

CHICAGO

INTERNATIONAL
SOFTWARE DEVELOPMENT
CONFERENCE 2015

goto;
conference

Platforms FTW!

Matt O'Keefe

 follow us @gotochgo

Conference: May 11-12 / Workshops: 13-14

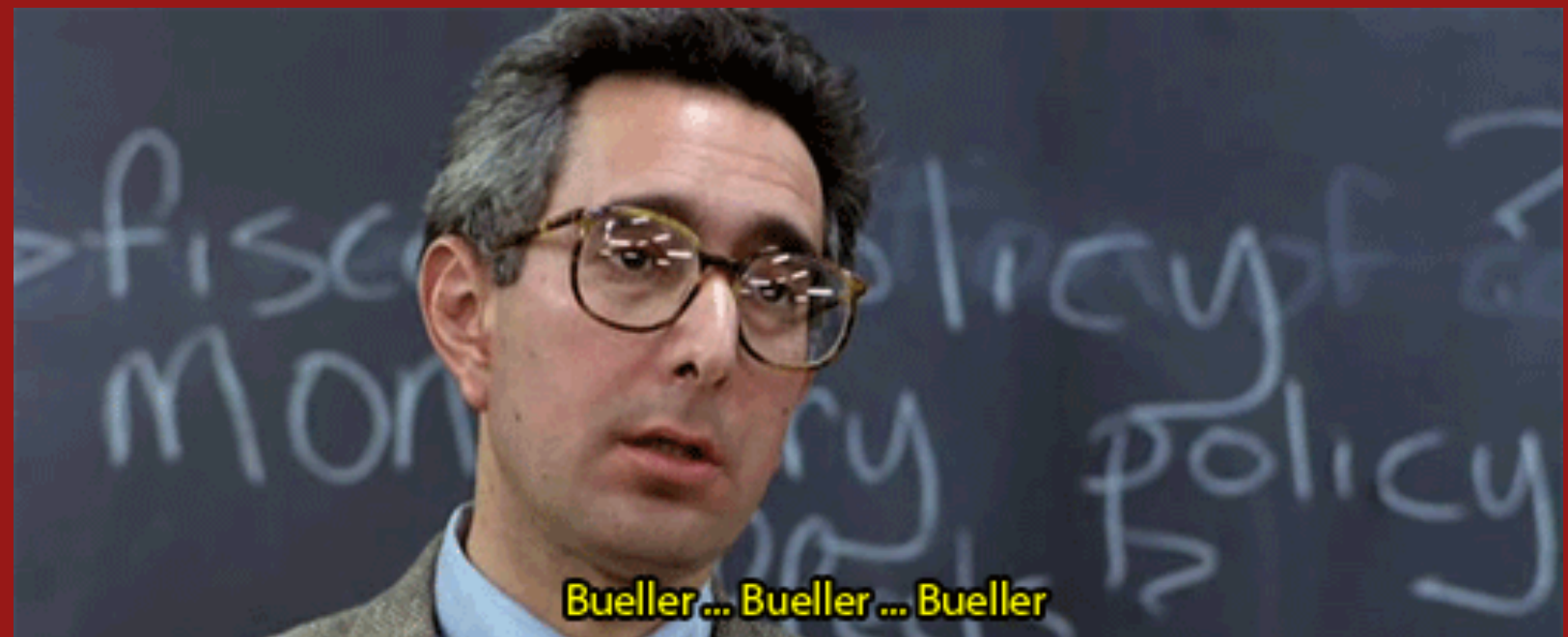
\$ whoami

- Developer
- -> Architect
- -> CTO



\$ whoami -O RLY?

- Developer
- -> Architect
- -> CTO



What is a Platform?

Mise en place for developers



In slightly more technical terms...

Service Oriented Architecture

+

Automation

=

Platform FTW!

