



EDGE X FOUNDRY™

DevOps Working Group

Thursday April 18, 2019

Agenda

Time	Topic	Owner
30 min	Discussion: Security Tooling for Jenkins CodePipeline	Trevor Conn with Guest Speaker: Dee Annachhatre / NVIDIA
10 min	Work Review (GitHub Project)	James Gregg
2 min	Backlog Review	James Gregg
10 min	Ci-management for Snap discussion	Ian Johnson
	Opens	All

Attendees: James, Jeremy, Trevor, Dee, Jessica, Ernesto, Ian, Andy Foster, Jim, Eric, Vishwas, Walt, Bryon, Colin, Brandon, Lenny, Toby, Andy Davies, Lisa

Attendees

Meeting Participants

Name (Original Name)	User Email
James Gregg (Intel)	
jphelps	
Trevor Conn	
Jim White	
Bryon Nevis (Intel)	
Walt (Intel)	
Vishwas (Intel)	
Dee	
Jessica Butler (NVIDIA) (Je...	
Call-In User_1	

Meeting Participants

UwkDG/iof2IjunFseOhuz...

Ernesto - Intel

Brandon Forster

Eric Ball - Linux Foundation

Lenny Goodell (Intel)

Toby Mosby (Intel) (Toby ...

ajdavies

Lisa Ranjbar (Intel)

