



Introdcion to CNCF world with Kubernetes

—
An introduciton to CNCF and demo using few CNCF graduated
projects



ANSIL H

LEAD SRE @ CISCO

CNCF



From <https://www.cncf.io/>

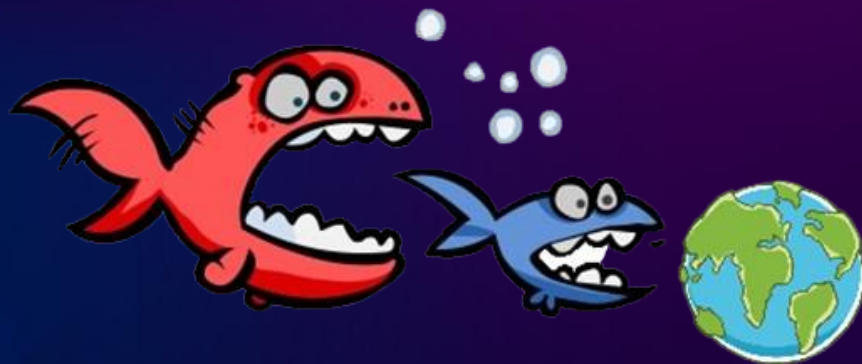
“CNCF is the open source, vendor-neutral hub of cloud native computing, hosting projects like Kubernetes and Prometheus to make cloud native universal and sustainable.”

“As part of the Linux Foundation, CNCF provide support, oversight and direction for fast-growing, cloud native projects, including Kubernetes, Envoy, and Prometheus.”

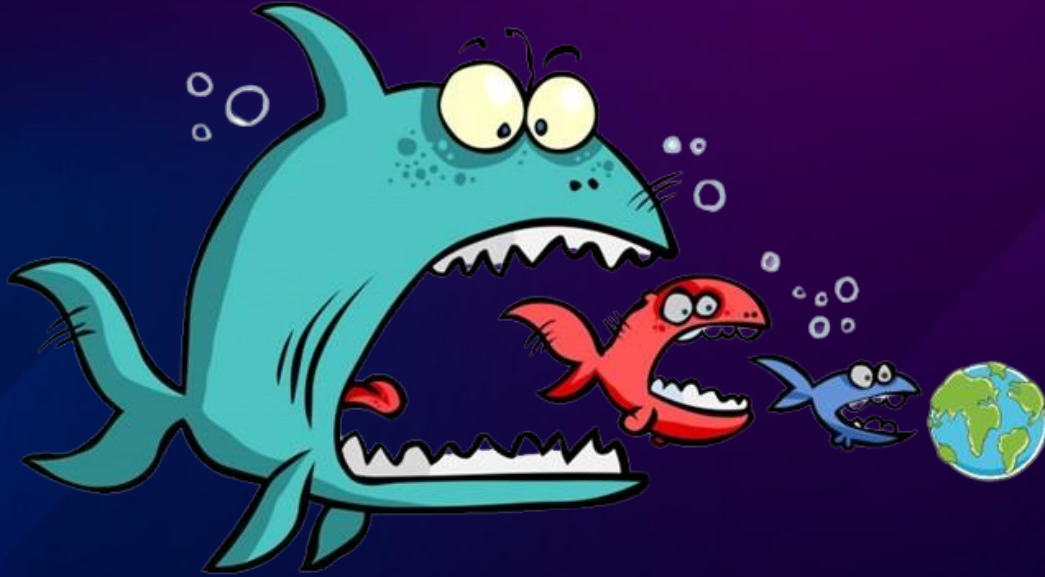
Software is eating the World



Opensource is eating the software



Cloud is eating the Opensource



What Industry wants

No more confusion

- Guidance and Clarity
- Quality
- A Common set of tools for cloud native apps



Cloud Native

Software and Patterns for..

