KubeCon
CloudNativeCon
North America 2019

Intro: cncf.ci

Lucina Stricko & Denver Williams,
Vulk Cooperative

Agenda (35 minutes)

- Team
- Intro
- Goals
- Key Features
- Walk-through of cncf.ci from v1 to v3
- Tech Overview
- Roadmap
- Get Involved
- Q&A

Meet Vulk Cooperative

vulk.coop

- Worker-owned software cooperative
- Since 2013
- Meetups in Austin, TX
  - Austin Software Co-operatives
  - Open Source Axes
- Connect with us
  - twitter.com/cncfci
  - twitter.com/vulkcoop
  - twitter.com/opensourceaxes

Meet the cncf.ci Team

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@taylor

Lucina Stricko
@lixuna

W. Watson
@wavell

Denver Williams
@denverwilliams

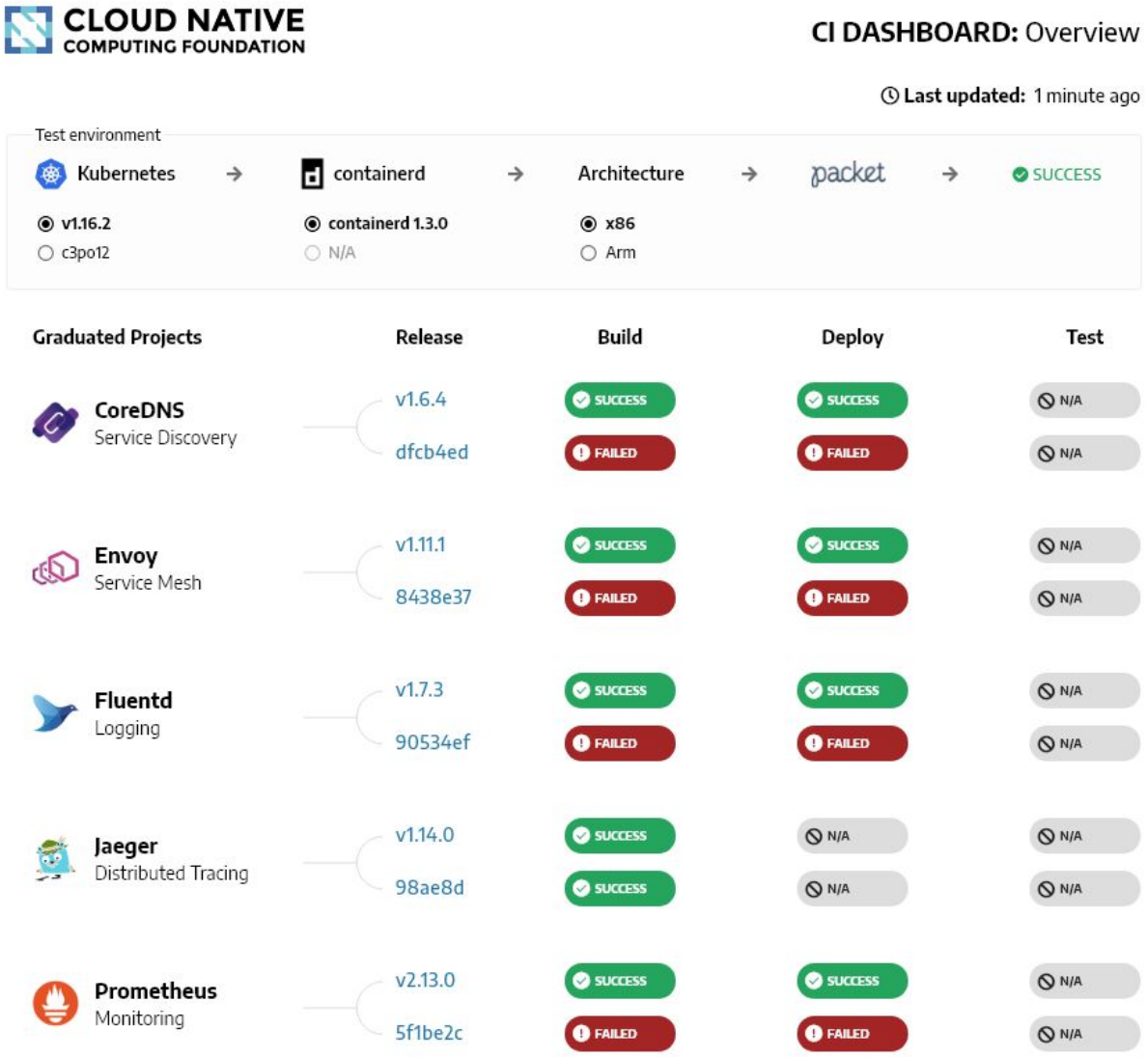
Ashleigh Gregory*
@ashleighgregory

William Harris*
@williscool

Joshua Smith*
@nupejosh

Robert Siekmann*
@rsiekmann

Intro



cncf.ci

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The 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.