Speed



Robustness



Scalability




Two Pizza Teams






Some Examples

AWS





 **AWS** ▾ **Services** ▾ **Edit** ▾

Amazon Web Services





Compute

-  **EC2**
Virtual Servers in the Cloud
-  **Lambda**
Run Code in Response to Events
-  **EC2 Container Service**
Run and Manage Docker Containers




Storage & Content Delivery

-  **S3**
Scalable Storage in the Cloud
-  **Storage Gateway**
Integrates On-Premises IT Environments with Cloud Storage
-  **Glacier**
Archive Storage in the Cloud
-  **CloudFront**
Global Content Delivery Network







Database

-  **RDS**
MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora
-  **DynamoDB**
Predictable and Scalable NoSQL Data Store
-  **ElastiCache**
In-Memory Cache
-  **Redshift**
Managed Petabyte-Scale Data Warehouse Service





Networking

-  **VPC**
Isolated Cloud Resources
-  **Direct Connect**
Dedicated Network Connection to AWS
-  **Route 53**
Scalable DNS and Domain Name Registration





Administration & Security

-  **Directory Service**
Managed Directories in the Cloud
-  **Identity & Access Management**
Access Control and Key Management
-  **Trusted Advisor**
AWS Cloud Optimization Expert
-  **CloudTrail**
User Activity and Change Tracking
-  **Config**
Resource Configurations and Inventory
-  **CloudWatch**
Resource and Application Monitoring







Deployment & Management

-  **Elastic Beanstalk**
AWS Application Container
-  **OpsWorks**
DevOps Application Management Service
-  **CloudFormation**
Templated AWS Resource Creation
-  **CodeDeploy**
Automated Deployments




Analytics

-  **EMR**
Managed Hadoop Framework
-  **Kinesis**
Real-time Processing of Streaming Big Data
-  **Data Pipeline**
Orchestration for Data-Driven Workflows
-  **Machine Learning**
Build Smart Applications Quickly and Easily




Application Services

-  **SQS**
Message Queue Service
-  **SWF**
Workflow Service for Coordinating Application Components
-  **AppStream**
Low Latency Application Streaming
-  **Elastic Transcoder**
Easy-to-use Scalable Media Transcoding
-  **SES**
Email Sending Service
-  **CloudSearch**
Managed Search Service

Mobile Services

-  **Cognito**
User Identity and App Data Synchronization
-  **Mobile Analytics**
Understand App Usage Data at Scale
-  **SNS**
Push Notification Service

Enterprise Applications

-  **WorkSpaces**
Desktops in the Cloud
-  **WorkDocs**
Secure Enterprise Storage and Sharing Service
-  **WorkMail** **PREVIEW**
Secure Email and Calendaring Service

Heroku

```
$ heroku create
```

```
Creating falling-wind-1624... done, stack is cedar-14
```

```
http://falling-wind-1624.herokuapp.com/ | https://git.heroku.com/falling-wind-1624
```

```
Git remote heroku added
```

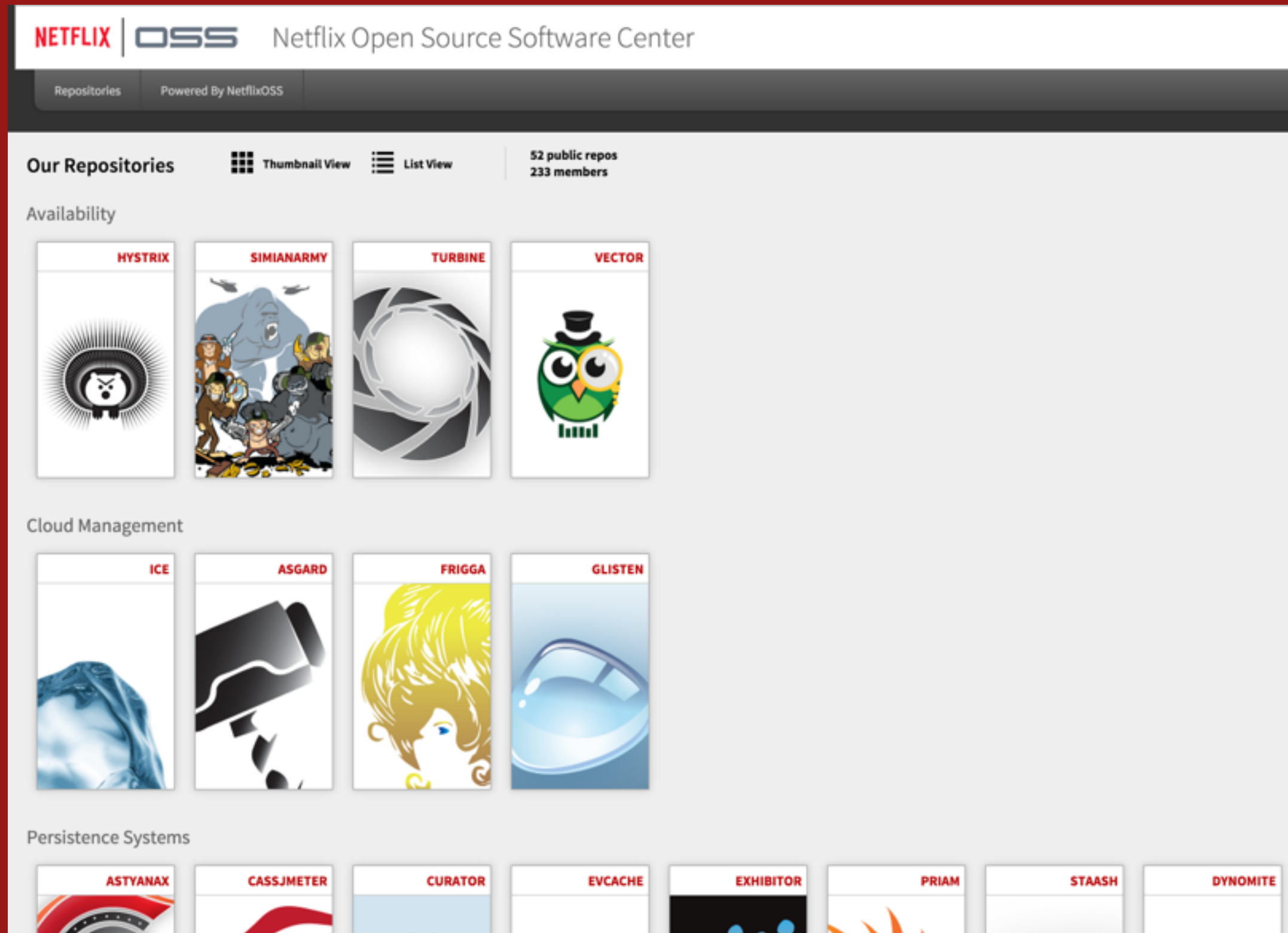
```
$ git push heroku master
```

```
Initializing repository, done.
```

