

La CNCF et son écosystème

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Zenika Brest @ZenikaBrest


BEGIN.

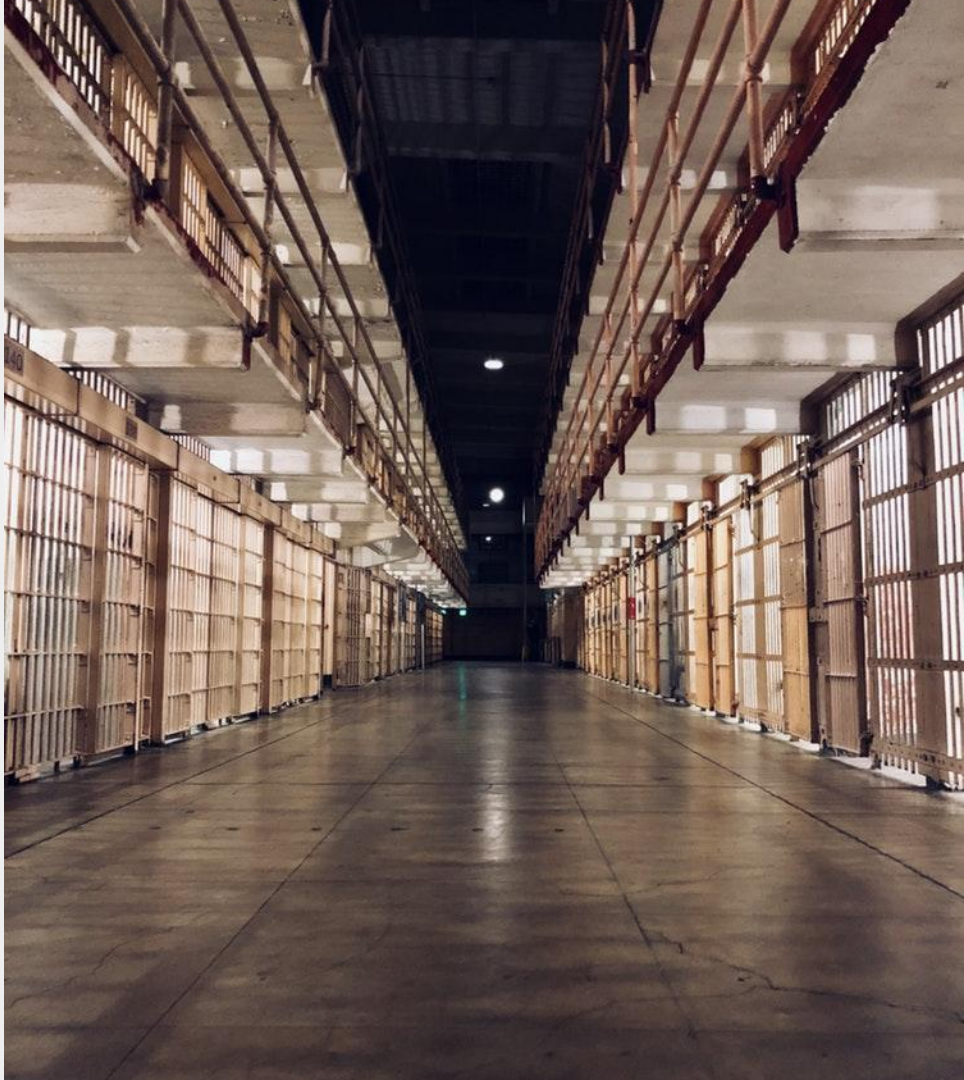


THE
APACHE™
SOFTWARE FOUNDATION


ECLIPSE™
FOUNDATION


OPAL

Open source software stack enables deployment on any public, private cloud or hybrid cloud




#Container #Microservice #DevOps



The Linux Foundation is dedicated to building sustainable ecosystems around open source projects to accelerate technology development and industry adoption.

Today the Linux Foundation is much more than Linux



Security

We are helping global privacy and security through a program to encrypt the entire internet.

Let's Encrypt



Networking

We are creating ecosystems around networking to improve agility in the evolving software-defined datacenter.

LF NETWORKING



Cloud

We are creating a portability layer for the cloud, driving de facto standards and developing the orchestration layer for all clouds.

CLOUD NATIVE COMPUTING FOUNDATION



Automotive

We are creating the platform for infotainment in the auto industry that can be expanded into instrument clusters and telematics systems.

AUTOMOTIVE GRADE LINUX



Blockchain

We are creating a permanent, secure distributed ledger that makes it easier to create cost-efficient, decentralized business networks.