Andrew Foster

Colin Hutchinson

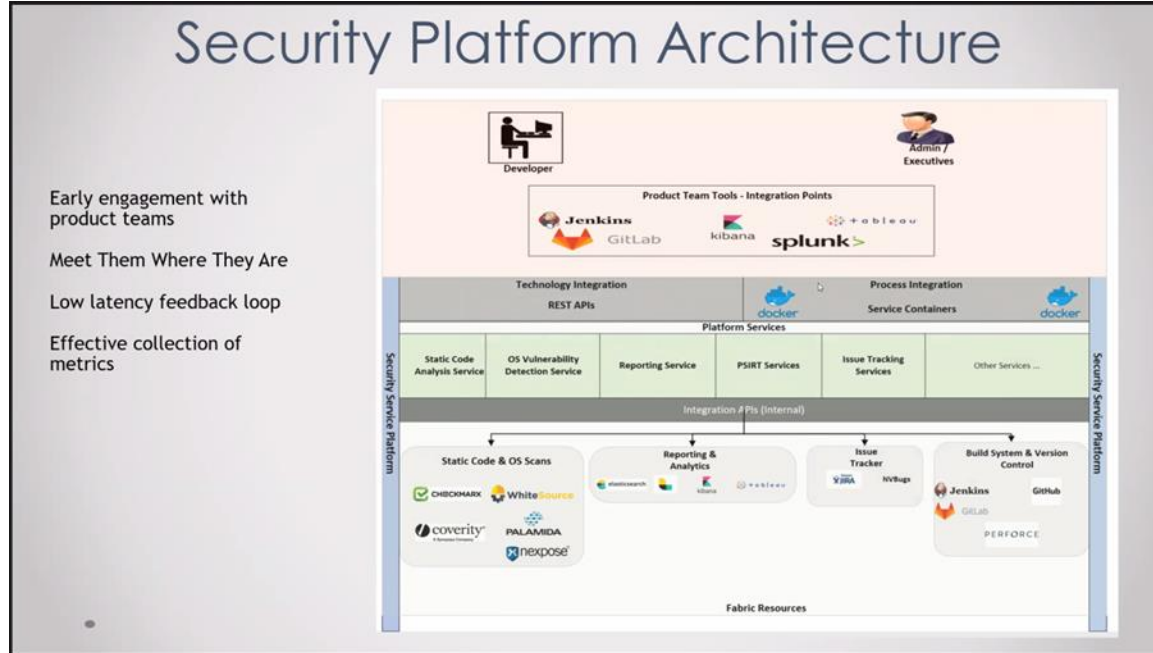


Security Tooling for Jenkins CodePipeline Discussion

Guest Speaker: Dee Annachhatre / NVIDIA

Discussion

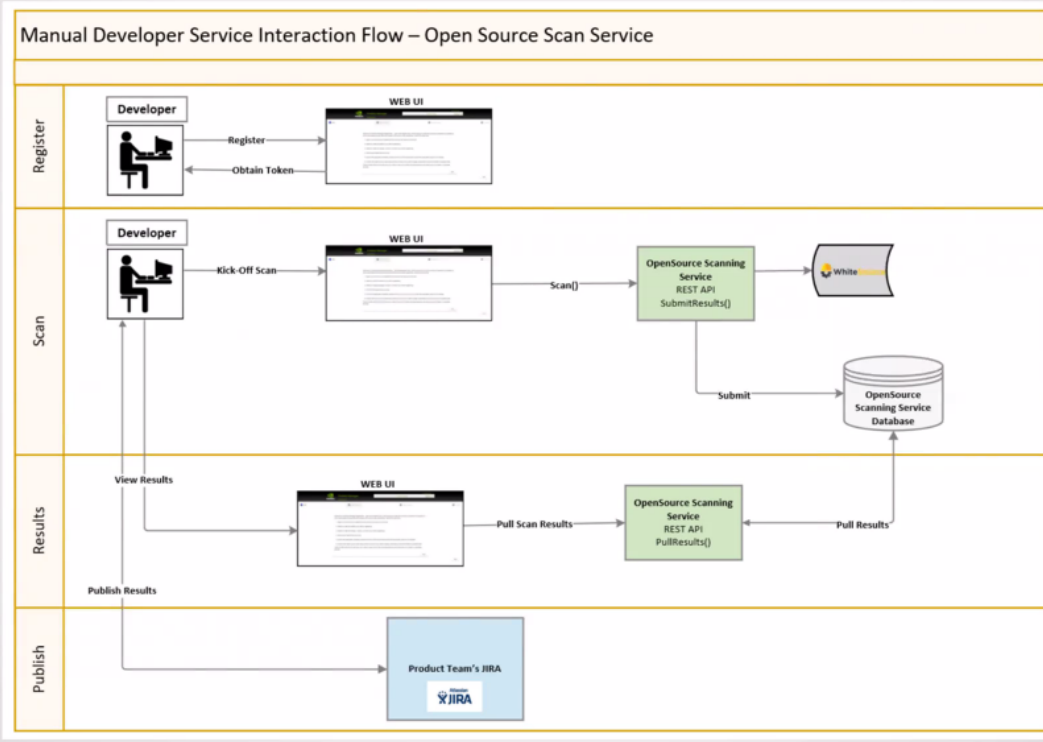
- OS scan = Open Source scan



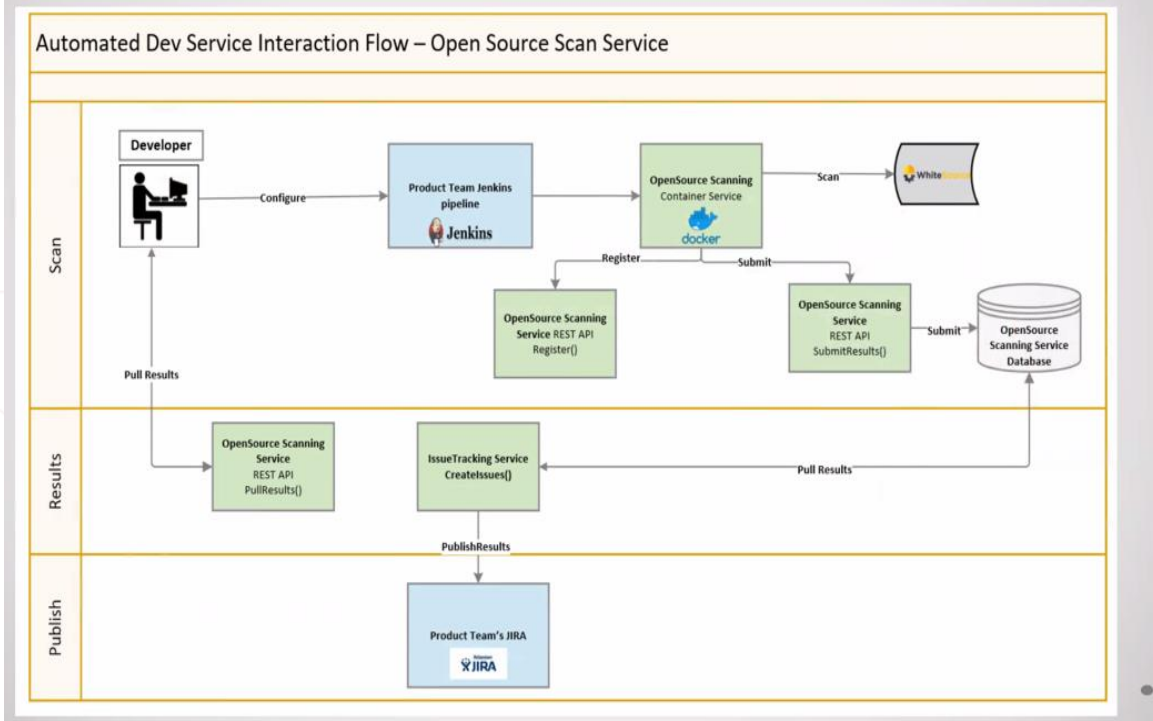
- Shift Left – SDL starts at the design / architecture phase of project
- NVIDIA Security team makes Security Services an offering to developers with options to integrate via REST or Docker
- Tools made available to development teams post registration