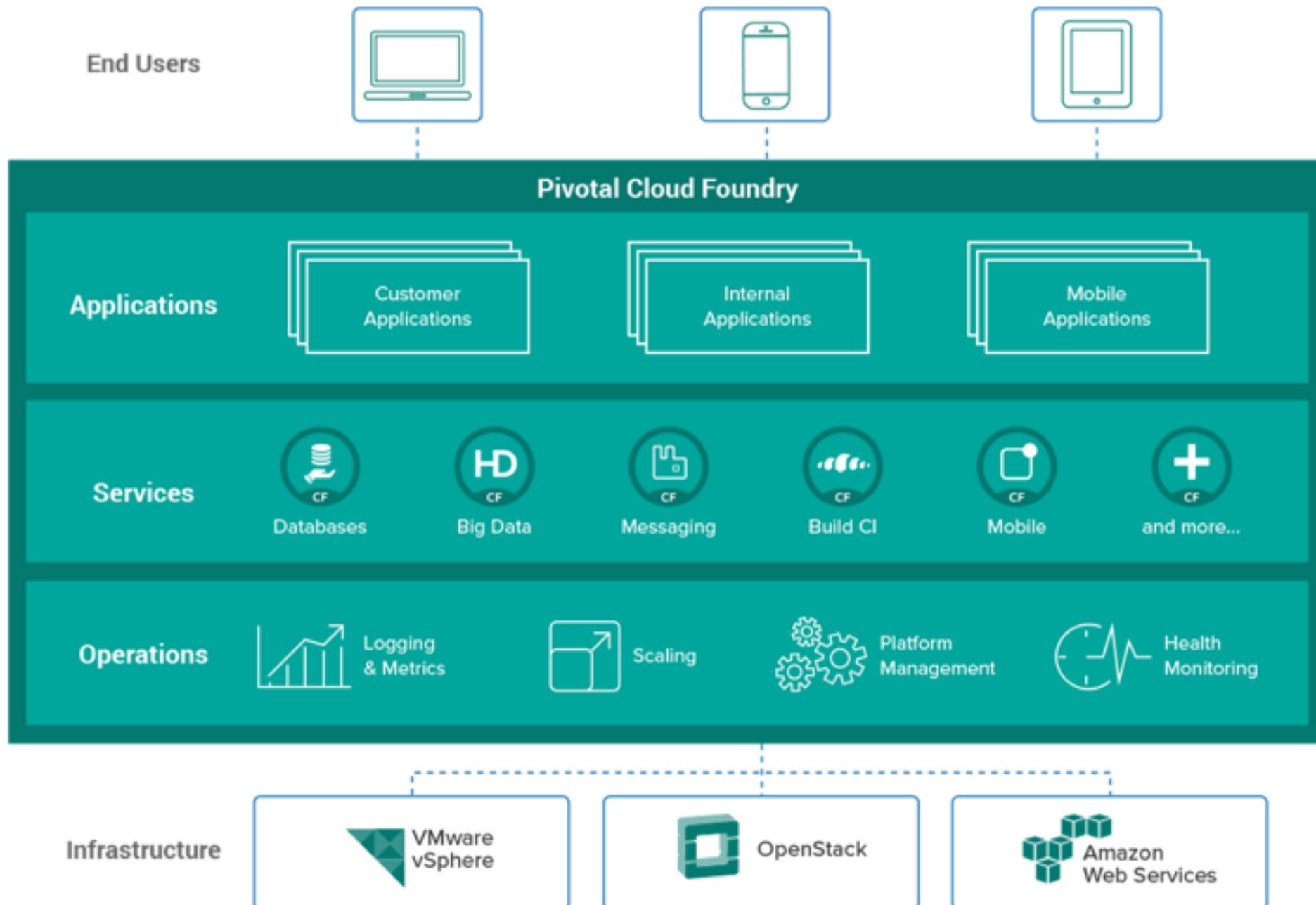
```
updating 'refs/heads/master'
```

```
...
```


