

CloudNative **Aalborg** presents

Cloud native is...

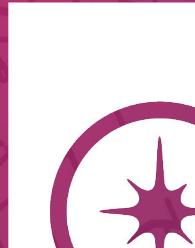
and

Cloud native usage in Sparnord

and

Install kubernetes in 10 minutes

Hosted by



spar Nord



CLOUD NATIVE  
COMPUTING FOUNDATION

# CloudNative Aalborg

#CloudNativeAalborg  
#CloudNativeNordics

Join Slack



@ <https://www.cloudnativenoridcs.com/>





Cloud Native **Aalborg** presents

**Cloud native is...**

and

**Cloud native usage in Sparnord**

and

**Install kubernetes in 10 minutes**



**CLOUD NATIVE**  
COMPUTING FOUNDATION

## A word from our sponsor



Camilla Beck Larsen  
Systems Engineer - Sparnord



sparNord

# The organization

- ~1500 employees
- ~500 of them located here in Aalborg

The IT organization

80++  
Superheroes



# We love numbers – so here are some facts

- 2 Datacenters
- ~400 VMs
- 6 Kubernetes clusters
- 40 external websites and services
- 33 internal service in prod
- ~500 pods

And ...>

**WE'RE  
HIRING**

# Cloud Native Nordics is...

/by Kasper Nissen

Lunarway & Cloud Native Computing Foundation Ambassador



**CLOUD NATIVE**  
COMPUTING FOUNDATION

