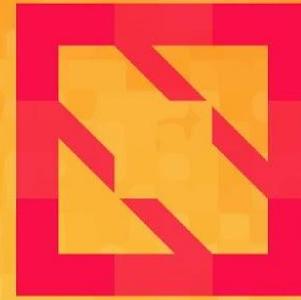




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Intro: `cncf.ci`

*Lucina Stricko & Denver Williams,
Vulk Cooperative*



Agenda (35 minutes)



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

Meet Vulk Cooperative



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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 Carpenter
[@taylor](#)

Lucina Stricko
[@lixuna](#)

W. Watson
[@wavell](#)

Denver Williams
[@denverwilliams](#)



Ashleigh Gregory*
[@ashleighgregory](#)

William Harris*
[@williscool](#)

Joshua Smith*
[@nupejosh](#)

Robert Siekmann*
[@rsiekmann](#)

Intro



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CI DASHBOARD: Overview

Last updated: 1 minute ago

Test environment

Kubernetes → containerd → Architecture → packet → SUCCESS

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	v1.14.0	SUCCESS	N/A	N/A
	98ae8d	SUCCESS	N/A	N/A
Prometheus Monitoring	v2.13.0	SUCCESS	SUCCESS	N/A
	5f1be2c	FAILED	FAILED	N/A

Intro



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

Intro

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 **CI testing system** can reuse existing artifacts from a project's preferred CI system or generate new build artifacts.

Intro

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 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

Goals:

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

Goals



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Goals:

- To compliment the CNCF landscape and trail map -- l.cncf.io
- To promote CNCF hosted projects and help attract more projects to CNCF

Goals



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Goals



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Goals



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Goals

Goals:

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- To promote CNCF hosted projects and help attract more projects to CNCF
- To demonstrate the use of cloud native technologies on multiple test environments
- To support and contribute to a sustainable and scalable project ecosystem
- 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



Displaying ONAP SO Project



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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



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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



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Key Features of `cncf.ci`



Key Features



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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



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

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



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Dashboard Walk-through



v1 Review: Cross-Cloud CI



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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	v1.12.2	✓ SUCCESS							
	✓ SUCCESS	dde084f	✓ SUCCESS							
Prometheus Monitoring	✓ SUCCESS	v2.4.3	✓ SUCCESS							
	✓ SUCCESS	8b91d39	✓ SUCCESS							
CoreDNS Service Discovery	✓ SUCCESS	v1.2.5	✓ SUCCESS							
	✓ SUCCESS	95c9e14	✓ SUCCESS							
Fluentd Logging	✓ SUCCESS	v1.2.6	✓ SUCCESS							
	✓ SUCCESS	3dabdc5	✓ SUCCESS							
Linkerd Service Mesh	✓ SUCCESS	1.5.1	✓ SUCCESS							
	✓ SUCCESS	36dc2c9	✓ SUCCESS							
Envoy Service Mesh	✓ SUCCESS	v1.8.0	✓ SUCCESS							
	✓ SUCCESS	0ebe247	✓ SUCCESS							
ONAP Network Automati	✓ SUCCESS	v1.1.1	✓ SUCCESS							
	✓ SUCCESS	9a3841e	✓ SUCCESS							

v2 Review: cncf.ci



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CI DASHBOARD: Overview

🕒 Last updated: 12 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
	2ef55f8	✔ SUCCESS	✔ SUCCESS	⊘ N/A
Envoy Service Mesh	v1.10.0	❗ FAILED	🔄 RUNNING	⊘ N/A
	829b905	❗ FAILED	🔄 RUNNING	⊘ N/A
Fluentd Logging	v1.4.2	✔ SUCCESS	✔ SUCCESS	⊘ N/A
	3ac6966	✔ SUCCESS	✔ SUCCESS	⊘ N/A
Prometheus Monitoring	v2.9.2	✔ SUCCESS	✔ SUCCESS	⊘ N/A
	04f2270	✔ SUCCESS	✔ SUCCESS	⊘ N/A
Linkerd Service Mesh	1.6.2	✔ SUCCESS	🔄 RUNNING	⊘ N/A
	603261b	✔ SUCCESS	✔ SUCCESS	⊘ N/A
ONAP SO Network Automation	v1.1.1	✔ SUCCESS	✔ SUCCESS	⊘ N/A
	24ad960	❗ FAILED	🔄 RUNNING	⊘ N/A

v2 Review: cncf.ci



CI DASHBOARD: Overview

🕒 Last updated: 12 hours ago

Test environment

 **Kubernetes** — Stable v1.13.0 ▾ → Bare Metal (Packet) → **✔ SUCCESS**

Project

 **CoreDNS**
Service Discovery

Release

v1.5.0
2ef55f8

Build

✔ SUCCESS
✔ SUCCESS

Deploy

✔ SUCCESS
✔ SUCCESS

Test

⊘ N/A
⊘ N/A

v3 Walk-through: cncf.ci



CI DASHBOARD: Overview

🕒 Last updated: 1 minute ago

Test environment



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	v1.14.0	✓ SUCCESS	🚫 N/A	🚫 N/A
	98ae8d	✓ SUCCESS	🚫 N/A	🚫 N/A
 Prometheus Monitoring	v2.13.0	✓ SUCCESS	✓ SUCCESS	🚫 N/A
	5f1be2c	! FAILED	! FAILED	🚫 N/A