Goals

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- To compliment the CNCF landscape and trail map -- l.cncf.io

landscape.cncf.io/

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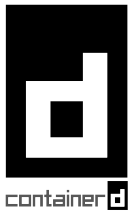
- To get feedback from cloud native end users and projects
- To provide a third party, unbiased validation of build, deploy and e2e tests for CNCF Graduated and Incubating projects

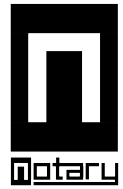
cncf.io/services-for-projects/

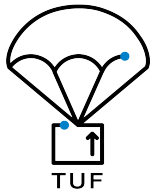
Displaying CNCF Projects

Graduated



Incubating





cncf.io/projects

Displaying ONAP SO Project

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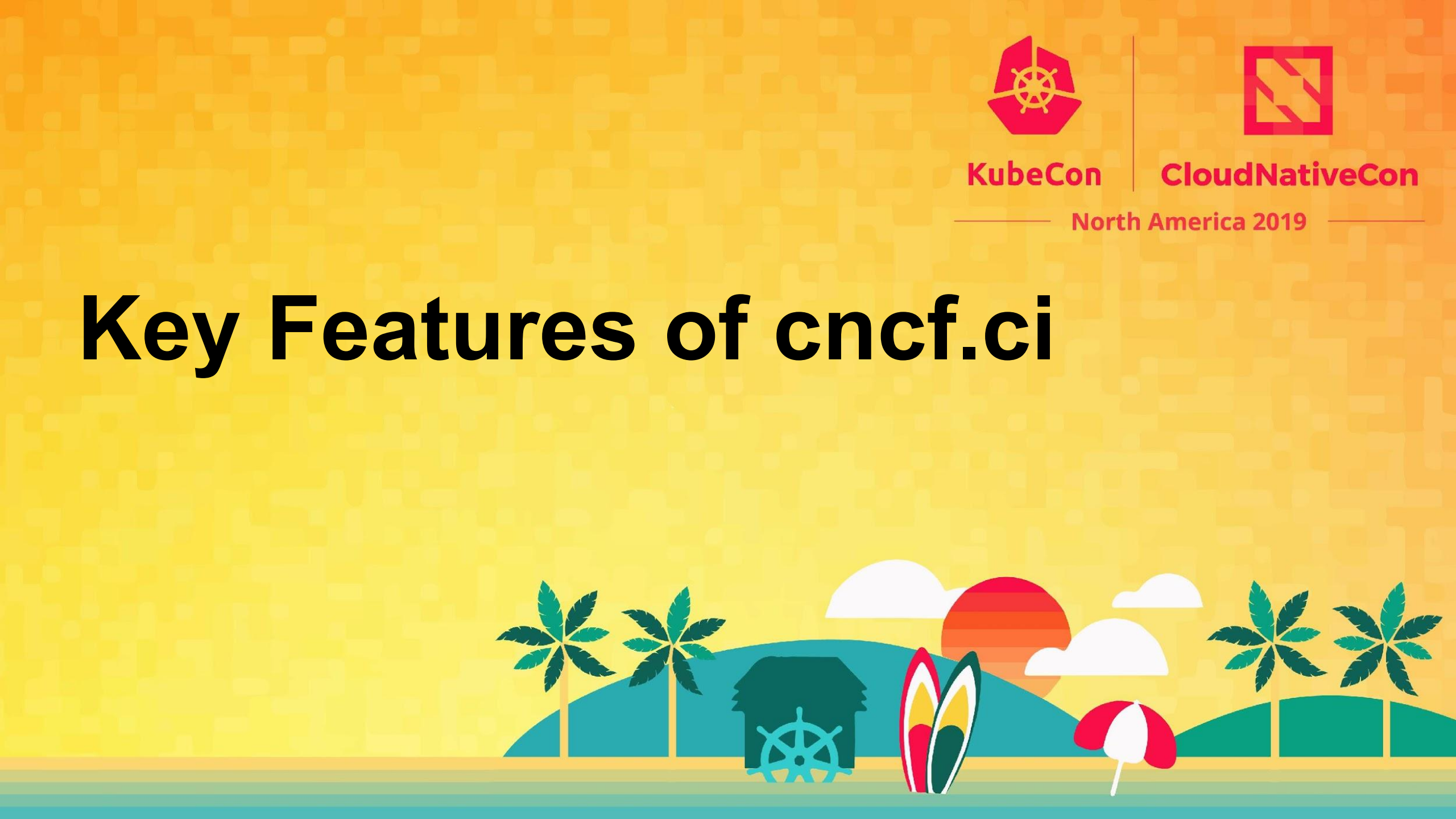
CNCF Launches Cross-Cloud CI Project &
Adds ONAP Networking Project to
Dashboard Overview

Displaying ONAP SO Project

CNCF Launches Cross-Cloud CI Project & Adds ONAP Networking Project to Dashboard Overview

"...Our CNCF demo at ONS will illustrate to carriers that Kubernetes and ONAP are key to the future of network virtualization."