Discussion

OSS – User Flow (Before)



OSS– User Flow (After)



Next Steps

- Take a look at additional tools which might be options for consideration for EdgeX Jenkins integration with focus on FOSS
 - WhiteSource
 - Coverity
- Thank you Dee and Jessica for sharing your presentation and helping frame the dialog for consideration of OSS Tooling within the Jenkins CI/CD Pipeline

Work Review

Helpdesk Ticket #	Description	Details	Status
69830	codecov.io config needed for edgex-go repo		WIP
68377	failed job related to timeout waiting for SSH	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	WIP Possible look at using a different OS for the builds
70612	EdgeX ARM Builds	EdgeX Jenkins builds for ARM take twice as long if not more than x_86 ARM builds fail with “no manifest” error	Closed Shared Jenkins build node details with ARM team. ARM team asked to work with the LF infrastructure team to understand how we might best take advantage of the other build hardware options which could speed up the arm builds. Ernesto identified root cause for the “no manifest” error
69422	need to extend sigul to include additional functionality	– sigul enhancements included in release last Thursday LFTOOLS release v0.23.1 Dockerized image with sigul	Closed

Work Review (continued)

Helpdesk Ticket #	Description	Details	Status
69600	jenkins docs job fails for /edgex-go-docs-delhi-stage-docs lftools: command not found	<p>Broken Builds for Delhi Documentation – as reported by Michael Hall – ISSUE identified with lftools – Still seeing issues as of 3/20/19</p> <p>Decision: Root Cause Analysis – plan to have this fixed with release for next Thursday</p> <p>Help Needed – Works in Sandbox but not production - needs an extra set of eyes to look at this issue.</p> <p>Eric needs some help from LF team. Needs to check init scripts – didn't fix it.</p> <p>Latest error: 401 errors from lftools upload to nexus</p>	Closed

Backlog Review

edgexfoundry / ci-management

<> Code 8 Issues 8 Pull requests 4 Projects 1 Wiki Insights

Tasks
Updated an hour ago

Filter cards

8 TODO

- snap builds placeholder
Added by jamesgregg
- Configure edgex-go repo to use codecov.io
#329 opened by jamesgregg
- Automate the tagging of the go library modules (go-mod-core)
#306 opened by jamesgregg
- Automate the tagging of the go library modules (go-mod-registry)
#307 opened by jamesgregg
- Build Automation for device-opcua-c
BLOCKED - WAITING FOR CODE DROP
Added by jamesgregg
- Build Automation for device-bacnet
BLOCKED - WAITING FOR CODE DROP
Added by jamesgregg
- Documentation move (FUJI)
1.) Currently the content hosted at docs.edgexfoundry.org is located in the

