DevOps Working Group

Thursday November 21, 2019
## Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Owner</th>
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<tbody>
<tr>
<td>15 Min</td>
<td>DevOps Updates</td>
<td>Emilio</td>
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<tr>
<td>5 Min</td>
<td>Backlog Review (Kanban Board / Issues)</td>
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<tr>
<td>20 Min</td>
<td>Fuji Retrospective</td>
<td>All</td>
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Attendees
DevOps WG Update

- **Geneva**
- Recap of the Jenkins Transformation to Pipelines Training - Thank you Ernesto!
- Fuji Release finalized by Lisa / EdgeX Foundry Release Czar - Thank you Lisa!
  - Status of push of public Docker Hub images
  - Clair scan post Fuji completed (against images in nexus staging)
    - https://jenkins.edgexfoundry.org/sandbox/view/All/job/fuji-clair-audit-scan/lastSuccessfulBuild/artifact/clair-reports/
- Configure Snyk with the latest tagged public Docker Hub images WIP (James)
- CommunityBridge - Advanced Snyk Reporting
  - New Contact from LF identified with James to follow up
DevOps WG Update

• Nexus Upgrade to address build issues and new GOPROXY cache functionality to address Go Module dependency caching
  • Based off this documentation, we would like to setup a new Go repository for Go modules: https://help.sonatype.com/repomanager3/formats/go-repositories
  • We hope this addresses ARM build failures

• PR Templates for ci-management
  • Example: https://github.com/edgexfoundry/sample-service/blob/master/.github/pull_request_template.md
  
  # Type of change? <!-- [x] all the boxes that apply -->
  - [ ] Bug fix
  - [ ] New feature
  - [ ] Enhancement
  - [ ] Breaking change (breaks backward compatibility)

  # Description, Context, Motivation <!-- Please help us reviewing your PR -->

  ...

  **Checklist:**
  - [ ] The code follows the code style and conventions of this project
  - [ ] The change requires a change to the documentation
  - [ ] I have updated the documentation accordingly
DevOps WG Update

• Git commit message enforcement.
  • Coming out of the EdgeX Geneva F2F, DevOps agreed to take on a SPIKE to look at tooling / automation that would be helpful for the project in terms of Commit Messages (enforce standard format that aligns to conventional commit standard or agreed upon format as per EdgeX written guidance)
  • 3 examples:
    • [https://itnext.io/enforcing-commit-templates-8cf3dbfe2510](https://itnext.io/enforcing-commit-templates-8cf3dbfe2510)
      • Example of pre-commit bash scripts.
      • Examples of client-side and server-side ruby scripts
    • [https://dev.to/prahladyeri/how-to-enforce-conventional-commit-messages-using-git-hooks-2bmk](https://dev.to/prahladyeri/how-to-enforce-conventional-commit-messages-using-git-hooks-2bmk)
      • Pre-commit custom python script placed in the .git/hooks directory and committed to the repo
Fuji Retrospective

https://github.com/orgs/edgexfoundry/projects/33
Meeting Minutes

Jim - DevOps triage to root cause ARM build failures occurring in blackbox-testing. The Test QA/Security team to provide DevOps team with a repeatable process to reproduce the errors. We decided to put DevOps troubleshooting task (owned by Vishwas) on hold until they provide us with the process.

Eric – Add GOPROXY environment variable, set value to the Nexus3 repo. Eric has been testing this successfully. Essentially, what needs to be done is to add the environment variable into the respective Go jobs. Eric will submit PR to ci-management.