- Container based
- Microservice oriented
- Programmable infrastructure

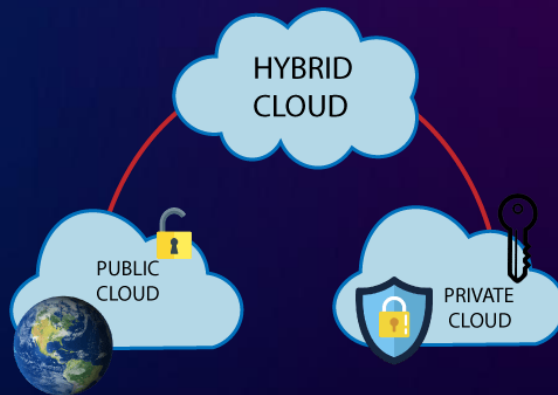


Cloud Native



The “Cloud” in “Cloud Native” stands for all cloud providers, including Private , Public and Hybrid Cloud

The term “Native” means, “..designed for or built into..”



CNCF Cloud Native Definition v1.0



<https://github.com/cncf/toc/blob/main/DEFINITION.md>

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.

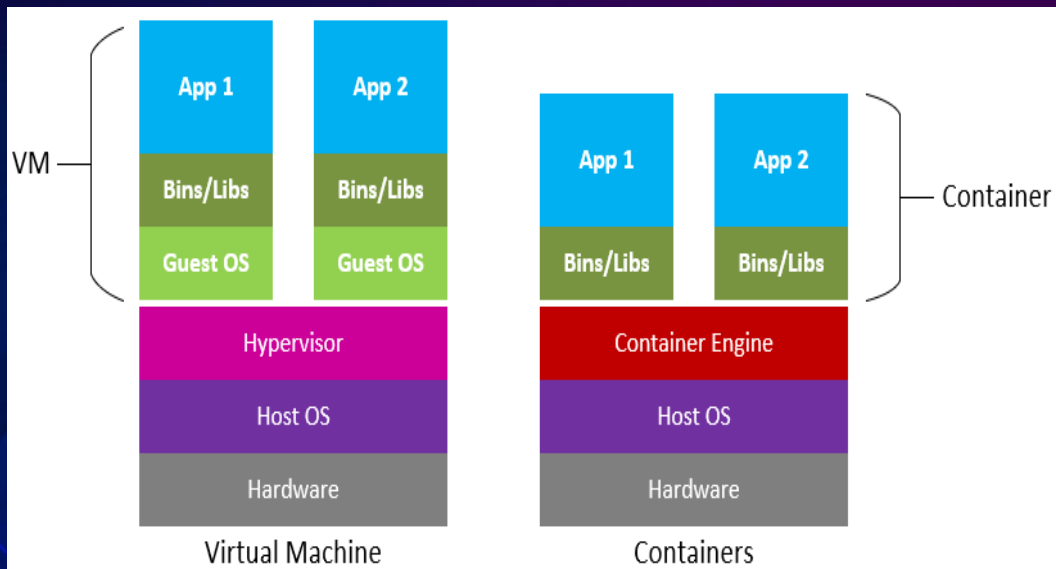
CNCF landscape

<https://landscape.cncf.io/card-mode?project=graduated>

A screenshot of the CNCF Landscape website in card mode. The browser address bar shows the URL landscape.cncf.io/card-mode?project=graduated. The page displays a grid of 25 project cards for graduated CNCF projects. Each card includes the project's logo, name, and a small circular icon indicating its status (e.g., "Graduated"). The projects shown are: argo, cilium, containerd, CoreDNS, cri-o, envoy, etcd, fluentd, flux, harbor, helm, istio, jaeger, keda, keda (serverless), kubernetes, linkerd, open policy agent, prometheus, rook, spiffe, spire, the update framework (tuf), tkv, and vitess. On the left side of the page, there is a sidebar with filters for "Reset Filters", "CNCF Relation", "Start By", "Category", "Project", "CNCF Graduated Projects", "License", "Organization", "Headquarters", "Company Type", "Industry", and "Download as CSV". Below the filters, there are "Example filters" such as "Cards by age", "Open source landscape", "Member cards", "Cards by stars", "Cards from China", "Certified K8s/KCSP/KTP", "Cards by MCapi/Funding", and "Cards without bestpractices.dev". At the bottom of the sidebar, there are logos for "KubeCon" and "CloudNativeCon" with the text "North America 2023" and "CHICAGO NOVEMBER 6-9".