Netflix OSS



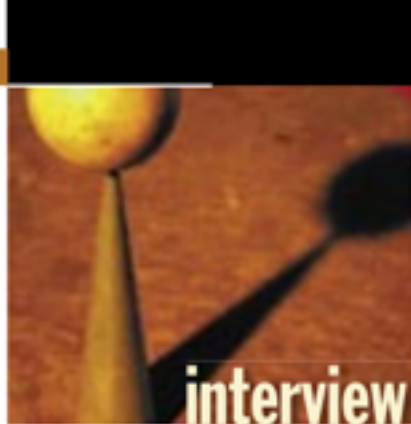
Cloud Foundry



Other Notable Examples



Recommended Reading



A Conversation with Werner Vogels

Photography by Craig Harrold

Many think of Amazon as “that hugely successful online bookstore.” You would expect Amazon CTO Werner Vogels to embrace this distinction, but in fact it causes him some concern. “I think it’s important to realize that first and foremost Amazon is a technology company,” says Vogels. And he’s right. Over the past years, Vogels has helped Amazon grow from an online retailer (albeit one of the largest, with more than 55 million active customer accounts) into a platform on which more than 1 million active retail partners worldwide do business. Behind Amazon’s successful evolution from retailer to technology platform is its SOA (service-oriented architecture), which broke new technological ground and proved that SOAs can deliver on their promises.

Vogels came to Amazon from Cornell University, where he was working on high-availability systems and the management of scalable enterprise systems. He maintains that research spirit at Amazon, which regularly must solve problems never before encountered. “Maybe other companies call it research. We just call it development,” he points out.

Interviewing Vogels is ACM Turing Award winner and Microsoft Technical Fellow Jim Gray.

JIM GRAY How has Amazon’s technology evolved over the past five years?

WERNER VOGELS Growth is core to Amazon.com’s business strategy, and that has had a significant impact on the way we use technology: growth through more categories,

Learning from

THE AMAZON

TECHNOLOGY

PLATFORM

application, running on a Web server, talking to a database on the back end. This application, dubbed Obidos, evolved to hold

all the business logic, all the display logic, and all the functionality that Amazon eventually became famous for: similarities, recommendations, Listmania, reviews, etc.



