Defining “Cloud Native” for Telco Workloads

Cloud Native Network Function (CNF) Working Group Kick-off

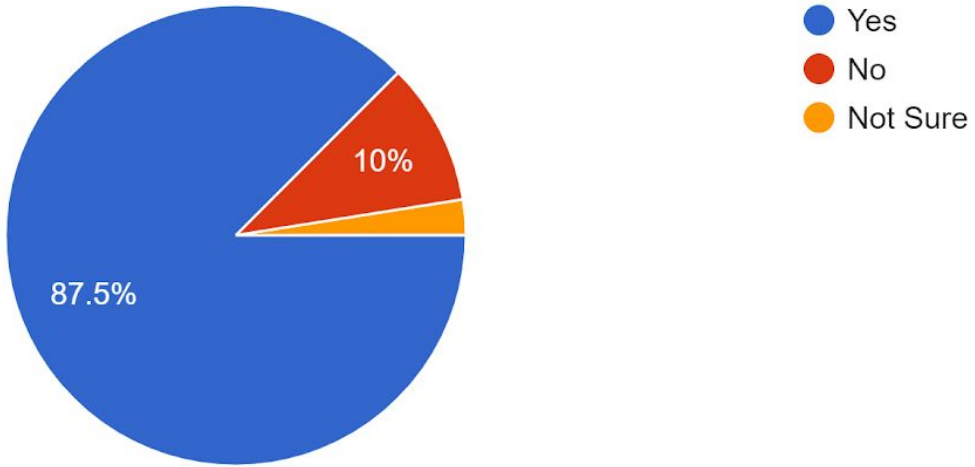
FYI: This is livestreaming on CNCF's Twitch channel

Please feel free to turn off video/sound if you are more comfortable that way

Why are CNFs important ***today***?

Telcos Widely Use Kubernetes

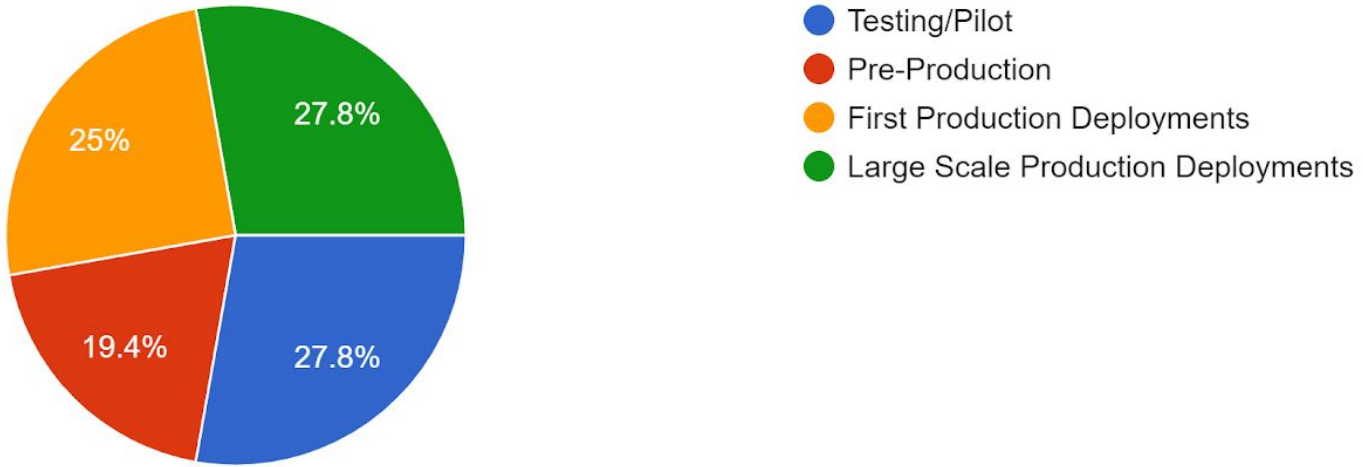
Are you currently running Kubernetes in any environment?