HYPERLEDGER



Web

We are providing the application development framework for next generation web, mobile, serverless, and IoT applications.

node JS









Cloud & Containers



Projects



Press & relations



Help for documentation



Training & Meetup



Events



CNCF Structure

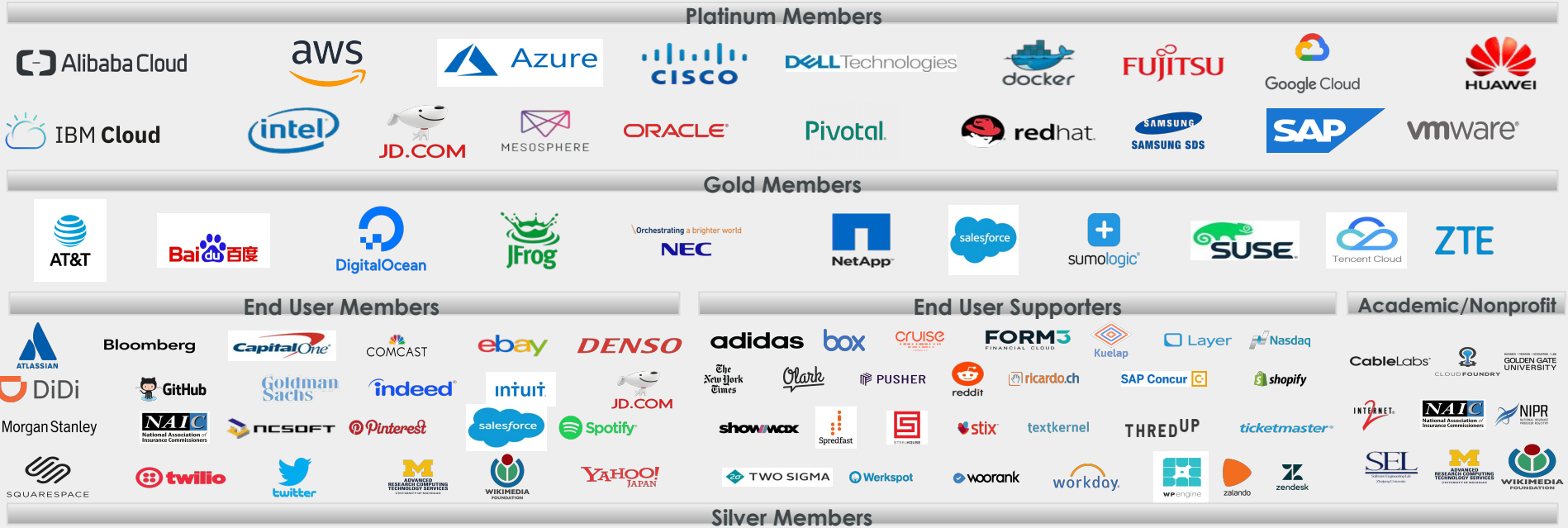


- Mainly vendors
- Fund the organization
- Marketing and strategic direction

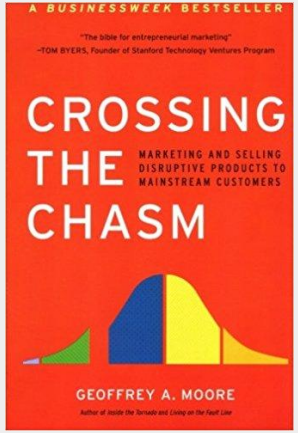
- 9 top technical architects
- Admit new projects
- Acts as a resource to projects

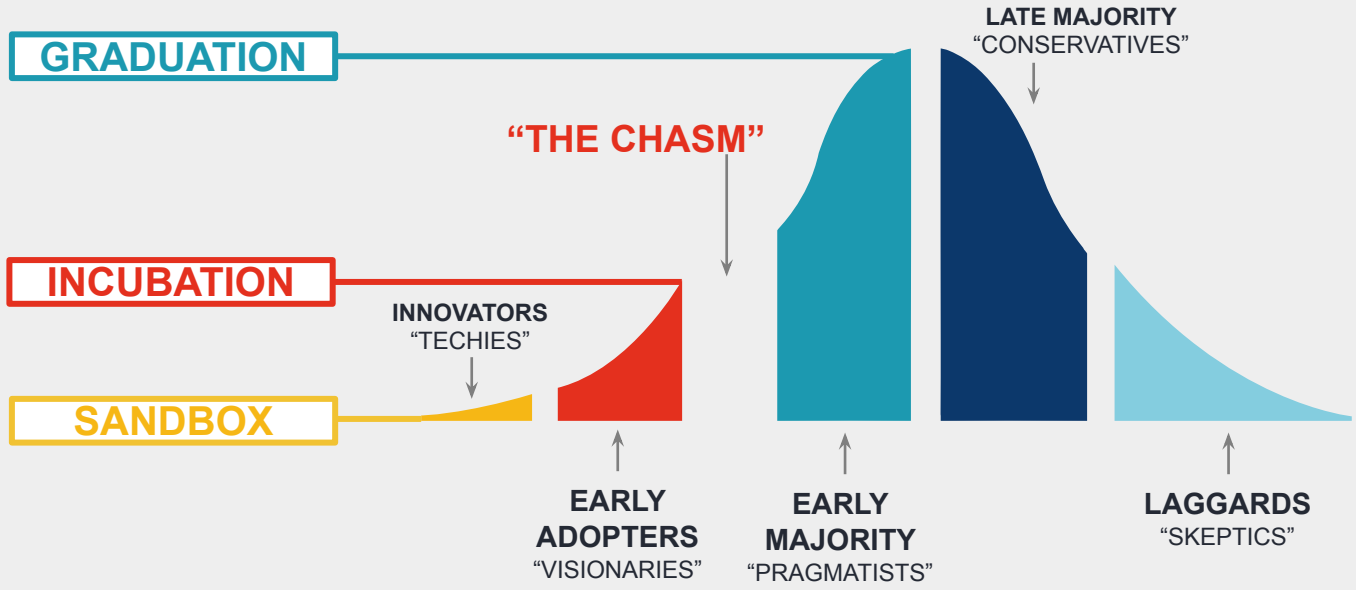
- Real end users of these technologies
- Communicate back requirements
- And good and bad experiences