4 In Progress

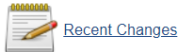
- SPIKE: Investigate Clair / Klar
Added by jamesgregg
- Automate the tagging of the go library modules (go-mod-messaging)
#305 opened by jamesgregg
- Kong image for arm as build image for blackbox security testing
edgexfoundry/blackbox-testing#185
Added by jamesgregg
- 1 Reference Hide
- Kong docker image is unable to pull at arm64 env
#185 opened by weichou1229 in edgexfoundry/blackbox-testing
- SPIKE: Static Code Analysis tooling for EdgeX
 - Explore available FOSS options for implementing static code analysis within the build process
 - Options to consider include but are not limited to Coverity, AquaSec

5 Test/QA/Verification/Review

- SPIKE: Investigate GitHub Pull Request builder plugin
#343 opened by jamesgregg
- Build Automation for device-virtual-go
Added by jamesgregg
- Sigul (GPG signed artifacts) - needs to be done with an automated (faceless service account does the actual signing on the artifact)
#304 opened by jamesgregg
- Root Cause Analysis for the failed arm builds
#345 opened by jamesgregg
- Assist with PR performance-testing PR#9 in Sandbox
Added by jamesgregg

Performance Testing

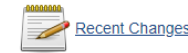
Pipeline performance-testing-master



Stage View

	Start EdgeX Client	== EdgeX Host 1 ==	== EdgeX Host 2 ==	== EdgeX Host 3 ==	before test	== Start Test - JMeter ==	Shutdown container	== Clean edgeX Host 1 ==	== Clean edgeX Host 2 ==	== Clean edgeX Host 3 ==
Average stage times:	121ms	2min 3s	1min 46s	1min 46s	74ms	63ms	97ms	193ms	205ms	170ms
#5 Apr 10 01:41 No Changes	82ms	2min 24s failed			50ms failed	59ms failed	97ms	135ms failed	138ms failed	148ms failed
#4 Apr 10 01:30 No Changes	123ms	2min 30s failed			172ms failed	101ms failed	108ms	112ms failed	121ms failed	169ms failed
#3 Apr 10 01:25 No Changes	97ms	1min 44s failed	1min 44s failed	1min 44s failed	51ms failed	45ms failed	88ms	173ms failed	172ms failed	151ms failed
#2 Apr 10 01:23 No Changes	111ms	1min 39s failed	1min 39s failed	1min 39s failed	54ms failed	57ms failed	75ms	142ms failed	180ms failed	185ms failed

Pipeline performance-testing-master



Stage View

	Run Test	== EdgeX Host 1 ==	== EdgeX Host 2 ==	== EdgeX Host 3 ==	== Start Test - JMeter ==
Average stage times: (Average full run time: ~9min 46s)	106ms	9min 40s	10min 21s	10min 21s	9min 33s
#50 Apr 17 09:42 No Changes	102ms	7min 22s			7min 22s
#49 Apr 16 18:45 No Changes	95ms	7min 31s	7min 35s	7min 31s	7min 30s
#48 Apr 16 18:14 No Changes	115ms	7min 27s	7min 15s	7min 13s	7min 12s
#47 Apr 16 18:02 No Changes	89ms	7min 59s	7min 49s	7min 55s	7min 45s

Parallel Processing where 3 nodes are spawned from the Pipeline – each pulling down Edgex stack and performing the jmeter test scripts

Meeting Minutes

- SPIKE on Image Scanning tools in Progress – Clair / Klar
- Performance Testing – Sandbox job implemented by IoTech team using Jenkins Pipeline – Good Job!
 - Need to investigate performance issues observed from Grafana dashboard
 - Unable to fetch data using Docker Metrics per container with Host
 - It would be helpful to see how IoTech configured their dashboard to work within their build environment so we can compare the configuration with the Linux Foundation implementation
- Snap discussion
 - Jim will add a note to include this topic along with the discussion around multiple orchestration mechanisms for upcoming F2F in Seoul



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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 throughput 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???