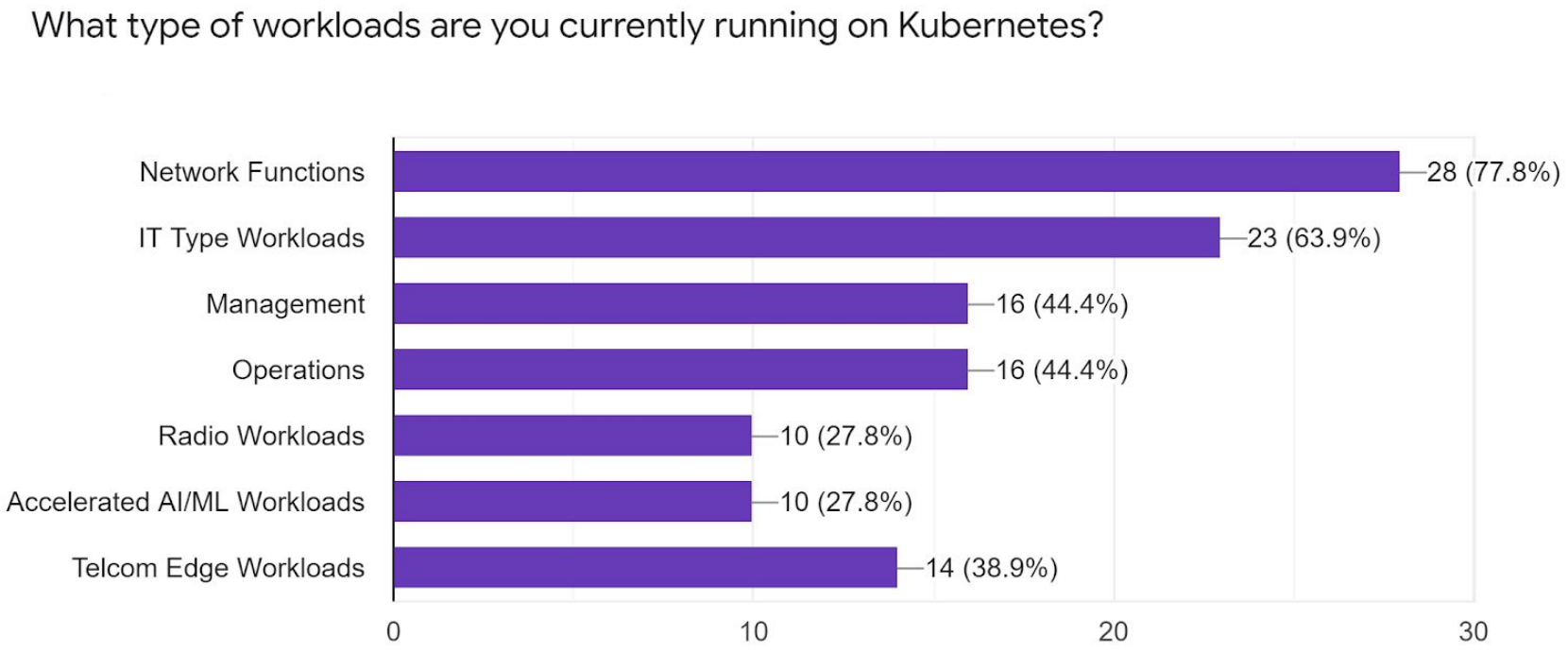
Link to survey

>50% in Production Today

What level of adoption does Kubernetes have?