300+ Members and Growing



CNCF Project Maturities





cncf / toc

Watch 128 Star 230 Fork 97

Code Issues 12 Pull requests 8 Projects 1 Insights

Branch: master toc / proposals / kubernetes.adoc Find file Copy path

rothgar Update kubernetes proposal doc 3cbb054 on 21 Mar 2017

2 contributors

45 lines (30 sloc) 3.15 KB Raw Blame History

Kubernetes Proposal

Name of project: Kubernetes

Description

Kubernetes is an open source system for managing containerized applications across multiple hosts, providing basic mechanisms for deployment, maintenance, and scaling of applications. Kubernetes will serve as a cluster manager for the CNCF ecosystem.

Sponsor / Advisor from TOC: Alexis Richardson

Unique Identifier: kubernetes

License: Apache License v2.0

Source control repositories: https://github.com/kubernetes (everything in the org)

Initial Committers: https://github.com/orgs/kubernetes/teams/kubernetes-maintainers

Sandbox



Buildpacks ★ 206
Cloud Native Computing Foundation (CNCF)



CloudEvents ★ 837
Cloud Native Computing Foundation (CNCF)



Cortex ★ 1,113
Cloud Native Computing Foundation (CNCF)



Dragonfly ★ 3,077
Cloud Native Computing Foundation (CNCF)



Falco ★ 1,286
Cloud Native Computing Foundation (CNCF)



Open Policy Agent (OPA) ★ 1,786
Cloud Native Computing Foundation (CNCF)



OpenMetrics ★ 537
Cloud Native Computing Foundation (CNCF)



SPIFFE ★ 389
Cloud Native Computing Foundation (CNCF)



SPIRE ★ 350
Cloud Native Computing Foundation (CNCF)



Telepresence ★ 1,621
Cloud Native Computing Foundation (CNCF)



TiKV ★ 4,603
Cloud Native Computing Foundation (CNCF)

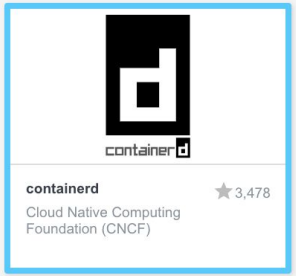


Virtual Kubelet ★ 1,659
Cloud Native Computing Foundation (CNCF)

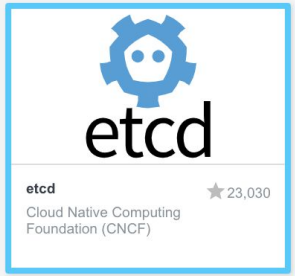
Incubating



Container Network Interface (CNI) ★ 1,842
Cloud Native Computing Foundation (CNCF)



containerd ★ 3,478
Cloud Native Computing Foundation (CNCF)



etcd ★ 23,030
Cloud Native Computing Foundation (CNCF)



Fluentd ★ 7,385
Cloud Native Computing Foundation (CNCF)



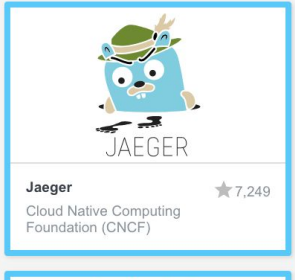
gRPC ★ 19,600
Cloud Native Computing Foundation (CNCF)



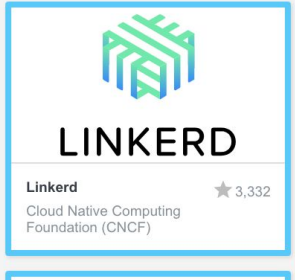
Harbor ★ 6,925
Cloud Native Computing Foundation (CNCF)



Helm ★ 10,151
Cloud Native Computing Foundation (CNCF)