Fuji Planning – DevOps

In

- Static code analysis tool identified and integrated into the EdgeX Jenkins Pipeline
- Code and artifact signing with semantic versioning
- Fix Documentation – edgex-go
- 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



Backlog Review

- What else do we need to consider?
 - Backlog review
 - <https://wiki.edgexfoundry.org/display/FA/Backlog>
 - Edinburgh Roadmap review (what did we not get done)
 - <https://wiki.edgexfoundry.org/display/FA/Edinburgh+Release>
- New additions/opens
 - DevOps Backlog
 - <https://github.com/edgexfoundry/ci-management/projects/2>



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Edinburgh Release

Release Planning

Edinburgh Dates

- Freeze Date – May 28
- Release Date – June 20





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Future Agenda Topics

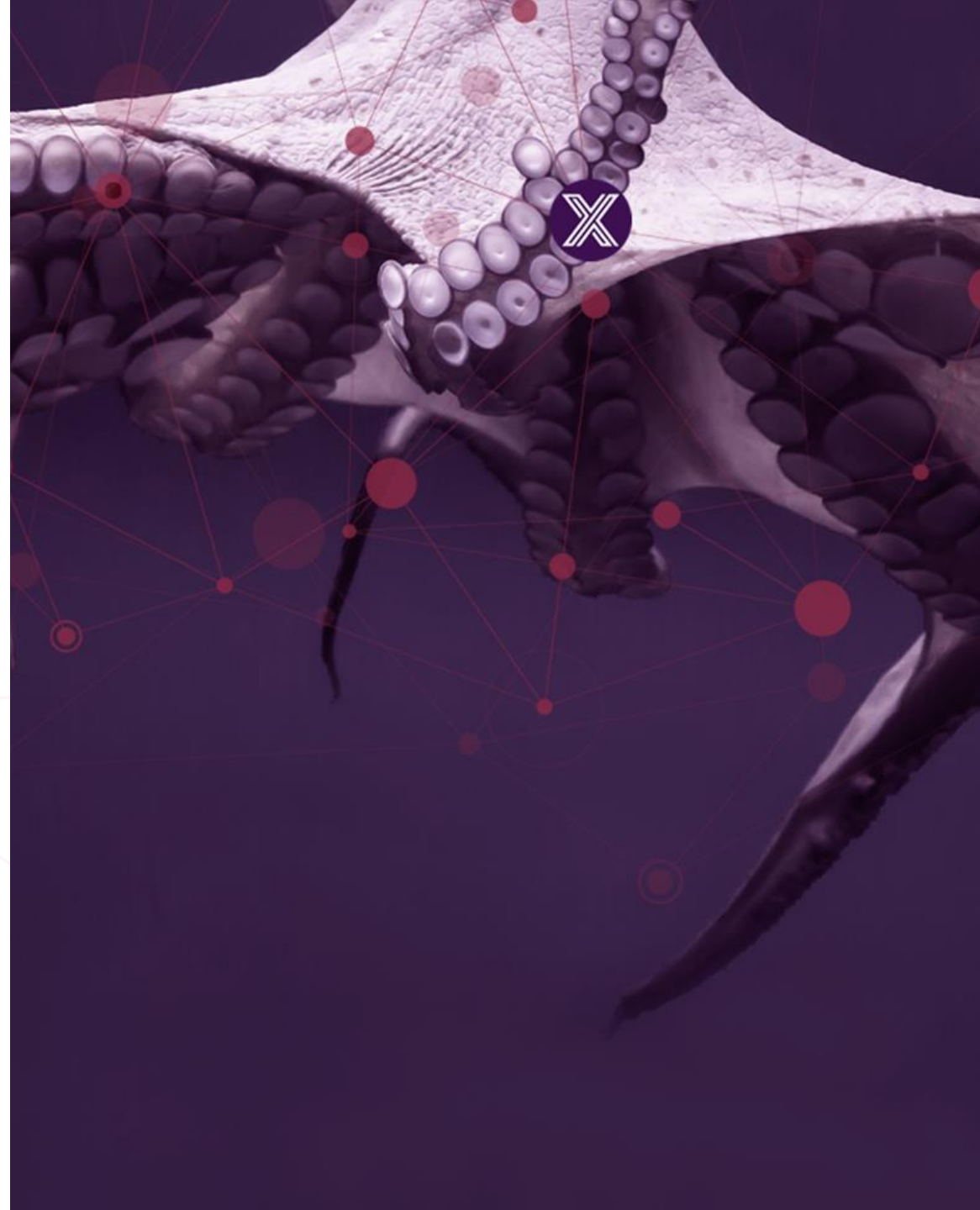
WW14	Documentation migration – edgex-go user documentation
WW14	Topics for Fuji F2F Jenkins Pipelines for EdgeX services
WW15	Review Aqua Microscanner – Image scanning tool for Vulnerabilities
WW16	NVIDIA – Security tooling within CodePipeline (Trevor request) 4/18/19
WW17	
WW18	
	Athens Project – proxy server for go package dependencies
	Community Involvement