Containerd

An open and reliable container runtime

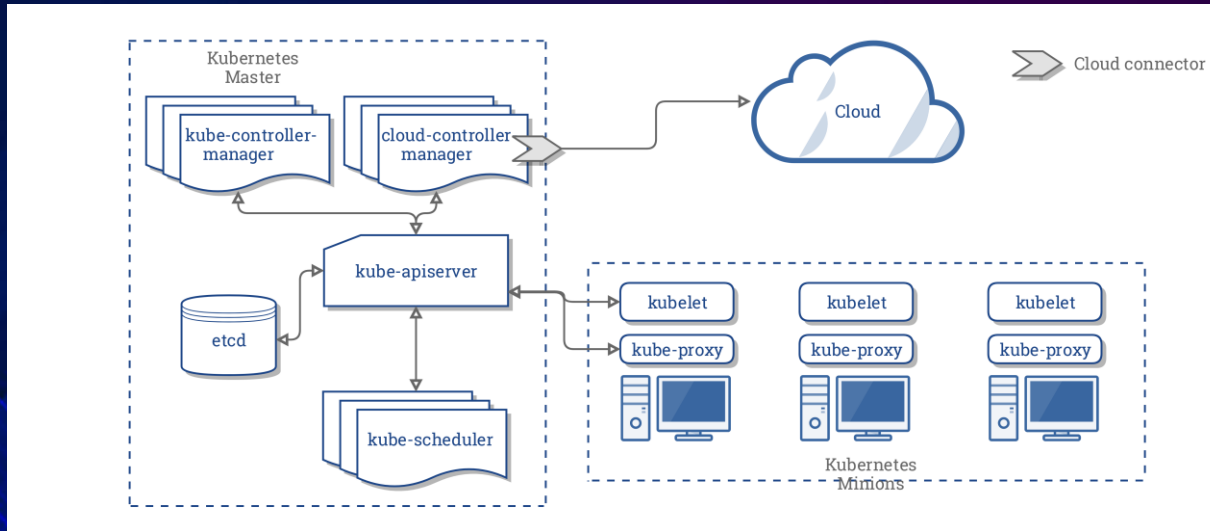


Kubernetes

Kubernetes is an open-source system for automating deployment, scaling, and management of containerized applications



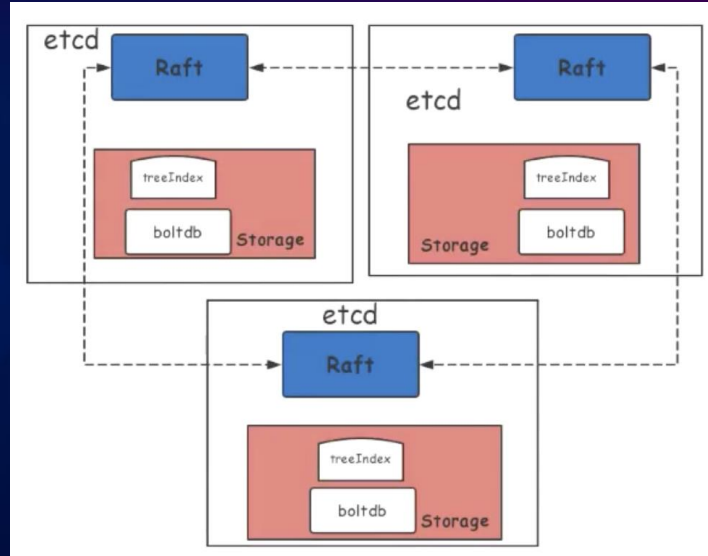
kubernetes



Etcd



Distributed reliable key-value store for the most critical data of a distributed system