Steve Yegge's Google+ rant



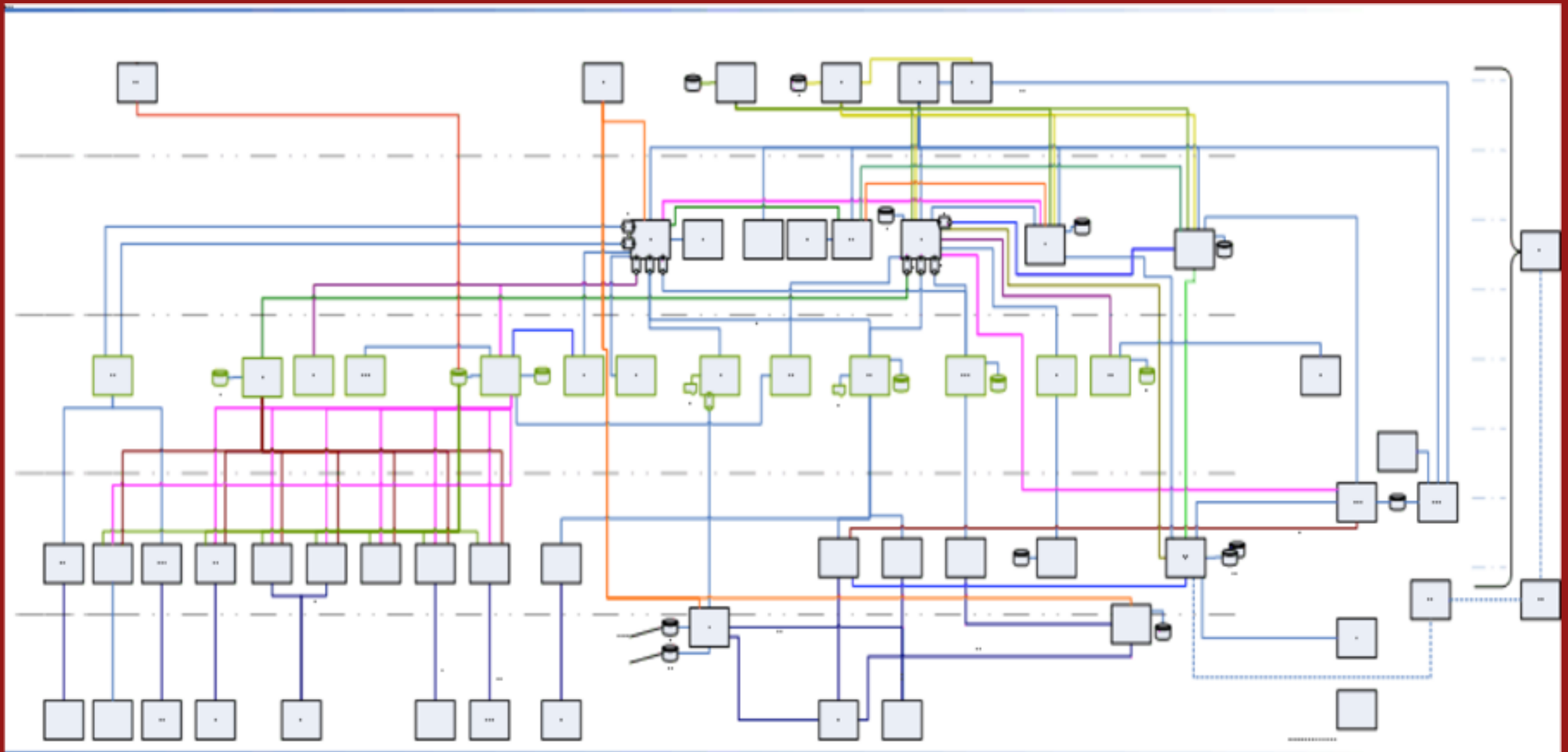
imgflip.com

The Bezos Mandate

- All teams will henceforth expose their data and functionality through service interfaces.
- Teams must communicate with each other through these interfaces.
- There will be no other form of interprocess communication allowed: no direct linking, no direct reads of another team's data store, no shared-memory model, no back-doors whatsoever. The only communication allowed is via service interface calls over the network.
- It doesn't matter what technology they use. HTTP, Corba, Pubsub, custom protocols -- doesn't matter. Bezos doesn't care.
- All service interfaces, without exception, must be designed from the ground up to be externalizable. That is to say, the team must plan and design to be able to expose the interface to developers in the outside world. No exceptions.
- Anyone who doesn't do this will be fired.
- Thank you; have a nice day!

