



KubeCon



CloudNativeCon

Europe 2023



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Europe 2023

Going for Graduation: Crossing the Chasm

*Katie Gamanji, Apple
Bill Mulligan, Isovalent*



Katie Gamanji

Sr Field Engineer [@Apple](#)

TOC (Technical Oversight Committee) [@CNCF](#)

Creator of Cloud Native Fundamentals [@Udacity](#)

Winner of [#WITAwards](#) & [#TechWomen100](#)



@k_gamanji



katie-gamanji



Bill Mulligan

Community Pollinator @ Isovalent

Committer @ Cilium



@breakawaybilly



bamulligan

CNCF Mission:
Make cloud native computing **ubiquitous**

Technical Oversight Committee:
Guides technical decisions to serve that mission

CNCF TOC: github.com/cncf/toc



Emily Fox



Katie Gamanji



Dave Zolotusky



Duffie Cooley



Matt Farina



Erin Boyd



Cathy Zhang



Justin Cormack



Nikhita Raghunath



Richard Hartmann



Ricardo Rocha

... + CNCF Staff to assist
<https://www.cncf.io/people/staff/>

Cloud Native Pillars

1

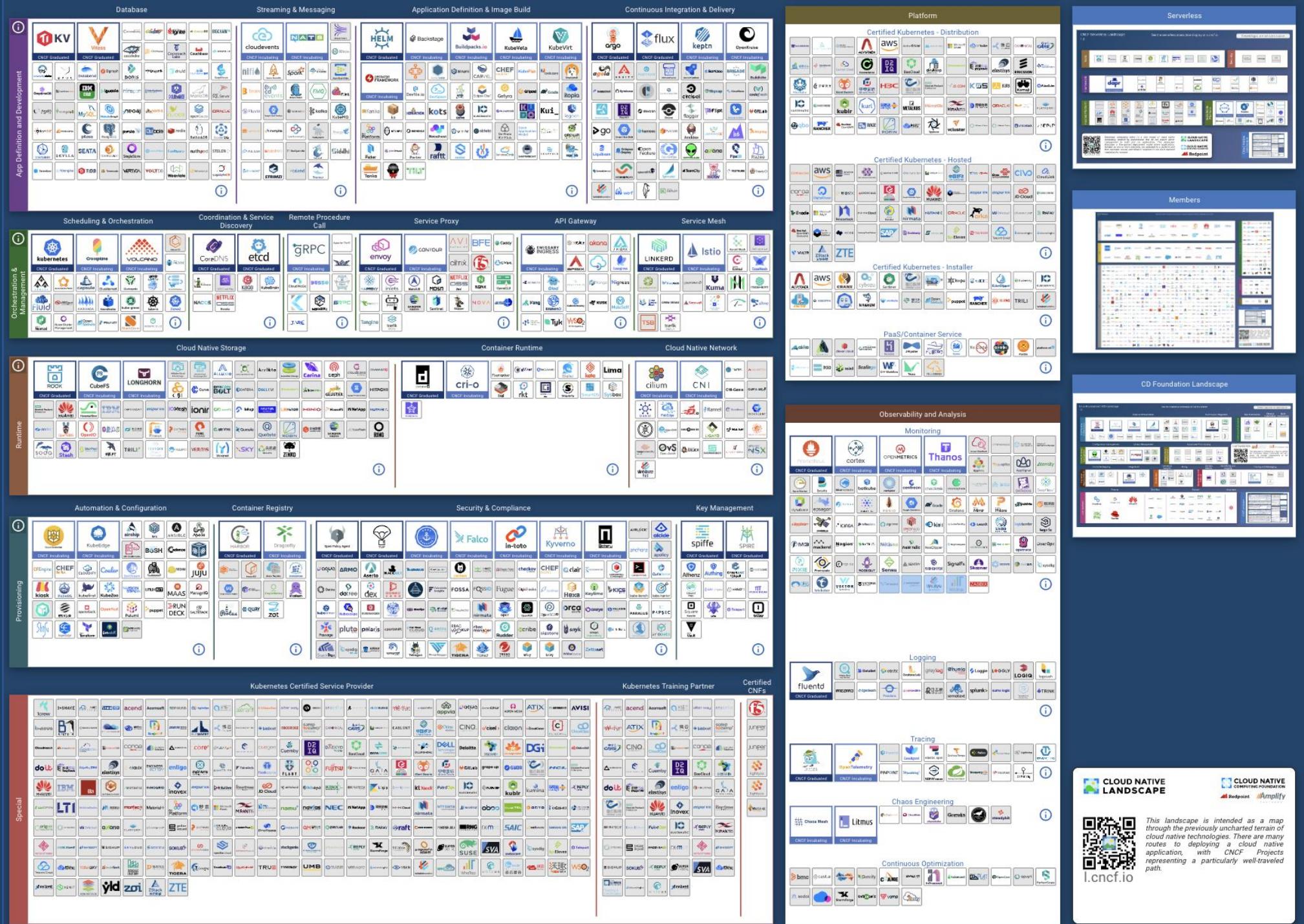
2

3

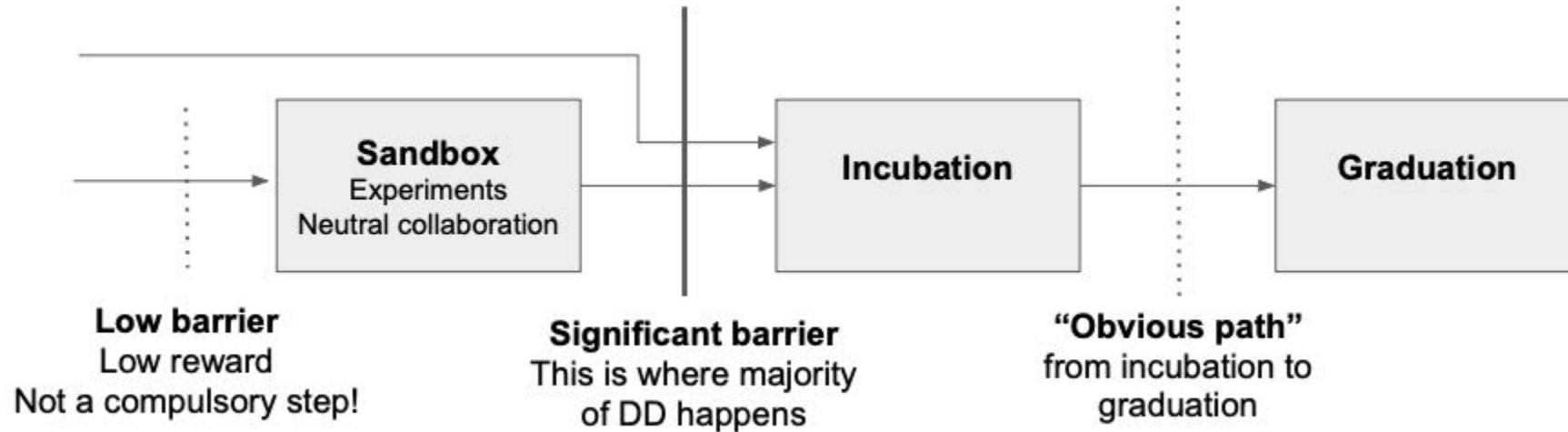
Open governance

Interoperability

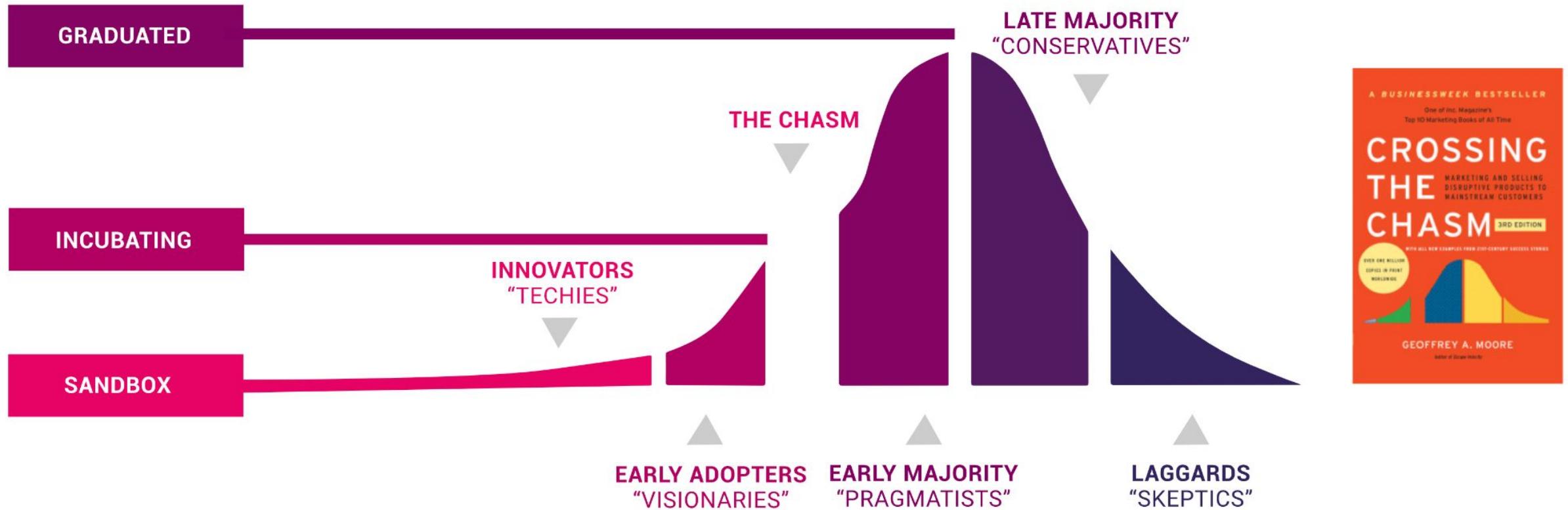
Sustainability



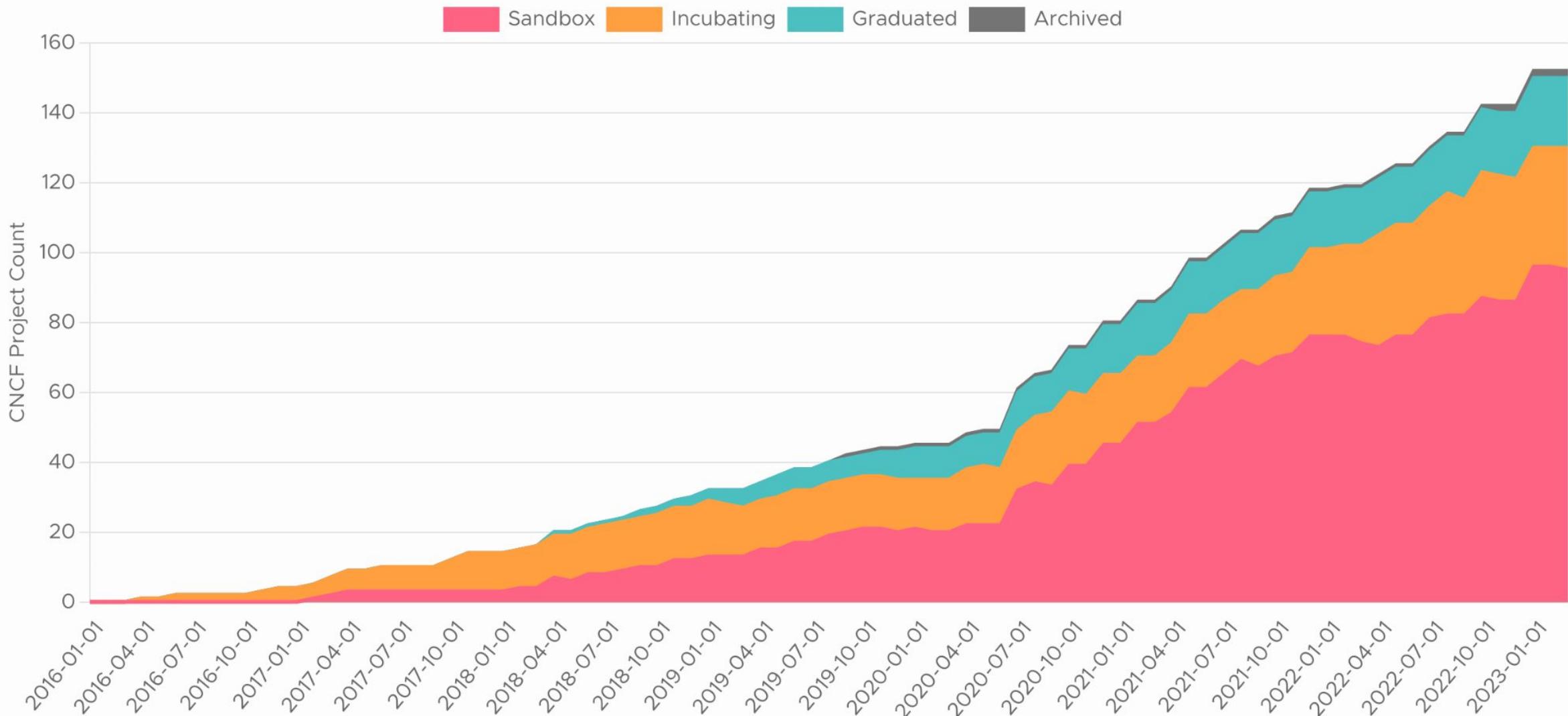
CNCF Project Maturity Levels



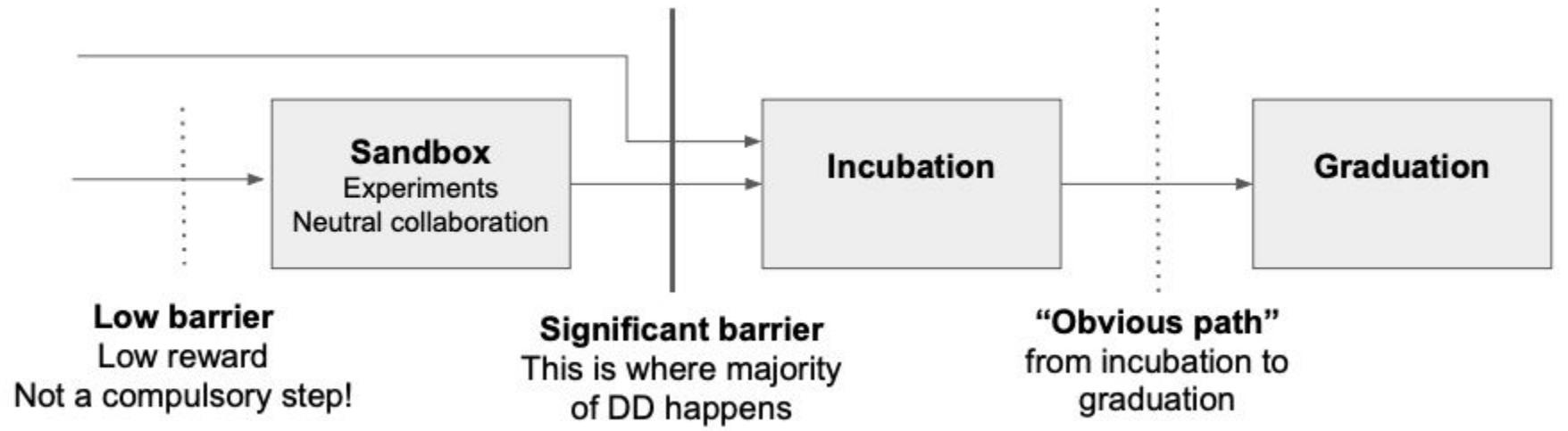
CNCF Project Maturity Levels



Current CNCF Projects



Current Submissions

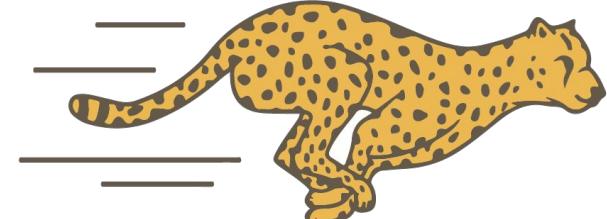


18 projects 11 projects 7 projects

CNCF Technical Advisory Groups (TAGs)



**TAG CONTRIBUTOR
STRATEGY**



TAG Runtime



TAG ENVIRONMENTAL
SUSTAINABILITY



TAG Storage



☰ README.md

Sandbox



CLOUD NATIVE SANDBOX

This repository is designed to allow projects seeking to join the CNCF as a [Sandbox](#) project to submit their applications. It is