



# DevOps vs SRE, CI/CD Pipelines Bridging the Gap



Presented by:

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Evangelist / Harness

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Had lots of outages

Destroyer of error budgets



MESOSPHERE



# What are we talking about today?

- DevOps and/or/vs SRE?
- Actions favors the bold or prepared
- Eventually you must pull the trigger

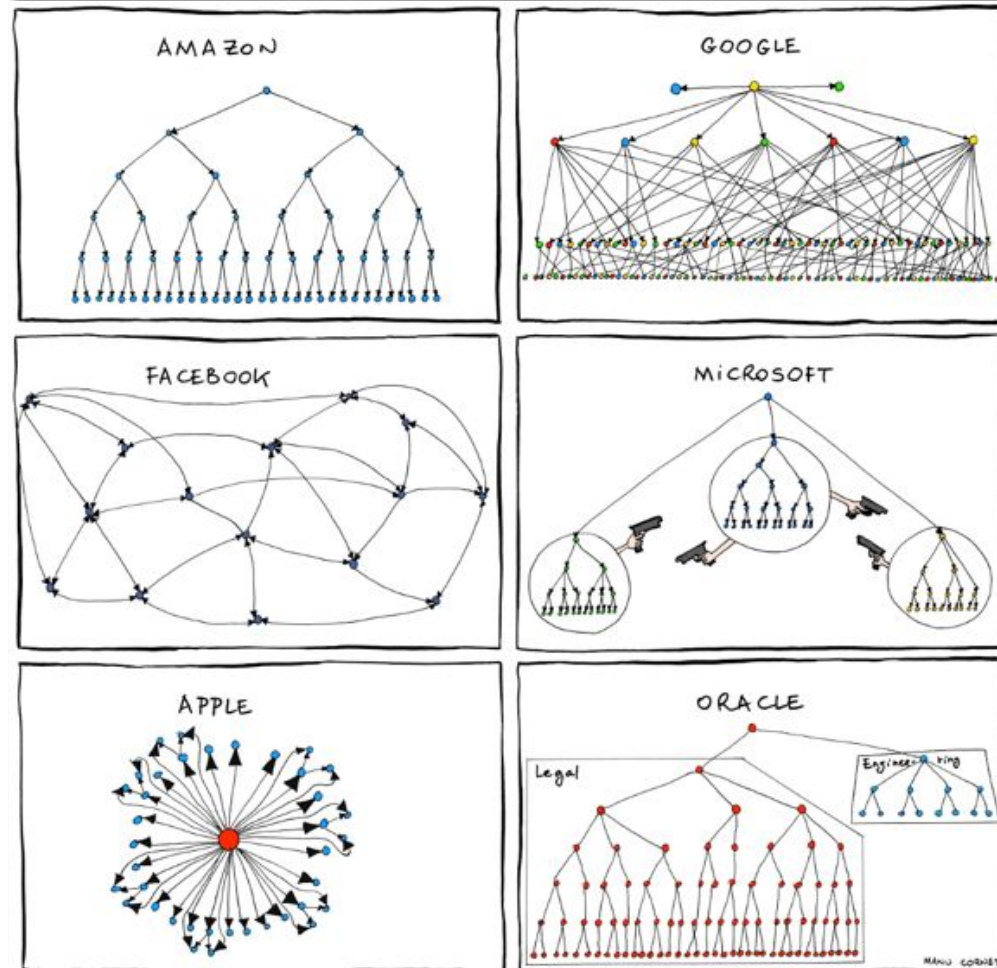
# DevOps || SRE



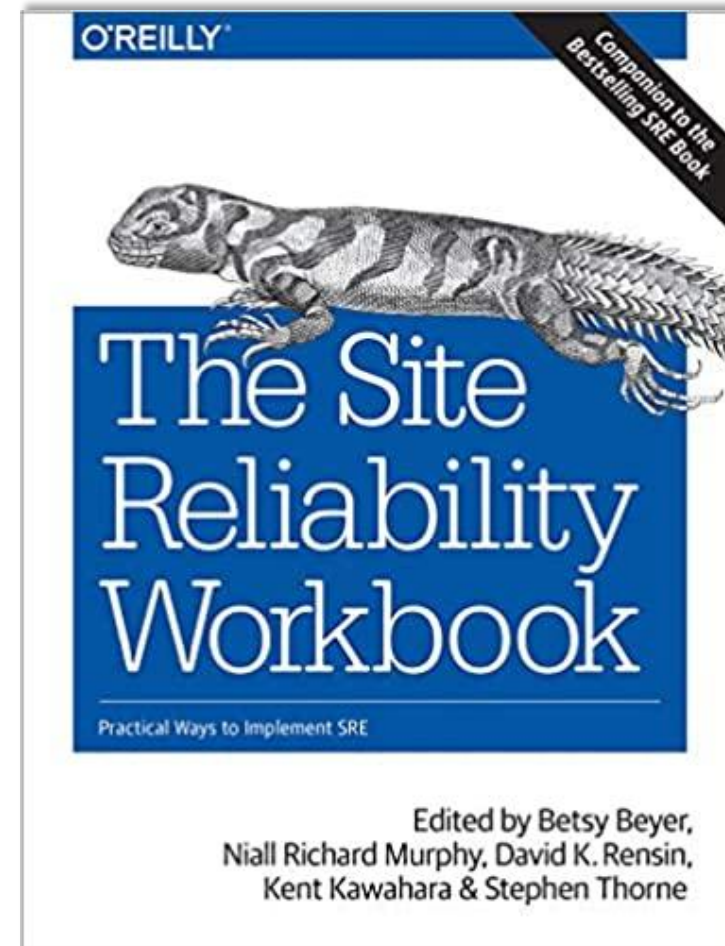
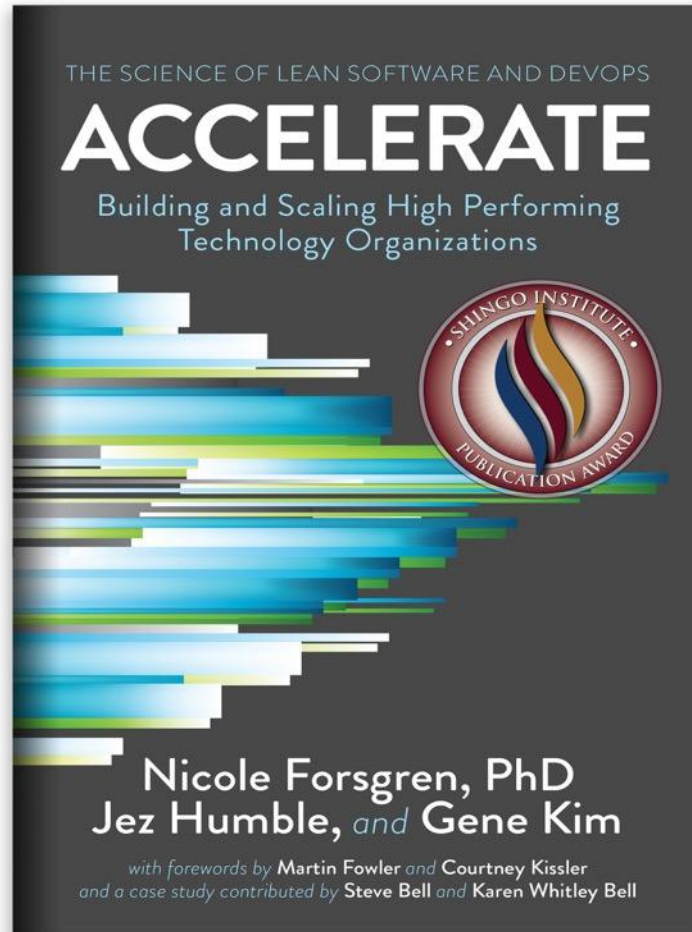
# Enabling Efficiency and Resiliency



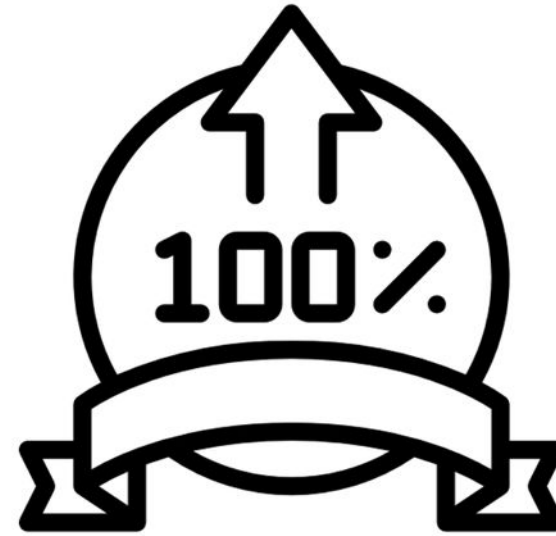
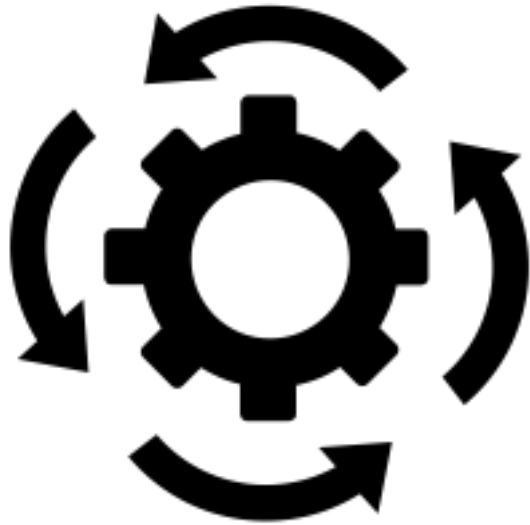
# Conway's Law



