

Howdy Partner

CI, CD, and Avoiding Leaky Pipes

August 5th 2020

Agenda:

1. Architecture Walk
2. Deploy the Pipeline
3. Use Case Breakdown
4. SAM Features
5. Evolving the Database Schema

About Your Host

Trek10 Lead Architect

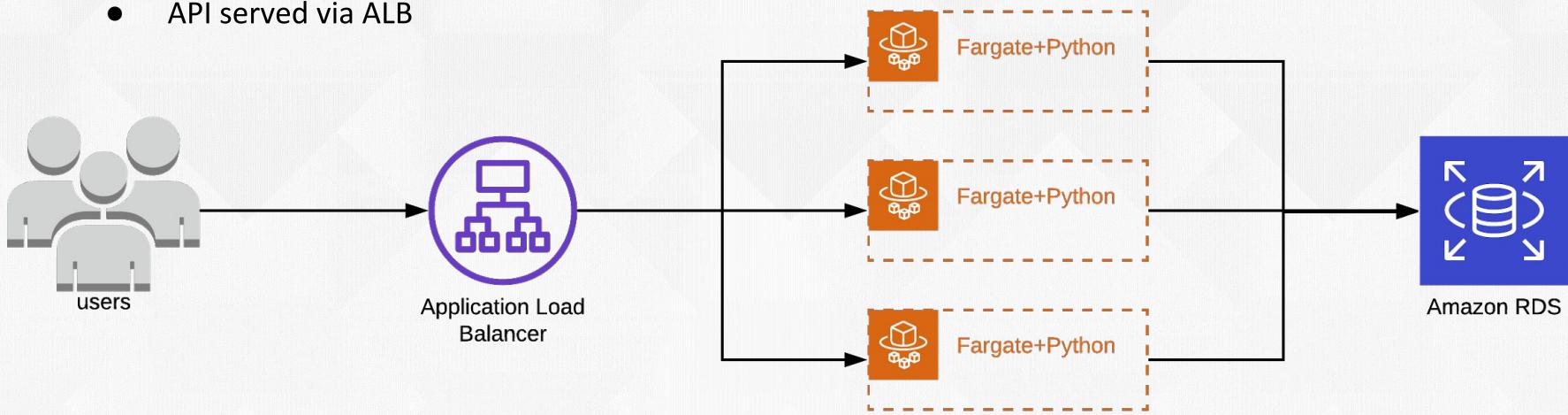
- A Cloud Guru instructor for Lambda, AppSync, and serverless topics
- AWS SA Pro
- Open Source
 - Ansible
 - Serverless Framework



Today's Application

We have a container-based application* that we need to deploy safely

- ECS for container orchestration
- Fargate to do the compute work
- Data stored in RDS
- API served via ALB



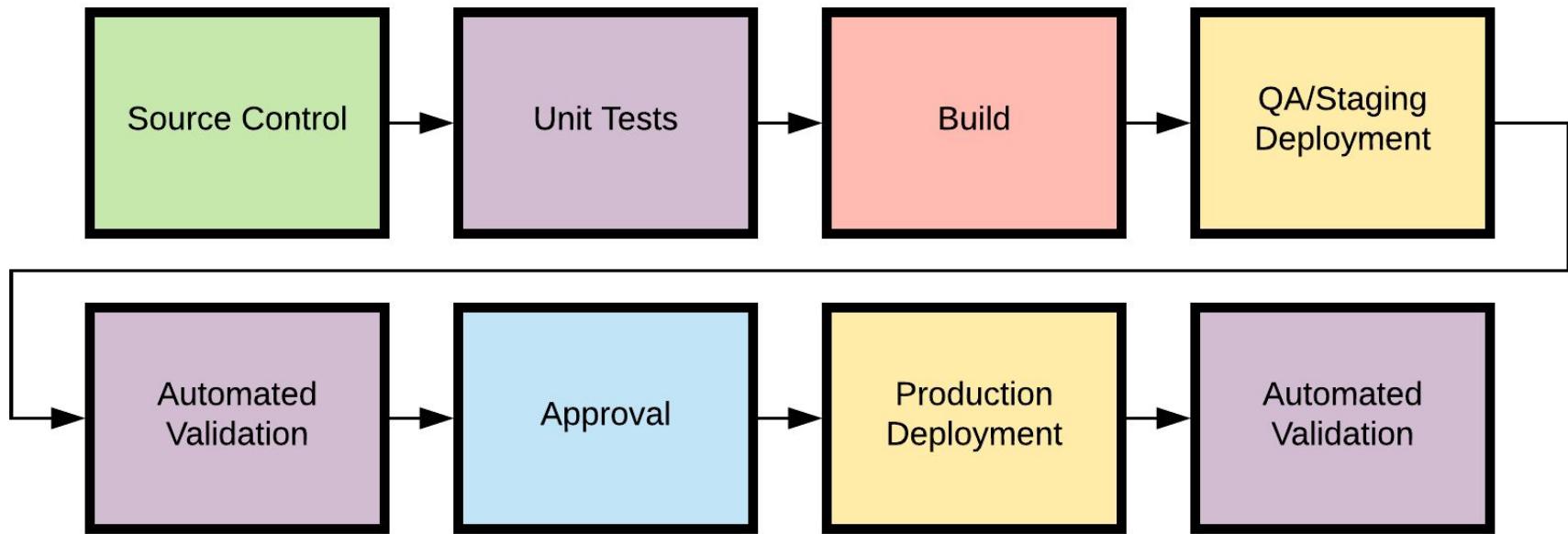
* would I rather it be serverless? Of course!

