



**ENTERPRISE
DEVOPS**
T E C H C O N

What is the role of CNCF and Cloud Native
in the current IT world and how to navigate in it?

Orlin Vasilev



CLOUD NATIVE
COMPUTING FOUNDATION

~agenda

- What is Cloud Native?
- Cloud Native Computing Foundation
- The CNCF Landscape
- Kubernetes...of course :)
- Cloud Native Certification
- Contributing
- My role

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whoami

- father x2
- SysAdmin/Developer/DevOps/SRE
- Kubernetes Cloud Native Bulgaria Meetup
- CNCF Ambassador
- KubeCon Program Committee Member and co-chair
- Señor Open Source Community Lead(?!) @VMware
- ... BBQ/DIY/home baker



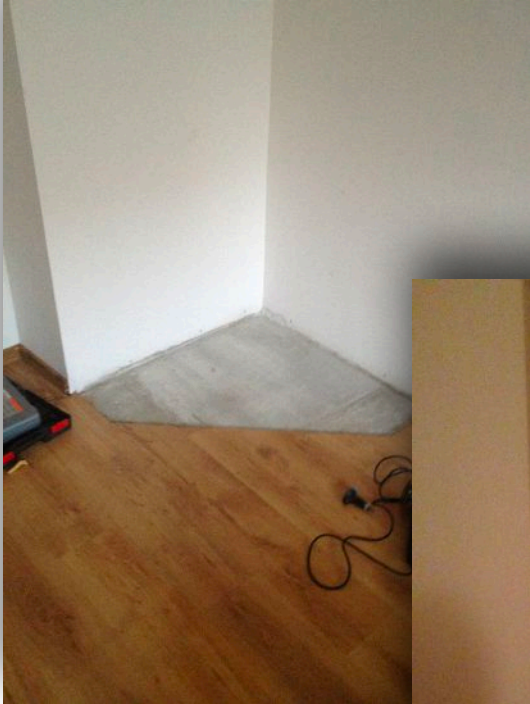
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Meetup/CNCF Ambassador