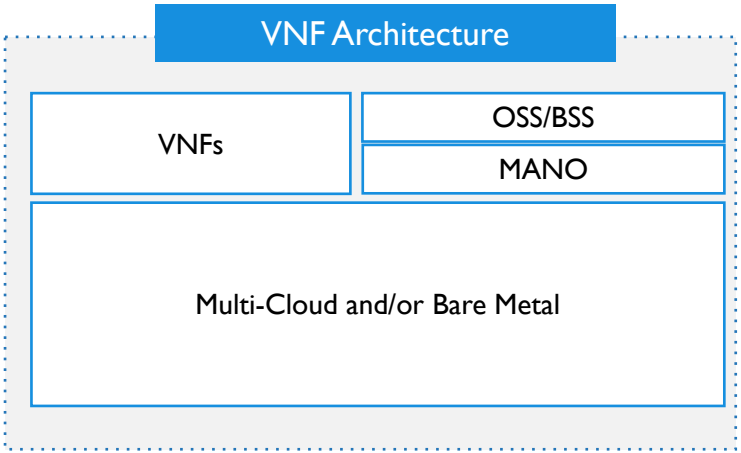


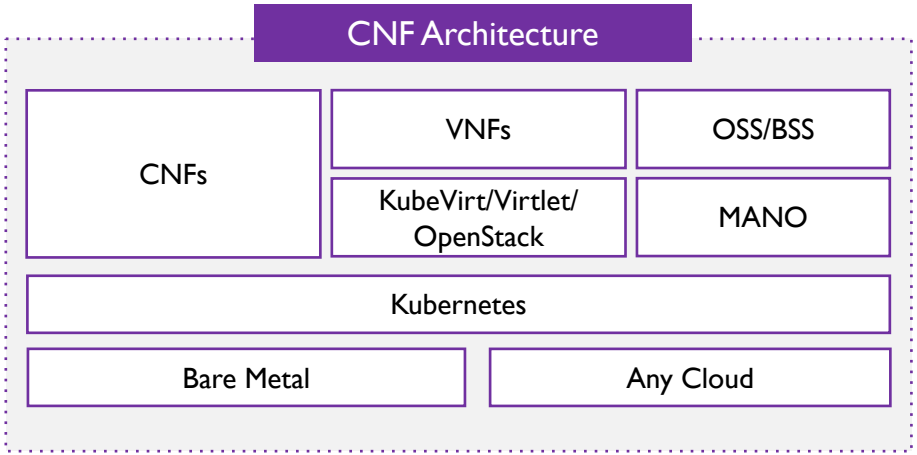
Already Running the Network



A Brief History

From PNFs to VNFs to CNFs





Cloud Native Definition

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**.

Why it Matters:
End User Driven Open Source

CLOUD NATIVE
COMPUTING FOUNDATION

Who is our telco end user?

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

CNCF Mission

The Foundation's mission is to **make cloud native computing ubiquitous**.

The CNCF Cloud Native Definition v1.0 says:

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.

CNF Conformance Goal

Aid companies to better understand what "cloud native" means for telecommunications workloads

Program structure

- CNF Working Group
  - Definitions
  - Best Practices
  - Process
- CNF Test Suite Initiative
  - Tests
  - Test framework

What is the CNF Working Group?

- CNCF runs the successful Certified Kubernetes conformance program that has achieved adoption by over 90 organizations covering millions of users, including all cloud and enterprise software providers

- Oversees and maintains what it means to be a cloud native conformant telco application in a living document

- Defines best practices and guidance for working in a cloud native way based on cloud native principles

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CNF Conformance Test Suite

- Works on the mechanics of the conformance tests themselves similar to K8s SIG Testing

- Based on concepts from K8s e2e tests + Project Sonobuoy
- A nod towards Project Sonobuoy on configuration for scoring, results, and overall making it easier for end-users to use the test suite
- Ability to test multiple layers of system focusing on tests for certifying conformant CNFs

Working with LF Networking & Other Communities

- The CNF WG sees itself as providing the **upstream definition of what makes a telco application cloud native** allowing downstream projects to create precise programs and/or implementations for their specific needs. It will be utilized in LF Networking projects Anuket (CNTT2.0/OVP2.0), ONAP, and other projects as needed

- This WG may collaborate with many of the other CNCF and K8s SIGs, WGs, and projects. However, the following groups might have the largest potential interactions: CNCF SIG App Delivery, CNCF SIG Security, CNCF SIG Network, Kubernetes SIG Apps, Kubernetes SIG Testing, K8s Conformance WG

How to get Involved

Next Steps

Follow the conversation

- Join the Mailing List
- Join the Slack Channel #cnf-wg
- Join the discussion on Github: github.com/cncf/cnf-wg
  - Add your name to interested parties in the charter

Drive the conversation

- Weekly/bi weekly meetings
  - Starting on Monday, November 30th at 4pm UTC
- Open a CNF Conformance Definition Proposal (CCDP)
  - Looking for people with experience running network functions or K8s Platforms *in production*

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CNF WG Milestones

- 3-6 months CNF WG Formalized under a SIG

- 3-6 months submit “CNF Test Suite” as a Sandbox Project

Contact Info

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Meet with me
Introduction to the CNCF video

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Open Discussion

Service Provider Feedback

Vendor Feedback