DevOps Working Group

Thursday April 11, 2019
## Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 min</td>
<td>Work Review (GitHub Project)</td>
<td>James Gregg</td>
</tr>
<tr>
<td>2 min</td>
<td>Backlog Review</td>
<td>James Gregg</td>
</tr>
<tr>
<td>10 min</td>
<td>Aqua: Microscanner - Image Vulnerability Scanner</td>
<td>James Gregg</td>
</tr>
<tr>
<td>10 min</td>
<td>Performance Testing / PR #9</td>
<td>Andy Foster / Cloud Tsai</td>
</tr>
<tr>
<td>10 min</td>
<td>Fuji Planning Discussion</td>
<td>James Gregg / Jim White</td>
</tr>
<tr>
<td>10 min</td>
<td>Opens</td>
<td>All</td>
</tr>
</tbody>
</table>

**Attendees:**

*Attendees:* [edgexfoundry.org](http://edgexfoundry.org) | [@edgexfoundry](https://twitter.com/edgexfoundry)
Attendees
## Work Review

<table>
<thead>
<tr>
<th>Helpdesk Ticket #</th>
<th>Description</th>
<th>Details</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>69830</td>
<td>codecov.io config needed for edgex-go repo</td>
<td>On Hold - See 69422</td>
<td>WIP</td>
</tr>
<tr>
<td>68377</td>
<td>failed job related to timeout waiting for SSH</td>
<td>Eric Ball follow up with the team that owns VEXHOST – no progress Issue is with building new arm images – doesn’t affect edgex builds decision to leave it open for now. Circle back with VEXHOST team</td>
<td>WIP</td>
</tr>
<tr>
<td>70612</td>
<td>EdgeX ARM Builds</td>
<td>EdgeX Jenkins builds for ARM take twice as long if not more than x_86</td>
<td>WIP</td>
</tr>
</tbody>
</table>
| 69422             | need to extend sigul to include additional functionality | Eric Ball plans to include in current sprint with expected completion in time for Edinburgh release.  

*This work is prioritized over codecov.io integration.*  

– next release Thursday (today) to include the sigul enhancements  
Dockerized image with sigul | WIP    |

Note: Needed in order to test full Jenkins Pipeline for release automation user story
<table>
<thead>
<tr>
<th>Helpdesk Ticket #</th>
<th>Description</th>
<th>Details</th>
<th>Status</th>
</tr>
</thead>
</table>
| 69600             | jenkins docs job fails for `/edgex-go-docs-delhi-stage-docs lftools: command not found` | Broken Builds for Delhi Documentation – as reported by Michael Hall – ISSUE identified with lftools – Still seeing issues as of 3/20/19  
Decision: Root Cause Analysis – plan to have this fixed with release for next Thursday  
Help Needed – Works in Sandbox but not production - needs an extra set of eyes to look at this issue.  
Eric needs some help from LF team.  
Needs to check init scripts – didn’t fix it.  
Latest error: 401 errors from lftools upload to nexus | WIP |
Backlog Review
SPIKE: Aqua Microscanner

- OSS uses NVD database of CVEs
  https://github.com/aquasec/microscanner
- Jenkins Plugin
- Free / Limited use - 20 scans per token per day
- Wrapper can be used to scan existing images
  https://github.com/lukebond/microscanner-wrapper
- Fails the build of the image if it finds any Critical CVEs in the image
Next Steps

• Continue the SPIKE with look at Clair / Klar
• Cost Analysis
• Scope the Work involved to implement in the CodePipeline

• Ian will share the process – post to DevOps Slack
## Performance Testing

### Pipeline performance-testing-master

#### Stage View

<table>
<thead>
<tr>
<th>Stage</th>
<th>Start EdgeX Client</th>
<th>EdgeX Host 1</th>
<th>EdgeX Host 2</th>
<th>EdgeX Host 3</th>
<th>before test</th>
<th>Start Test - JMeter</th>
<th>Shutdown container</th>
<th>Clean edgeX Host 1</th>
<th>Clean edgeX Host 2</th>
<th>Clean edgeX Host 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>121ms</td>
<td>2min 3s</td>
<td>1min 46s</td>
<td>74ms</td>
<td>63ms</td>
<td>97ms</td>
<td>193ms</td>
<td>205ms</td>
<td>170ms</td>
</tr>
</tbody>
</table>

Average stage times:

- Apr 10 01:41
  - 82ms
  - 2min 24s (failed)
  - 50ms (failed)
  - 97ms (failed)
  - 135ms (failed)
- Apr 10 01:30
  - 123ms
  - 2min 30s (failed)
  - 101ms (failed)
  - 112ms (failed)
- Apr 10 01:25
  - 97ms
  - 1min 44s (failed)
  - 61ms (failed)
  - 173ms (failed)
- Apr 10 01:23
  - 111ms
  - 1min 39s (failed)
  - 54ms (failed)
  - 142ms (failed)

No Changes

edgxfoundry.org | @edgxfoundry
Meeting Minutes

• Jim coordinated with ARM team and James shared build node details. ARM builds taking twice as long as non-ARM.

• Trevor recommended we ask a guest speaker to present to us what NVIDIA is doing with regards to some of the additional security validation processes they use which take advantage of some OSS tooling. Guest speaker will join DevOps WG on 4/18/19.

• Continue SPIKE on Image Scanning tools – Clair / Klar

• Performance Testing – Sandbox job implemented by IoTech team using Jenkins Pipeline – Good Job!

• Andy / QA-Testing WG will have additional scope of work for Fuji which will require DevOps help. New testing framework adoption should comprehend end to end architecture and logistics to fully implement device testing.
Fuji Planning

Scope Discussions
Proposed Fuji – Test/QA/Documentation

**In**

- More unit tests everywhere (better coverage)
- More black box tests
- Automated system level latency and throughout testing (e.g. device read to export or device read to analytics to device actuation)
- Automated Device Service testing (functional and performance for each Device Service e.g. Modbus DS)
- Propose additions???
- Performance testing

**Out**

- Configuration testing
  - Existing testing uses a single static configuration
  - Need to identify and add additional testing configurations to automated blackbox testing
- Tracing
  - During testing, configuration
  - Candidate tools/technology based on OpenTracing standard: Zipkin, Jaeger
- Propose additions???
Proposed Fuji Planning – DevOps

In

• Static code analysis
• Code and artifact signing (covered in Edinburgh with sigul enhancements)
• Go Code formatting check – REMOVE (Worked into the developer flow)
• Propose additions???
• Pipeline transformation for EdgeX services - prioritize what gets worked in Fuji since it will be a smaller release
• - basebuild docker images published to Docker Hub or Nexus ??
• SonarQube – SonarCloud is already in play in the LF
• Additional Performance Testing
• Fix Documentation
• Technical Debt
  • Address proxy server timeouts / authentication issues
  • Basebuild docker images local to Jenkins
• Performance Issues (network timeouts) arm vs. non-arm builds (Verify jobs take a long time to start)
• Suggestion to rename all of the Jenkins “arm” jobs so as to differentiate 32bit / 64bit architectures.

Out

• Alternate deployment/orchestration
  • Beyond Docker/Snaps
  • Kubernetes
  • Kata Containers
  • ...
• Propose additions???
Backlog Review

• What else do we need to consider?
  • Backlog review
    • [https://wiki.edgexfoundry.org/display/FA/Backlog](https://wiki.edgexfoundry.org/display/FA/Backlog)
  • Edinburgh Roadmap review (what did we not get done)

• New additions/opens
  • Jenkins Pipelines will require basebuild Docker images
  • Proxy Server Issues (Timeouts observed WW15 pulling from Docker Hub)
  • Real performance testing will require dedicated physical hardware set up on a lab so that the EdgeX stack (microservices) are orchestrated to the different appliances
    • Need physical hardware and physical location for real testing
Edinburgh Dates

- Freeze Date – May 28
- Release Date – June 20
## Future Agenda Topics

| WW14 | Documentation migration – edgex-go user documentation |
| WW14 | Topics for Fuji F2F  
Jenkins Pipelines for EdgeX services |
| WW15 | Review Aqua Microscanner – Image scanning tool for Vulnerabilities |
| WW16 | NVIDIA – Security tooling within CodePipeline (Trevor request) 4/18/19 |
| WW18 | Athens Project – proxy server for go package dependencies |
|       | Community Involvement |
EdgeX DevOps Discussion
Future Roadmapping

Beyond Fuji
Future Roadmaps

• What moves to Geneva
  • What’s the major theme(s) for spring release
• Do we have plans for Hanoi
• What are some big rocks we want to set out as markers for the next few releases