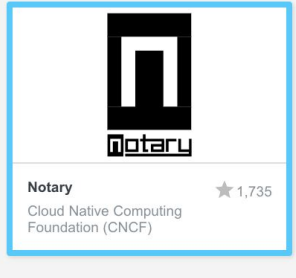
Jaeger ★ 7,249
Cloud Native Computing Foundation (CNCF)



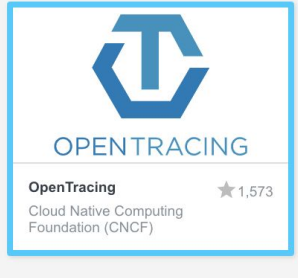
Linkerd ★ 3,332
Cloud Native Computing Foundation (CNCF)



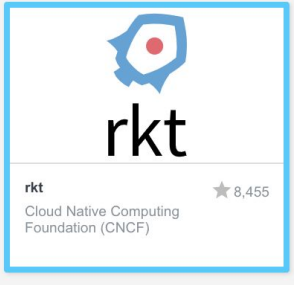
NATS ★ 5,267
Cloud Native Computing Foundation (CNCF)



Notary ★ 1,735
Cloud Native Computing Foundation (CNCF)



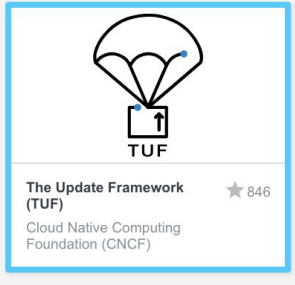
OpenTracing ★ 1,573
Cloud Native Computing Foundation (CNCF)



rkt ★ 8,455
Cloud Native Computing Foundation (CNCF)



Rook ★ 4,583
Cloud Native Computing Foundation (CNCF)



The Update Framework (TUF) ★ 846
Cloud Native Computing Foundation (CNCF)



Vitess ★ 7,526
Cloud Native Computing Foundation (CNCF)