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DIY

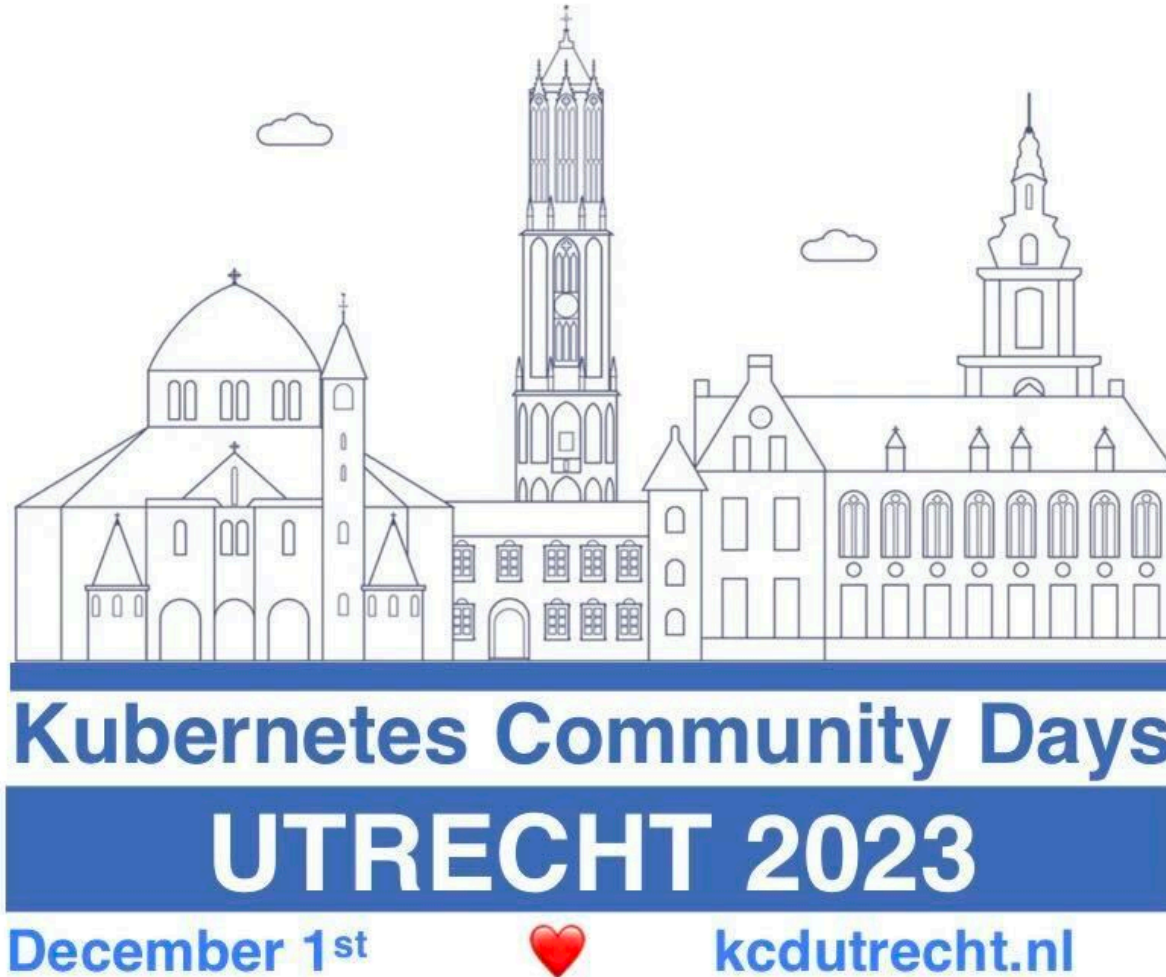


Cooking...



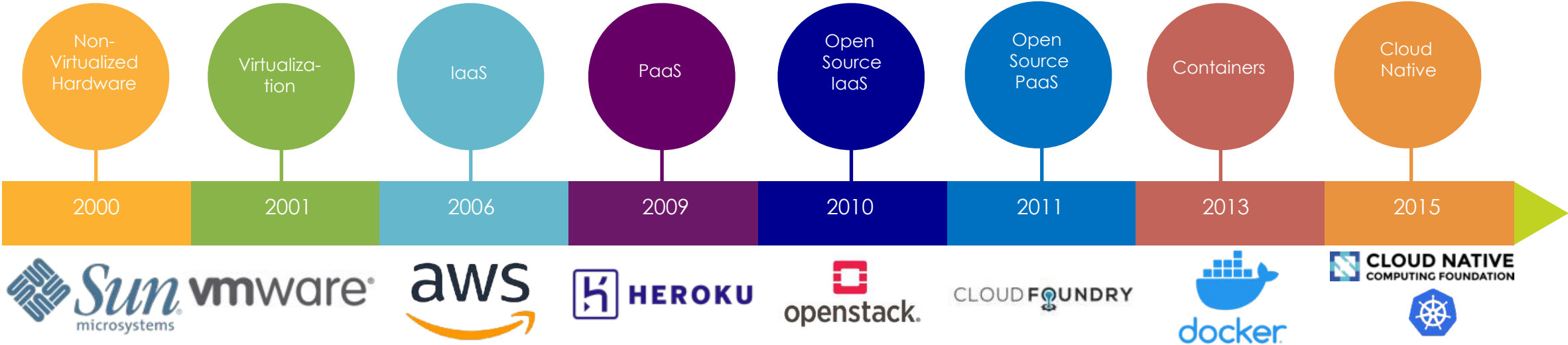
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KCD Invite