still a work in progress and we welcome PRs on this repo to automate assignments, improve the process, etc. If you have any questions, please reach out in the [TOC Slack Channel](#) or file an [issue](#) on the repo.

For information on the sandbox process please check out the [details on our sandbox application process below](#).

How to apply

Application: Spreadsheet to GitHub Issues

- Transparency
- Tracking and Labeling
- Voting in GitHub
- Direct contact with project maintainers

○ 18 Open ✓ 7 Closed

○ [Sandbox] kpt New

#34 opened 14 hours ago by mortent ○ 2 tasks done

○ [Sandbox] Spiderpool New

#33 opened 5 days ago by weizhoublue ○ 2 tasks done

○ [Sandbox] KCP-Edge New

#32 opened 3 weeks ago by clubanderson ○ 2 tasks done

○ [Sandbox] KubeClipper New

#31 opened 3 weeks ago by sacredartr ○ 2 tasks done

○ [Sandbox] API Improvement Proposals (AIP) New

#30 opened last month by makahmad ○ 2 tasks done

○ [Sandbox] HwameiStor New

#29 opened last month by zhaosimon ○ 2 tasks done

○ [Sandbox] SOPS New

#28 opened on Feb 17 by hiddeco 🔍 2 tasks

Sandbox Application: Template

[Sandbox] Inspektor Gadget #7

Closed

2 tasks done

blixtra opened this issue on Oct 27, 2022 · 5 comments



blixtra commented on Oct 27, 2022 · edited

Contributor

...

Application contact emails

chriskuehl@microsoft.com, mauriciov@microsoft.com

Project Summary

Inspektor Gadget is a collection of tools (or gadgets) to debug and inspect Kubernetes resources and applications

Project Description

Inspektor Gadget is a collection of tools (or gadgets) to debug and inspect Kubernetes resources and applications. It manages the packaging, deployment and execution of eBPF programs in a Kubernetes cluster, including many based on BCC tools, as well as some developed specifically for use in Inspektor Gadget. It automatically maps low-level kernel primitives to high-level Kubernetes resources, making it easier and quicker to find the relevant information.

Org repo URL

<https://github.com/inspektor-gadget>

Project repo URL

<https://github.com/inspektor-gadget/inspektor-gadget>

Additional repos

<https://github.com/inspektor-gadget/website>

Website URL

<https://www.inspektor-gadget.io/>



Basic info:

- Project Summary
- Project Description
- Org repo URL
- Project repo URL
- Website URL
- Roadmap
- Roadmap context
- Contributing Guide
- Code of Conduct (CoC)
- Adopters
- Contributing or Sponsoring Org
- Maintainers file
- IP Policy
- Trademark and accounts
- Project presentations
- Project champions

Sandbox Application: CoC

CNCF Community Code of Conduct v1.2

Other languages available:

