (0%)
- **Megabytes Stored**: 0.00 of 1073.74 Megabytes (0%)

**Popular URIs since 12am PST**
- /: 809 requests
- /favicon.ico: 113 requests

**URIs with Errors since 12am PST**
- /docs/tools/configuring: 3 errors (100%)
- /docs/datastore/keys: 2 errors (100%)
More Languages
Purchase Additional Quota
Large File Support
SSL Support
Offline Processing
Using App Engine
Getting Started

• Sign up for an account
• Download the SDK
• Write your code
• Test on your workstation
• Deploy
• Configure your domain
Writing Your App

- Decide on a data model
- Write business logic
- Write front-end pages
Testing & Debugging

- Use the Dev App Server included in SDK
- Browse to build-in HTTP server
- Test application
Deploying Your App

- Command-line: ‘appcfg.py’
- On Mac: GUI utility
- Visit your app on appspot.com
- ...or set up a domain of your own
- Monitor on the dashboard
What’s it cost?

• Free quota to get started: 500MB storage and enough CPU and bandwidth for about 5 million pageviews per month

• $0.10 - $0.12 per CPU core-hour

• $0.15 - $0.18 per GB-month of storage

• $0.11 - $0.13 per GB outgoing bandwidth

• $0.09 - $0.11 per GB incoming bandwidth

• Note: billing not active during current preview period
Google App Engine

http://code.google.com/appengine/