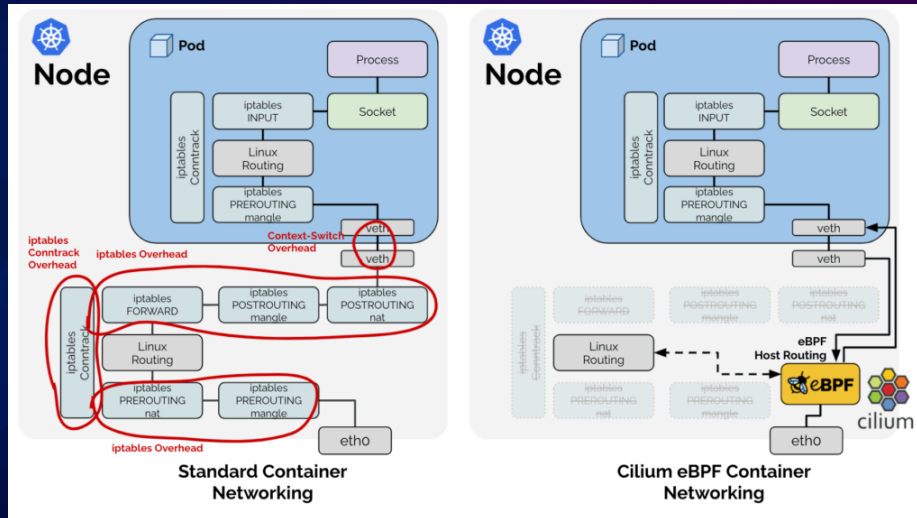


Cilium

eBPF-based Networking, Security, and Observability



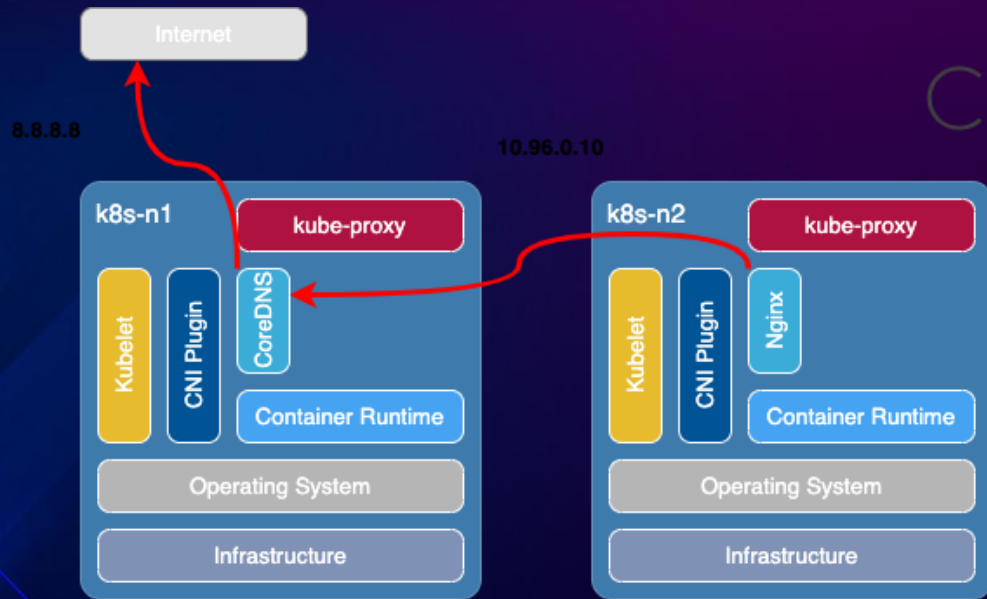
cilium



CoreDNS



CoreDNS is a DNS server that chains plugins



CoreDNS

Helm

The Kubernetes Package Manager





Demo



Thank you