- [Arabic/العربية](#)
- [Bulgarian/Български](#)
- [Chinese/中文](#)
- [Czech/Česky](#)
- [Farsi/فارسی](#)
- [French/Français](#)
- [German/Deutsch](#)
- [Indonesian/Bahasa Indonesia](#)
- [Italian/Italiano](#)
- [Japanese/日本語](#)
- [Korean/한국어](#)
- [Polish/Polski](#)
- [Portuguese/Português](#)
- [Russian/Русский](#)
- [Spanish/Español](#)
- [Turkish/Türkçe](#)
- [Ukrainian/Українська](#)
- [Vietnamese/Tiếng Việt](#)

Contributor Code of Conduct

As contributors and maintainers in the CNCF community, and in the interest of fostering an open and welcoming community, we pledge to respect all people who contribute through reporting issues, posting feature requests, updating documentation, submitting pull requests or patches, and other activities.

We are committed to making participation in the CNCF community a harassment-free experience for everyone, regardless of level of experience, gender, gender identity and expression, sexual orientation, disability, personal appearance, body size, race, ethnicity, age, religion, or nationality.

Scope

This code of conduct applies both within project spaces and in public spaces when an individual is representing the project or its community.

CNCF Events

CNCF events, or events run by the Linux Foundation with professional events staff, are governed by the Linux Foundation Events Code of Conduct available on the event page. This is designed to be used in conjunction with the CNCF Code of Conduct.

Our Standards

Sandbox Application: Adopters

Users (Alphabetically)

* N: AccuKnox
D: AccuKnox uses Cilium for network visibility and network policy enforcement.
U: L3/L4/L7 policy enforcement using Identity, External/VM Workloads, Network Visibility using Hubble
L: <https://www.accuknox.com/spiffe-identity-for-cilium-presentation-at-kubecon-2021>, <https://www.accuknox.com/cilium>
Q: @nyrahul

* N: Acoss
D: Acoss is using cilium as their main CNI plugin (self hosted k8s, On-premises)
U: CiliumNetworkPolicy, Hubble, BPF NodePort, Direct routing
L: @JrCs

* N: Adobe, Inc.
D: Adobe's Project Ethos uses Cilium for multi-tenant, multi-cloud clusters
U: L3/L4/L7 policies
L: <https://youtu.be/39FLsSc2P-Y>

* N: Alibaba Cloud
D: Alibaba Cloud is using Cilium together with Terway CNI as the high-performance ENI dataplane
U: Networking, NetworkPolicy, Services, IPVLAN
L: <https://www.alibabacloud.com/blog/how-does-alibaba-cloud-build-high-performance-cloud-native-pod-networks-in-producti>

* N: Amazon Web Services (AWS)
D: AWS uses Cilium as the default CNI for EKS Anywhere
U: Networking, NetworkPolicy, Services
L: <https://isovalent.com/blog/post/2021-09-aws-eks-anywhere-chooses-cilium>

Adopters

Here are some of the organizations we know are using Cilium.
If you're using Cilium and aren't on this list, [please submit a pull request!](#)



What Makes a Good Multi-tenant Kubernetes Solution

[VIDEO 1](#) • [VIDEO 2](#)



Building High-Performance Cloud Native Pod Networks

[READ BLOG](#)



Ascend uses Cilium as their one CNI across multiple cloud providers

[READ USER STORY](#)



AWS picks Cilium for Networking & Security on EKS Anywhere

[READ BLOG](#)



Bell uses Cilium and eBPF for telco networking

[VIDEO 1](#) • [VIDEO 2](#)



Building a Secure and Maintainable PaaS

[WATCH VIDEO](#)



Cloud Native Networking with eBPF

[WATCH VIDEO](#)



Cilium is the CNI for Cosmonic's Nomad based PaaS

[USER STORY](#) • [VIDEO](#)

Sandbox Application: Justification

Why CNCF?