Idea-to-Production Pipelines

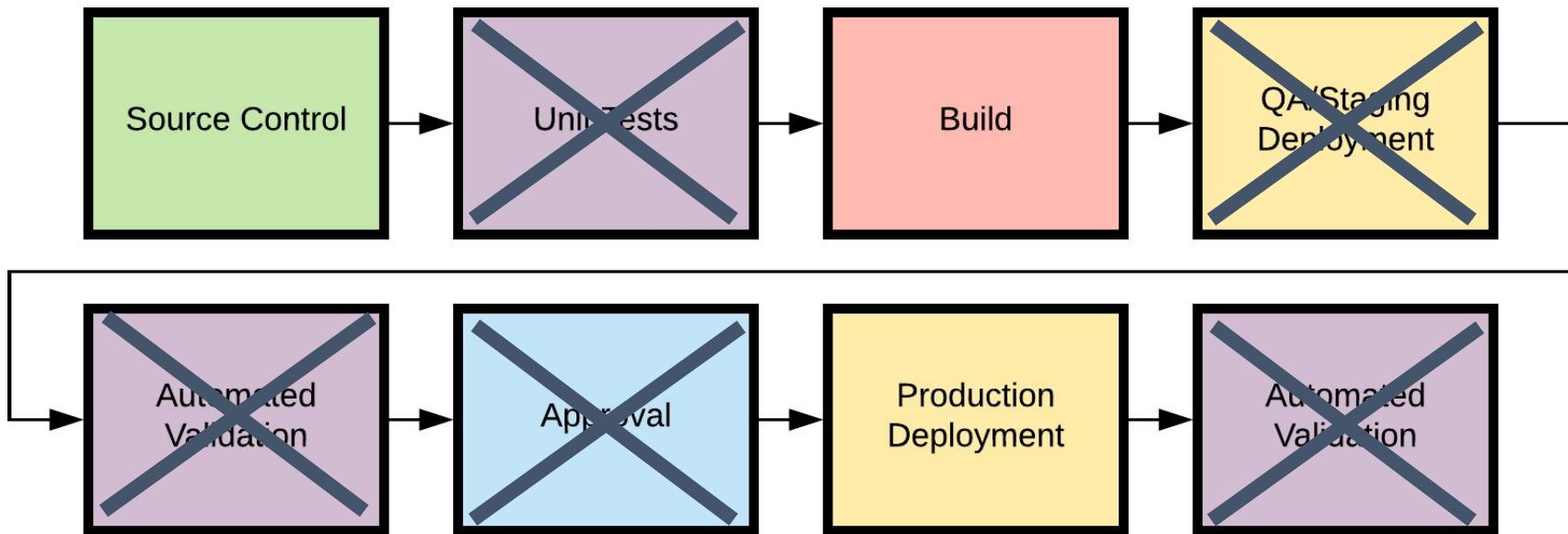
From the start, you need a way to get
ideas → code → environments

- CodePipeline
 - Workflows and organization
- CodeBuild
 - Build steps, scripts, and artifact creation
- SAM
 - Deployment, developer ergonomics, and pre-built constructs