- Dan Kohn, CNCF executive director



Key Features of cncf.ci

Key Features

1. Project-centric -- highlight and validate CNCF-hosted Graduated and Incubating projects:

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

Key Features

2. Collaboration -- increase engagement with CNCF Project maintainers:

- Maintainers can update project and release details via GitHub PR, following https://github.com/crosscloudci/crosscloudci/blob/master/CONTRIBUTING.md
- Maintainers can provide Helm charts and smoke tests for deploy phase
- Maintainers can provide end-to-end tests for test phase
- CI Testing System integrates with external CI systems to retrieve a CNCF Project's build status

Key Features

3. Agnostic testing -- validate projects in a configurable test environment:

- Per Kubernetes Release
  - Stable
  - HEAD
- Per Architecture
  - X86
  - Arm
- Bare Metal
  - Packet

Dashboard Walk-through

v1 Review: Cross-Cloud CI

CLOUD NATIVE COMPUTING FOUNDATION

CI DASHBOARD: Overview

Last updated 16 hours ago

Project	Build	Release	Deployments							
	Status	Stable Head	AWS	Azure	GCE	IBM Cloud	Bare Metal (Packet)	OpenStack	VMware vSphere	Oracle Cloud Infrastructure
Kubernetes Orchestration	SUCCESS SUCCESS	v1.12.2 dde084f	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS
Prometheus Monitoring	SUCCESS SUCCESS	v2.4.3 8b91d39	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS
CoreDNS Service Discovery	SUCCESS SUCCESS	v1.2.5 95c9e14	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS
Fluentd Logging	SUCCESS SUCCESS	v1.2.6 3dabdc5	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS
Linkerd Service Mesh	SUCCESS SUCCESS	1.5.1 36dc2c9	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS
Envoy Service Mesh	SUCCESS SUCCESS	v1.8.0 0ebe247	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS
ONAP Network Automati	SUCCESS SUCCESS	v1.1.1 9a3841e	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS	SUCCESS SUCCESS

Created for CNCF by Cross-Cloud CI | Report bug

v1 Review: Cross-Cloud CI

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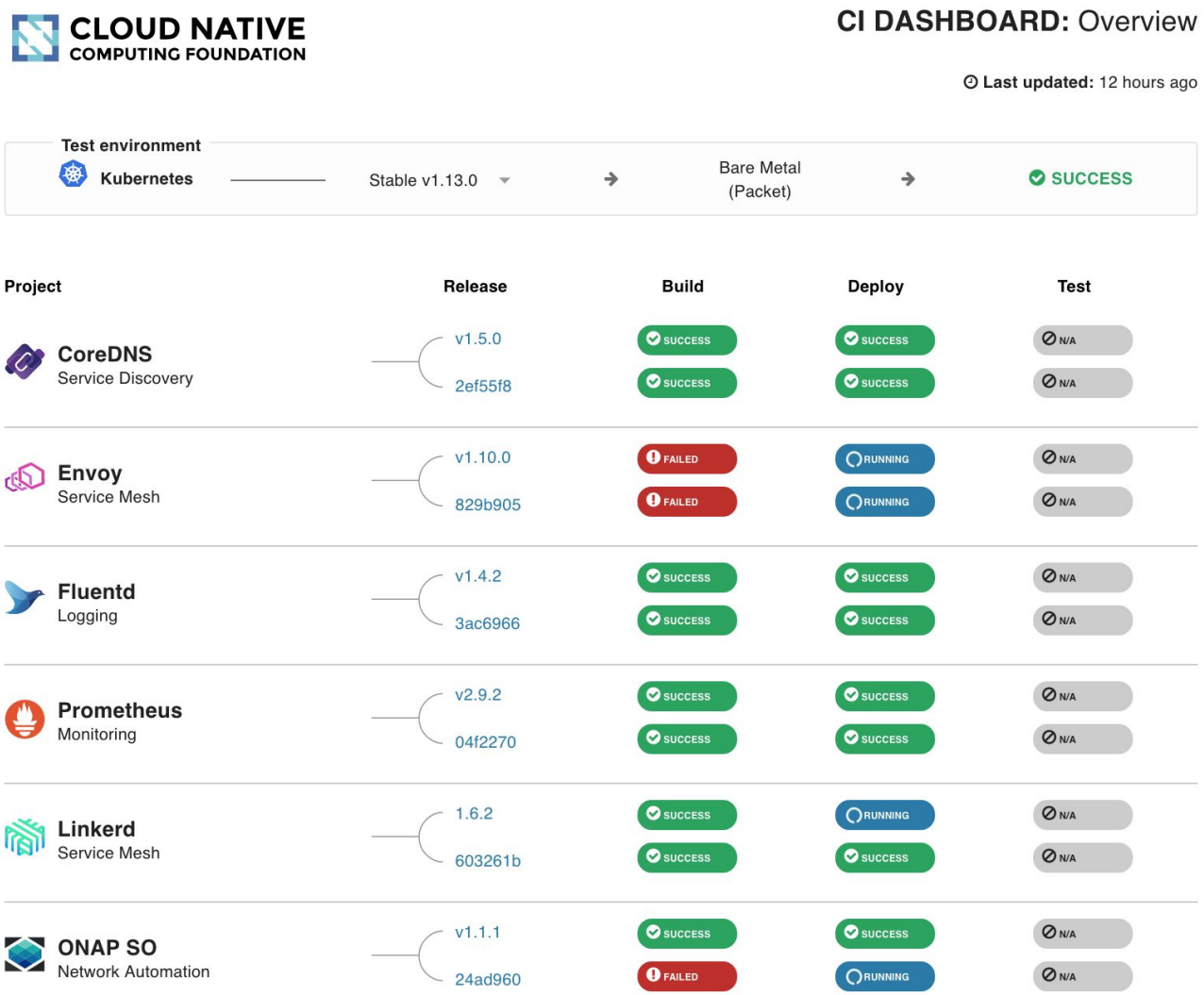
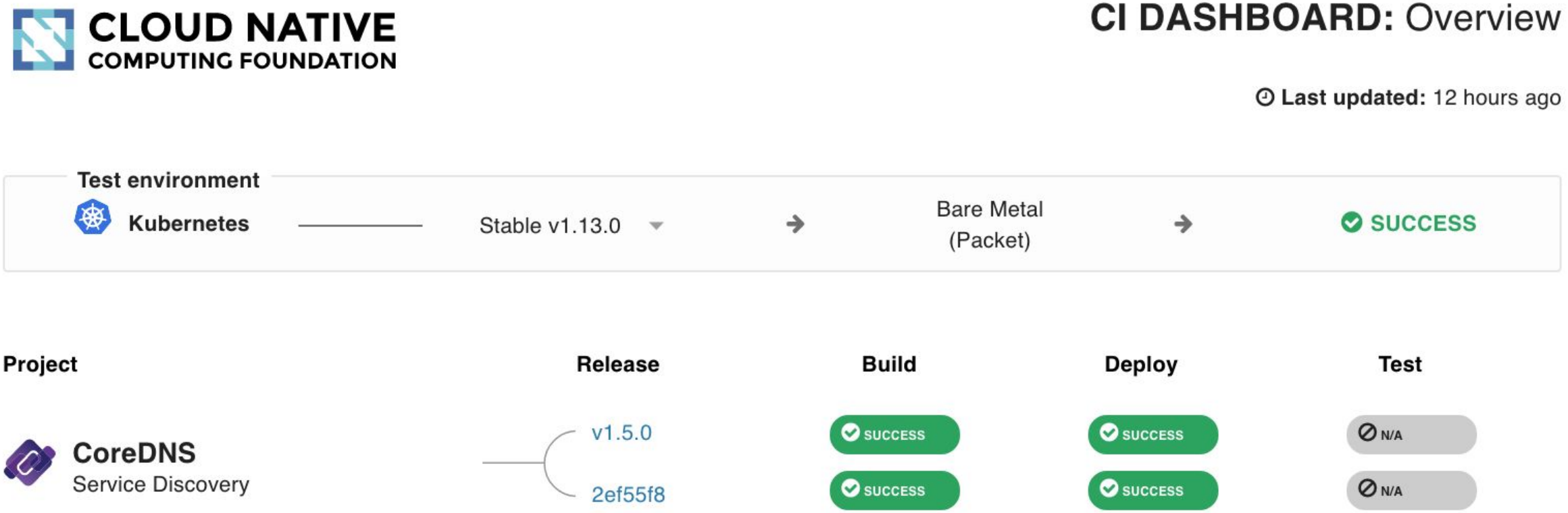
Kubernetes Orchestration	SUCCESS	v1.12.2	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	dde084f	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
Prometheus Monitoring	SUCCESS	v2.4.3	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	8b91d39	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
CoreDNS Service Discovery	SUCCESS	v1.2.5	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	95c9e14	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS

