Ship your App in a Container

JRuby on Google App Engine

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Rails Deployment Roadmap

- 2004 - FastCGI on Apache or Lighttpd
  “a rocket that sometimes blows up in strange ways”
- 2006 - Mongrel clusters behind Apache mod_proxy
  “high throughput, but requires multiple moving parts”
- 2008 - Phusion Passenger on Apache
  “simply upload files, rack-based, REE/COW”
- 2010 - Rails3 or Sinatra + DataMapper in a servlet container
  “powerful/portable/scalable, rack-based, JRuby”

Why JRuby?

- Outperforms MRI in many cases... 2x to 10x
- Gem extensions written in Java (no more segfaults)
- A wealth of integration options available
- Already works on App Engine with supported APIs

Why Rails3?

- More modular, load only what you need for each request
- Intelligent gem management and deployment tools
- First-class integrations with “other” ORMs like DataMapper
- Better routing and Rack integration
- Better Javascript integration and options
- Rails conventions!

Why Sinatra?

- No learning curve... a simple and elegant DSL
- Some data-driven apps don’t require MVC or ActionView
- No need to extract the components we can’t use
- New application instances can spin up quickly

Why DataMapper?

- Data mapped in your model, auto-migrations or no migrations
- Text fields treated like associations, lazy-load by default
- Create concise queries without using method_missing
- Supports validations and legacy AR finders
- Already works with dm-appengine wrapper

Why a Servlet Container?

- Various app servers to choose from
- Everything you need in in the container
- JRuby-Rack dispatches to Rack
  while providing access to servlet features
- Access to Google App Engine APIs for Java
  via Ruby APIs that are feature compatible
- Our tools allow you to develop in the container
  with the ability to integrate Java servlets

JRuby on App Engine

Install it Now

```
sudo gem install google-appengine
```

Everything you need installs as gems

What is Google App Engine?

- A cloud-computing platform
- We provide the container and services
- Run your web apps on Google's infrastructure
- Pay-as-you-go, with free quota to get started

App Engine JRuby APIs

- AppEngine::Users
- AppEngine::Datastore
- AppEngine::Memcache
- AppEngine::Mail
- AppEngine::URLFetch
- AppEngine::Images
- AppEngine::Logger
- AppEngine::Testing
- AppEngine::XMPP
- AppEngine::Labs::TaskQueue

Dev_AppServer

- Customized Jetty server
- Local implementation of services
  - LRU memcache
  - Disk-backed datastore
  - HttpClient-backed URLFetch
- Emulates the production environment
  - Sandbox restrictions may be inconsistent, so run tests on production servers as well

Deployment

- Your app lives at
  - <app_id>.appspot.com, or
  - Custom domain with Google Apps
- Deploying uploads
  - Static files
  - Resource files
  - Other metadata (datastore indexes, cron jobs)
- Admin Console
  - dashboards
  - manage multiple versions
  - view logs