The Continuous Integration Dream



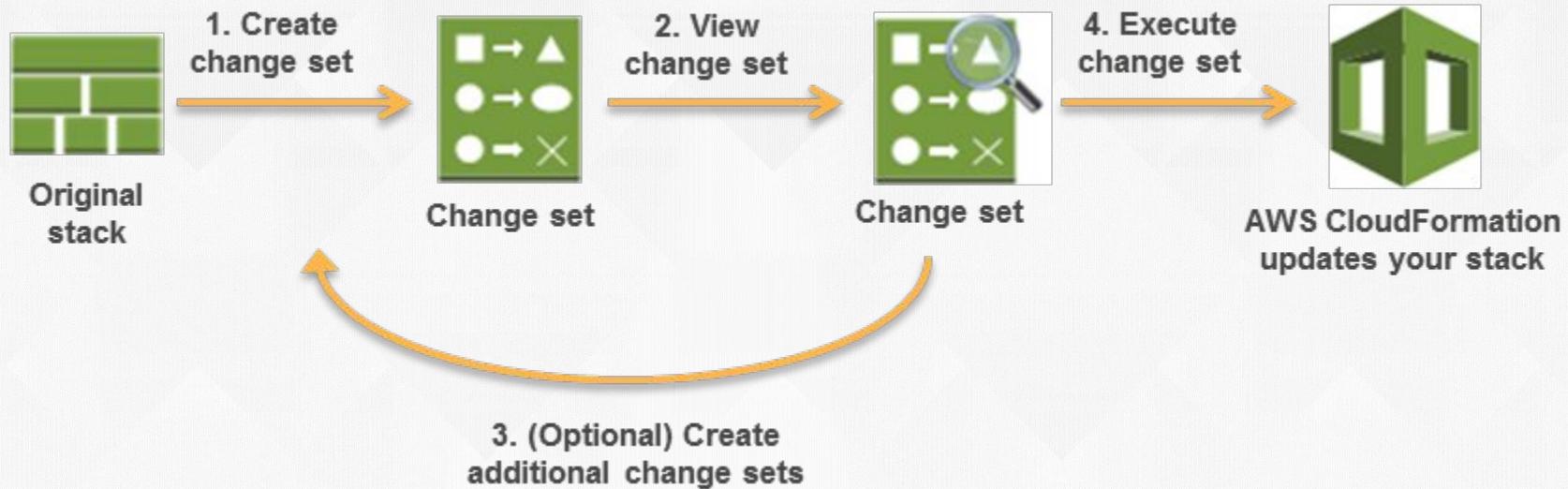
The Continuous Integration Demo



Demo Time

CFN ChangeSets

- Ask CloudFormation for a specific plan before making any changes
- Direct CodePipeline integration (see service_pipeline)



SAM Package vs.

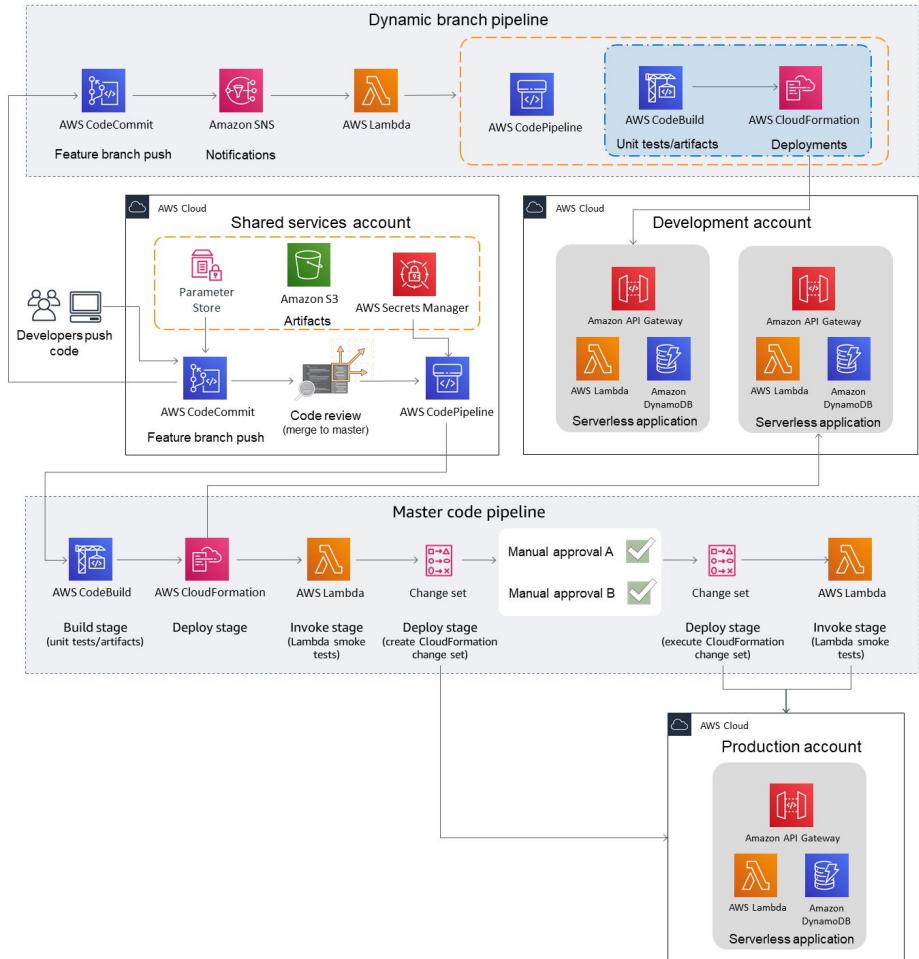
1. Validate template
2. Local transforms
3. Upload code / templates
4. No pretty colors