v2 Review: cncf.ci

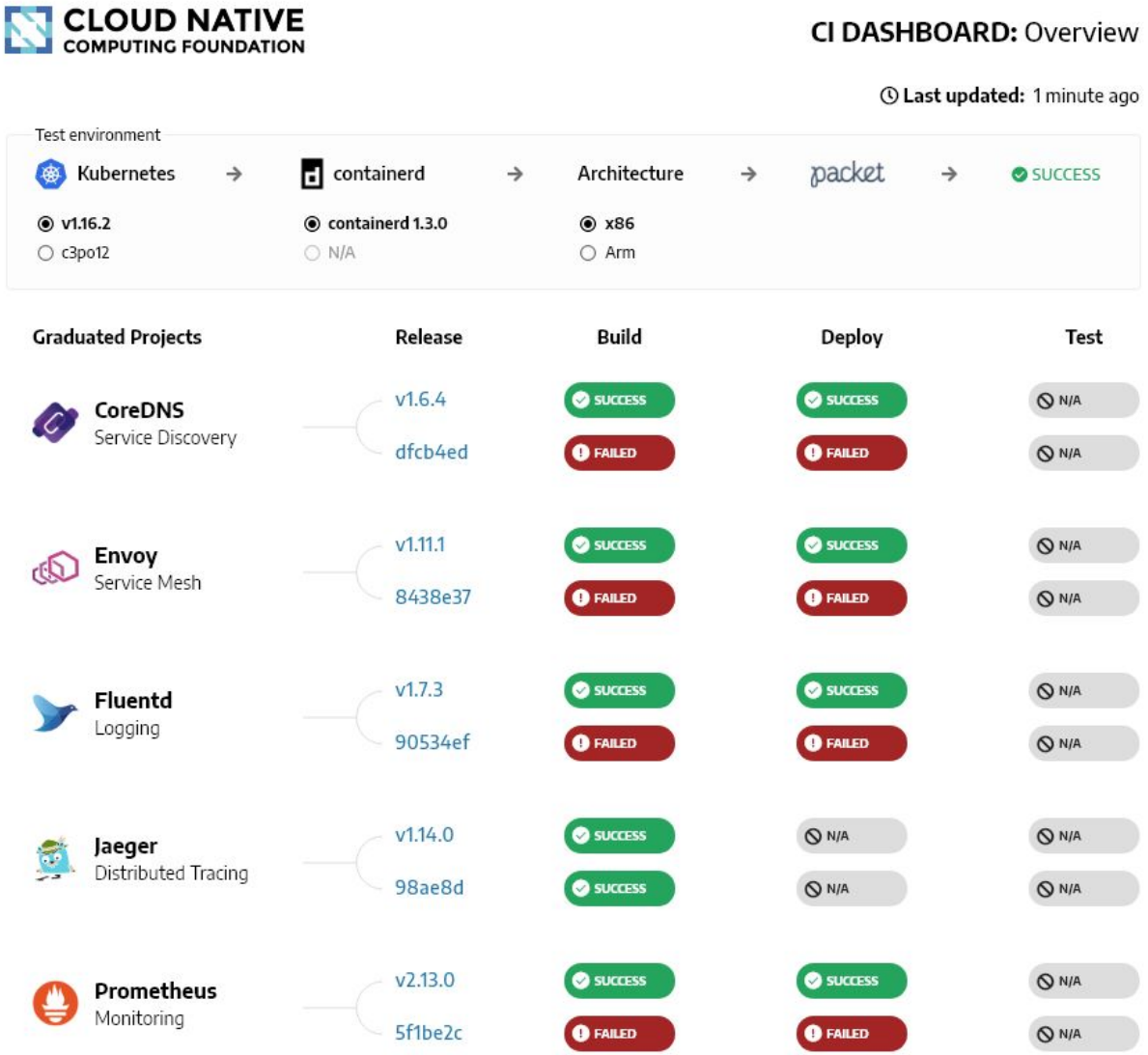


cncf.ci

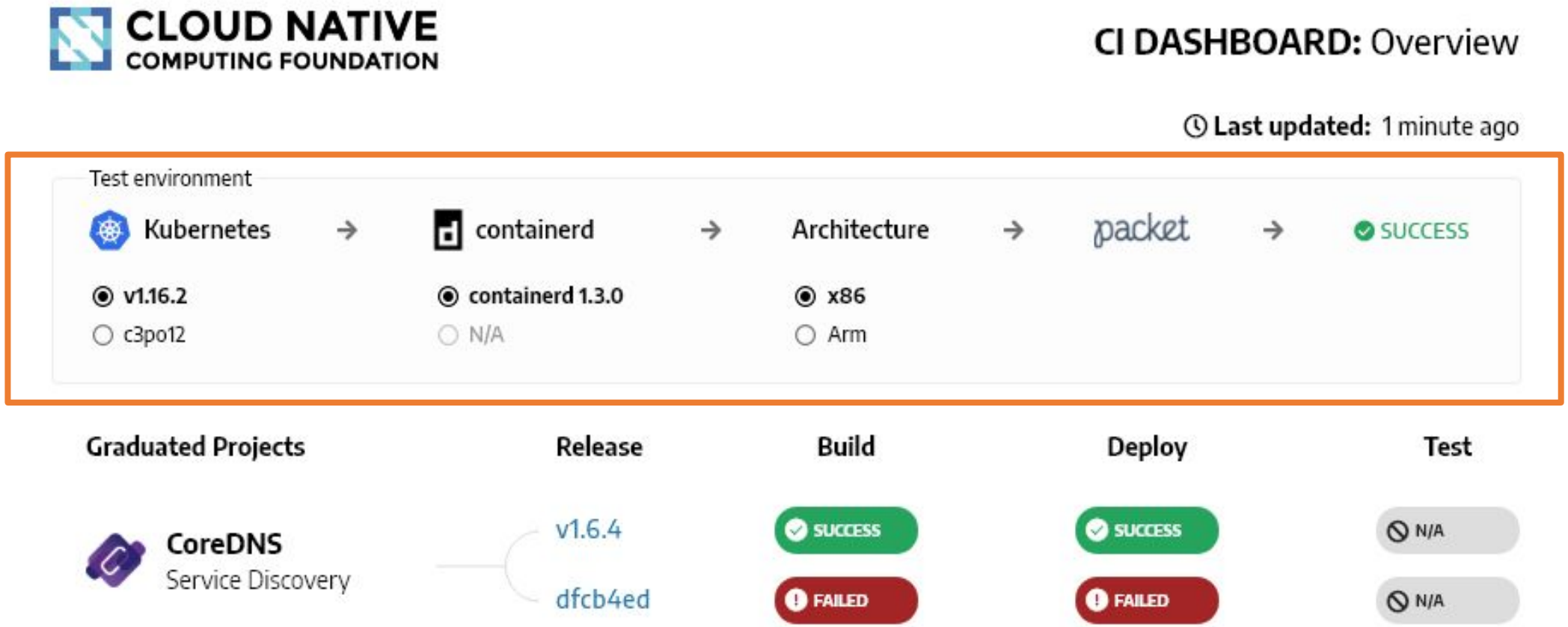
v2 Review: cncf.ci



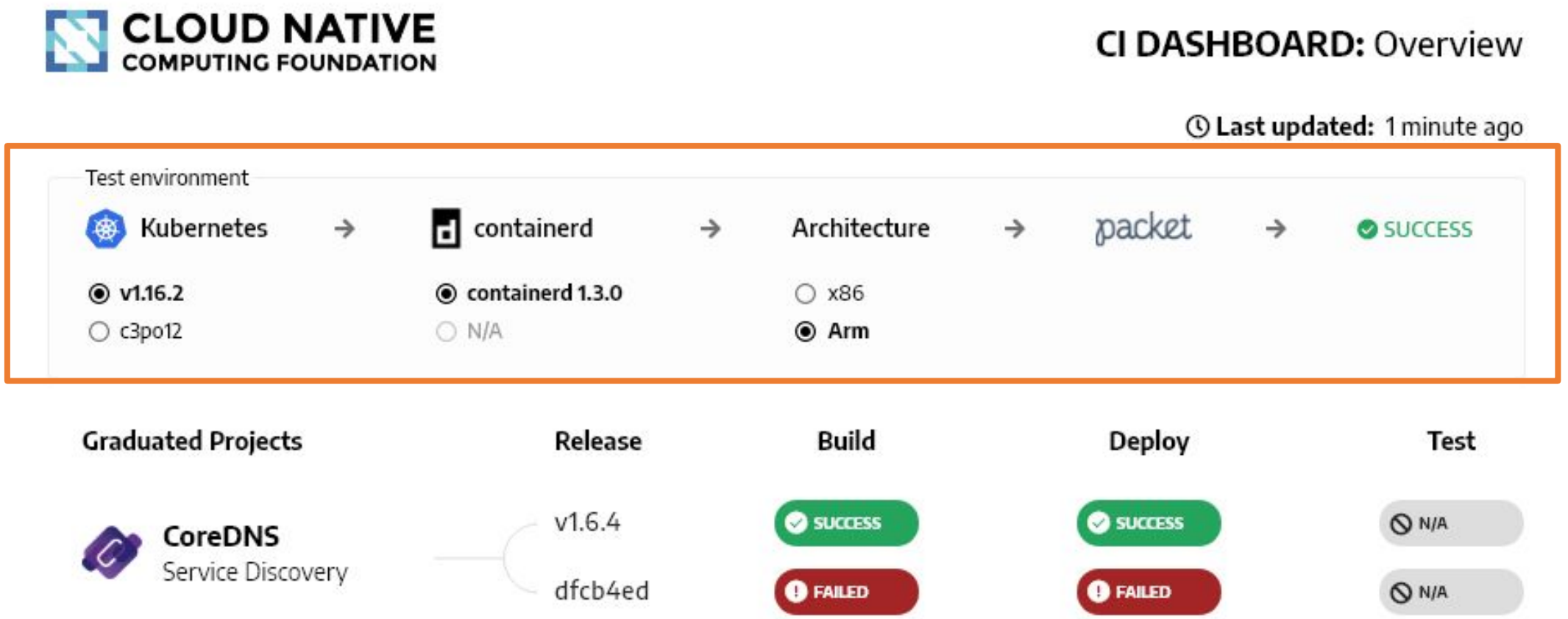
v3 Walk-through: cncf.ci



