Follow the CNCF Road

0.3.1 • 30.07.2018

Cloud Native Wales
@cloudnativewal
Brodorion y Cwmwl Cymru

Take Photos

#CNW
@CloudNativeWal

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Thank You(s)?

Alpha

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Follow the CNCF Road

Follow the CNCF Road

- Open source software foundation
- Host and nurture components of cloud native software stacks
- Over 260 members including the world's largest public cloud and enterprise software companies as well as dozens of innovative startups.

Follow the CNCF Road

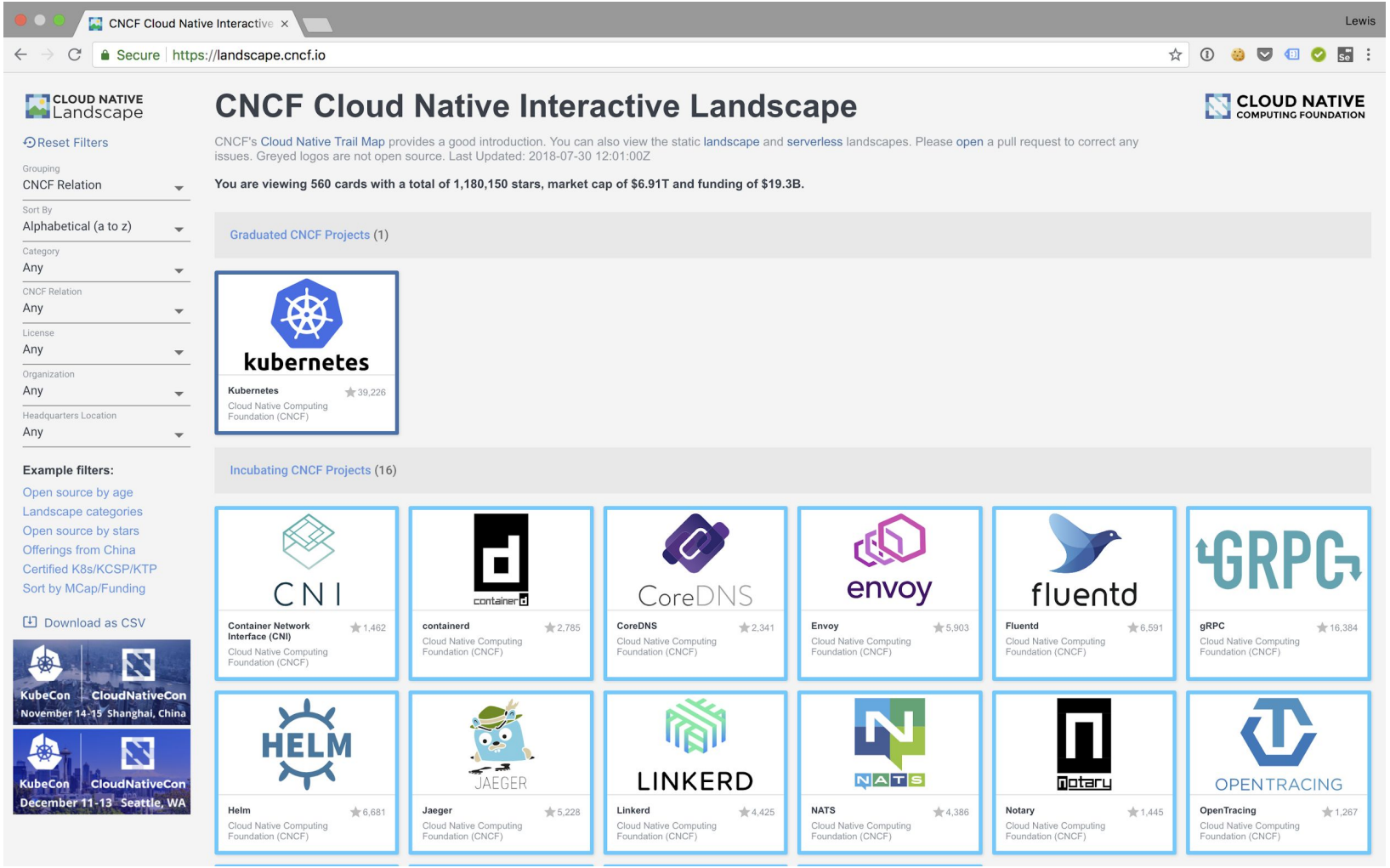
Follow the CNCF Road

Follow the CNCF Trail Map

Follow the CNCF Trail Map

https://l.cncf.io

https://landscape.cncf.io


CNCF Cloud Native Interactive
Lewis
Secure | https://landscape.cncf.io
CLOUD NATIVE Landscape
Reset Filters
Grouping
CNCF Relation
Sort By
Alphabetical (a to z)
Category
Any
CNCF Relation
Any
License
Any
Organization
Any
Headquarters Location
Any
Example filters:
Open source by age
Landscape categories
Open source by stars
Offerings from China
Certified K8s/KCSP/KTP
Sort by MCap/Funding
Download as CSV
KubeCon CloudNativeCon November 14-15 Shanghai, China
KubeCon CloudNativeCon December 11-13 Seattle, WA
CNCF Cloud Native Interactive Landscape
CLOUD NATIVE COMPUTING FOUNDATION
CNCF's Cloud Native Trail Map provides a good introduction. You can also view the static landscape and serverless landscapes. Please open a pull request to correct any issues. Greyed logos are not open source. Last Updated: 2018-07-30 12:01:00Z
You are viewing 560 cards with a total of 1,180,150 stars, market cap of $6.91T and funding of $19.3B.
Graduated CNCF Projects (1)
kubernetes
Kubernetes ★39,226
Cloud Native Computing Foundation (CNCF)
Incubating CNCF Projects (16)
CNI
Container Network Interface (CNI) ★1,462
Cloud Native Computing Foundation (CNCF)
containerd ★2,785
Cloud Native Computing Foundation (CNCF)
CoreDNS ★2,341
Cloud Native Computing Foundation (CNCF)
