

5C's Series

Faster Innovation with Confidence

How CI/CD & Containers Help Arrayent Go Faster

 #5CsDevOps

aws

prodea

 nclouds

5 C's That Changed the Future

CI, CD, Containers, Cloud & Culture

Case studies in creating sustainable systems that empower the business to deliver innovation faster, with predictability.

- **REPLAY – Prodea/Arrayent - CI/CD, Containers & Culture**
- **REPLAY – nDimensional - Cloud Infrastructure & Culture**
- **Tue, May 15 – LendingHome - Cloud Migration & Containers**

**SAVE
THE
DATES**

Join us for the series, and bring your team!

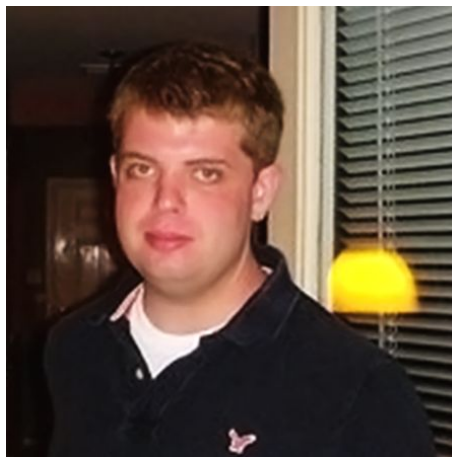
Faster Innovation with Confidence

How CI/CD & Containers Help Arrayent Go Faster



Jarrod Sinclair

Chief Architect, Prodea Systems



Doug Cliche

Solutions Architect, AWS



JT Giri

CEO & Co-founder, nClouds



CURRENT STATE - SPRING 2016

- 3 - 6 months to release new features
- Major planning to perform an upgrade
- “Eventful deployments” involving all of Ops
- Low confidence in release timing & quality
- The future was a wall in front of us
 - Multiple data centers
 - Security
 - “Funding challenged”



CURRENT STATE - FALL 2017

- 10x+ faster delivery - concept to production
- Reduced defect rate
- Ability to release as the business demands
- Internal & client confidence in iterative development
- Blameless culture, collaboration rules
- Acquired by Prodea



STRATEGY

- We're on a journey
- Started with the question, "Is it possible to cloudify this environment?"
- Multiple iterations
- Localized environment

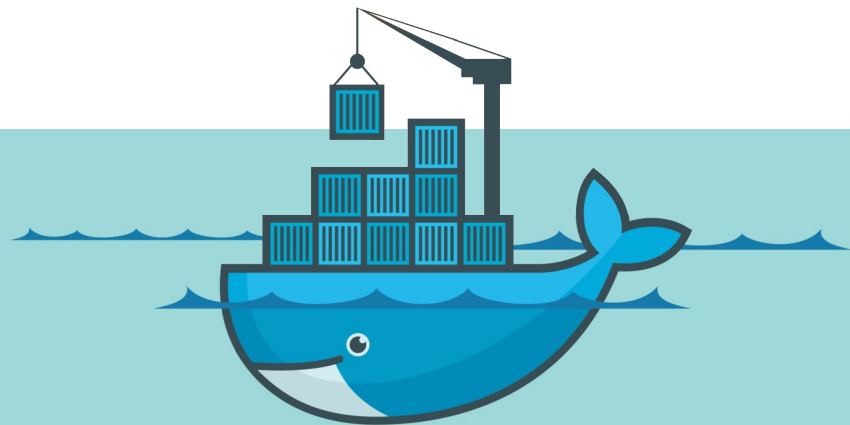


CONTAINERS

- Docker Compose to build local environment
- Demonstrating the “art of the possible”