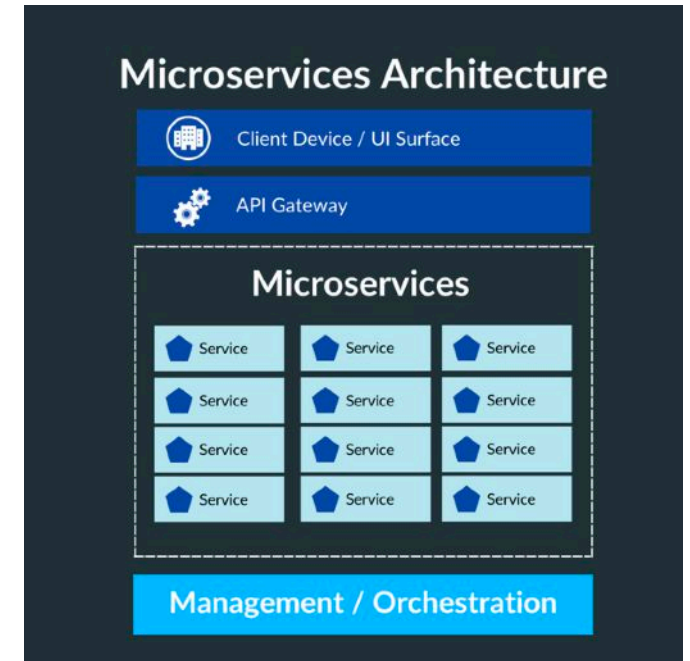
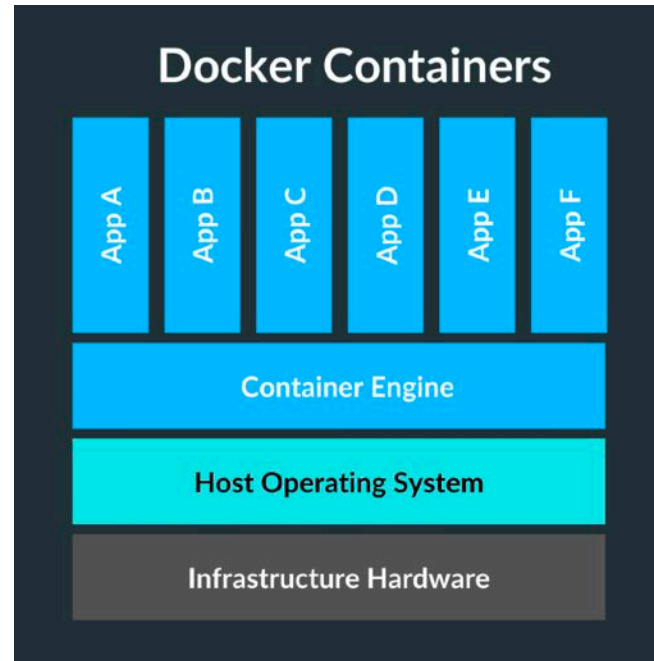
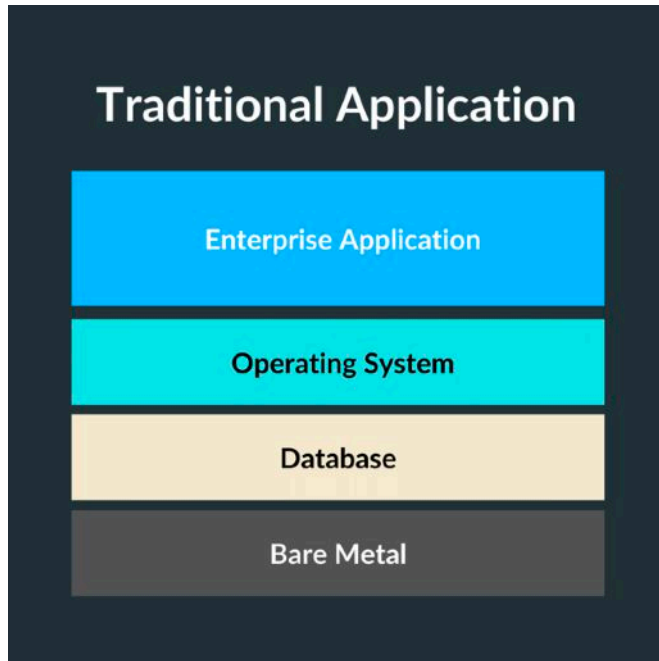
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From Traditional to Cloud Native



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Your Cloud Native Journey



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The Cloud Native definition

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.

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.

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What Cloud Native is?

Approach!

...of building, deploying, and managing modern applications

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Essentials of Cloud Native



- segment applications into **microservices**
- package each part into its own **container**
- dynamically **orchestrating** those containers to optimize resource **utilization**

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Cloud Native and the Business



Increase Efficiency



Reduce costs

200 OK
Ensure availability

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What is CNCF?