# Cloud Native Nordics Community

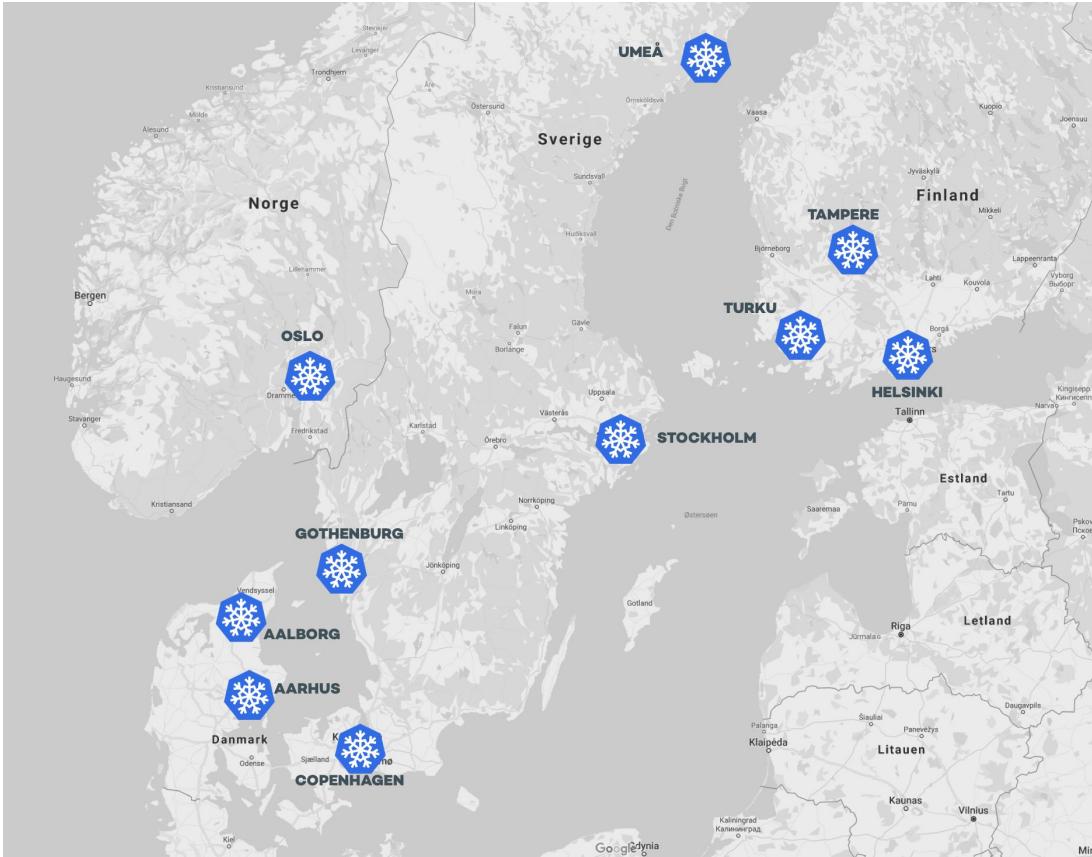


CLOUD NATIVE  
**NORDICS**



CLOUD NATIVE  
**NORDICS**

# Cloud Native Nordics Community



# Cloud Native Nordics Stats



Meetups



Total RSVPs



Unique Speakers



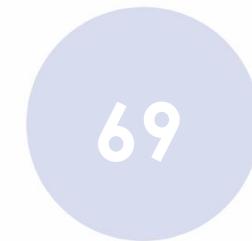
Average Meetup  
RSVPs



Meetup Group  
Members



Unique Attendees



Unique Sponsors



# Cloud Native Nordics Community

Continue the discussions  
and meet Cloud Natives from:

- Denmark,
- Sweden,
- Norway, and
- Finland

on



join @

[www.cloudnativenoridcs.com](http://www.cloudnativenoridcs.com)



CLOUD NATIVE  
**NORDICS**



CLOUD NATIVE  
**NORDICS**

Sponsored by  
The Cloud.dk logo, featuring a blue cloud icon next to the text "Cloud.dk".

# A word from the local organizers



Arne Mejlholm  
Systems Engineer  
Sparnord



Simon Bengtsson  
Systems Engineer  
Sparnord



Camilla Beck Larsen  
Systems Engineer  
Sparnord



Allan Højgaard Jensen  
Cloud Platform Architect  
Oracle

# What is Cloud Native

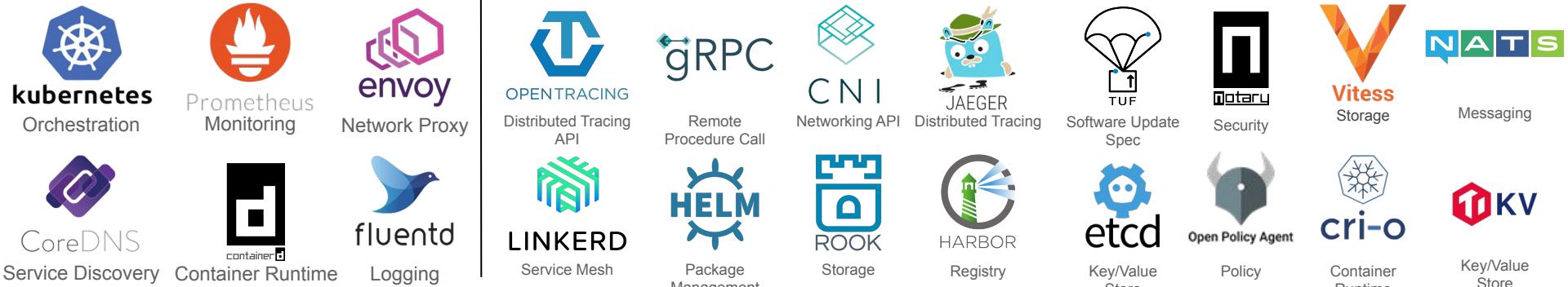
Ihor Dvoretskyi, [@idvoretskyi](https://twitter.com/idvoretskyi),

