Continuous Deployment Pipeline

OpsWorks Environment

- Tear down Docker container with old version of application, if exists
- Deploy Docker Container from newly pulled Image
- Verify environment deployment using Assertion checking (Mini-test)
- Which Jenkins Job triggered the deployment?
- Periodic Build → Run all Tests
- Commit Build → Run Commit Test Suite (time constrained tests)
- Pull Docker Image from Registry, compute image checksum
- Get expected Image checksum from database
- Verify downloaded Image integrity by comparing checksums
- Deploy to Production
- Application in Docker container in Production stack start serving requests

Deployer

- Invoke Chef run to deploy and execute Application Tests from built Docker Image in OpsWorks Testing Environment
- Invoke Chef run to deploy latest Docker Image from Periodic Build to OpsWorks Production Environment

Configuration Management

- Application Source code
- Encrypted credentials (database, AWS)
- Dockerfile
- Docker Image Registry
- Image Checksum database
- Log bucket

Jenkins Build Server

- Required credentials for application (database access, etc.)
- Decrypt Credentials needed for Application
- Build Docker Image
- Pull source code, run unit tests, build Application executable
- Application artifacts (.jar, .war)
- Verify that Docker Image built correctly (using docker-spec)
- Compute Docker Image checksum, store in Database
- Push Image to Docker Image Registry
- Log test results
- Notify developer of commit test results, set commit build status on GitHub
- Log test results
- All tests passed?
- No → Latest Periodic build failed
- Yes → Notify Production Deployment job to deploy tested Image to Production
- Deploy to Production the Docker Image of latest successful Periodic Build
- Log Deployment results
- Periodic Build Trigger
- Application code commit pushed to GitHub
- Commit build finished
- Latest Periodic build ready for deployment
- Notified by previously successful Periodic build
- New version of Application successfully deployed to Production