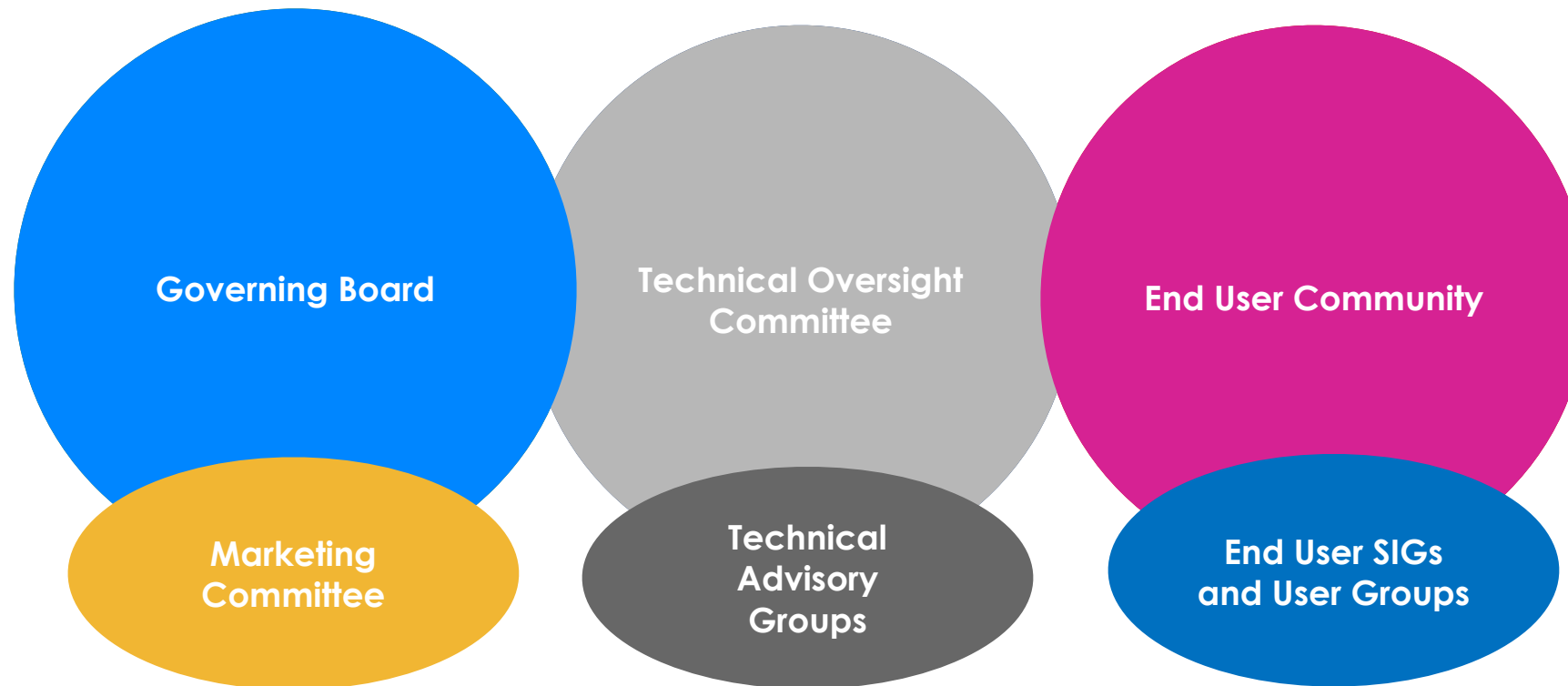
The CNCF hosts critical components of the global technology infrastructure. CNCF brings together the world's top developers, end users, and vendors and runs the largest open source developer conferences.



<https://github.com/cncf/foundation/blob/main/charter.md>

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CNCF Structure



- Mainly vendors
- Fund the organization
- Marketing and strategic direction
- 11 top technical architects
- Admit new projects
- Acts as a resource to projects
- Real end users of the technologies
- Communicate back requirements and good and bad experiences

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CNCF Projects

<https://contribute.cncf.io/contributors/projects/>

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Levels of Maturity

Sandbox Stage

Incubation Stage

Graduation Stage

https://github.com/cncf/toc/blob/main/process/graduation_criteria.md

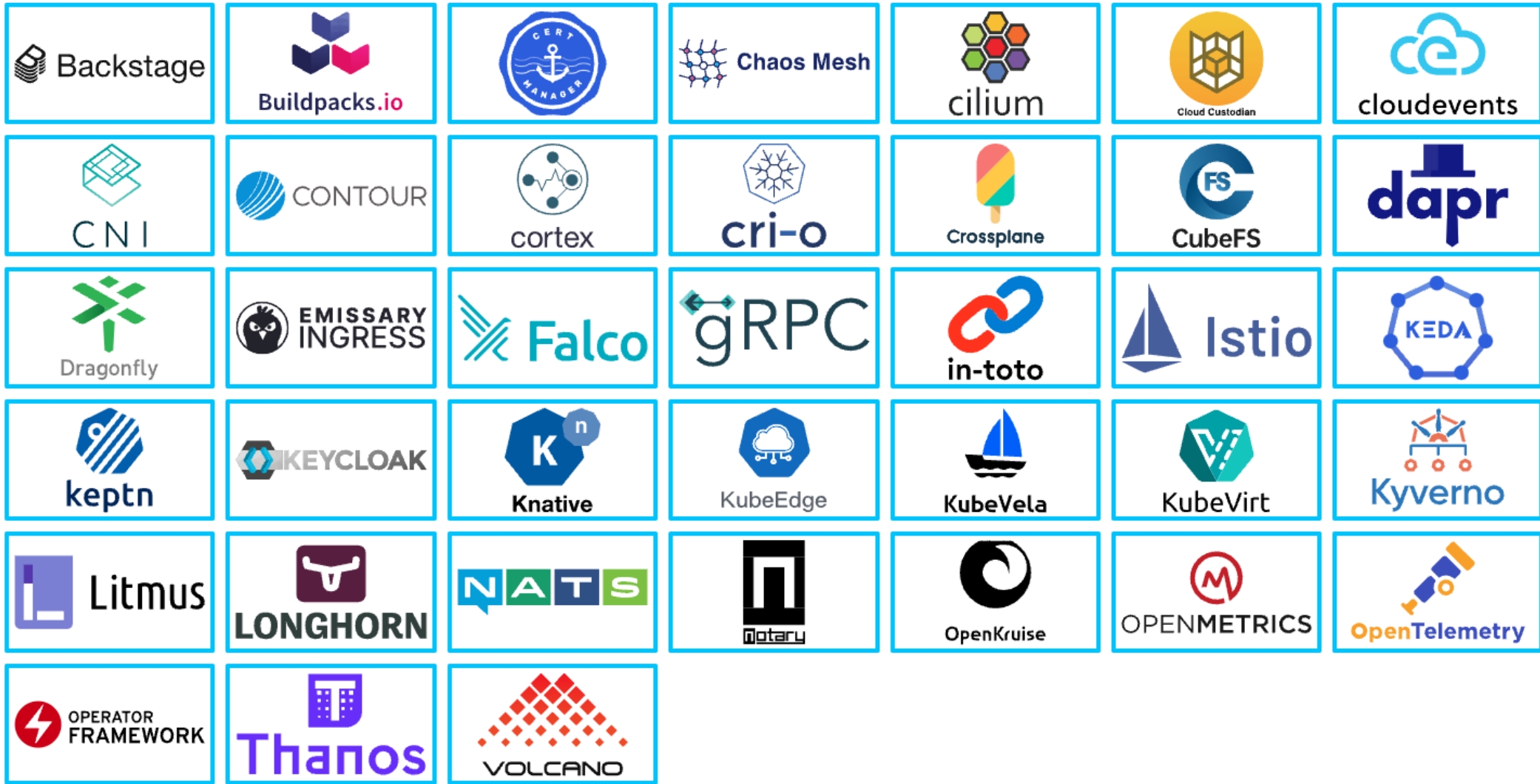
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Sandbox Projects