Developer Advocate, CNCF

# Cloud Native Computing Foundation

- Nonprofit, part of the Linux Foundation; founded Dec 2015

## Graduated

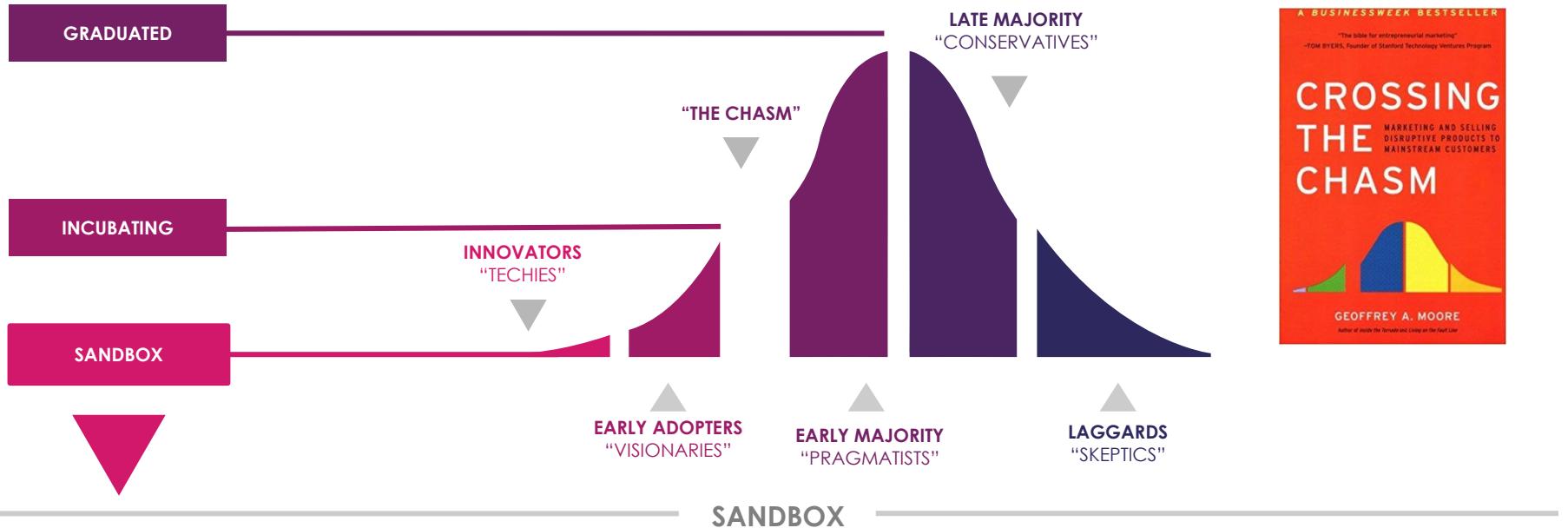


## Incubating

- Platinum members:



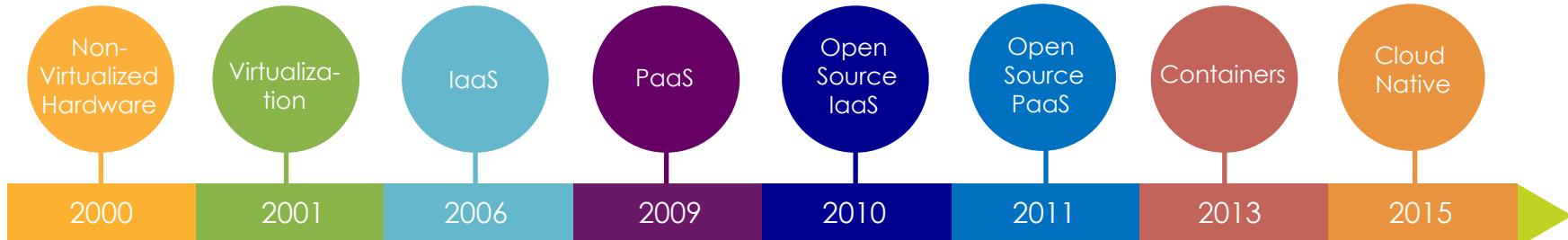
# CNCF Project Maturities



# From Virtualization to Cloud Native



- Cloud native computing uses an open source software stack to:
  - segment applications into *microservices*,
  - package each part into its own container
  - and dynamically orchestrate those containers to optimize resource utilization



# Cloud Native Trail Map

20

Trail Map: [l.cncf.io](https://l.cncf.io)

## CLOUD NATIVE TRAIL MAP

The Cloud Native Landscape ([l.cncf.io](https://l.cncf.io)) has a large number of options. This Cloud Native Trail Map is a recommended process for learning about 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 taking offerings from CNCF and then take the exam to become a Certified Kubernetes Administrator or a Certified Kubernetes Application Developer [cncf.io/training](https://cncf.io/training)

#### B. Consulting Help

If you need assistance with Kubernetes and the surrounding ecosystem, consider leveraging a Kubernetes Certified Service Provider [cncf.io/kscp](https://cncf.io/kscp)

#### C. Join CNCF's End User Community

For companies that don't offer cloud native services externally [cncf.io/enduser](https://cncf.io/enduser)

#### WHAT IS CLOUD NATIVE?

Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

The Cloud Native Computing Foundation seeks to drive adoption of this paradigm by fostering and sustaining an ecosystem of open source, vendor-neutral projects. We democratize state-of-the-art patterns to make these innovations accessible for everyone.

[l.cncf.io](https://l.cncf.io)

v20190821



### 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



### 3. ORCHESTRATION & APPLICATION DEFINITION

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



### 5. SERVICE PROXY, DISCOVERY, & MESH

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



### 7. DISTRIBUTED DATABASE & STORAGE

When you need more resilience and scalability than you can get from a single database, Vitess is a good option for running MySQL at scale through sharding. Rock is a storage orchestrator that integrates a diverse set of storage solutions into Kubernetes. Serving as the "brain" of Kubernetes, etcd provides a shared state across datacenter cluster of machines. TiKV is a high performance distributed transactional key-value store written in Rust.