# Two Different Goals



# Two Different Problem Sets

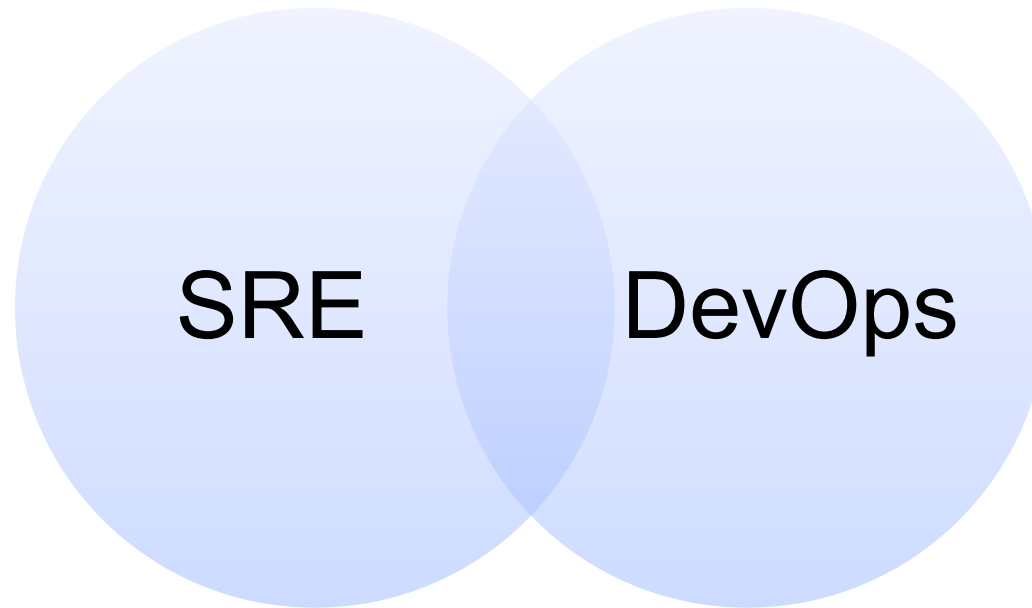




# Comparisons



# Comparisons, in a 6 Round Battle



# Round I, tl;dr

## SRE

Resilience,  
Scaling,  
Uptime,  
Robustness

## DevOps

Development  
Pipelines

# Round II, Does the App Cluster?

SRE

RAFT based  
leader with  
Zookeeper  
and Mesos

DevOps

Yes, we need  
to fulfill three  
nodes

# Round III, Can We Have Monitoring?

SRE

BlackBox vs  
WhiteBox

DevOps

Yes,  
Prometheus,  
ELK, FluentD

# Round IV, Our Deployment Failed

SRE

Did it cause  
an incident?

DevOps

Re-run the  
pipeline and  
we can up the  
logging.

# Round V, Typical Metrics

## SRE

Four Golden Signals,  
SLOs, SLIs

## DevOps

Deployment frequency,  
deployment failure rate

# Round VI, War Chant

SRE

No Root  
Cause!

DevOps

People,  
Process,  
Technology!



