

# Test Driving Your Infrastructure



# Who am I?

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Systems Engineer

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delivering hire insights.

***Dice***

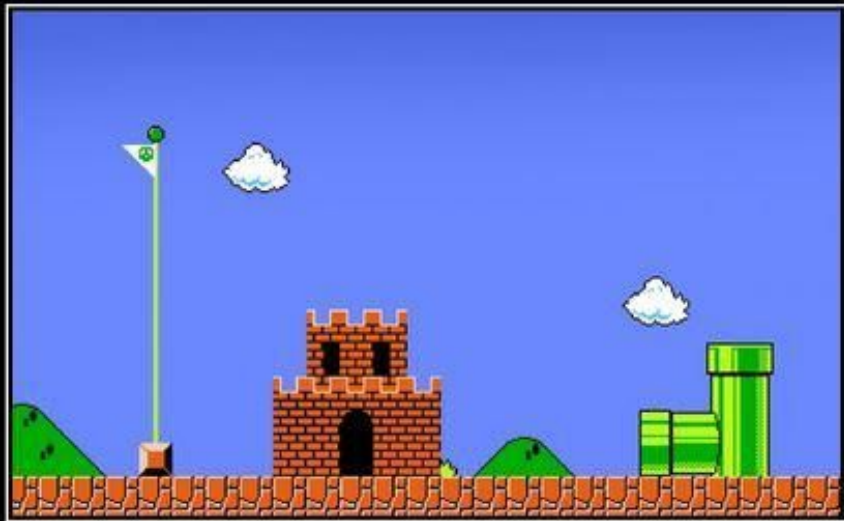
# Migrating a 15 year old infrastructure to the cloud

Infrastructure as code

Test all the things

What's been successful (and probably a little about what hasn't)

# Goals



**REMEMBER...**

WHEN THIS WAS YOUR ONLY GOAL?

- Modernize & replace aging infrastructure
- Improve application & server deployments
- Improve stability and flexibility of our application
- Remove Knowledge Silos