Test Environment



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CI DASHBOARD: Overview

🕒 Last updated: 1 minute ago

Test environment



Graduated Projects

CoreDNS
Service Discovery

Release

v1.6.4
dfcb4ed

Build

SUCCESS
 FAILED

Deploy

SUCCESS
 FAILED

Test

N/A
 N/A

Arm Support



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CI DASHBOARD: Overview

🕒 Last updated: 1 minute ago

Test environment

Kubernetes → containerd → Architecture → packet → ✔ SUCCESS

v1.16.2 containerd 1.3.0 x86

c3po12 N/A Arm

Graduated Projects



CoreDNS
Service Discovery

Release

v1.6.4

dfcb4ed

Build

✔ SUCCESS

! FAILED

Deploy

✔ SUCCESS

! FAILED

Test

⊘ N/A

⊘ N/A

cncf.ci

Arm Support



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Test environment

Kubernetes → containerd → Architecture → packet → SUCCESS

v1.16.2
 c3po12

containerd 1.3.0
 N/A

x86
 Arm

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



GitLab: Build job > CoreDNS > Arm



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GitLab Projects Groups Snippets Help This project Search Sign in / Register

CoreDNS > coredns > Jobs > #183774

passed Job #183774 triggered about 14 hours ago by denverwilliams

```
Running with gitlab-runner 11.11.2 (ac2a293c)
  on amd64 1b7a036e
Using Docker executor with image crosscloudci/debian-go:1.13.1-stretch ...
Pulling docker image crosscloudci/debian-go:1.13.1-stretch ...
Using docker image sha256:cfb44b2940991610b4f41a569fd4ea936424ecdda0ac795515496d9fde60f647 for crosscloudci/debian-go:1.13.1-stretch ...
Running on runner-1b7a036e-project-9-concurrent-1 via 6ef2cfa93c02...
DEPRECATION: this GitLab server doesn't support refsspecs, gitlab-runner 12.0 will no longer work with this version of GitLab
Fetching changes...
From https://gitlab.cncf.ci/coredns/coredns
 * [new branch]      dependabot/go_modules/github.com/aws/aws-sdk-go-1.25.25 -> origin/dependabot/go_modules/github.com/aws/aws-sdk-go-1.25.25
 5ecd4ec5..1942746c master -> origin/master
Checking out b139ba34 as v1.6.4...
Removing coredns
Removing coverage.txt
Removing release.env
```

Trigger
Token: 8471

ARCH
arm64

CROSS_CLOUD_YML
<https://raw.githubusercontent.com/crosscloudci/configuration/production/cross-cloud.yml>

DASHBOARD_API_HOST_PORT
productionapi.cncf.ci

PIPELINE_RELEASE_TYPE
stable

Commit [b139ba34](#)

Set version to 1.6.4 (#3317)

Pipeline #43810 from v1.6.4

build



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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



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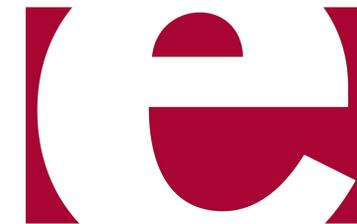
Frontend:

- Vue.js



Status repository:

- Elixir and Erlang



ERLANG

Provisioning Kubernetes

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

Test environment



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 pinning 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

Graduated Projects



CoreDNS
Service Discovery

Release

v1.6.4

dfcb4ed

Build



Deploy





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Roadmap



Roadmap: Nov 2019 to Feb 2020



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Nov 2019	v3.2	<ul style="list-style-type: none">❑ 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	<ul style="list-style-type: none">❑ 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	<ul style="list-style-type: none">❑ 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	<ul style="list-style-type: none">❑ Collaborate w/ Graduated Projects to add end-to-end tests

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



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Get Involved



How to Collaborate



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- **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



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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



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@crosscloudci



@cncfci / @vulkcoop



#cncf-ci



cncfci@vulk.coop



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Q&A

*Denver Williams,
Vulk Cooperative*



Q&A



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Thank You!



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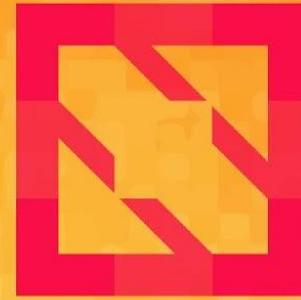
Presentation prepared by:



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