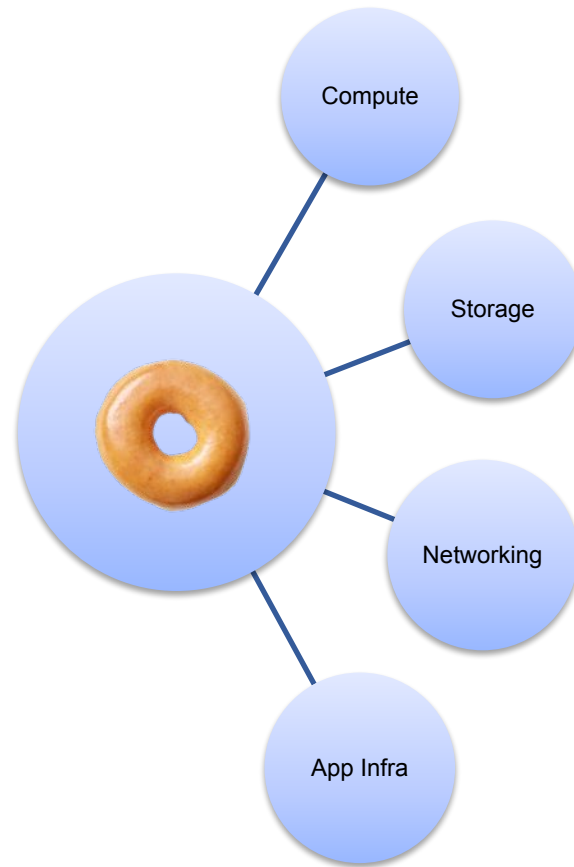
# Action Required



# Eventually You Have to do Something



# Dimensions of an App



# How do you Deploy?

```
#BackUp
cp ~/doughnut ~/doughnut_old
#Make Dir
mkdir ~/doughnut_build && cd ~/doughnut_build
#SCP Files
scp -rp java.zip centos@34.229.24.254:/home/doughnut_build/
#Unzip
unzip java.zip
#Maven Build
mvn install
#Make Dir
mkdir ~/doughnut_artifact && cd ~/doughnut_artifact
#Move
cp ~/doughnut_build/build/latest.jar ~/doughnut_artifact
```