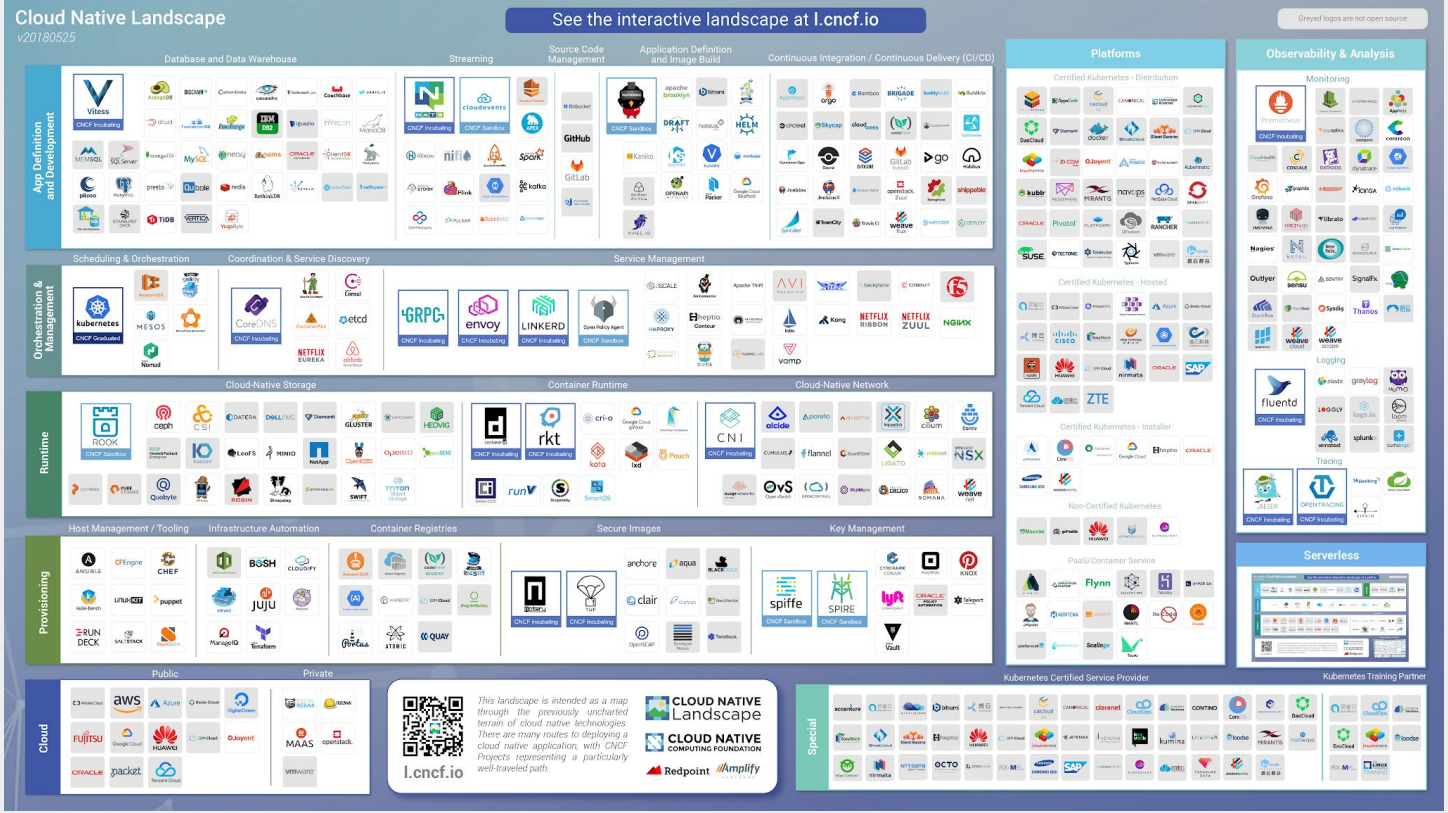
Graduated


CoreDNS
CoreDNS
3,490
Cloud Native Computing Foundation (CNCF)


envoy
Envoy
8,469
Cloud Native Computing Foundation (CNCF)


kubernetes
Kubernetes
48,453
Cloud Native Computing Foundation (CNCF)


Prometheus
Prometheus
22,137
Cloud Native Computing Foundation (CNCF)


Cloud Native Landscape
v20180525
See the interactive landscape at l.cncf.io
Greyed logos are not open source
App Definition and Development
Database and Data Warehouse
Streaming
Source Code Management
Application Definition and Image Build
Continuous Integration / Continuous Delivery (CI/CD)
Orchestration & Management
Scheduling & Orchestration
Coordination & Service Discovery
Service Management
Runtime
Cloud-Native Storage
Container Runtime
Cloud-Native Network
Provisioning
Host Management / Tooling
Infrastructure Automation
Container Registries
Secure Images
Key Management
Cloud
Public
Private
l.cncf.io
This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.
CLOUD NATIVE Landscape
CLOUD NATIVE COMPUTING FOUNDATION
Redpoint
Amplify
Platforms
Certified Kubernetes - Distribution
Certified Kubernetes - Hosted
Certified Kubernetes - Installer
Non-Certified Kubernetes
PaaS/Container Service
Observability & Analysis
Monitoring
Logging
Tracing
Serverless
Special
Kubernetes Certified Service Provider
Kubernetes Training Partner

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Dan Kohn
@dankohn1

Follow

The biggest ever improvement to the @CloudNativeFdn Interactive Landscape: we now dynamically generate the landscape in real-time in your browser rather than having a graphic artist do so manually once a month. landscape.cncf.io/format=landsca…

12:04 AM - 14 Sep 2018

CLOUD NATIVE COMPUTING FOUNDATION

CLOUD NATIVE TRAIL MAP

The Cloud Native Landscape (*cncf.io*) has a large number of options. This Cloud Native Trail Map is a recommended process for leveraging open source, cloud native technologies. At each step, you can choose a vendor-supported offering or do it yourself, and everything after step #3 is optional based on your circumstances.

HELP ALONG THE WAY

A. Training and Certification

Consider training offerings from CNCF and then take the exam to become a Certified Kubernetes Administrator or a Certified Kubernetes Application Developer

cncf.io/training

B. Consulting Help

If you want assistance with Kubernetes and the surrounding ecosystem, consider leveraging a Kubernetes Certified Service Provider

cncf.io/kcsp

C. Join CNCF's End User Community

For companies that don't offer cloud native services externally

cncf.io/enduser

WHAT IS CLOUD NATIVE?

Cloud-native technologies, such as containers and microservices, empower organizations to develop and deploy scalable, agile applications and services in dynamic, distributed environments. By taking into account these characteristics, such systems are designed to be resilient, elastic, and loosely coupled, via manageable abstractions and declarative APIs, thereby enabling effective, reliable automation. This allows engineers to observe the applications and to safely make impactful changes, and results in processes and workflows that fully take advantage of these environments and minimize toil.

The Cloud Native Computing Foundation seeks to drive adoption of these techniques by fostering an ecosystem of open-source, vendor-neutral projects that align with these objectives, and which are portable to public, private, and hybrid clouds. We democratize the state-of-the-art patterns and practices to ensure innovations remain open and accessible for everyone.

l.cncf.io

v20180604

1. CONTAINERIZATION

- Commonly done with Docker containers
- Any size application and dependencies (even PDP-11 code running on an emulator) can be containerized
- Over time, you should aspire towards splitting suitable applications and writing future functionality as microservices





2. CI/CD

- Setup Continuous Integration/Continuous Delivery (CI/CD) so that changes to your source code automatically result in a new container being built, tested, and deployed to staging and eventually, perhaps, to production
- Setup automated rollouts, roll backs and testing