### 9. CONTAINER REGISTRY & RUNTIME

Harbor is a registry that stores, signs, and scans content. You can use alternative container runtimes. The most common, both of which are OCI-compliant, are containerd and CRI-O.



### 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
- Set up automated rollouts, roll backs and testing

### 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



### 6. NETWORKING & POLICY

To enable more flexible networking, use a CNCF-compliant network project like Calico, Flannel, or Weave Net. Open Policy Agent (OPA) is a general-purpose policy engine with ranges from authorization and admission control to data filtering.



### 8. STREAMING & MESSAGING

When you need higher performance than JSON+REST, consider using gRPC or NATS. gRPC is a universal RPC framework. NATS is a multi-modal messaging system that includes request/reply, pub/sub and load balanced queues.



### 10. SOFTWARE DISTRIBUTION

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





# CNCF Cloud Native Interactive Landscape

[Reset Filters](#)

Grouping

No Grouping

Sort By

Stars (high to low)

Category

Any

CNCF Relation

Any

License

Any

Organization

Any

Headquarters Location

Any

**Example filters:**[Cards by age](#)[Open source landscape](#)[Member cards](#)**Cards by stars**[Cards from China](#)[Certified K8s/KCSP/KTP](#)[Cards by MCap/Funding](#)[Download as CSV](#)

The Cloud Native Trail Map ([png](#), [pdf](#)) is CNCF's recommended path through the cloud native landscape. The cloud native landscape ([png](#), [pdf](#)), serverless landscape ([png](#), [pdf](#)), and member landscape ([png](#), [pdf](#)) are dynamically generated below. Please open a pull request to correct any issues. Greyed logos are not open source. Last Updated: 2019-07-12 2:17:13Z

You are viewing 1,158 cards with a total of 1,725,127 stars, market cap of \$10.38T and funding of \$57.6B.

Try it now at  
<https://l.cncf.io>

[Tweet](#) 694

Landscape

Card Mode

Serverless

Members

No Grouping (1158)



Kubernetes

Cloud Native Computing Foundation (CNCF)  
★ 55,292

Elastic

Elastic ★ 42,628  
MCap: \$7.09B

Netdata

Netdata ★ 39,579



Ansible

Red Hat ★ 38,340  
MCap: \$33.43B

Redis

Redis Labs ★ 37,543  
Funding: \$146.6M

serverless

Serverless ★ 30,993  
Serverless Funding: \$13M

Grafana

Grafana Labs ★ 29,826  
Funding: \$1.23M

No Code

No Code ★ 29,736



Dubbo

Apache Software Foundation ★ 27,880



etcd

Cloud Native Computing Foundation (CNCF) ★ 26,033



Prometheus

Cloud Native Computing Foundation (CNCF) ★ 25,134



Traefik

Containous ★ 23,355  
Containous Funding: \$1.06MApache Spark ★ 22,617  
Apache Software FoundationKong ★ 22,580  
Funding: \$69.1MRethinkDB ★ 22,388  
Linux FoundationgRPC ★ 22,130  
Cloud Native Computing Foundation (CNCF)GitLab ★ 21,901  
GitLab Funding: \$168.2MSentry ★ 21,457  
Sentry Funding: \$26.5M

# CNCF Cloud Native Definition v1.0

Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

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# KubeCon + CloudNativeCon

- North America 2019
  - San Diego: November 18-21, 2019
- Europe 2020
  - Amsterdam: March 30 - April 2, 2020
- China 2020
  - Shanghai: July 28-30, 2020
- North America 2020
  - Boston: November 17-20, 2020



# Cloud Native @ Sparnord

/by Camilla Beck Larsen

Systems Engineer Sparnord



CLOUD NATIVE  
COMPUTING FOUNDATION

How many of you, are running Cloud  
Native services?