Test Environment



Arm Support



arm

cncf.ci

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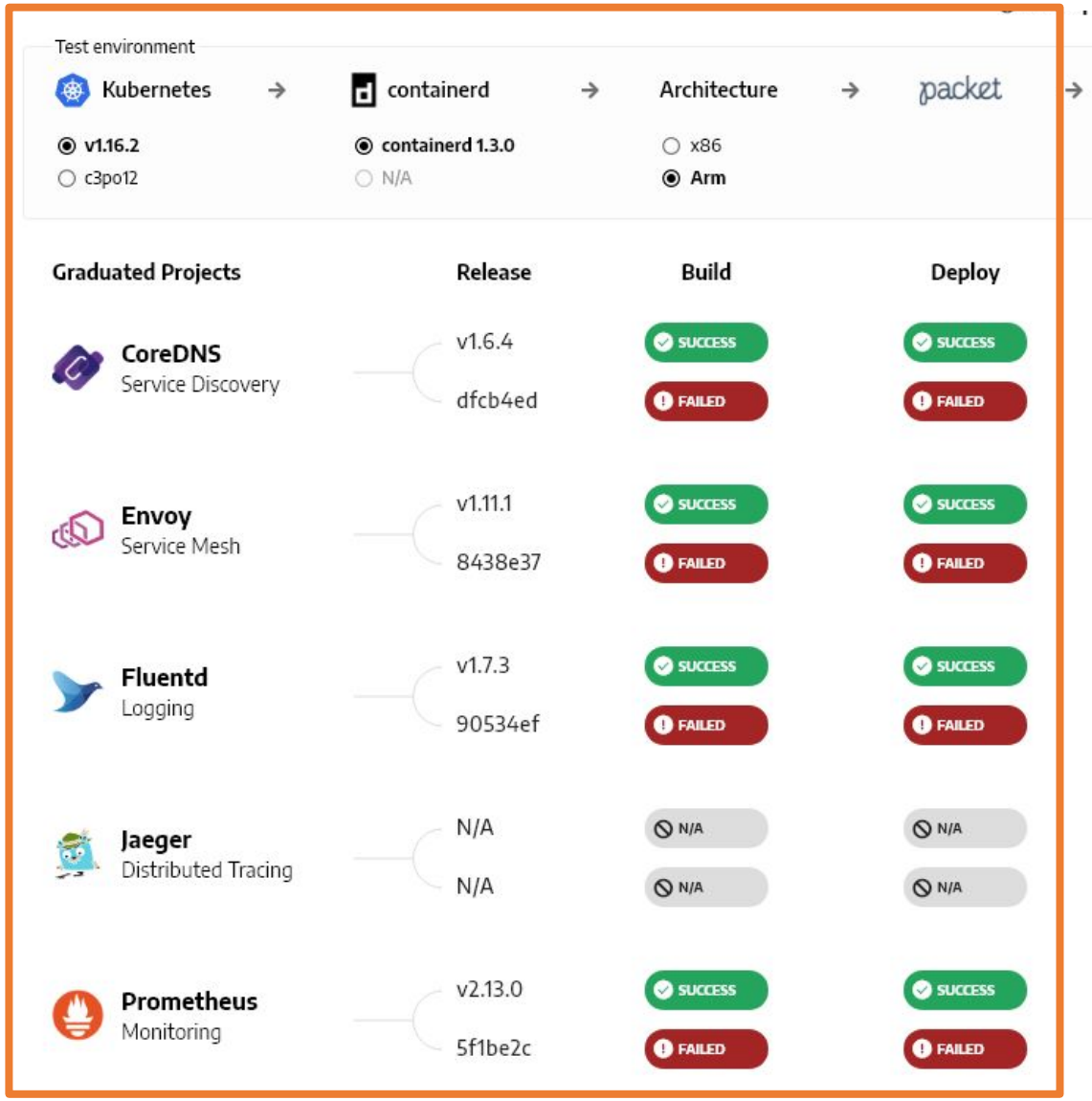


Test environment