3. ORCHESTRATION & APPLICATION DEFINITION

- Kubernetes is the market-leading orchestration solution
- You should select a Certified Kubernetes Distribution, Hosted Platform, or Installer: *cncf.io/ck*
- Helm Charts help you define, install, and upgrade even the most complex Kubernetes application



kubernetes — CNCF Graduated

HELM — CNCF Incubating

4. OBSERVABILITY & ANALYSIS

- Pick solutions for monitoring, logging and tracing
- Consider CNCF projects Prometheus for monitoring, Fluentd for logging and Jaeger for Tracing
- For tracing, look for an OpenTracing-compatible implementation like Jaeger

Prometheus — CNCF Incubating

fluentd — CNCF Incubating

OPENTRACING — CNCF Incubating

JAEGER — CNCF Incubating



5. SERVICE MESH AND DISCOVERY

- CoreDNS is a fast and flexible tool that is useful for service discovery
- Envoy and Linkerd each enable service mesh architectures
- They offer health checking, routing, and load balancing



envoy — CNCF Incubating

CoreDNS — CNCF Incubating

LINKERD — CNCF Incubating

6. NETWORKING

To enable more flexible networking, use a CNI-compliant network project like Calico, Flannel, or Weave Net.



CNI — CNCF Incubating

7. DISTRIBUTED DATABASE

When you need more resiliency and scalability than you can get from a single database, Vitess is a good option for running MySQL at scale through sharding.

Vitess — CNCF Incubating



8. MESSAGING

When you need higher performance than JSON-REST, consider using gRPC. NATS is publish/subscribe message-oriented middleware.

gRPC — CNCF Incubating

NATS — CNCF Incubating

9. CONTAINER RUNTIME

You can use alternative container runtimes. The most common, all of which are OCI-compliant, are containerd, rkt and CRI-O.