We are running ... >



**HELM**



JAEGER



QUARKUS



Prometheus



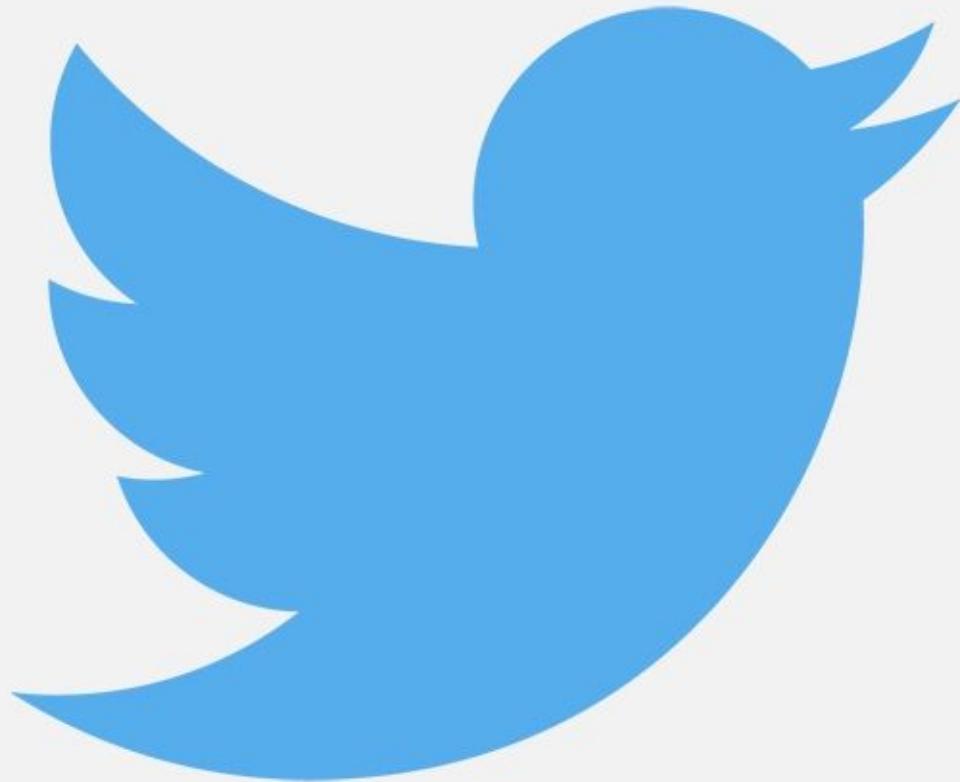
**kubernetes**

And more ...

How we got started...

The logo consists of the word "meetup" in a white, lowercase, cursive-style font. The letter "t" is stylized with a small vertical crossbar extending upwards from its top curve. The entire logo is centered on a solid red background.

meetup



Good/Bad

Open Source community

Great examples and visibility on github

Easy integration to existing tools, once the learning curve has passed :)

Often a quite pricey support agreement if you are a mid/large size company

High learning curve on some products

Further inspiration...>

[Landscape](#)[Card Mode](#)[Serverless](#)[Members](#)

768

### CNCF Graduated Projects (6)

 <b>containerd</b> Cloud Native Computing Foundation (CNCF) ★ 4,566	 <b>CoreDNS</b> Cloud Native Computing Foundation (CNCF) ★ 4,674	 <b>envoy</b> Cloud Native Computing Foundation (CNCF) ★ 10,765	 <b>fluentd</b> Cloud Native Computing Foundation (CNCF) ★ 8,258	 <b>kubernetes</b> Cloud Native Computing Foundation (CNCF) ★ 57,255	 <b>Prometheus</b> Cloud Native Computing Foundation (CNCF) ★ 26,142
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### CNCF Incubating Projects (16)

 <b>CNI</b> Container Network Interface (CNI) ★ 2,265 Cloud Native Computing Foundation (CNCF)	 <b>cri-o</b> Cloud Native Computing Foundation (CNCF) ★ 1,926	 <b>etcd</b> Cloud Native Computing Foundation (CNCF) ★ 27,004	 <b>gRPC</b> Cloud Native Computing Foundation (CNCF) ★ 22,900	 <b>HARBOR</b> Cloud Native Computing Foundation (CNCF) ★ 8,974	 <b>HELM</b> Cloud Native Computing Foundation (CNCF) ★ 13,616	 <b>Jaeger</b> Cloud Native Computing Foundation (CNCF) ★ 8,860	 <b>LINKERD</b> Cloud Native Computing Foundation (CNCF) ★ 4,420
 <b>NATS</b> Cloud Native Computing Foundation (CNCF) ★ 6,444	 <b>Notary</b> Cloud Native Computing Foundation (CNCF) ★ 1,974	 <b>Open Policy Agent (OPA)</b> Cloud Native Computing Foundation (CNCF) ★ 2,436	 <b>OpenTracing</b> Cloud Native Computing Foundation (CNCF) ★ 1,922	 <b>ROOK</b> Cloud Native Computing Foundation (CNCF) ★ 5,920	 <b>The Update Framework (TUF)</b> Cloud Native Computing Foundation (CNCF) ★ 918	 <b>TIKV</b> Cloud Native Computing Foundation (CNCF) ★ 8,897	 <b>Vitess</b> Cloud Native Computing Foundation (CNCF) ★ 8,552