# Pipelines, in Good and in Incident

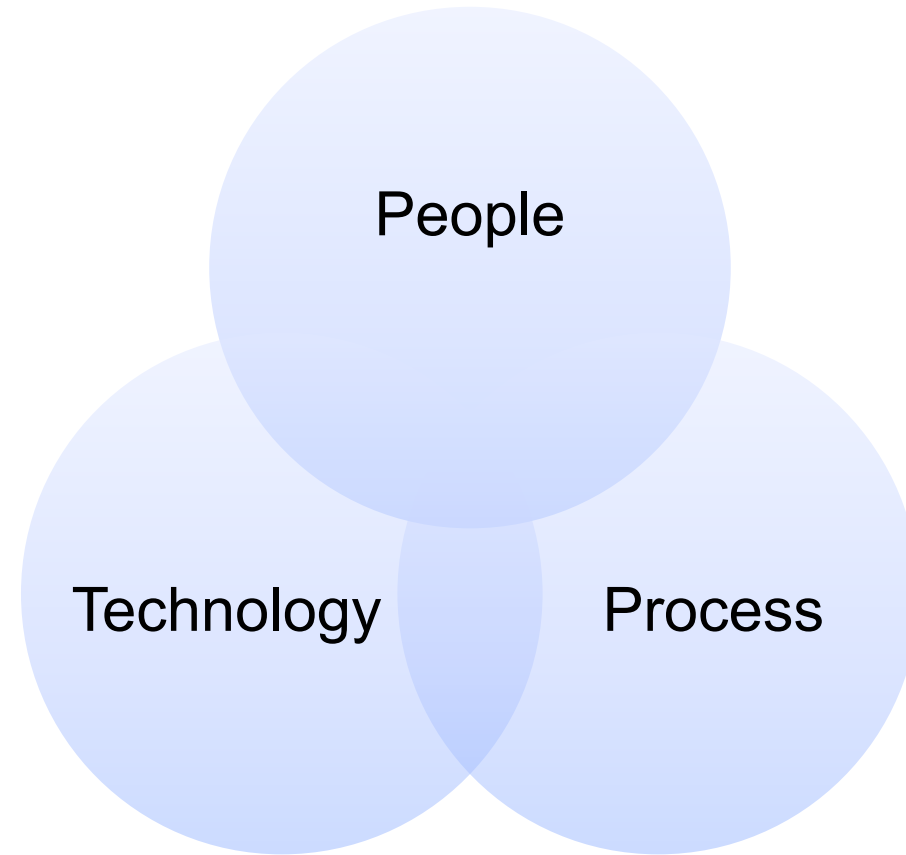


Deploying During an Incident



Deploying New Feature

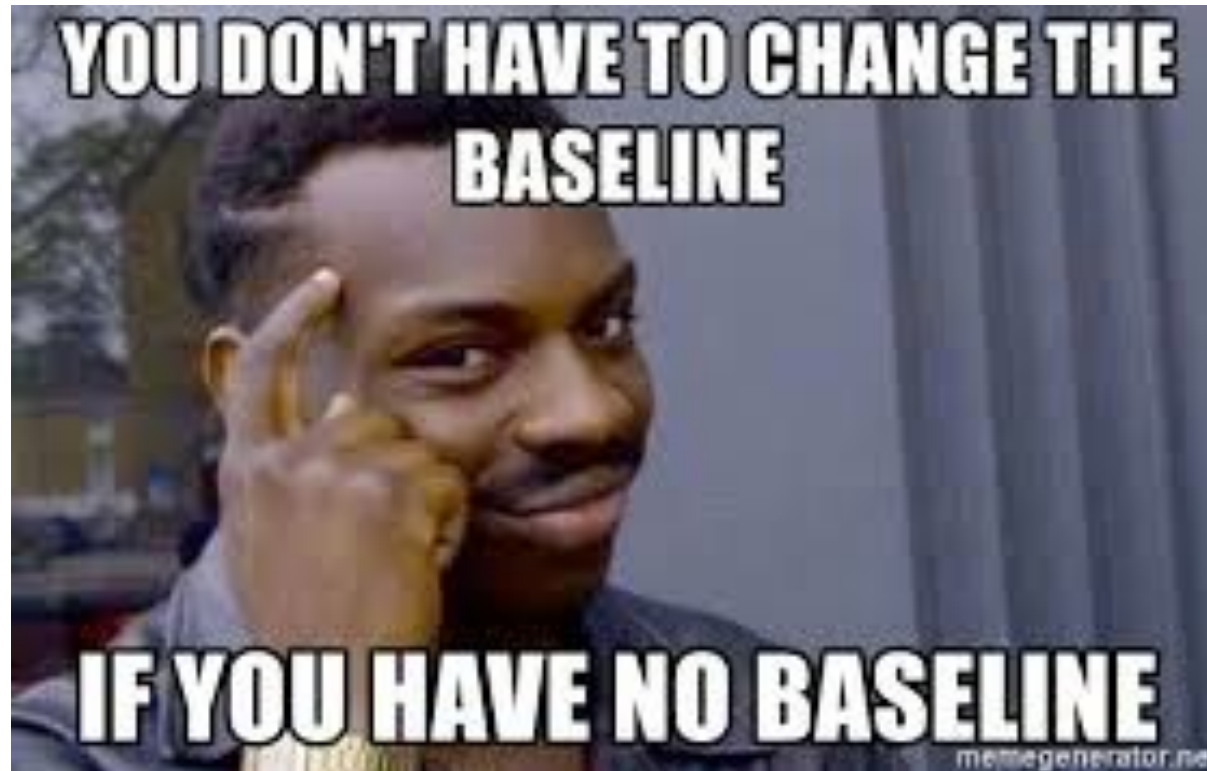
# Confidence is Always Needed



# Being Prepared to Take Action



# What is Normal?





# CI/CD Pipeline

The screenshot displays the Harness CI/CD pipeline interface. The top navigation bar shows the Harness logo and the title "Deployment Details". The breadcrumb trail indicates the current view is "Deployments > CD Pipeline - 03/31/2021 01:18 pm (40 mins ago) - Duration : 8m 11s".

The left sidebar contains a navigation menu with the following items:

- Continuous Deployment (Expanded)
  - Overview
  - Deployments (Selected)
  - Services
  - Serverless Functions
- Continuous Verification
- Continuous Efficiency
- Custom Dashboards
- Security
- Setup
- Notifications (21)
- What's New!

The main content area shows the pipeline execution progress. The top status bar indicates the pipeline is "FAILED" with a "STAGE 5 Deploy to prod" step that has failed. Below this, a summary card provides details for the failed stage:

- Application: Harness Demo Application
- Pipeline: CD Pipeline
- Services: order-service, production, Prod Retail Applicat...
- Environment: Prod GKE
- Workflow: Prod Retail Applicat...
- Tags: CV:TRUE
- Artifacts: harness\_todolist-samp (8 Failed)
- Instances Deployed: 2
- Infrastructure: Prod GKE
- Triggered By: robin.elliott@harness.ir