containerd — CNCF Incubating

rkt — CNCF Incubating

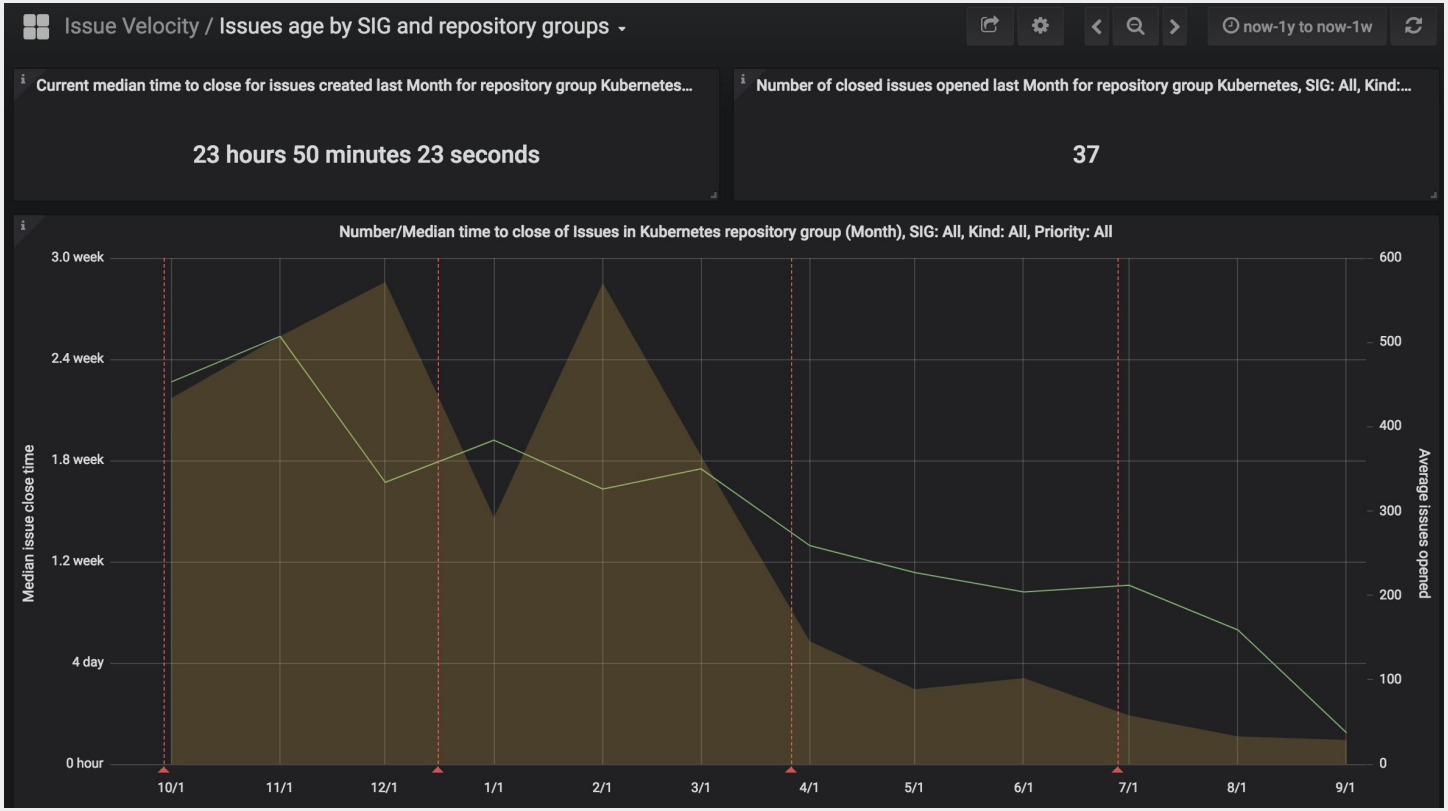
10. SOFTWARE DISTRIBUTION

If you need to do secure software distribution, evaluate Notary, an implementation of The Update Framework.

Notary — CNCF Incubating

TUF — CNCF Incubating

DEVSTATS



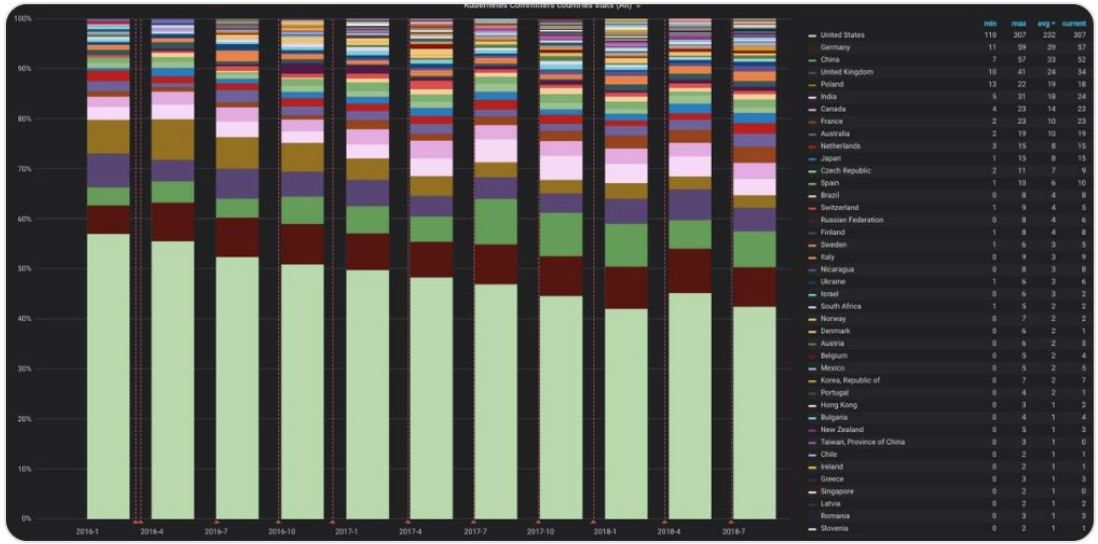
Link



Dan Kohn @ #OSSummit Edinburgh
@dankohn1

Follow

New DevStats dashboard from @CloudNativeFdn shows that less than 50% of committers to #Kubernetes now come from the US. k8s.devstats.cncf.io/d/50/countries …



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cncf.ci

Project	Build Status	Release Stable Head	Deployments AWS	Azure	GCE	IBM Cloud	Bare Metal (Packet)	OpenStack
Kubernetes Orchestration	SUCCESS	v1.11.2	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	03a6d0b	FAILED	FAILED	FAILED	FAILED	FAILED	SUCCESS
Prometheus Monitoring	SUCCESS	v2.3.2	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	068eaa5	FAILED	FAILED	FAILED	FAILED	FAILED	SUCCESS
CoreDNS Service Discovery	SUCCESS	v1.2.2	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	0bf8b81	FAILED	FAILED	FAILED	FAILED	FAILED	SUCCESS
Fluentd Logging	SUCCESS	v1.2.5	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	0337300	FAILED	FAILED	FAILED	FAILED	FAILED	SUCCESS
Linkerd Service Mesh	SUCCESS	1.4.6	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	SUCCESS	7bd1ba7	FAILED	FAILED	FAILED	FAILED	FAILED	SUCCESS
Envoy Service Mesh	SUCCESS	v1.7.1	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS	SUCCESS
	initial INITIAL	260798f	FAILED	FAILED	FAILED	FAILED	FAILED	FAILED

CNCF serves as the vendor-neutral home for many of the fastest-growing projects on GitHub, including Kubernetes, Prometheus and Envoy, fostering collaboration between the industry's top developers, end users, and vendors.