# What Were the Problems?



# Manual Changes



# Everything was Always Broken



# Everything Took Too Long





# Silos of Knowledge



# Outdated Hardware





# Tools



# How We Create Environments

Terraform to define infrastructure & manage state

Puppet to manage configuration

Abstract the differences

Write tests to prove it

# How We Migrate Between Environments

Environments are defined by git branches

With that environment configuration

And tests

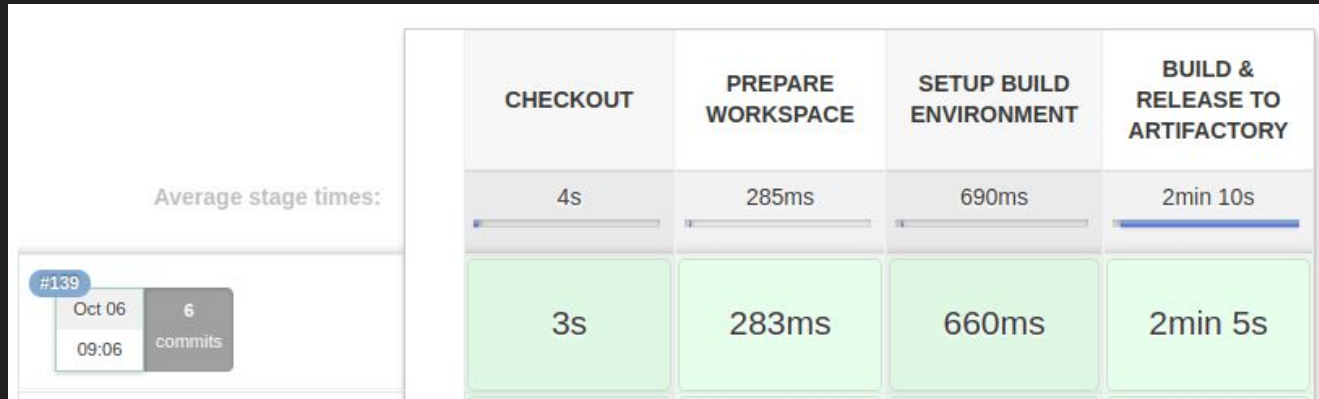
# How We Deploy

Automation using Jenkins pipelines & DSL Plugin

Orchestration using Choria playbooks

Custom mcollective agents

# Continuous Integration & Automation



# Make It Visible



## devops-build-monitor



<b>devops-choria-playbooks-build</b> #3 12 days ago	<b>devops-choria-playbooks-deploy-all-environments</b> #6 7 days ago	<b>devops-choria-playbooks-update-version-pilot</b> #5 12 days ago	<b>devops-choria-playbooks-update-version-production</b> #6 7 days ago
<b>devops-choria-playbooks-update-version-qa</b> #5 12 days ago	<b>devops-nginx-deploy-pilot</b> #55 13 days ago	<b>devops-nginx-deploy-production</b> #59 1 day ago	<b>devops-nginx-deploy-qa</b> #38 28 days ago
<b>devops-nginx-maintenance-pilot</b> #3 2 months ago	<b>devops-nginx-maintenance-production</b> #3 2 months ago	<b>devops-nginx-maintenance-qa</b>	<b>devops-quova-deploy-pilot</b> #1 3 months ago
<b>devops-quova-deploy-production</b> #2 3 months ago	<b>devops-quova-deploy-qa</b> #4 3 months ago	<b>dhupuppet-diceartifactory-kitchen-test</b> #18 9 months ago	<b>dhupuppet-dicedocker-kitchen-test</b> #58 4 days ago
<b>dhupuppet-dicejenkins-kitchen-test</b>	<b>dhupuppet-dicelinuxbase-kitchen-test</b> #49 12 days ago	<b>dhupuppet-dicetomcat-kitchen-test</b> #72 12 days ago	<b>dhupuppet-dicezookeeper-kitchen-test</b> Back in the green #5 10 months ago
<b>r10k-deploy-dev</b> #532 1 day ago	<b>r10k-deploy-pilot</b> #118 1 day ago	<b>r10k-deploy-prod</b> #88 12 hours ago	<b>terraform-dice-integration-tests-pilot</b> #14 6 days ago
<b>terraform-dice-integration-tests-production</b> #11 6 days ago	<b>terraform-dice-integration-tests-qa</b> #22 5 days ago		

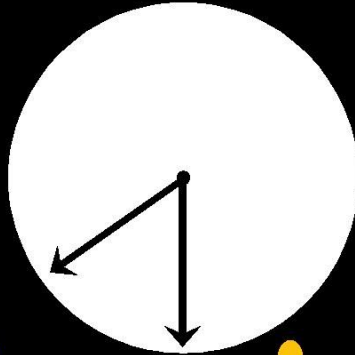


# What Lessons Have We Learned?



# Get Everyone Involved Early

**Early is on time.**



**On time is late.**

## A group of nine cast members from Star Trek: The Motion Picture are posed in a futuristic, metallic environment. They are wearing their iconic Starfleet uniforms: red for command (Kirk and Ilia), yellow for engineering (T'Pol and Travis Mayweather), and blue for science (Spock, Ilia, and Travis Mayweather). The background features a large window showing a view of space with a planet and a star. The lighting is dramatic, with strong highlights and shadows.



# Be Flexible



# Discover Problems Quickly

~~FAIL~~  
LEARN  
FAST

@JeremiahGardner

# Automation is Reproducible



# A Couple of Other Things ...

**DevOpsDays Des Moines:**

<https://www.devopsdays.org/events/2018-des-moines/>

**(Also my team has an open positions)**

# Questions?

Examples and slides:

<https://github.com/jessiepuls/2018-01-dsmdevops>

**Feel free to contact me:**

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