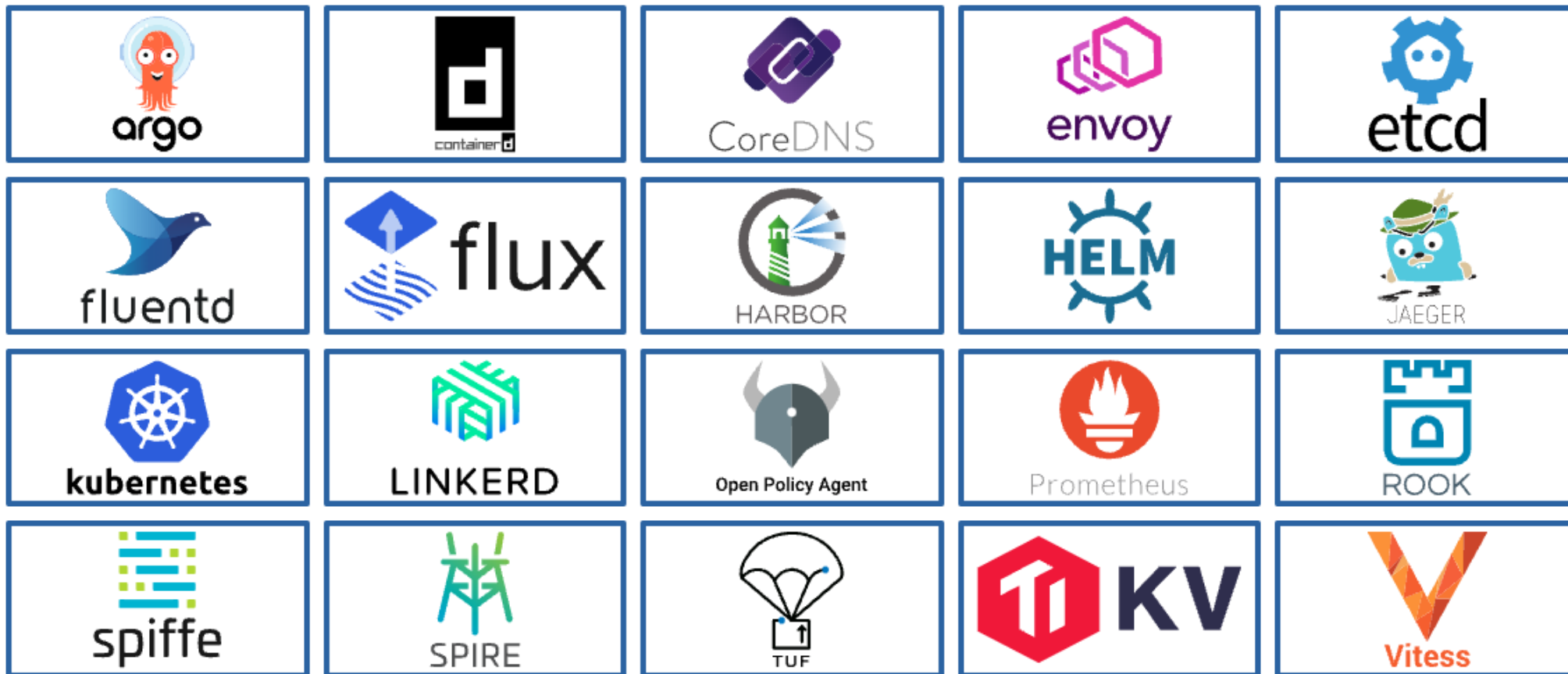
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Incubating Projects