50,399

# of contributors to CNCF projects



60,610

Registered for free Kubernetes EdX course



79

Certified Kubernetes Distributions and Platforms



95,912

CNCF Meetup members

CNCF
@CloudNativeFdn

Follow

Nominations open TODAY for the CNCF #CommunityAwards – honoring those who have made the greatest impact over the last year in the #cloudnative space. Visit cncf.io/blog/2018/10/0 … to nominate a deserving ambassador, maintainer and/or advocate by Oct. 29 🏆



6:27 PM - 8 Oct 2018

CloudNativeCon + KubeCon

- Barcelona: May 20-23, 2019
- Shanghai: June 26-28, 2019
- San Diego: November 18-21, 2019



Meetups



Cloud Native Computing Foundation (CNCF)

Members	Groups	Countries
96,780	172	44

CLOUD NATIVE COMPUTING FOUNDATION
AMBASSADOR

Certifications

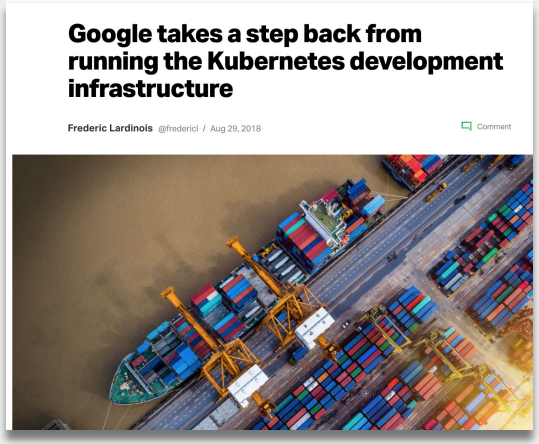
CERTIFIED kubernetes ADMINISTRATOR

CERTIFIED kubernetes APPLICATION DEVELOPER

Mailing-lists

Serverless WG

Store



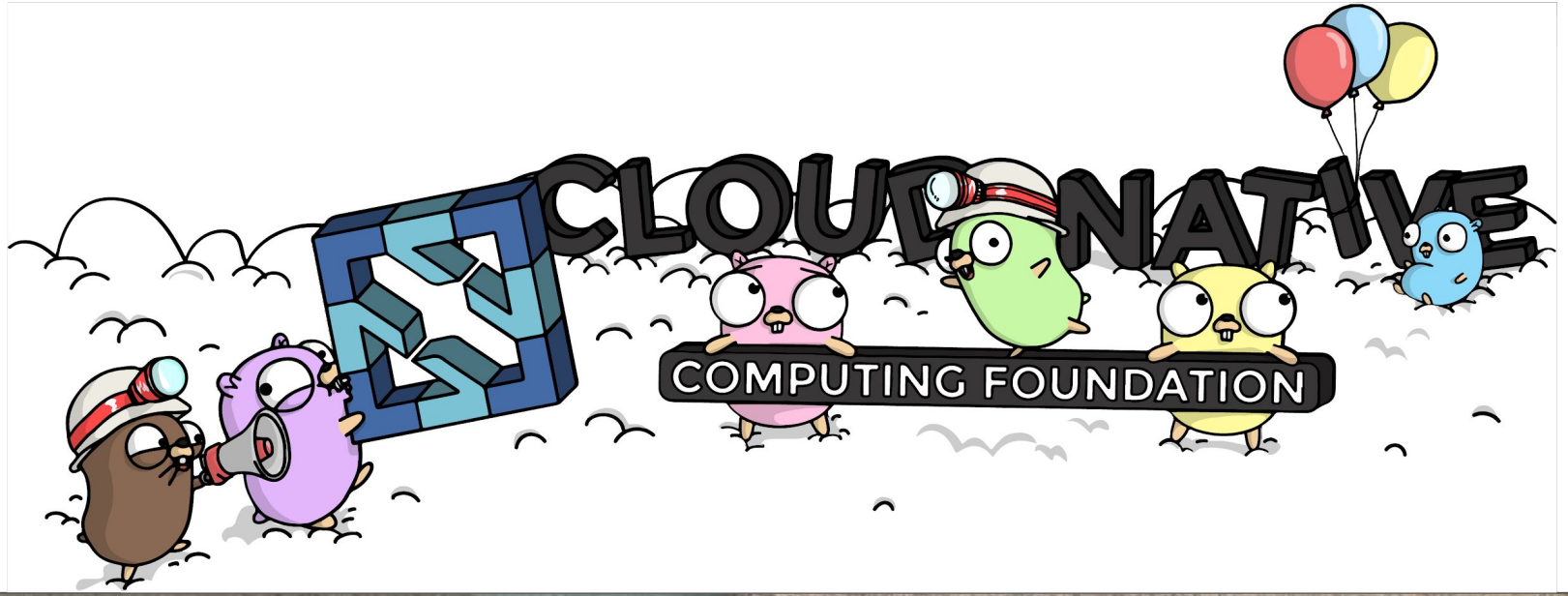
Infrastructure Lab

Slack



La CNCF et son écosystème

Julien Landuré @jlandure



Julien Landuré @jlandure