SAM Deploy

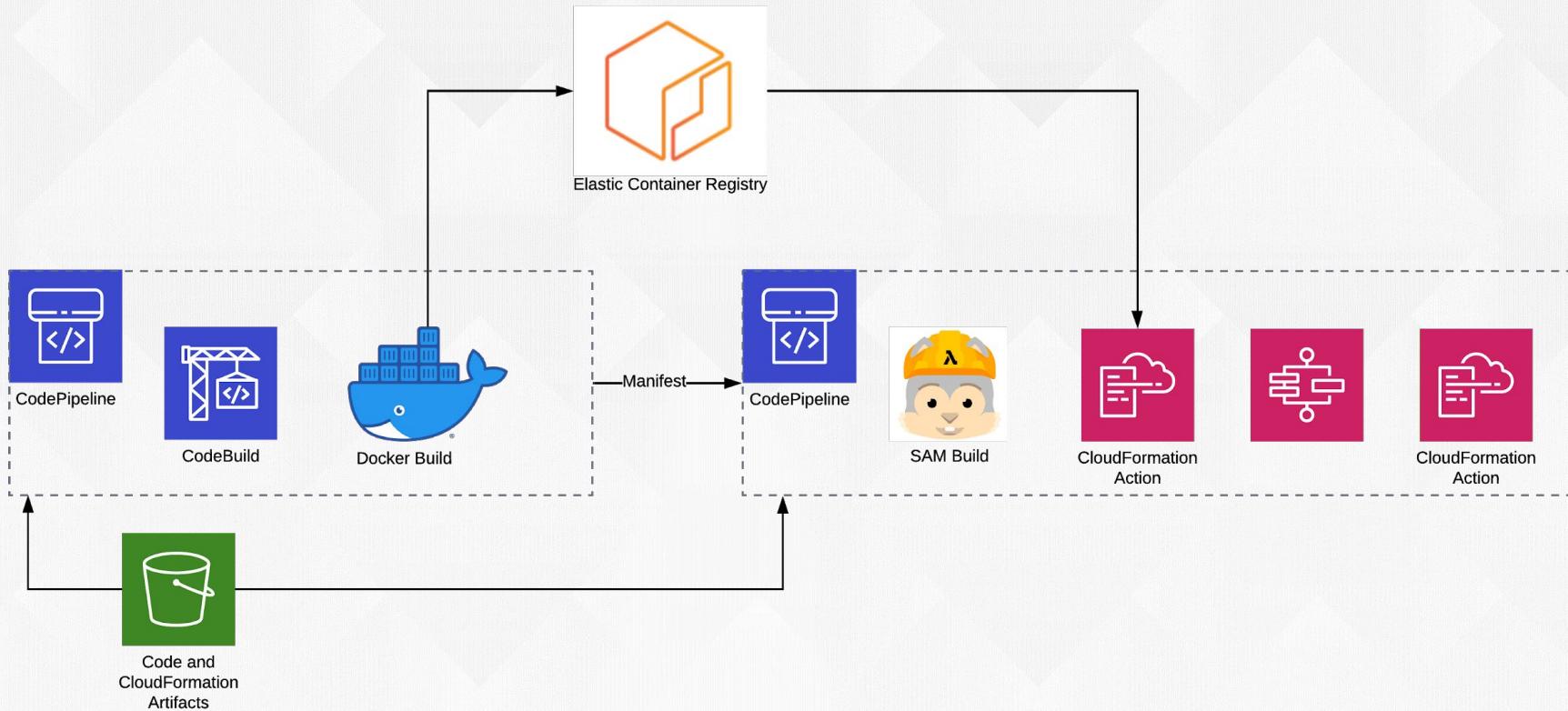
1. Optionally auto-package
2. Read samconfig.toml
3. Create changeset
4. Approval gate (optional)
5. Execute changeset
6. Fancy log viewer