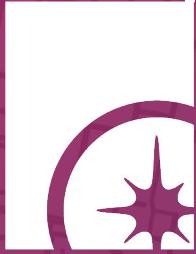
<https://landscape.cncf.io/format=card-mode>

# Questions?



# Food

/sponsored by



# spar nord



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# Do you want to host a Meetup?



Arne Mejlholm  
Systems Engineer  
Sparnord



Simon Bengtsson  
Systems Engineer  
Sparnord



Camilla Beck Larsen  
Systems Engineer  
Sparnord



Allan Højgaard Jensen  
Cloud Platform Architect  
Oracle

come talk to us...

# Install k8s in 10 minutes

/by Arne Mejholm  
Systems Engineer Sparnord



CLOUD NATIVE  
COMPUTING FOUNDATION

# Install k8s in 10 minutes

All commands etc can be found here:

<https://github.com/Cloud-Native-Aalborg/Meetup-1>

Options for running kubernetes locally:

- Minikube - <https://github.com/kubernetes/minikube>
- K3s - <https://k3s.io/>
- Microk8s - <https://microk8s.io/>
- Katacoda - <https://www.katacoda.com/courses/kubernetes>
- Docker for windows - <https://docs.docker.com/docker-for-windows/>
- Probably others...

8 minute intro to kubernetes:

- <https://dev.to/prodopsio/an-8-minute-introduction-to-kubernetes-1oi>



# **DEMO TIME**



**LETS PRAY TO THE DEMO GODS...**

# Questions?

# Cloud Native Nordics Community



CLOUD NATIVE  
**NORDICS**



CLOUD NATIVE  
**NORDICS**

Continue the discussions and meet Cloud Natives from Denmark, Sweden, Norway, and Finland

[www.cloudnativenorthernlights.com](http://www.cloudnativenorthernlights.com)



slack

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 **Cloud.dk**

# Survey

/by You

Cloudnatives in Aalborg



CLOUD NATIVE  
COMPUTING FOUNDATION

# Cloud Native Aalborg

We need your feedback...

- what can we do better?
- any ideas for future meetups?
- provide feedback on:  **slack**

# Do you want to speak at a Meetup?



Arne Mejlholm  
Systems Engineer  
Sparnord



Simon Bengtsson  
Systems Engineer  
Sparnord



Camilla Beck Larsen  
Systems Engineer  
Sparnord



Allan Højgaard Jensen  
Cloud Platform Architect  
Oracle

come talk to us...

# Networking

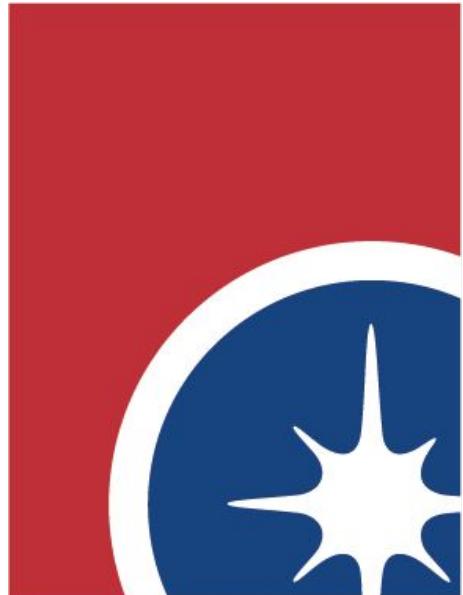
/by You

Cloudnatives in Aalborg



CLOUD NATIVE  
COMPUTING FOUNDATION

A big thank you to this evening's host



sparNord

A and a big thank you to

and **YOU YOU**

and **YOU YOU** and **YOU**

and **YOU YOU** and **YOU**

# Tweet! Tweet!



#CloudNativeAalborg

#CloudNativeNordics

Make some noise about our awesome community... @CloudNativeFdn, #kubernetes, etc.



# CloudNative Aalborg

#CloudNativeAalborg  
#CloudNativeNordics

Join Slack



@ <https://www.cloudnativenoridcs.com/>

