Docker, Enabling Continuous (Food) Delivery

@jvaleo #dockercon

Who am I?

- SRE on Platform Team (Cloud Infrastructure) at GrubHub
- Previously at Dramafever, Google, Apple
- GrubHub since September 2014

grubHub®

What’s GrubHub

- GrubHub is the nation's leading online and mobile food ordering company dedicated to connecting hungry diners with local takeout restaurants. The company’s online and mobile ordering platforms allow diners to order directly from approximately 35,000 takeout restaurants in more than 900 U.S. cities and London.
- GrubHub’s portfolio of brands includes GrubHub, Seamless, MenuPages, Allmenus, Restaurants on the Run, and DiningIn
- In 2014, sent nearly $2 billion in gross food sales to local takeout restaurants
- Processes an average of nearly 235,000 orders on a daily basis
- Serves approximately 5.6 million active diners

DevOps @ GrubHub

- SREs and Devs on the same team
- Goal is pretty standard; move code from dev to production as quick as possible in a safe repeatable manner
- Share the operation of the system

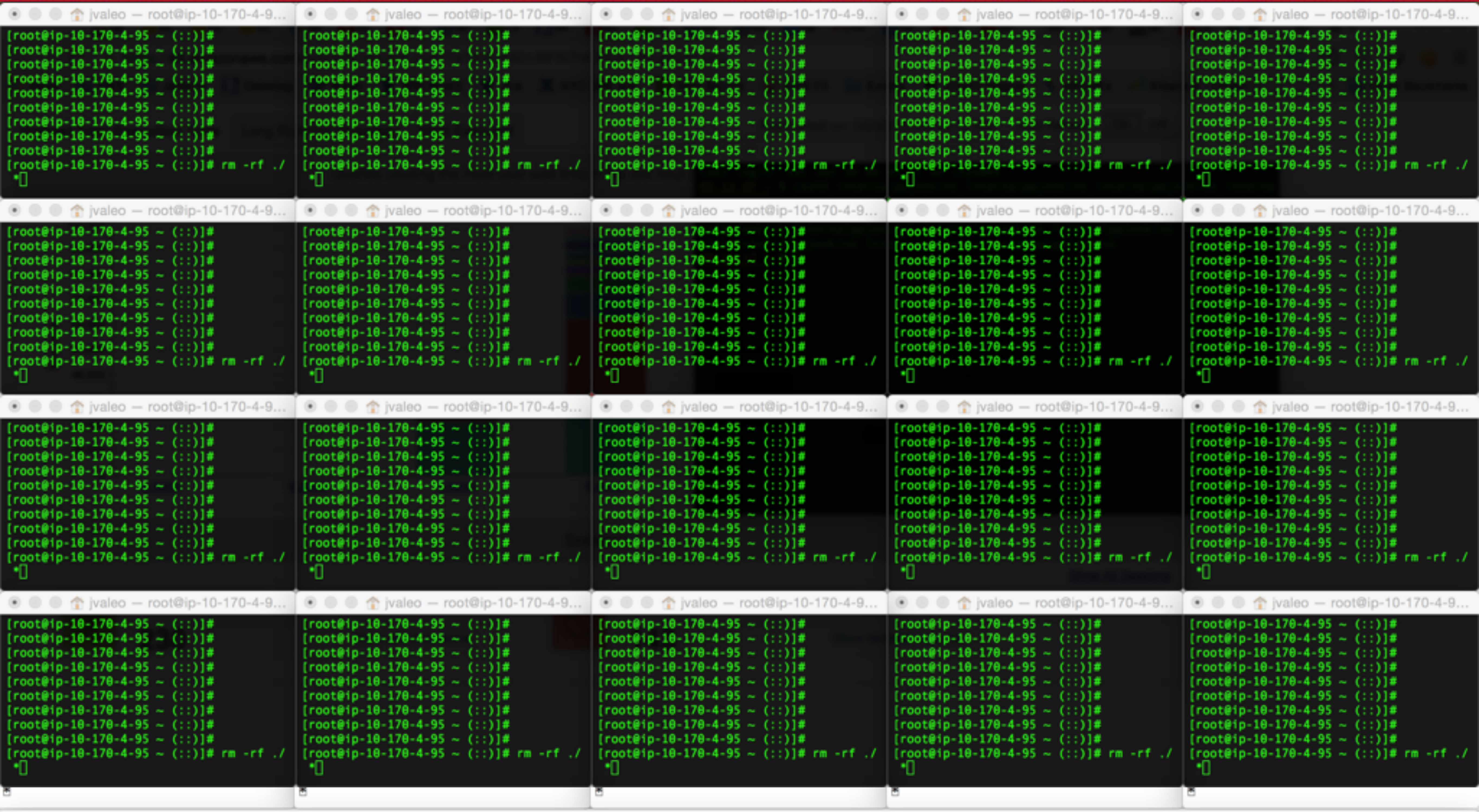
Architecture Commandments

- Multi-datacenter from the start
- No single point(s) of failure
- Elastically scalable
- Automated and continuous deployments