Multi-Account

- Limits blast radius to individual stages
- Enforces stronger security boundaries
- Splits infrastructure and code responsibilities



The Pipeline



CloudFormation SubStacks

- Improved reusability
- Separate concepts live in separate templates
- SAM automatically packages and uploads,
avoiding custom scripting work

Handy Transforms

SAM isn't just about Lambdas

- Step Functions
- DynamoDB

Type: AWS::Serverless::SimpleTable

Properties:

PrimaryKey: PrimaryKeyObject

ProvisionedThroughput: ProvisionedThroughput

SSESpecification: SSESpecification

TableName: String

Tags: Map

IAM Policy Templates

Quick, easy IAM policies for common serverless use cases

Policy Template Documentation

Why Step Functions?



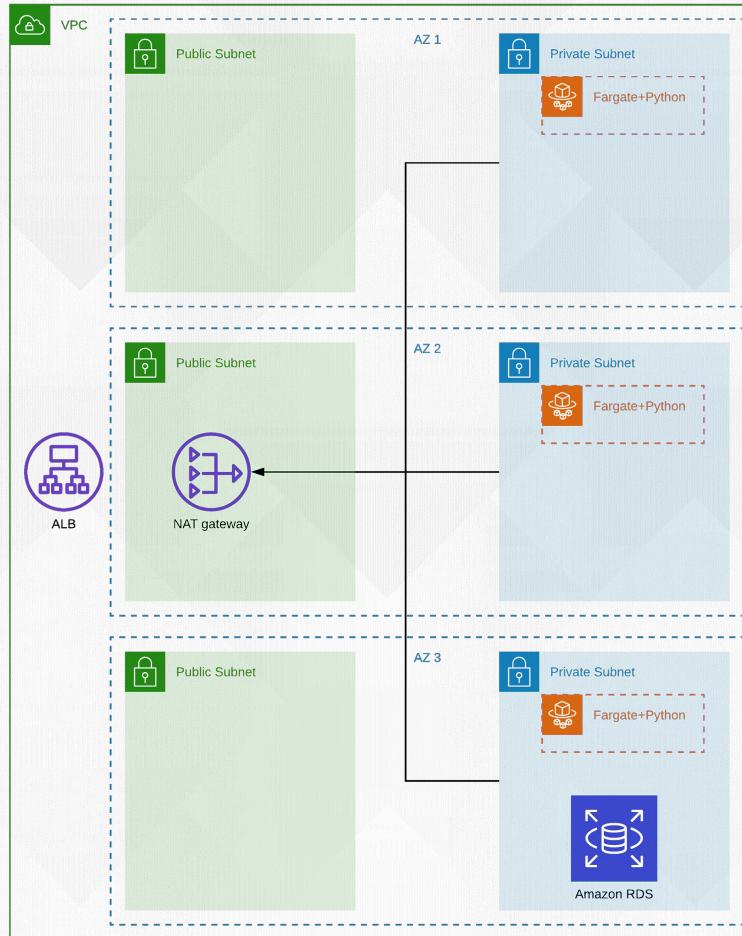
Shoutout: Builder's Library

<https://aws.amazon.com/builders-library/going-faster-with-continuous-delivery/>

<https://aws.amazon.com/builders-library/automating-safe-hands-off-deployments/>

Demo Time

The Network



Resources and Links

- <https://github.com/ryansb/hat-market-demo>
- <https://github.com/aws-quickstart/quickstart-trek10-serverless-enterprise-cicd>
- <https://www.trek10.com/blog/pragmatic-enterprise-cicd>
- <https://aws.amazon.com/builders-library/going-faster-with-continuous-delivery/>

Questions