Some personal
experiences

Homogeneous Platform



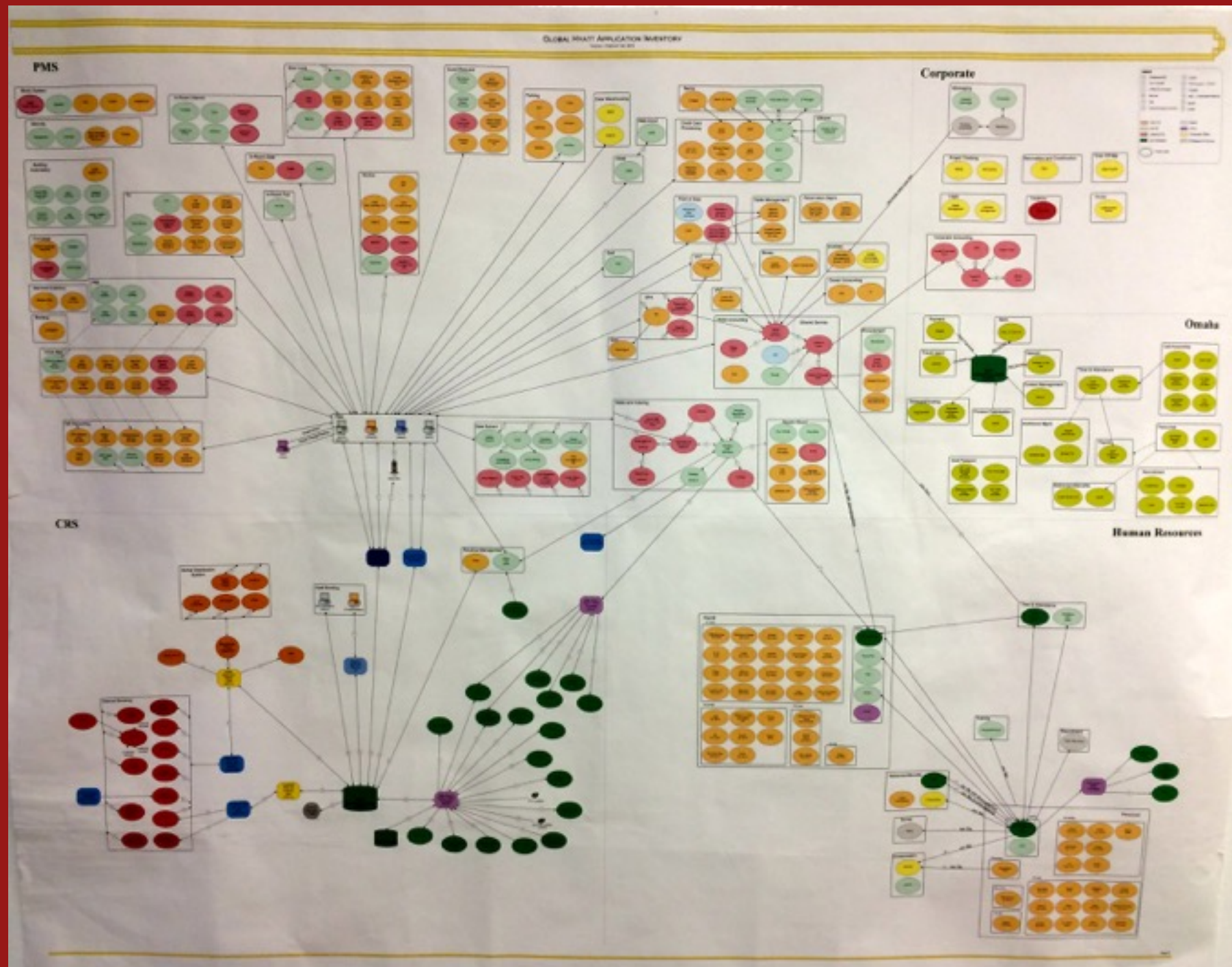
Heterogeneous Platform + Core Services



graphite

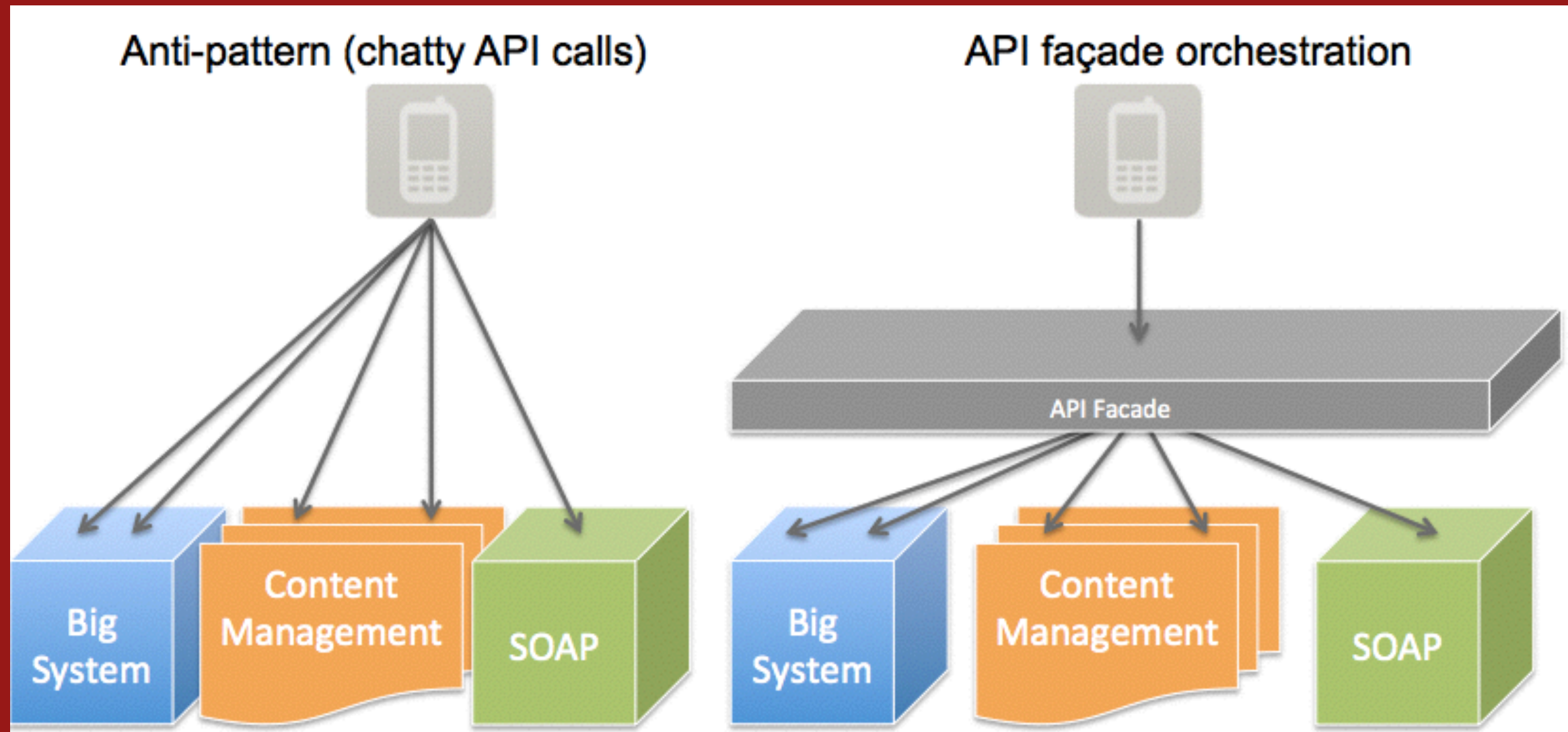


Hyatt circa 2010





API Façade



credit: apigee.com

API Gateway



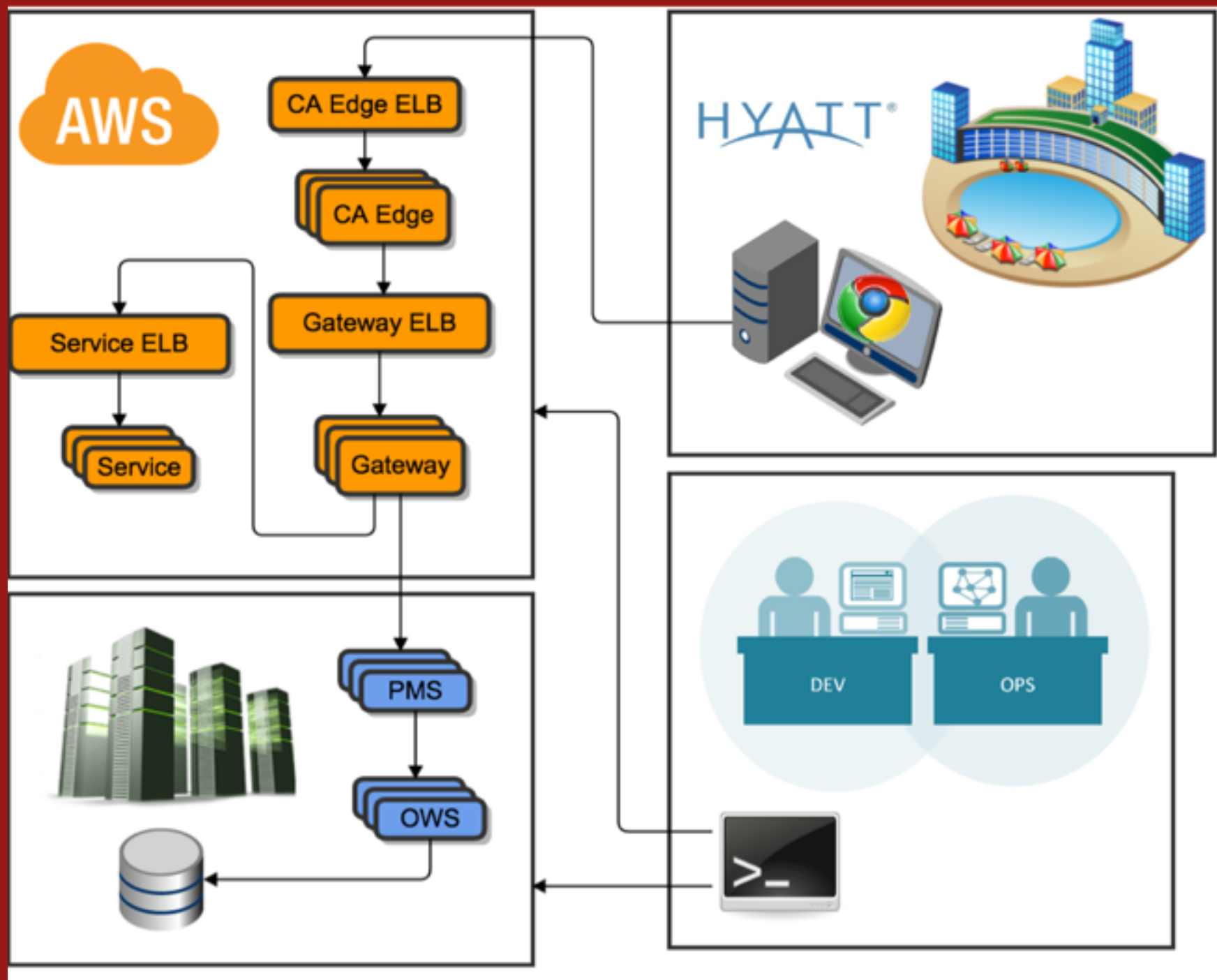
API Gateway features

- Presents a uniform API and a single ingress to all services
- Routes to services based on dynamically configured URL path matching
 - `https://api.hyatt.com/v1/.../.../`
- Authenticates all requests using API keys
- Performs rate limiting based on API key

Future Enhancements

- Circuit breakers for robustness
- API analytics using streaming analytics service