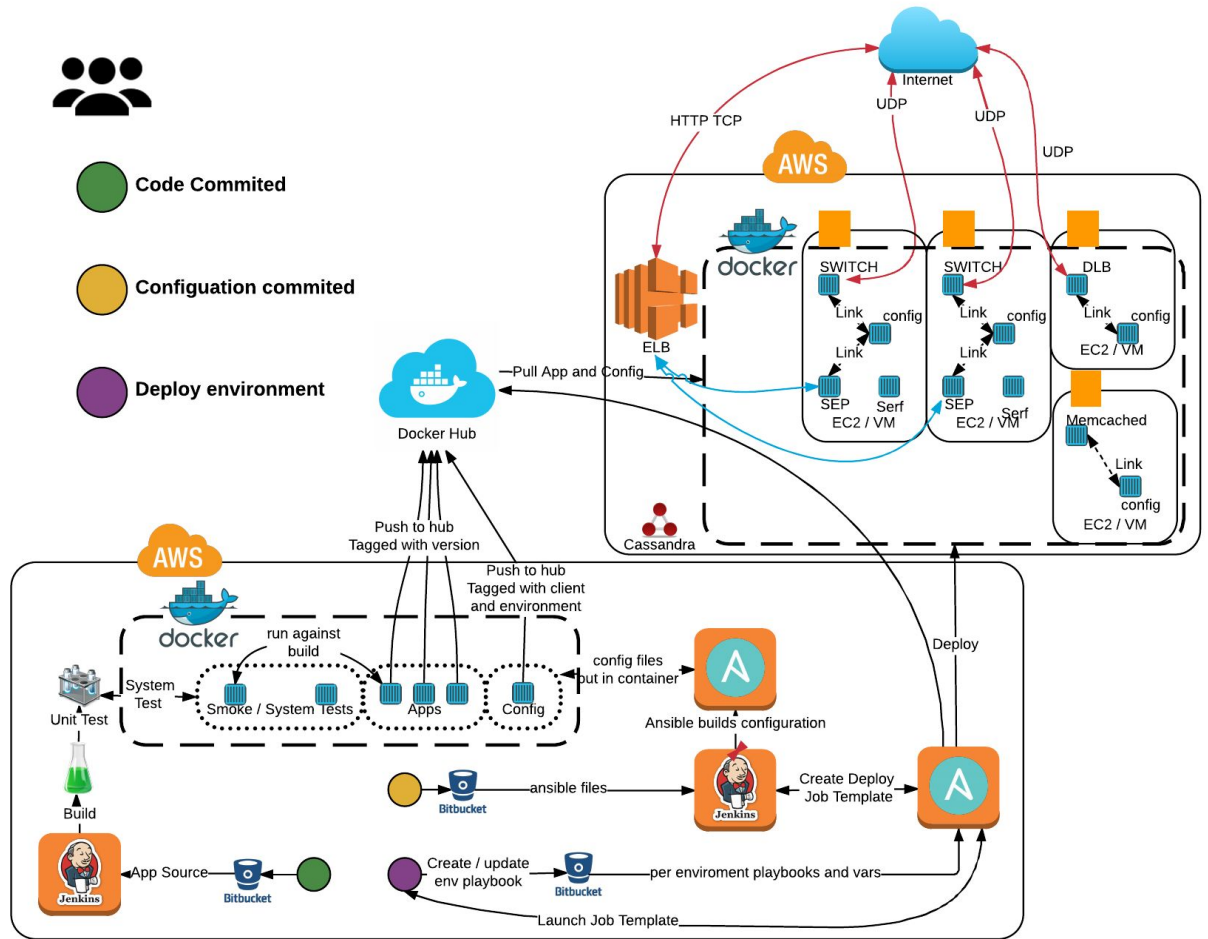


Gained confidence and support from executive team



DEVOPS PROCESS

Initial DevOps Plan



by Jarrod Sinclair
Chief Architect - Arraynet

CLOUD

- Started with Dev and Test environments in the cloud
- Kept legacy platform up and running until we gained confidence
- It's not all or nothing - incremental



CLOUD



ECS

Jenkins server kicks off
build and test tasks to
workers in an
auto-scaling ECS cluster



