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# Deep Dive: CNCF CI

Lucina Stricko & Denver Williams,  
Vulk Coop & CNCF

# Agenda:



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- **Team**
- **Intro**
- **Key features**
- **Overview**
- **Deep Dive: Adding Arm Support**
  - **Demo**
  - **Code Review**
- **Get Involved**
- **Q&A**

# Meet the team:



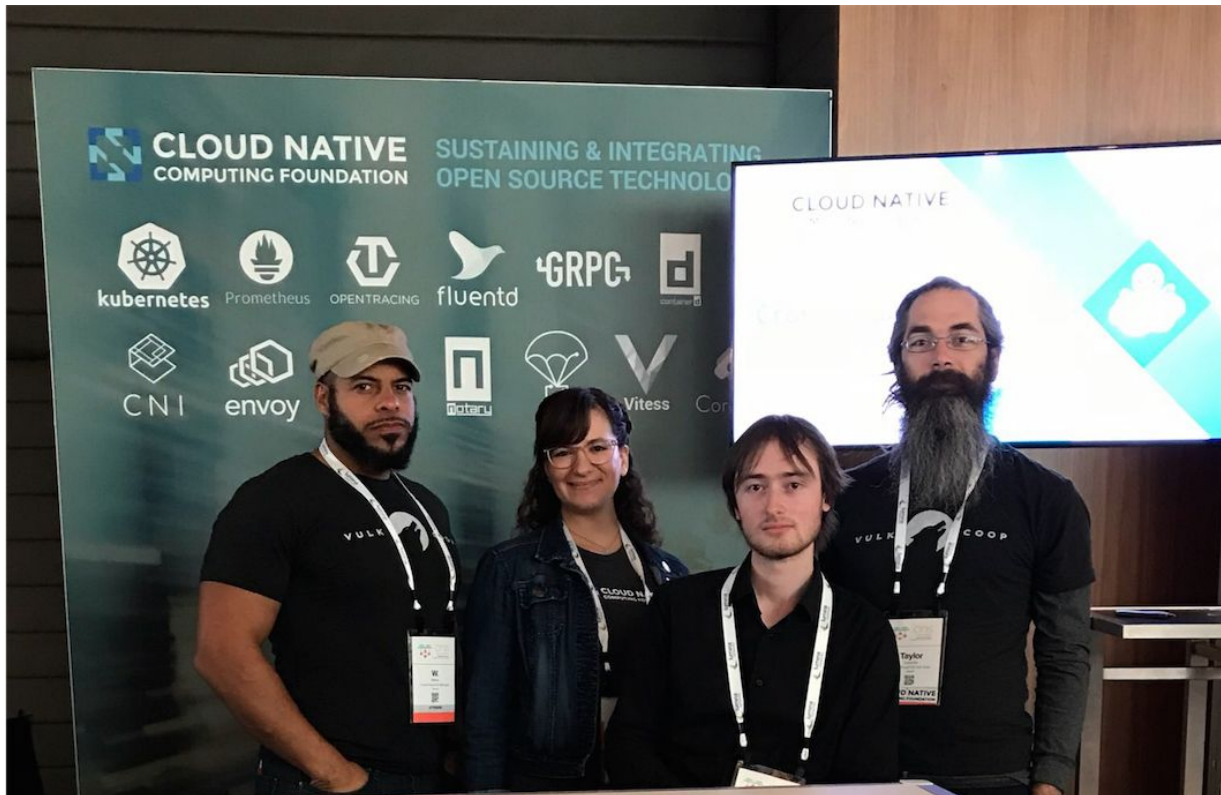
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- **W. Watson**  
[@wavell](#)
- **Lucina Stricko**  
[@lixuna](#)
- **Denver Williams**  
[@denverwilliams](#)
- **Taylor Carpenter**  
[@taylor](#)
- **Joshua Smith\***  
[@nupejosh](#)
- **Robert Siekmann\***  
[@rsiekmann](#)
- **Krista Williams\***  
[@rystakei](#)



# CNCF CI Intro:



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The CNCF CI project consists of a CI testing system, status repository server and a dashboard -- `cncf.ci`.

The CI testing system validates the build and deployment of each CNCF project for any commit on stable and HEAD to x86 and Arm architectures on bare metal (Packet) servers.

The CNCF CI testing system can reuse existing artifacts from a project's preferred CI system or generate new build artifacts. The status repository server collects the test results and the dashboard displays them.

# CNCF CI Intro:



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## Goals:

- To provide a third party, unbiased validation for CNCF Graduated and Incubating projects
- To promote CNCF hosted projects and attract more projects to CNCF
- To demonstrate the use of cloud native technologies
- To support and contribute to a sustainable and scalable project ecosystem
- To get feedback from cloud native end users and projects
- To compliment the CNCF landscape and trail map -- [l.cncf.io](https://l.cncf.io)

# Goal: target CNCF projects



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kubernetes



Prometheus



envoy



CoreDNS



container



fluentd



OPENTRACING



gRPC



rkt



CNI



JAEGER



TUF



Notary



Viteess



NATS



LINKERD



HELM



ROOK



HARBOR



etcd



Open Policy Agent



cri-o

# Goal: target LF project



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Implemented







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# Key Features

# Key Features



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## 1. Highlight and validate CNCF Hosted Graduated and Incubating projects:

- Validate stable and HEAD releases of Graduated/Incubating projects
- Re-use build containers that are provided by a project's CI System
- Re-use upstream Helm charts
- Re-use end-to-end tests provided by projects

# Key Features



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## 2. Increase collaboration with CNCF Project maintainers:

- Maintainers can update project and release details via GitHub PR
- Cncf.ci will integrate with external CI systems to retrieve a CNCF Project's build status and container artifacts
- Maintainers can provide Helm charts and smoke tests for deploy phase
- Maintainers can provide end-to-end tests for test phase

# Key Features



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## 3. Accelerate adding new projects to cncf.ci:

- Support more contributors to cncf.ci
- Shared responsibility to add and maintain projects with maintainers
- Reduce level of maintenance by one party



## 4. Validate projects in various Test Environments:

- Kubernetes Releases:
  - Stable
  - HEAD
  - *Future: Release Candidate*
- Architectures:
  - Arm
  - x86
- Bare Metal
  - Packet



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# Dashboard Overview

# CNCF CI Status Dashboard



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## CI DASHBOARD: Overview

🕒 Last updated: 11 hours ago

### Test environment



Kubernetes

Stable v1.13.0



Bare Metal (Packet)



🟢 SUCCESS

### Project

### Release

### Build

### Deploy

### Test



### CoreDNS

Service Discovery

v1.5.0

🟢 SUCCESS

🟢 SUCCESS

🔒 N/A

6e1c57a

🟢 SUCCESS

🟢 SUCCESS

🔒 N/A



### Envoy

Service Mesh

v1.10.0

🔴 FAILED

🟡 RUNNING

🔒 N/A

ac1757f

🟢 SUCCESS

🔴 FAILED

🔒 N/A



### Fluentd

Logging

v1.4.2

🟢 SUCCESS

🟢 SUCCESS

🔒 N/A

add2af9

🟢 SUCCESS

🟢 SUCCESS

🔒 N/A

# CNCF CI Dashboard Overview



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## CI Dashboard Overview:

- Overview of [cncf.ci](https://cncf.ci)
  - Refreshes daily at 3:00am Eastern Time
  - Provisions Test Environments for K8s release and architecture
  - Shows status of K8s Provisioning to Packet
  - Supports status of Build, App Deployments and e2e testing per project



# Arm is a CNCF Gold Member



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# Cloud Native Computing Foundation Welcomes Arm as Gold Member

By [cncf](#) | February 19, 2019 | [Announcement](#)

# Arm is a CNCF Gold Member



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In joining CNCF, Arm plans to build on the significant work from the community to ensure that Kubernetes and other CNCF-hosted projects run well on Arm-based platforms. Also, through the acquisition of Treasure Data, Arm will lead and continue the investment in [Fluentd](#), one of the first CNCF-hosted projects.



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# Deep Dive: Adding Arm Support

# Demo of cncf.ci



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## CI DASHBOARD: Overview

🕒 Last updated: 1 minute ago

Test environment



Kubernetes

Head c3po09 Arm ▾



Bare Metal (Packet)



✔ SUCCESS

### Graduated CNCF Projects



CoreDNS

Service Discovery

Stable v1.13.0

Stable v1.13.0 Arm

Head c3po09

Head c3po09 Arm ✓

Build

✔ SUCCESS

✔ SUCCESS

Deploy

✔ SUCCESS

✔ SUCCESS

Test

🕒 N/A

🕒 N/A



## Kubernetes build process on Arm architecture:

- <https://github.com/crosscloudci/kubernetes-configuration/blob/master/.gitlab-ci.yml#L8>



## Building CoreDNS on Arm:

- <https://github.com/crosscloudci/coredns-configuration/blob/master/.gitlab-ci.yml>



## Building Prometheus on Arm:

- <https://github.com/crosscloudci/prometheus-configuration/blob/master/server/.gitlab-ci.yml#L30>



## Building Envoy on Arm:

- <https://github.com/crosscloudci/envoy-configuration/blob/master/.gitlab-ci.yml>



# How to Contribute



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## How to Add Arm Support to Projects on the CNCF CI Dashboard:

- Look at Gitlab CI system and use existing project builds as reference
- Ex. Add Arm support for Linkerd
  - <https://github.com/crosscloudci/linkerd-configuration/blob/master/.gitlab-ci.yml>

# Q&A



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# Stay in Touch

# Connect with the Team



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- **Attend CI WG meetings:**
  - <https://github.com/cncf/wg-ci>
- **Subscribe to the CNCF CI public mailing list:**
  - <https://lists.cncf.io/g/cncf-ci-public>
- **Create issues on GitHub:**
  - <https://github.com/crosscloudci/ci-dashboard/issues>
- **Join #cncf-ci on CNCF Slack:**
  - <https://slack.cncf.io/>

# Connect with the Team



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**@crosscloudci**



**@cncfci**



**@vulkcoop**



**cncfci@vulk.coop**

# Thank you!



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**Today's Demo Prepared by:**

[taylor@vulk.coop](mailto:taylor@vulk.coop)

[lucina@vulk.coop](mailto:lucina@vulk.coop)

[w.watson@vulk.coop](mailto:w.watson@vulk.coop)

[denver@debian.nz](mailto:denver@debian.nz)



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