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Graduated Projects



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CNCF Members

<https://landscape.cncf.io/members>

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The world's largest cloud and software companies

Platinum Members



Gold Members



Academic/Nonprofit Members



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CNCF is End User driven open source - 170+ organizations



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Advantages of CNCF

CNCF Benefits for the projects

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CNCF Benefits

A neutral home increases contributions

Maintain your committers and define your own governance, as long as it's neutral

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CNCF Benefits

Tens of thousands of dollars per year in documentation, security audits, case studies, and other support services

Cloud resources for CI and scale testing

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CNCF Benefits

Full-time staff eager to assist

World-class events team, track at KubeCon + CloudNativeCon around the world, and custom events for your project

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Why Cloud Native

- Better resource allocation and usage
- Improved resilience and availability
- Cloud-native enables multi-cloud
- The cloud-native infrastructure is enabling rapid software development

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How to navigate Cloud Native

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The Cloud Native Landscape

give it a try at:
<https://l.cncf.io>

CNCF Cloud Native Landscape
10
Overwhelmed? Please see the CNCF Trail Map. That and the interactive landscape are at l.cncf.io
Covered here are all open source.

App Definition and Development
Database: KV, V, etc.
Streaming & Messaging: cloudstream, etc.
Application Definition & Image Build: HELM, etc.
Continuous Integration & Delivery: argo, flux, etc.

Platform
Certified Kubernetes - Distribution: AWS, etc.
Certified Kubernetes - Hosted: AWS, etc.
Certified Kubernetes - Installer: AWS, etc.
PaaS/Container Service: AWS, etc.

Services
Members: AWS, etc.

CD Foundation Landscape

Observability and Analysis
Monitoring: Prometheus, etc.
Logging: fluentd, etc.
Tracing: Jaeger, etc.
Chaos Engineering: Chaos Mesh, etc.
Continuous Optimization: etc.

Coordination & Management
Scheduling & Orchestration: K8s, etc.
Coordination & Service Discovery: etcd, etc.
Remote Procedure Call: gRPC, etc.
Service Proxy: envoy, etc.
API Gateway: Kong, etc.
Service Mesh: Istio, etc.

Runtime
Cloud Native Storage: MinIO, etc.
Container runtime: cri-o, etc.
Cloud Native Network: Cilium, etc.

Preprocessing
Automation & Configuration: Ansible, etc.
Container Registry: Docker, etc.
Security & Compliance: Falco, etc.
Key Management: spiffe, etc.

Social
Kubernetes Certified Service Provider: etc.
Kubernetes Training Partner: etc.
Certified CNFs: etc.

Are you lost?... Don't be! :)



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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

KubeCon CloudNativeCon
Nov. 18 - 21 San Diego, CA

KubeCon CloudNativeCon
March 30 - April 2 Amsterdam



















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: 2019-07-16 22:17:13Z

You are viewing 1,158 cards with a total of 1,725,127 stars, market cap of \$10.38T and funding of \$57.68B.

Landscape Card Mode Serverless Members

Tweet 694

No Grouping (1158)







 kubernetes Kubernetes ★ 55,292 Cloud Native Computing Foundation (CNCF)	 elastic Elastic ★ 42,628 Elastic MCap: \$7.09B	 NETDATA Netdata ★ 39,579 Netdata	 ANSIBLE Ansible ★ 38,340 Red Hat MCap: \$33.43B	 redis Redis ★ 37,543 Redis Labs Funding: \$146.6M	 serverless Serverless ★ 30,993 Serverless Funding: \$13M
 Grafana Grafana ★ 29,826 Grafana Labs Funding: \$1.23M	 No Code No Code ★ 29,736 No Code	 DUBBO Dubbo ★ 27,880 Apache Software Foundation	 etcd etcd ★ 26,033 Cloud Native Computing Foundation (CNCF)	 Prometheus Prometheus ★ 25,134 Cloud Native Computing Foundation (CNCF)	 traefik Traefik ★ 23,355 Containous Funding: \$1.06M
 APACHE Spark Apache Spark ★ 22,617 Apache Software Foundation	 Kong Kong ★ 22,580 Kong Funding: \$69.1M	 RethinkDB RethinkDB ★ 22,388 Linux Foundation	 gRPC gRPC ★ 22,130 Cloud Native Computing Foundation (CNCF)	 GitLab GitLab ★ 21,901 GitLab Funding: \$168.2M	 SENTRY Sentry ★ 21,457 Sentry Funding: \$26.5M