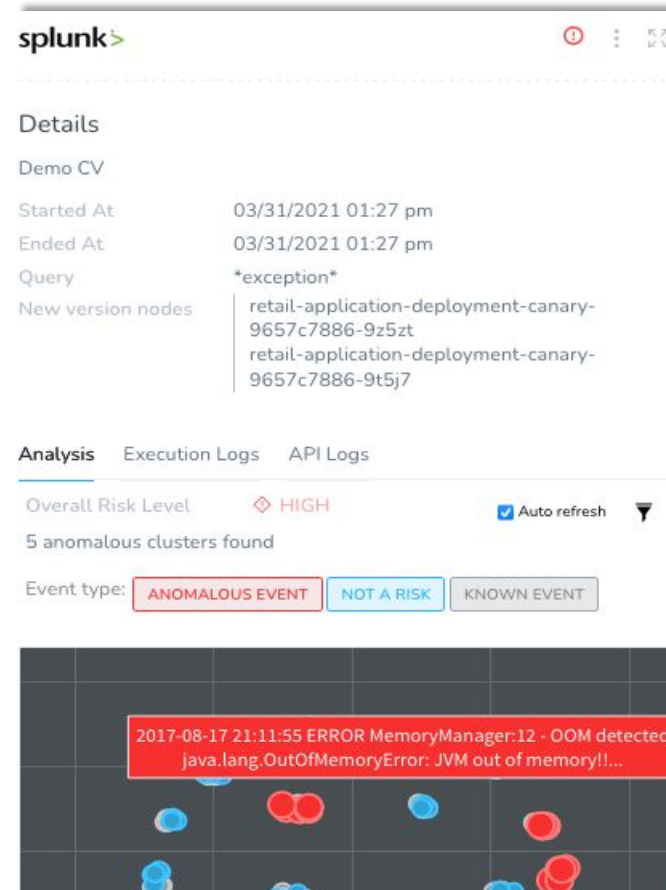
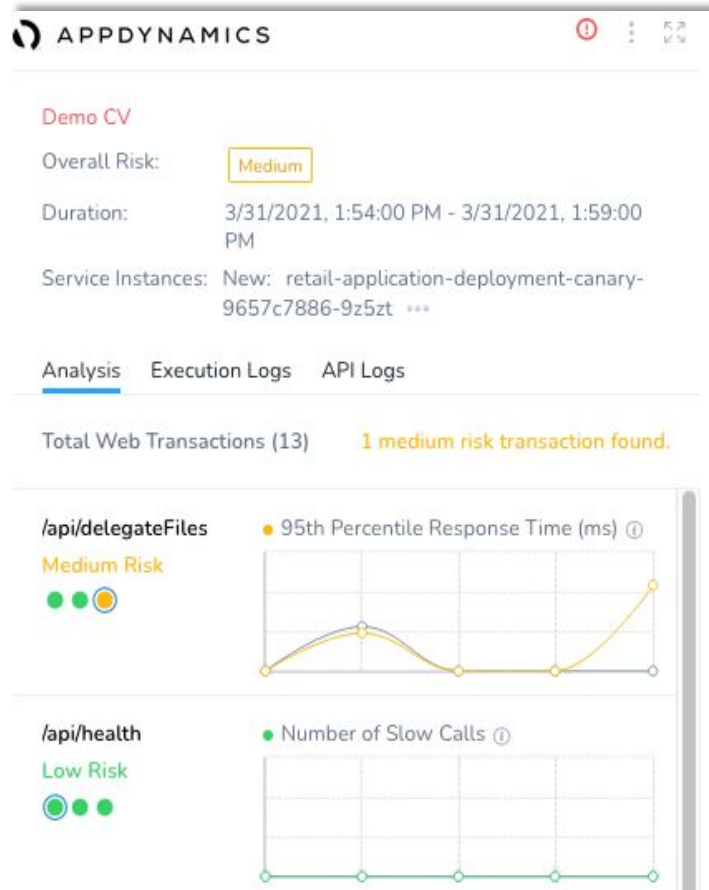
The pipeline diagram shows the following stages:

- Pre-Deployment (Success)
- Canary (Success)
- Rollback Canary (Success)
- Deploy (Success)
- Verify (Failed)
- AppDynamics (Success)