Kubernetes → containerd → Architecture → packet → SUCCESS

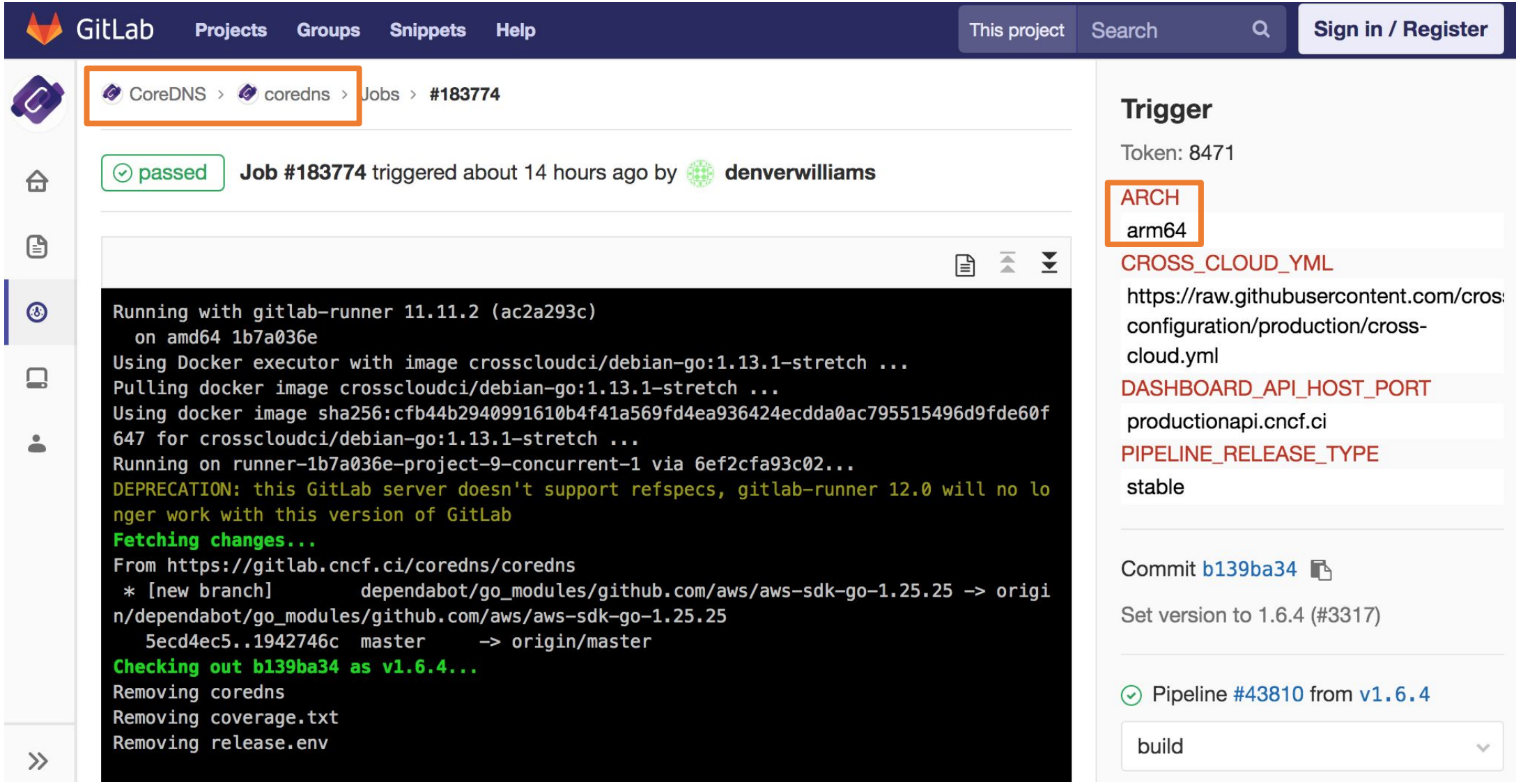
Kubernetes	containerd	Architecture
(•) v1.16.2	(•) containerd 1.3.0	( ) x86
( ) c3po12	( ) N/A	(•) Arm