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CNCF Graduated Projects (3)

 fluentd	 JAEGER	 Prometheus
Fluentd Cloud Native Computing Foundation (CNCF) ★ 12,199 Funding: \$3M	Jaeger Cloud Native Computing Foundation (CNCF) ★ 18,318 Funding: \$3M	Prometheus Cloud Native Computing Foundation (CNCF) ★ 49,987 Funding: \$3M

CNCF Incubating Projects (6)

 Chaos Mesh	 cortex	 Litmus	 OPENMETRICS	 OpenTelemetry	 Thanos
Chaos Mesh Cloud Native Computing Foundation (CNCF) ★ 5,951 Funding: \$3M	Cortex Cloud Native Computing Foundation (CNCF) ★ 5,211 Funding: \$3M	Litmus Cloud Native Computing Foundation (CNCF) ★ 3,830 Funding: \$3M	OpenMetrics Cloud Native Computing Foundation (CNCF) ★ 2,149 Funding: \$3M	OpenTelemetry Cloud Native Computing Foundation (CNCF) ★ 1,652 Funding: \$3M	Thanos Cloud Native Computing Foundation (CNCF) ★ 12,103 Funding: \$3M

CNCF Sandbox Projects (10)

 ChaosBlade	 FONIO	 HEADLAMP	 INSPEKTOR GADGET	 KEPLER	 kuberhealthy	 OpenCost
Chaosblade Cloud Native Computing Foundation (CNCF) ★ 5,501 Funding: \$3M	Fonio Cloud Native Computing Foundation (CNCF) ★ 407 Funding: \$3M	Headlamp Cloud Native Computing Foundation (CNCF) ★ 1,157 Funding: \$3M	Inspektor Gadget Cloud Native Computing Foundation (CNCF) ★ 1,579 Funding: \$3M	Kepler Cloud Native Computing Foundation (CNCF) ★ 637 Funding: \$3M	Kuberhealthy Cloud Native Computing Foundation (CNCF) ★ 1,790 Funding: \$3M	OpenCost Cloud Native Computing Foundation (CNCF) ★ 4,107 Funding: \$3M

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You are viewing 24 cards with a total of 108,914 stars and funding of \$3M.

Landscape

Card Mode

Members







Serverless

Wasm

CNCF Graduated Projects (2)

 Open Policy Agent	 TUF
Open Policy Agent (OPA) ★ 8,496 Cloud Native Computing Foundation (CNCF) Funding: \$3M	The Update Framework (TUF) ★ 1,541 Cloud Native Computing Foundation (CNCF) Funding: \$3M

CNCF Incubating Projects (6)

 cert-manager	 Falco	 in-toto	 Keycloak	 Kyverno	 Notary
★ 10,730 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 6,313 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 763 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 17,472 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 4,402 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 214 Cloud Native Computing Foundation (CNCF) Funding: \$3M

CNCF Sandbox Projects (16)

 CONFIDENTIAL CONTAINERS	 ContainerSSH	 Curiefense	 dex	 external-secrets	 Hexa	 Keylime
★ 70 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 2,410 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 668 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 8,440 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 3,102 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 74 Cloud Native Computing Foundation (CNCF) Funding: \$3M	★ 350 Cloud Native Computing Foundation (CNCF) Funding: \$3M

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The necessary joke



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Something about Kubernetes

- First project to join CNCF
- In ~2018 won against Mesos and Docker Swarm
- Stable...
- Super scalable
- Enormous community developing K8s
- Actually makes possible the implementation of cloud-native apps
- Infrastructure abstraction layer
- ... etc

Do you need Kubernetes?



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Need!

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~~Need!~~ Of course, you do! :)

...if you want to be in the real Cloud Native

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...yes but...

- Kubernetes is not a “magic” pill
- Relatively complicated for implementation
- Super steep learning curve



...it's not only Kubernetes

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Other CNCF Projects you may need

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Observability



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CI/CD; DevOps; GitOps



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Service Mesh



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Security



Open Policy Agent



trivy



Kubescape



Miscellaneous



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Contribute - code & cloud native evangelism

CODE - Technical Oversight Committee

- Special Interest Groups
 - [App Delivery](#)
 - [Contributor Strategy](#)
 - [Network](#)
 - [Runtime](#)
 - [Security](#)
 - [Storage](#)
 - [Observability](#)
- Working Groups
 - [Continuous Integration \(CI\)](#)
 - [Serverless](#)
- 80+ projects
- [CNF Test Suite](#)
- [CNF WG](#)

NON CODE - Cloud Native Evangelism

- [CNCf.io blog](#) (projects and members)
- [Kubernetes.io blog](#) (open to all)
- Marketing Committee (members only)
 - [Business Value Subcommittee](#)
 - [Cloud Native Glossary](#) (open to all)