envoy
Envoy ★5,903
Cloud Native Computing Foundation (CNCF)
fluentd
Fluentd ★6,591
Cloud Native Computing Foundation (CNCF)
GRPC
gRPC ★16,384
Cloud Native Computing Foundation (CNCF)
HELM
Helm ★6,681
Cloud Native Computing Foundation (CNCF)
JAEGER
Jaeger ★5,228
Cloud Native Computing Foundation (CNCF)
LINKERD
Linkerd ★4,425
Cloud Native Computing Foundation (CNCF)
NATS
NATS ★4,386
Cloud Native Computing Foundation (CNCF)
Notary
Notary ★1,445
Cloud Native Computing Foundation (CNCF)
OPENTRACING
OpenTracing ★1,267
Cloud Native Computing Foundation (CNCF)

- Map through the previously uncharted terrain of cloud native technologies.
- There are many routes to deploying a cloud native application.
- CNCF Projects represent a particularly well-traveled path.

- Plan of action:
  - Go through each section.
  - Discuss the concept.

Break it down

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

4. OBSERVABILITY & ANALYSIS

- Pick solutions for monitoring, logging and tracing
- Consider CNCF projects Prometheus for monitoring, Fluentd for logging and Jaeger for Tracing

Containerization

Containerisation

Amlwytho

CI/CD

Orchestration & Application Definition

Trail Map: 30%

We've covered the basics

- 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

Observability & Analysis

Service Mesh & Discovery

Networking

Trail Map: 60%

Production use cases covered

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

CNI
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

Distributed Database

Messaging

Trail Map: 80%

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

Container Runtime

Software Distribution

Trail Map: 100%

Trail Map: DONE!

!!! DONE !!!

Serverless?

openfaas

knative

How do we learn more?

The People

https://landscape.cncf.io

Google Cloud Platform

Google Cloud Platform

$300 of hosting

GitLab
$200 of hosting

$500 worth of hosting

https://katacoda.com

Raspberry Pi’s

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