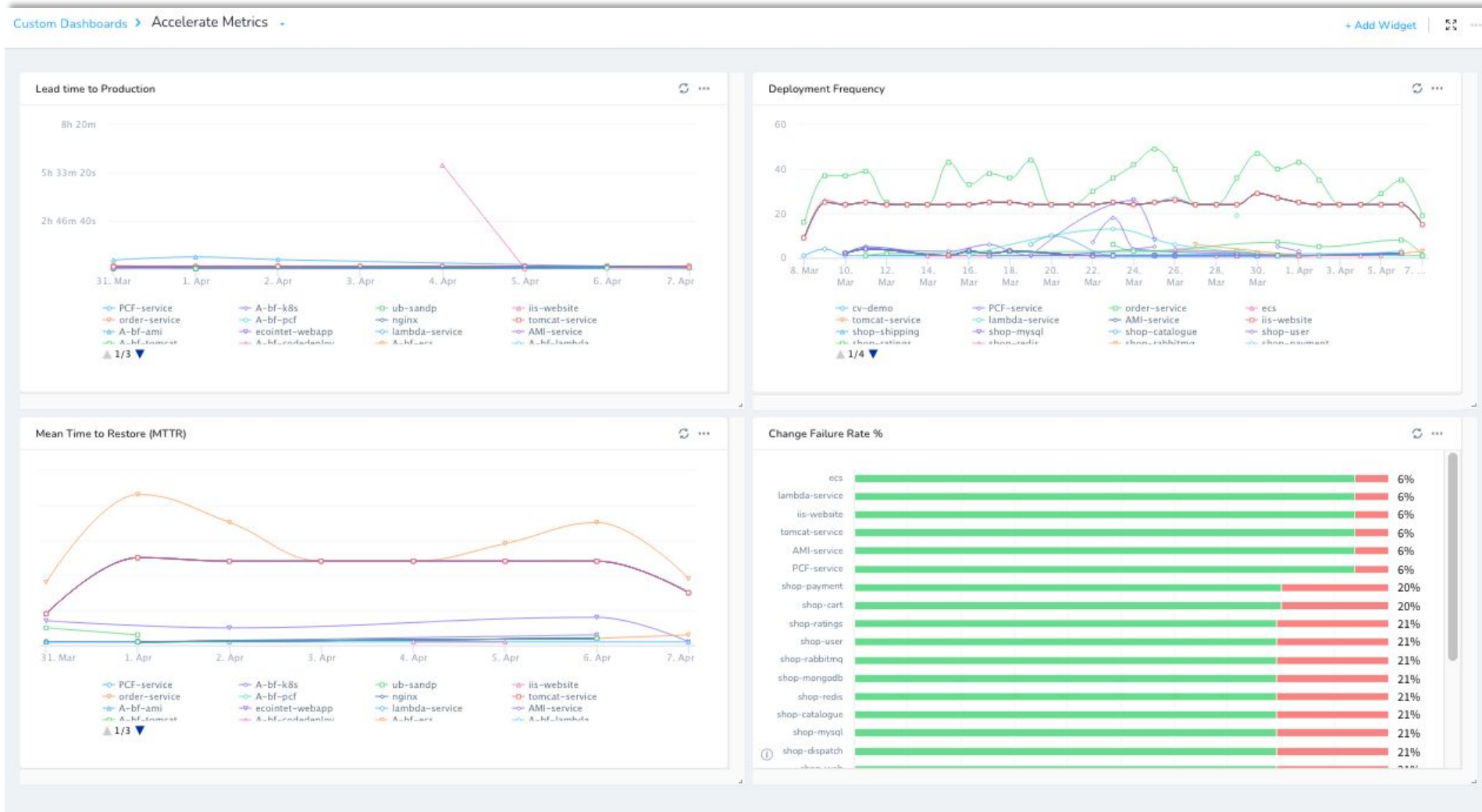
On the right side, there is a Prometheus dashboard for "Demo CV" with the following information:

- Overall Risk: Medium
- Duration: 3/31/2021, 1:54:00 PM - 3/31/2021, 1:59:00 PM
- Service Instances: New: retail-application-deployment-canary-9657c7886-9z5zt ...
- Analysis: Execution Logs, API Logs
- Total Web Transactions (1): 1 medium risk transaction found.
- Checkout: Medium Risk
- Errors: 1

