# CI / CD with Bamboo

Why use CI/CD?

CI/CD pipelines - triggers, multiple builds, multiple environments

Bamboo Components: Projects, Build Plans, Stages, Jobs, Tasks

Bamboo Specs

Bamboo alternatives: Jenkins, Circle CI, Travis CI, Github Actions

# Docker

What are containers?

How does Docker isolate containers?

Images vs. Containers

Getting Existing Images (DockerHub)

Running Containers from Images

Building Custom Images

Dockerfile structure

FROM

RUN

COPY

ENV

EXPOSE

CMD / ENTRYPOINT

Tags / Layers

Containerizing Existing Apps / 12 Factor Apps

Microservices

Docker Volumes - creating and using

Docker Compose - declaring container setup / dependencies

Container Orchestrators

* Cluster Concepts
* Swarm vs. Kubernetes

# Kubernetes

RESTful API

Client tool - kubectl

What Kubernetes manages

Declare object state, apply

Kubernetes Objects

* YAML file structure
* Pods
* Deployments
* Service - Labels and Selectors
* Deployment Scenarios / Strategies
* Volumes, Secrets, ConfigMaps
* Advanced Objects

# 

# AWS

Cloud-based Platforms

IaaS vs. PaaS vs. FaaS vs. SaaS

Regions and Availability Zones

Interacting - Web Console vs. AWS CLI vs. SDKs

Access: IAM - Identity Management, Policies - Permissions

Execute: EC2, Elastic Beanstalk, Lambda

Containers: ECR, ECS, EKS

Network: VPC, Security Group

File Storage: EBS, EFS, S3

Data: RDS, SimpleDB, DynamoDB, Aurora

Component Communication: SNS, SQS

Support Services: API Gateway, CloudWatch

AWS Infrastructure as Code: CloudFormation Templates