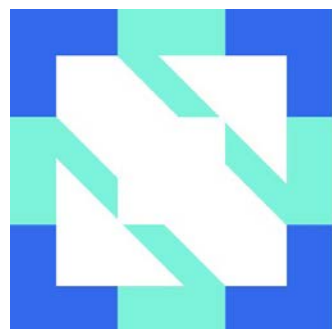




Open Cloud Day 2017

Cloud Native Computing

The evolution of Cloud and Open Source



**CLOUD NATIVE
COMPUTING
FOUNDATION**



Agenda

- Intro
- What is Cloud Native Computing?
- CNCF – The Foundation
- Projects in the CNCF
- Why?
- Kubernetes, Fluentd, Prometheus
- Q&A



Who

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VSHN AG - the DevOps company
Since 2014, 18 people in Zürich
<https://vshn.ch> @vshn_ch



What is Cloud Native Computing 1/2

Patterns and best practices how to build (distributed) software applications

Containerized

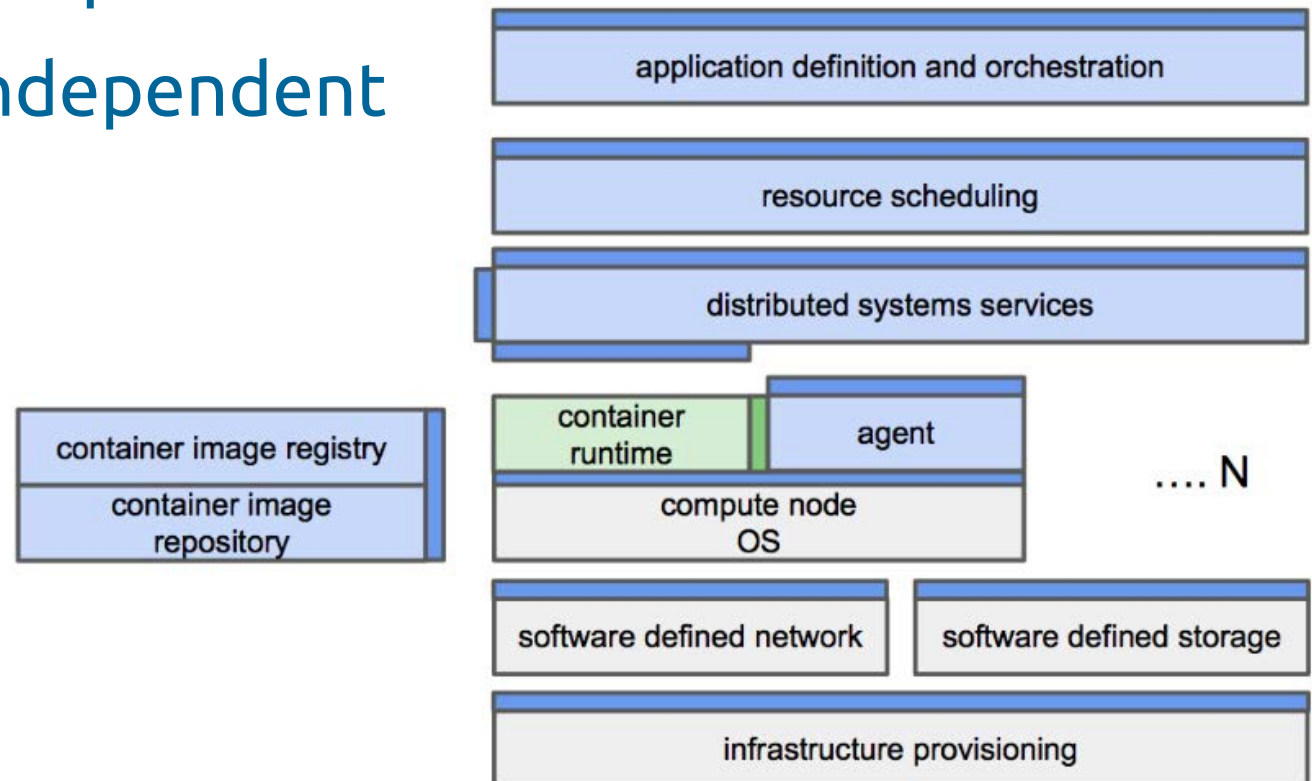
Dynamically orchestrated

Microservices oriented



What is Cloud Native Computing 2/2

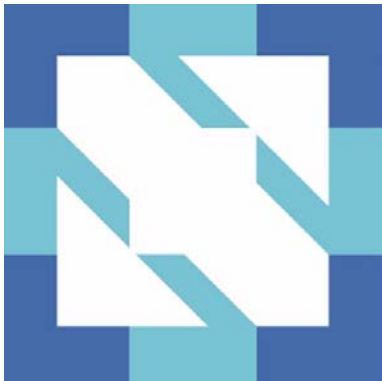
- A set of OSS to implement and/or support these patterns
- Share experience and code for the 'generic' problems
- Infra independent





The Cloud Native Computing Foundation

- <https://www.cncf.io/>
- Sub-Foundation of the **Linux Foundation**
- Established 2015
- Governing body for financial resources (donations), trademarks, events, etc
- <https://www.cncf.io/about/members/>
 - Cisco, CoreOS, Docker, Google, IBM, RH, SUSE, Netapp, Dell, Fujitsu, Huawei, Intel, Samsung, ATT, Canonical, Twitter, ebay, Zalando, etc





CNCF Project Criteria

- Add value to cloud native computing
- Be used >3 production users
- Healthy number of committers & commits
- Best practices, code of conduct, governance, committer process
- Voted by CNCF board



<https://www.cncf.io/projects/> 1/3



Kubernetes

container/service orchestration



Prometheus

metrics aggregation & alerting



OpenTracing

distributed service call tracing



Fluentd

log data collector



Linkerd

service call framework (discovery, routing, failure handling, visibility)