Graduated Projects	Release	Build	Deploy	Test
CoreDNS — Service Discovery	v1.6.4	SUCCESS	SUCCESS	N/A
	dfcb4ed	FAILED	FAILED	N/A
Envoy — Service Mesh	v1.11.1	SUCCESS	SUCCESS	N/A
	8438e37	FAILED	FAILED	N/A
Fluentd — Logging	v1.7.3	SUCCESS	SUCCESS	N/A
	90534ef	FAILED	FAILED	N/A
Jaeger — Distributed Tracing	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
Prometheus — Monitoring	v2.13.0	SUCCESS	SUCCESS	N/A
	5f1be2c	FAILED	FAILED	N/A

arm

cncf.ci

GitLab: Build job > CoreDNS > Arm



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Tech Overview

CI Testing System

Unified CI/CD platform:
- GitLab

Test Environment provisioning:
- Terraform and Kubespray

App deployments:
- K8s manifest management with Helm

Automated builds and deployments:
- Git + per project yaml configuration

Dashboard

Frontend:

- Vue.js

Status repository:

- Elixir and Erlang

Provisioning Kubernetes

1. **Artifacts:** Collect K8s artifact pinnings from the previous K8s builds
2. **Test Environment Provisioning:** Provision Packet server and bootstrap K8s
3. **Update-Dashboard:** Update Test Environment status badge

Build Stage

1. **Build:** Compile or retrieve build status from project's CI system
2. **Package:** Create containers, create artifact pinning configuration and push to GitLab Docker registry
3. **Update-Dashboard:** Update build status badges

App Deployment Stage

1. **Artifacts:** Collect project artifact pinnings from the previous build stages or retrieve published artifacts per project
2. **Cross-Project:** Use Helm charts to deploy each project
3. **Dashboard-Update:** Update deployment status badges

Roadmap

Roadmap: Nov 2019 to Feb 2020

Nov 2019	v3.2	❑ Add Vitess (using Travis CI integration) ❑ Start next external CI system integration - GitHub Actions ❑ Plan integration with external artifacts for deploy status on cncf.ci
Dec 2019	v3.3	❑ Add etcd (using Travis CI integration) ❑ Start adding deploy status for Linkerd 2.x, Jaeger or Vitess ❑ Plan to save history to add stateful URLs to share test results per Test Environment configuration
Jan 2020	v3.4	❑ Update Linkerd 2.x or add NATS build status (using GitHub Actions integration) ❑ Start 3rd external CI system integration (Circle CI, Jenkins, Gitlab, Drone)
Feb 2020	v3.5	❑ Collaborate w/ Graduated Projects to add end-to-end tests

https://github.com/crosscloudci/crosscloudci/blob/master/ROADMAP.md

Get Involved

How to Collaborate

- **Add/update a CNCF project, see the Contributing Guide:**
  - https://github.com/crosscloudci/crosscloudci/blob/master/CONTRIBUTING.md
- **Create issues/PR on GitHub:**
  - https://github.com/crosscloudci/ci-dashboard/issues
- **Subscribe to the CNCF CI public mailing list:**
  - https://lists.cncf.io/g/cncf-ci-public
- **Join #cncf-ci on CNCF Slack:**
  - https://slack.cncf.io
- **Attend CI WG Public Meetings:**
  - https://github.com/cncf/wg-ci

Upcoming Events

Deep Dive: cncf.ci - Adding new projects to cncf.ci (Denver and Watson)

- Wednesday, November 20 at 10:55am - 11:30am
- Location: Room 6D
- https://sched.co/UahV

Intro and Deep Dive: CNF Testbed (Denver and Taylor)

- Thursday, November 21 at 4:25 – 5:55pm
- Location: Room 6E
- https://sched.co/UakA

CI WG Public Meetings

- 4th Tuesday of month at 12pm Pacific > **Next Meeting: January 28th**
- https://github.com/cncf/wg-ci

Connect with the Team

@crosscloudci

@cncfci / @vulkcoop

#cncf-ci

cncfci@vulk.coop

Q&A

Denver Williams,
Vulk Cooperative

Q&A

Thank You!

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