What is Cloud Native?

CNCPH meetup - Laszlo Fogas
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What is Cloud Native?

The structure of this talk:

- Take out the buzz factor
- Do talk about CNCF and its projects
- Set the focus for this meetup group

Cloud Native

"I'm in trouble"

From the Cloud Native Computing Foundation ("CNCF") Charter

*"The Foundation's mission is to create and drive the adoption of **a new computing paradigm that is optimized for modern distributed systems environments capable of scaling to tens of thousands of self healing multi-tenant nodes.**"*

Is this really a first order of problem for most of us?

Is this even on page one?

Cloud Native

If it's not about scale for us, what else are we searching for?

Speed

"Cloud Native is the name of a particular approach to designing, building and running applications based on infrastructure-as-a-service combined with new operational tools and services like continuous integration, container engines and orchestrators. The overall objective is to improve speed, scalability and finally margin."
By Anne Currie / Container Solutions

Cloud Native

"Speed: [...] able to move quickly and get ideas to market fast. [...] a cultural shift [...] from big bang projects to more incremental improvements. [...] Cloud Native approach is about de-risking as well as accelerating change, thus allowing companies to delegate more aggressively and thus become more responsive."

"In the past, our standard approach to avoiding danger was to move slowly and carefully. The Cloud Native approach is about moving quickly but taking small, reversible and low-risk steps."

Cloud Native - take two

Joe Beda from Heptio

"There is no hard and fast definition for what Cloud Native means. [...] At its root, Cloud Native is structuring teams, culture and technology to utilize automation and architectures to manage complexity and unlock velocity."

"Operating in this mode is as much a way to scale the people side of the equation as much as the technology side."

"you don't have to run in the cloud to be Cloud Native."

Cloud Native - take three

Sam Newman author of Building Microservices

"It's a buzz-worthy term that has no real, good, formal definition," says Sam. "A lot of people conflate many things in the term cloud native. In my talk, I came back down to the sub-characteristics we commonly talk about for cloud-based applications: they've got to be built for scale, there must be some concepts of fault tolerance, and they need to have high degrees of automation".

Cloud Native - take four

"It's about removing process that relies on manual intervention to keep things running. Instead, we're building automation and distribution friendly applications that exploit our chosen cloud substrate's capabilities. This includes being able to take advantage of on-demand services and heads towards applications with more reliable, self healing and auto scaling like characteristics".

Nicki Watt's - CTO of OpenCredo

Cloud Native themes

- Container packaged
  high levels of resource isolation. Improves overall developer experience, simplify operations for cloud native applications.

- Dynamically managed.
  Actively scheduled and actively managed by a central orchestrating process. Radically improve resource utilization while reducing the cost of operations.

- Micro-services oriented.
  Significantly increase the overall agility and maintainability of applications.

- Automation
  Removes toil(manual & repetitive), reversible and transparent changes

- Optimize for the benefits of the Cloud
  IaaS, services like S3

CNCF

CLOUD NATIVE COMPUTING FOUNDATION

- Launched with Kubernetes in 2015
- Cncf.io
- Foundation, just like Apache, or Eclipse
  - Incubate, coordinate, drive standardization processes (like serverless today)
- Achievements: Kubernetes took the world by storm, almost Linux like scale of cooperation

Jun 1, 2014 – Dec 12, 2017

Contributions: **Commits** ▾

Contributions to master, excluding merge commits

Kubernetes

Orchestration

Prometheus

Monitoring

OpenTracing

Distributed Tracing API

Fluentd

Logging

linkerd

Service Mesh

gRPC

Remote Procedure Call

CoreDNS

Service Discovery

containerd

Container Runtime

rkt

Container Runtime

CNI

Networking API

Envoy

Service Mesh
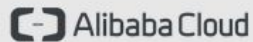
Jaeger

Distributed Tracing

Notary

Security

TUF

Software Update Spec

CNCF

(b) Open. The foundation is open and accessible, and operates independently of specific partisan interests. The foundation accepts all contributors based on the merit of their contributions, and the foundation's technology must be available to all according to open source values. The technical community and its decisions shall be transparent.

(c) Fair. The foundation will avoid undue influence, bad behavior or "pay-to-play" decision-making.

(g) Platform agnostic. The specifications developed will not be platform specific such that they can be implemented on a variety of architectures and operating systems.

Just watch a Kubernetes SIG, or how vendors coopete

CNCPH

- Share the experience with CNCF tech
- We take a broader Cloud Native definition. Not just about shiny new tech, but automation, culture things, Golang, etc
- Keen on community efforts. OSS projects, etc, in CNCF spirit