<https://www.cncf.io/projects/> 2/3



gRPC

multi-language service call framework
(data serialization, streaming, auth)



CoreDNS

DNS server for service discovery



Containerd

container runtime daemon (OCI runtime
(runC), OCI image spec)



Rkt

container runtime (App Container (appc)
spec)



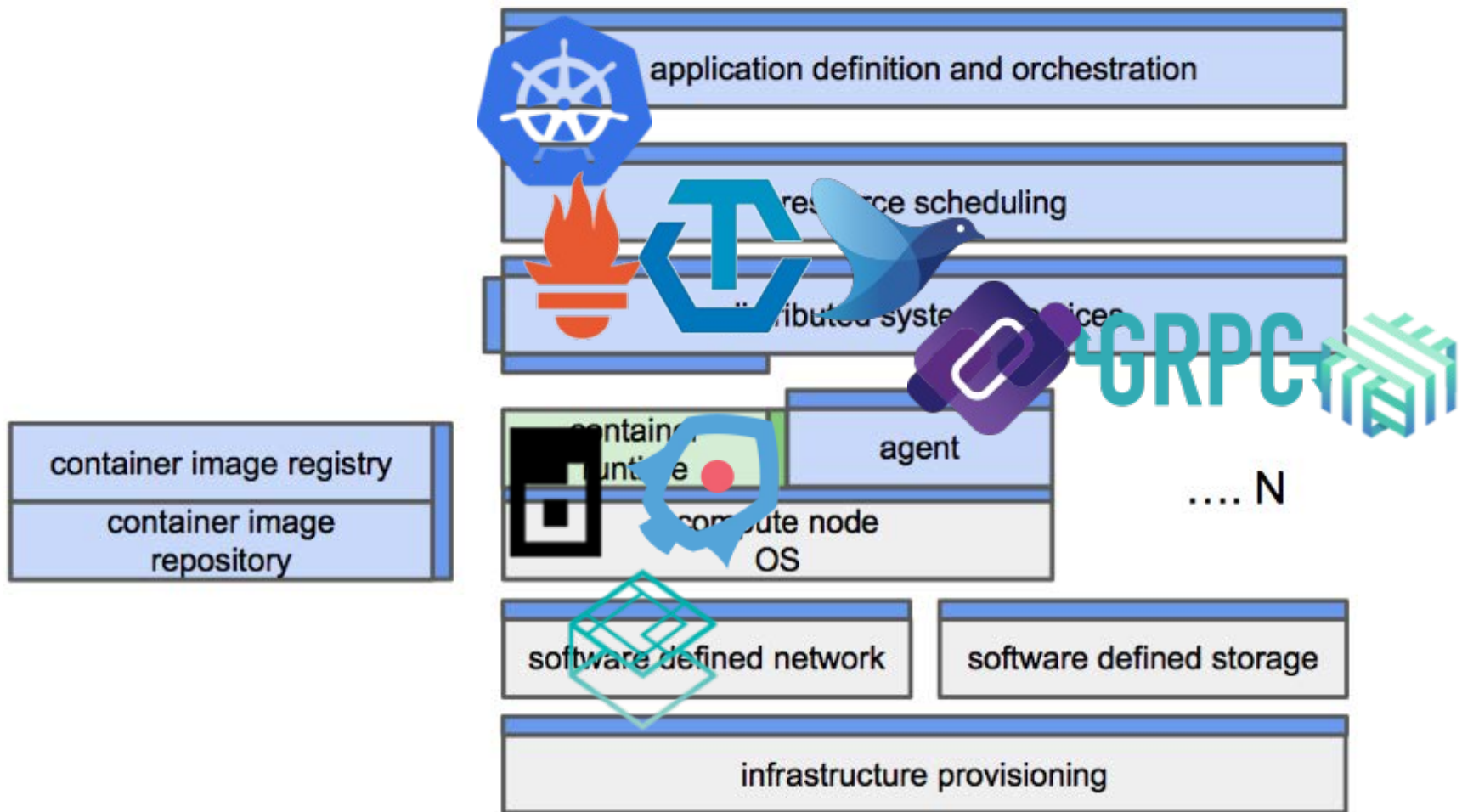
<https://www.cncf.io/projects/3/3>



CNI

Container Network Interface - networking
for Linux containers

Since 2017-05-23





Why Cloud Native Computing?

- **Patterns:** higher level problem solving than 'just use tool x'
- Open Source and Open Standards
- Broad support consortium
- Runs on any infrastructure → cloud native not cloud only
- Application Infrastructure as Code
- DevOps Philosophy



Kubernetes



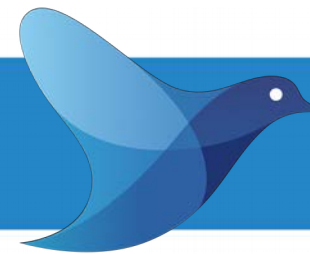
kubernetes

Container orchestrator

- How many of a kind should be running?
- On which IP/port/machine are they?
- How do they find each other?
- What happens when a container/machine disappears?
- Scaling, load balancing, rolling deployments



Fluentd



fluentd

Log shipper

- Collect logs from various sources
- Ship logs to various sinks
- 500+ Plugins, small core
- Plugins are distributed – no central repo



Prometheus



Metrics and Alerting

- Time Series Database
- Query Language
- Visualisation
- Alerting
- Grafana as Dashboard



Cloud Native Computing

Meetup

Cloud Native Computing Switzerland

<https://www.meetup.com/de-DE/Cloud-Native-Computing-Switzerland/>



Thanks!





We are hiring!

Like to work with Cloud Native Technologies?

Speak to me!