GOPROXY=https://nexus3.edgexfoundry.org/repository/go-proxy/

Mike – PR Template topic is a current agenda item in the Architecture WG. Mike is working with James to formalize the core set of template items across all services (repos). Discussion item is on Architecture WG sometime in December (per Jim). AR – to send Jim reminder to include ‘Git commit message enforcement’ as part of the ‘PR Template’ agenda item in the Architecture WG.
Geneva Planning
Scope Discussions
Geneva – DevOps

In
- Full Pipeline transformation for EdgeX services
  - Convert Jenkins JJB Freestyle jobs to Jenkins Pipelines
- Introduce GitHub Org Plugin
- Simplified Jenkinsfile
- Global Libraries to support Jenkins Pipeline transformation
- Add Unit testing to global-libraries (uncommitted) **
- Snyk integration for edgex services
  - As part of Jenkins Pipeline conversion
- Slack integration with Jenkins pipelines (stretch goal)
- Nexus Cleanup / Lifecycle Policy

Out
- Alternate deployment/orchestration
  - Beyond Docker/Spans
  - Kubernetes
  - Kata Containers
  - ...
- Integration Test Pipelines
- Code signing / Artifact signing **
Geneva Transformation: Architecture
How long does it take? Is this all Geneva scope?

Geneva Transformation

- **Phase 1**
  - Research Spikes
  - Plugin Setup and Configuration
    - Jenkinsfile
    - Jenkinsfile.sandbox

- **Phase 2**
  - Jenkinsfile templates
  - Implementation details get solidified
  - Refactor existing pipelines to use new templates

- **Phase 3**
  - Existing Job Migration

Full Transformation by Geneva Release - April 2020

Phase 1
Work in Progress
Q3 2019
Fuji Planning

Scope Discussions
Fuji Release

- Freeze: Oct 23rd (Wednesday)
- Release: Nov 15th (Friday)

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<th>Start Date: 10/23/19 (with extension)</th>
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- **Developers**
  - Cut Fuji Branches
  - Update Documentation, Compose Files and Bug Fixes
  - EdgeX F2F in Phoenix
- **WG Chairs**
  - GitHub Issues: Close / Mark for Geneva
- **DevOps**
  - Create Fuji Jobs For Existing Repos
  - Clone Scan of EdgeX Images
- **Release Tsar**
  - Open Tickets with LF for release on 11/15/19
  - Finalize Release Notes
Fuji – DevOps

In
- Static code analysis tool identified and integrated into the EdgeX Jenkins Pipeline for Docker image scanning (Clair Server)
- Explore SAST for true static code analysis to include additional tooling such as Fortify / Coverity
- Code and artifact signing with semantic versioning
- Fix Documentation – edgex-go
  - Create a new repo for edgex-docs
- Build Performance Optimizations
  - Pipelines for EdgeX Foundry base build images
  - Basebuild images managed locally within Nexus
  - Leverage PyPi Proxy for local pip dependencies
  - ARM builds – optimization leveraging different high CPU build nodes / OS (ARM Team)

Out
- Alternate deployment/orchestration
  - Beyond Docker/Snaps
  - Kubernetes
  - Kata Containers
  - ...
- SonarQube – SonarCloud is already in play in the LF
  - Decision: wait to see what codecov.io offers
- Suggestion to rename all of the Jenkins “arm” jobs so as to differentiate 32bit / 64bit architectures
- Full Pipeline transformation for EdgeX services
EdgeX DevOps Commitments (Fuji)

Scope of Work

| Add static artifact analysis into the EdgeX Jenkins Pipeline (analysis of Docker /runtime artifacts, not the source code) |  
| Add code and artifact signing with semantic versioning |  
| Conduct build performance optimizations by:  
  - Adding Pipelines for EdgeX Foundry base build images  
  - Allow base build images to be managed locally within Nexus  
  - Leverage PyPi Proxy for local pip dependencies |  
| Explore static code analysis like Checkmarx, Coverity, GuardRails, Synk, SonarQube |  

- Clair Server landing no longer at risk for Fuji  
  - LF committed to implement on AWS and fund with expected completion next week  
- gitsemver along with lftools used for artifact signing and semantic versioning  
- Jenkins build performance optimizations for base build images completed  
- All base build images will now be stored in Nexus (Snapshot):10003  
- PyPi enabled as part of Edinburgh scope  
- Initial review of GuardRails showed that the product was identifying issues which were not applicable for microservices architecture
## Past / Future Agenda Topics

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