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EdgeX DevOps Discussion

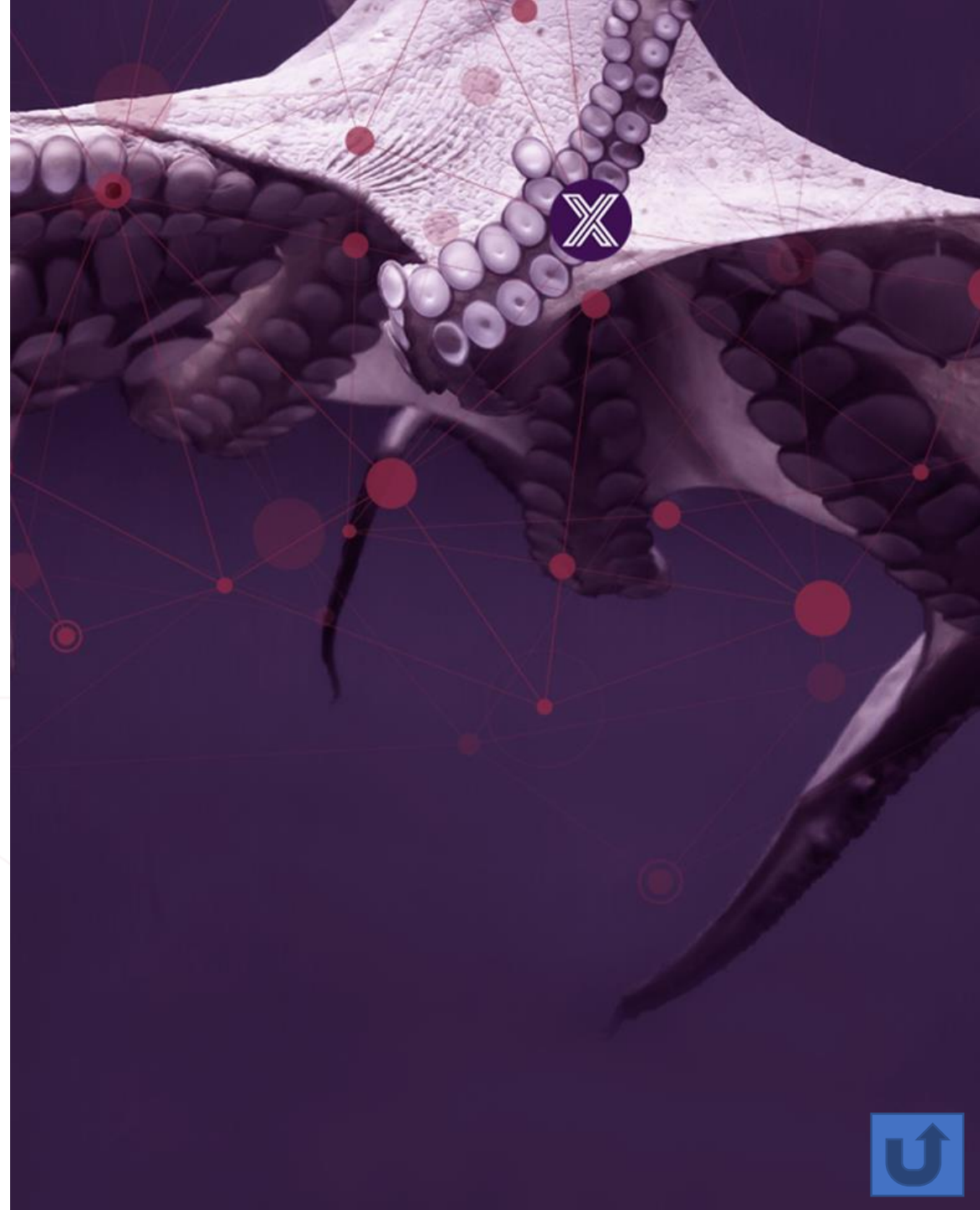
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Future Roadmapping

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