Lambda

Chatbot
Ability to do A/B testing



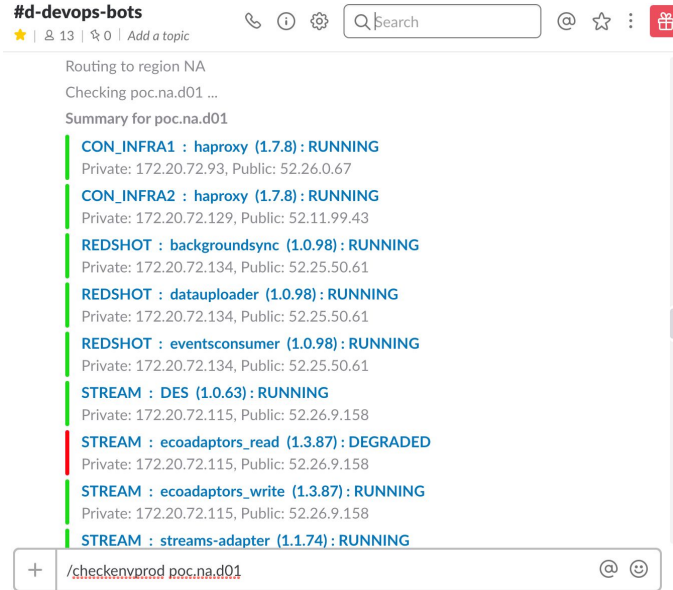
Route 53

Scripted process to move DNS name
around with Route 53, making it easy
to stop resources and bring up and
move the DNS

Resulting in cost savings

CHATBOT

Uses Slack and AWS Lambda

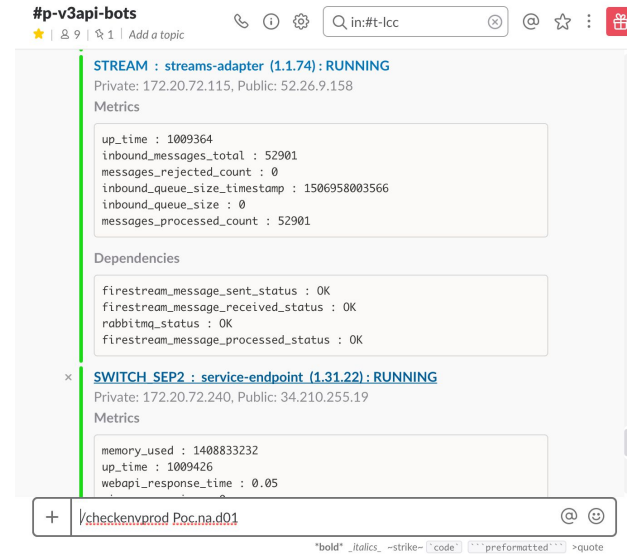


#d-devops-bots
★ | 👤 13 | 🔒 0 | Add a topic

Routing to region NA
Checking poc.na.d01 ...
Summary for poc.na.d01

- CON_INFRA1 : haproxy (1.7.8) : RUNNING
Private: 172.20.72.93, Public: 52.26.0.67
- CON_INFRA2 : haproxy (1.7.8) : RUNNING
Private: 172.20.72.129, Public: 52.11.99.43
- REDSHOT : backgroundsync (1.0.98) : RUNNING
Private: 172.20.72.134, Public: 52.25.50.61
- REDSHOT : datauploader (1.0.98) : RUNNING
Private: 172.20.72.134, Public: 52.25.50.61
- REDSHOT : eventsconsumer (1.0.98) : RUNNING
Private: 172.20.72.134, Public: 52.25.50.61
- STREAM : DES (1.0.63) : RUNNING
Private: 172.20.72.115, Public: 52.26.9.158
- STREAM : ecoadaptors_read (1.3.87) : DEGRADED
Private: 172.20.72.115, Public: 52.26.9.158
- STREAM : ecoadaptors_write (1.3.87) : RUNNING
Private: 172.20.72.115, Public: 52.26.9.158
- STREAM : streams-adapter (1.1.74) : RUNNING