Architecture

- Java based micro service architecture
- Cassandra for datastore
- Platform - garçon!
  - Provides discovery (Eureka), security, layer 7 routing (Jiujitsu) and service configuration management (Fig). Built on common frameworks
- Deployment/Automation?

Deployment Tools For Consideration



jvaleo — root@ip-10-170-4-9...

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jvaleo — root@ip-10-170-4-9...

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grubHub seamless MENUPAGES allmenus

Deployment Tools For Consideration

- rsync/http/ssh/somethingotheracronym
- “Traditional” artifact store
- Golden AMI/Image per service & version
- Docker

Questions Around Docker

- Performance overhead
- Are tools production ready?
- How does this help us enable Continuous Deployment over a more “traditional” deployment methodology?

Performance Overhead

- Extensive load testing run against services running in Docker
- Minimal/no latency added
- No real system overhead

Are Tools Ready?

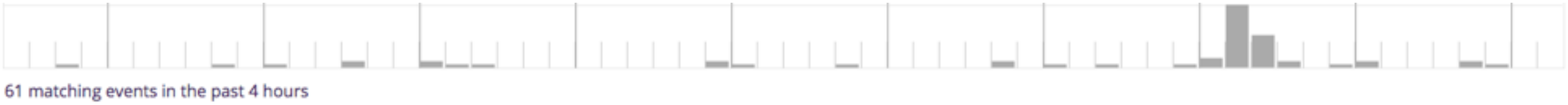
- “Built-in” tools are ready to run in production
- Lots of ways to build and manage images, need to make smart decisions upfront
- Container orchestration tools are mostly there
- Now what?

Solution - “Busboy”

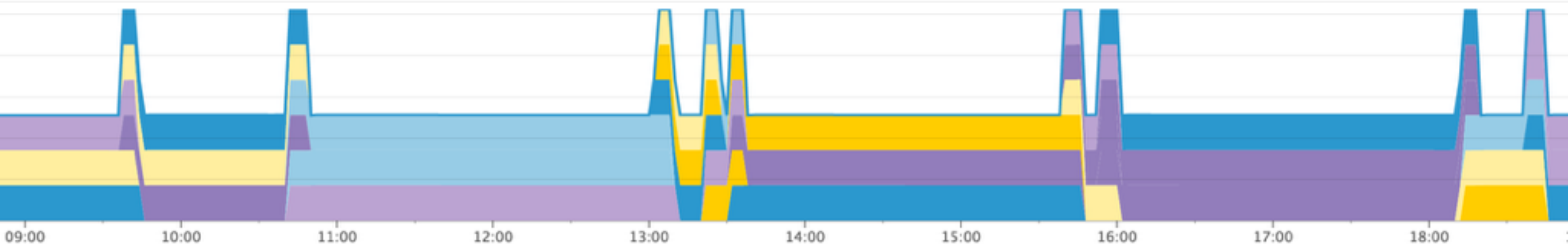
- Docker containers built on every integrate to master, service and test container
- Pushes to local registry backed by S3
- Kicks off deployment job
- Starts instances with local registry, pulls container and runs
- Runs instance test, service level test, “big-test”
- Outputs results of tests back to user as well as service logs to log aggregator

How Does This Help Us?

- Able to run entire stack locally in the same way we run in production
- Don’t worry as much about host OS
- Docker APIs make it “easy” to manipulate physical data centers and cloud in the same manner
- Helps us move away from deployments and focus on code
- Lots of (automated) deployments



61 matching events in the past 4 hours



Lessons Learned

- Managing Dockerfiles and images
- Registry considerations
- Not everything needs to run in Docker
- Troubleshooting in production

What’s Next?

- Container orchestration tools
- Docker 1.6 with new registry

Thank you

Jeff Valeo
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