- Aggregation and assembly of custom projections
- Multi-tenancy and externalization?
- Whatever else we discover based on customer feedback

Hyatt Hospitality Platform v0.5



Who ya gonna call?



DevOps Unicorns

What's in a name?

- Should 'DevOps' appear in a team name? NO!
- Should 'DevOps' appear in a job title? Maybe
- Should 'DevOps' appear in a job description?
Absolutely. Search <http://hyatt.jobs> for some nice examples ;)
- What is 'DevOps' anyway?

Codifying DevOps

Inbox



Guillaume FORTAINE

to devops

May 20, 2012 [Details](#)



Hello,

For your information :

<http://java.dzone.com/articles/codifying-devops>

Best Regards,

Guillaume FORTAINE



bongo

to devops

May 22, 2012 [Details](#)



For starters, it's "DevOps" not "Devops" or "devops".

<https://groups.google.com/forum/?fromgroups=#!topic/devops/u2KnDJ04xdw>
55 posts by 31 authors in this thread alone

DevOps is like Porn

You know it when you see it



source: <https://twitter.com/adrianco>



source: <http://developerblog.redhat.com/2014/01/15/devops-in-straight-english-part-1-of-2/>



source: <http://redmonk.com/cote/2011/06/22/itmanagement088/>

Full Stack Developers



source: <http://happytesting.wordpress.com/2013/02/01/agile-testing-unicorn-perspective/>

Questions?

*Please remember to evaluate via the GOTO
Guide App*