+ /checkenvprod poc.na.d01



#p-v3api-bots
★ | 👤 9 | 🔒 1 | Add a topic

STREAM : streams-adapter (1.1.74) : RUNNING
Private: 172.20.72.115, Public: 52.26.9.158

Metrics

```
up_time : 1009364
inbound_messages_total : 52901
messages_rejected_count : 0
inbound_queue_size_timestamp : 1506958003566
inbound_queue_size : 0
messages_processed_count : 52901
```

Dependencies

```
firestream_message_sent_status : OK
firestream_message_received_status : OK
rabbitmq_status : OK
firestream_message_processed_status : OK
```

× SWITCH_SEP2 : service-endpoint (1.31.22) : RUNNING
Private: 172.20.72.240, Public: 34.210.255.19

Metrics

```
memory_used : 1408833232
up_time : 1009426
webapi_response_time : 0.05
```

+ /checkenvprod Poc.na.d01

bold _italic_ -strike- [code] [preformatted] >quote

CI/CD

Tools



Jenkins



Robot Framework



Amazon EC2 Container Service (ECS)



AWS Lambda



Amazon CloudWatch

CI/CD

Streamlined, automated testing

- Smoke test - takes hours (not days), and integrated with deployment pipeline
- Performance testing

CULTURE

Believe in the process

- “Burn the ships” - once you gain confidence
- Eliminating the ability for developers / operations to SSH and fix issues manually
- Finding root causes and incorporating into the process

BUSINESS IMPACT

- Customer (and internal) confidence went up
- Software quality went up - giving us the bandwidth to modernize
- Updates used to be a big deal - now they're routine
- Blameless culture, enabled by feedback and consistency across the dev, test and prod environments
- DevOps culture & innovation speed made us attractive - we were acquired by Prodea

WHAT'S NEXT?

- Continuous improvement
- Extend & accelerate DevOps journey and culture
- Replicate Arrayent DevOps practices within Prodea



Create sustainable systems
that empower the business
to deliver innovation faster,
with predictability.



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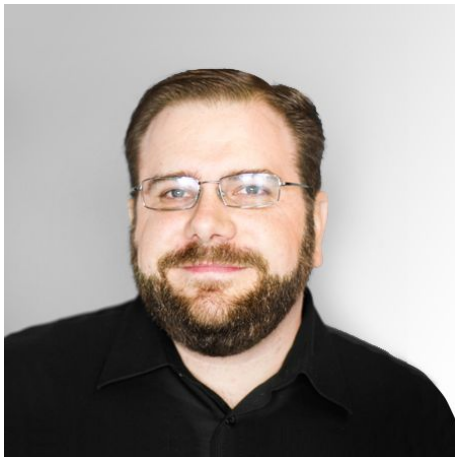
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Q&A - Faster Innovation with Confidence

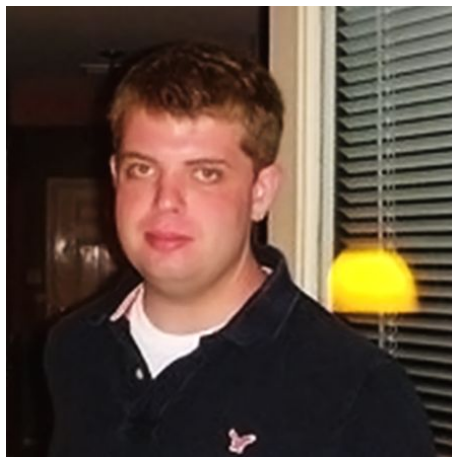


Jarrod Sinclair

Chief Architect, Prodea Systems



Entrepreneur.com lists Prodea's Arrayent as one of "25 Innovative IoT Companies and Products You Need to Know."



Doug Cliche

Solutions Architect, AWS



For 11 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud platform.



JT Giri

CEO & Co-founder, nClouds



CIOReview named nClouds to their "20 Most Promising DevOps Solution Providers - 2017." AWS Advanced Consulting Partner

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