# Auto Baselines



# Measure Goals

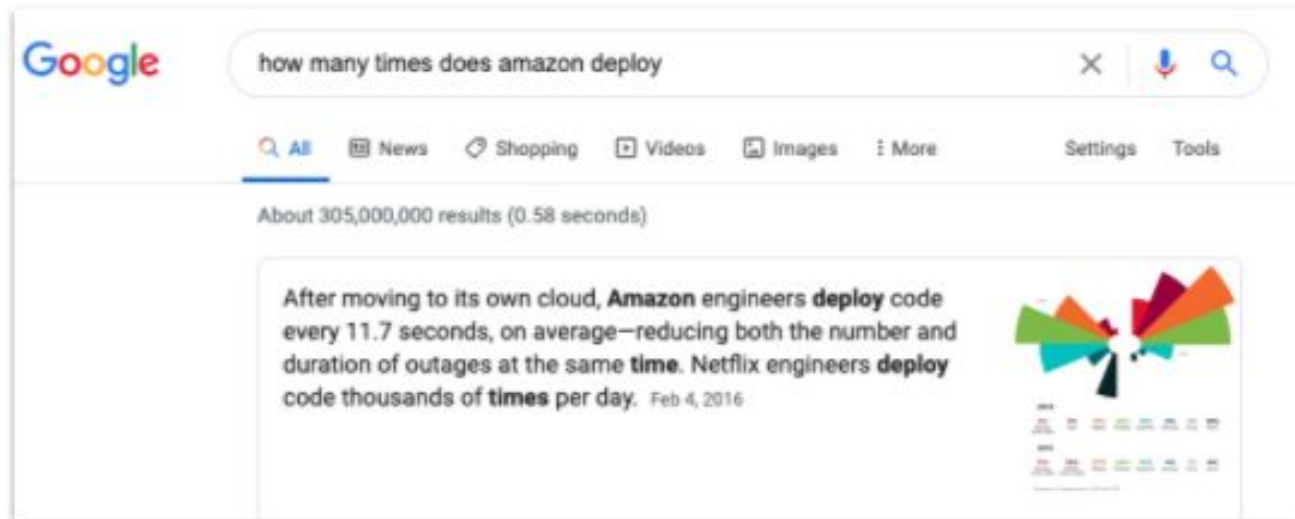
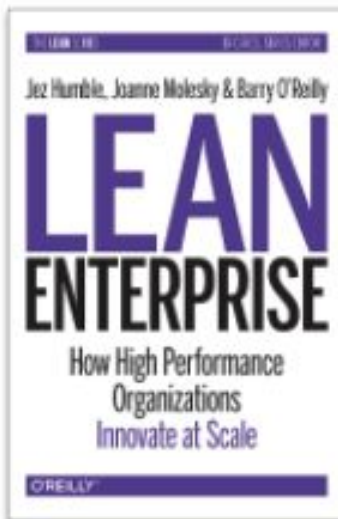


# Hello CDF!



# Continuous Delivery Foundation

## How much should you Deploy?



The image is a screenshot of a Google search page. The search query is 'how many times does amazon deploy'. The search results show 'About 305,000,000 results (0.58 seconds)'. A featured snippet is visible, stating: 'After moving to its own cloud, Amazon engineers **deploy** code every 11.7 seconds, on average—reducing both the number and duration of outages at the same **time**. Netflix engineers **deploy** code thousands of **times** per day. Feb 4, 2016'. To the right of the text is a colorful bar chart with several bars of varying heights and colors (green, orange, red, blue). The Google logo is in the top left corner, and navigation links like 'All', 'News', 'Shopping', 'Videos', 'Images', 'More', 'Settings', and 'Tools' are visible below the search bar.



# Neutral Home for CD Tools and Projects

The image displays a comprehensive grid of logos for Continuous Delivery (CD) tools and projects, organized into several functional categories:

- Pipeline Orchestration:** Includes Jenkins, Spinnaker, Tekton, Screwdriver.cd, agola, memory, circleci, cloudbees, Jenkins, and Drone.
- Configuration Management:** Includes Ansible, Chef, and Puppet.
- Library Management:** Includes FOSSA, Jfrog, and WhiteSource.
- Cloud Native:** Includes CircleCI, Compose, Cycloid, Epsilon, Rancher, and Terraform.
- Continuous Automation:** Includes Selenium, JMeter, and OpenShift.
- Container Registry and Image Build:** Includes Quay, Helm, and Docker.
- Container Security:** Includes Anchore, Snyk, Sysdig, and Clair.
- Analytics & Monitoring:** Includes Grafana, Prometheus, and Sumo Logic.
- Version Control:** Includes GitHub.
- Issue Tracking:** Includes Jira.
- Messaging:** Includes RabbitMQ and Apache Kafka.
- Change and Defect Management:** Includes Jira.
- Protocols and Messaging:** Includes Apache Camel and Apache Camel K.
- CD Foundation Landscape:** A QR code and text describing the landscape as a map to explore the CD community and member organizations.
- Member Organizations:** A section titled "CDF Members" listing Platinum members (Capital One, CircleCI, CloudBees, Fujitsu, Google Cloud, Huawei, IBM Cloud, Jfrog, Netflix, Salesforce) and General members (CircleCI, Compose, Anchore, Memory, Cycloid, Boom, OutSystems, GitLab, Harness, PsMx, Puppet, Rancher, Red Hat, SAP, Snyk, Sumo Logic, Sysdig, WhiteSource).
- End User Supporter:** Includes Automa, eBay, and JFrog.

Learn More!



<http://bit.ly/learn-more-from-harness>



@ravilach

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