App Engine Architecture

Incoming Requests

Load Balancer

App Engine Front End

App Engine Front End

App Engine Front End

AppServer

AppServer

AppServer

AppServer

API Layer

App

App

App

Other Google Infrastructure

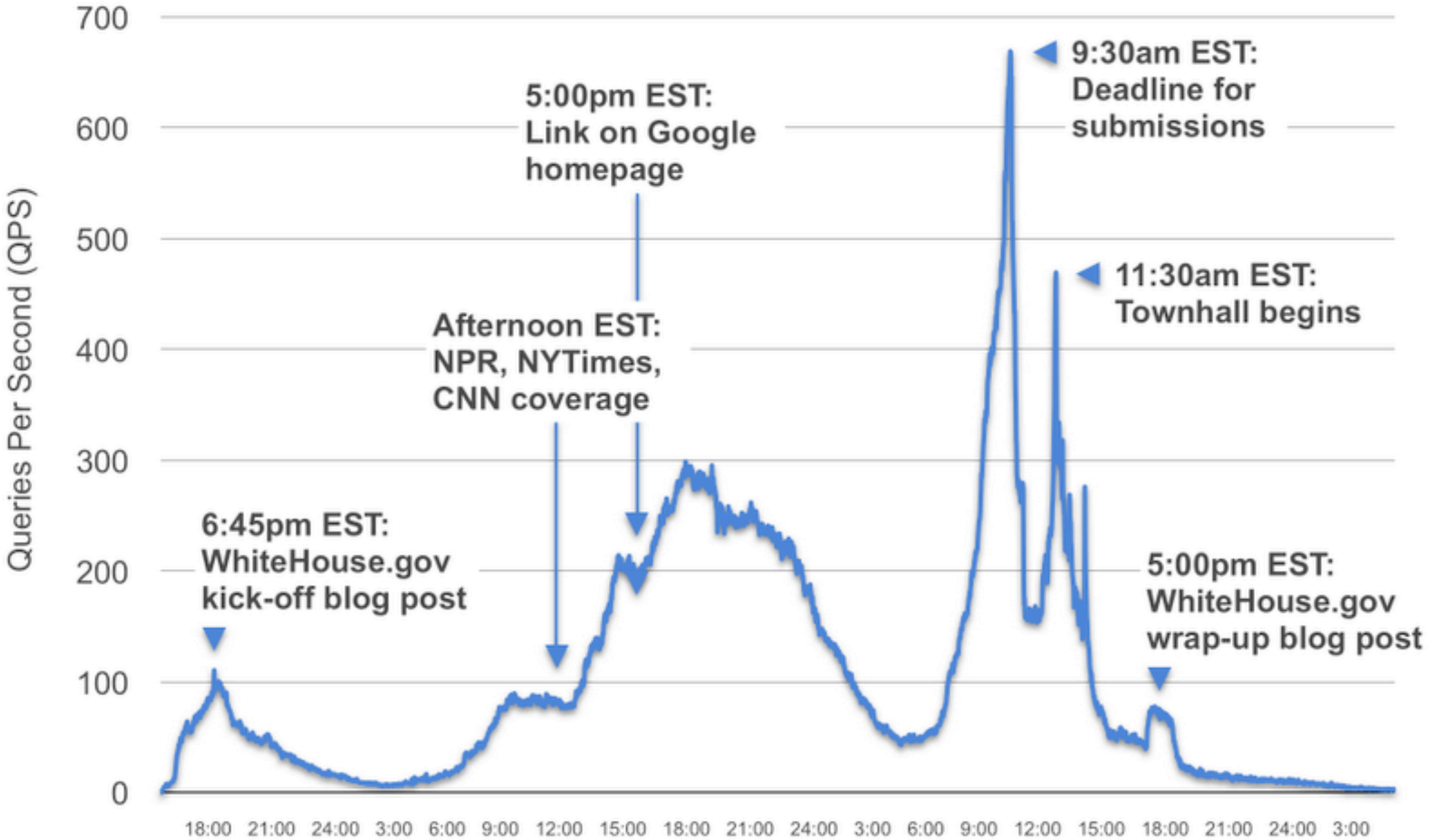
- Bigtable

- Google Accounts

- Memcache

- Image manipulation

WhiteHouse.gov/openforquestions



Quotas and Billing

Resource	Provided Free	Additional Cost
CPU	6.5 hours/day	$0.10/hour
Bandwidth In	1GByte/day	$0.10/GByte
Bandwidth Out	1GByte/day	$0.12/GByte
Stored Data	1 GB	$0.005/GB-day
Emails sent	2000/day to users 50000/day to admins	$0.0001/email

Demo

```
run lambda { |env| [200, {}, 'Aloha'] }
```

Resources

- John Woodell, woodie@google.com
- Google App Engine for JRuby
  - http://code.google.com/p/appengine-jruby/
- Google Group
  - http://groups.google.com/group/appengine-jruby
- Blog: JRuby on App Engine Blog
  - http://jruby-appengine.blogspot.com/