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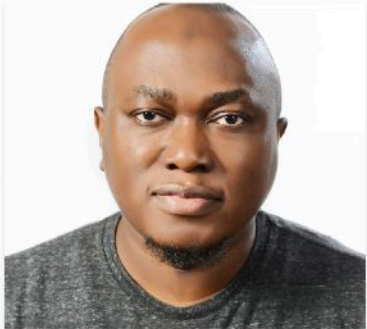
Gather with the Community

- [Meet our Ambassadors](#)
 - Local cloud native influencers
- [Mentorship Programs](#)
 - Learn and grow in open source

- [Cloud Native Community Groups](#)
 - Local meetup event
- [Kubernetes Community Days](#)
 - Regional events where cloud native connects
- [KubeCon + CloudNativeCon](#)
 - Premier worldwide cloud native events!
 - Co-located events

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Meet the Ambassadors



Abubakar Siddiq Ango

(He/Him)

GitLab



Alessandro Vozza

(He/Him)

Solo.io



Andrea Giardini

(He/Him)

Freelance - Crossover Engineering B.V.



Eric D Schabell

Chronosphere



Robin Smorenburg

(He/Him)

Nordcloud, an IBM company

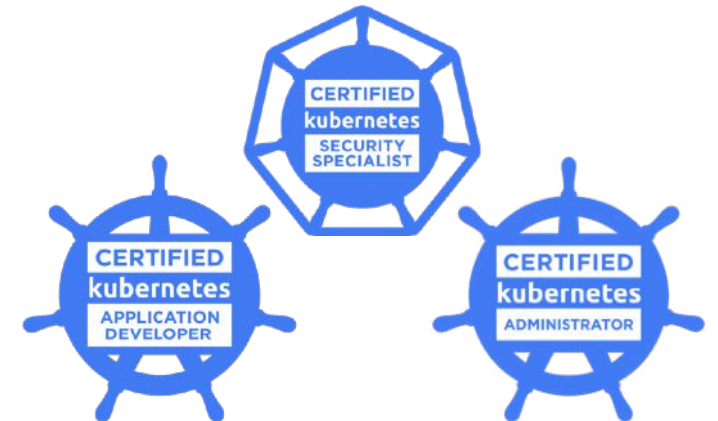


https://www.cncf.io/people/ambassadors/?_sft_if-country=nl

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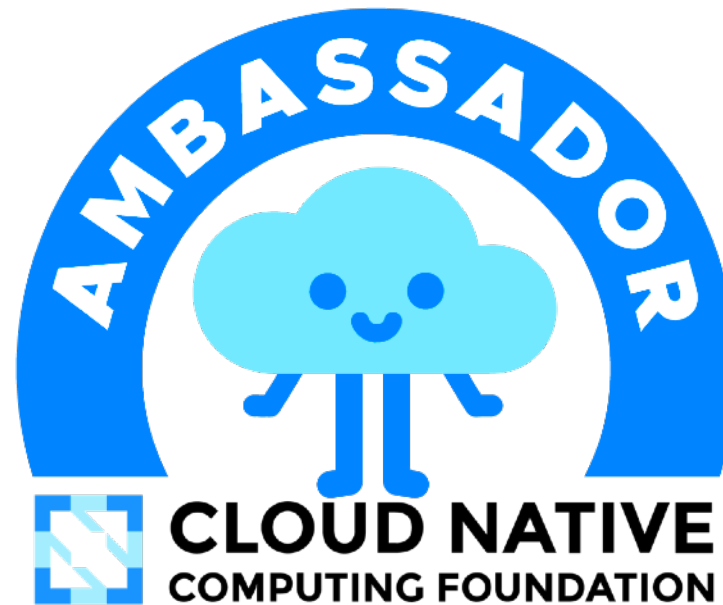
Millions of Trained and Certified Professionals

- Kubernetes [MOOC](#) hit 285,000 enrollments
- Certified Kubernetes Administrator ([CKA](#)) exam hit 101,000 enrollments
- Certified Kubernetes Application Developer ([CKAD](#)) hit 47,000 exam registrations
- Certified Kubernetes Security Specialist ([CKS](#)) exam hit 17,000 registrations
- Kubernetes and Cloud Native Associate Exam ([KCNA](#)) exam reached 3,800 registrations
- [Additional Courses](#) include:
 - Service Mesh Fundamentals
 - Manager Kubernetes Applications with Helm
 - Cloud Native Logging with Fluentd
 - Intro to Service Mesh with Linkerd
 - Intro to Serverless on Kubernetes
 - Intro to WebAssembly



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My Role



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Get in touch with me

- @OrlinVasilev - on all platform
- [orlin\(@\)orlix.org](mailto:orlin(@)orlix.org)

Q & A

Feedback wanted!



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