Benefit to the Landscape

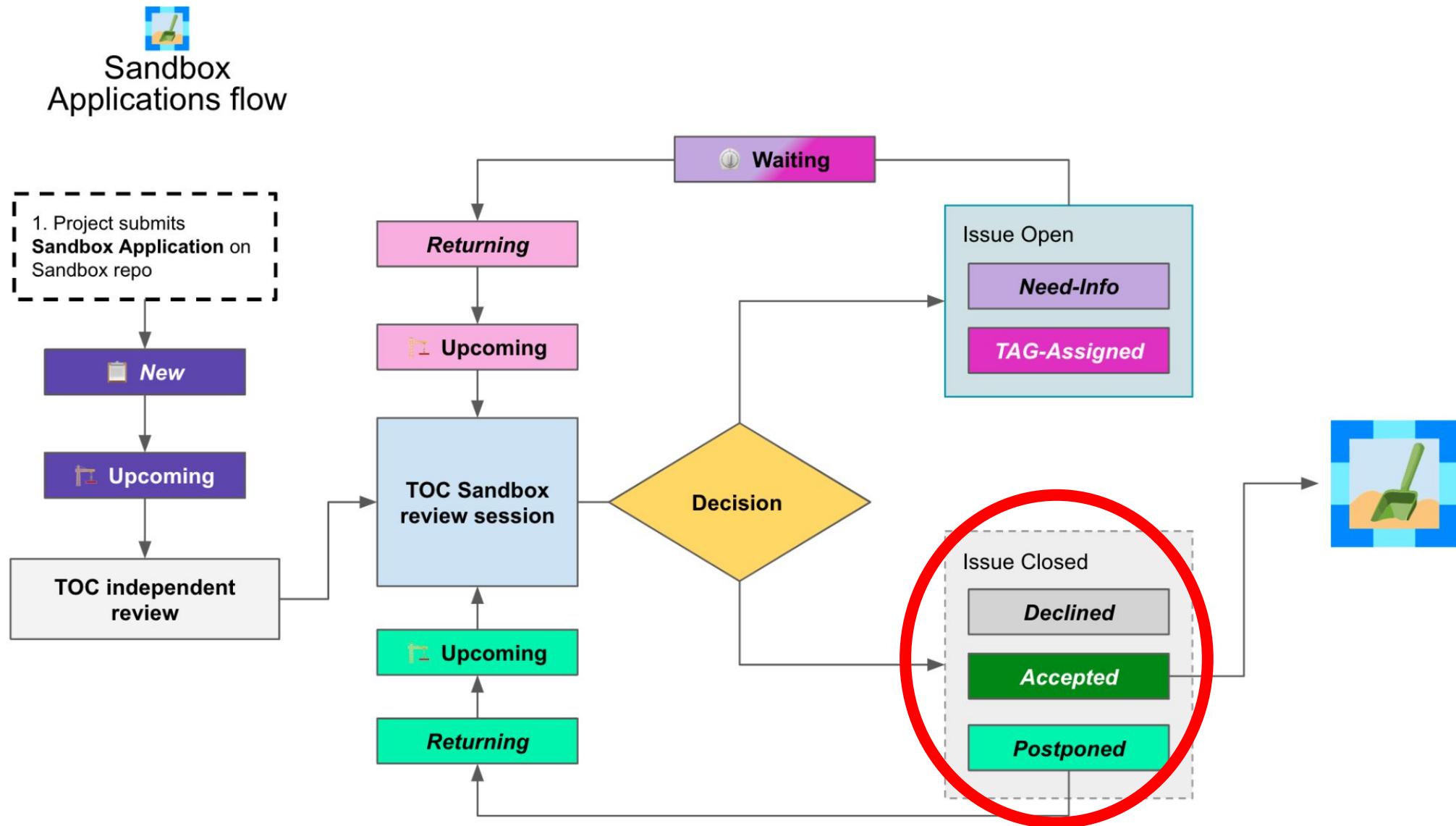
Cloud Native 'Fit'

Cloud Native 'Integration'

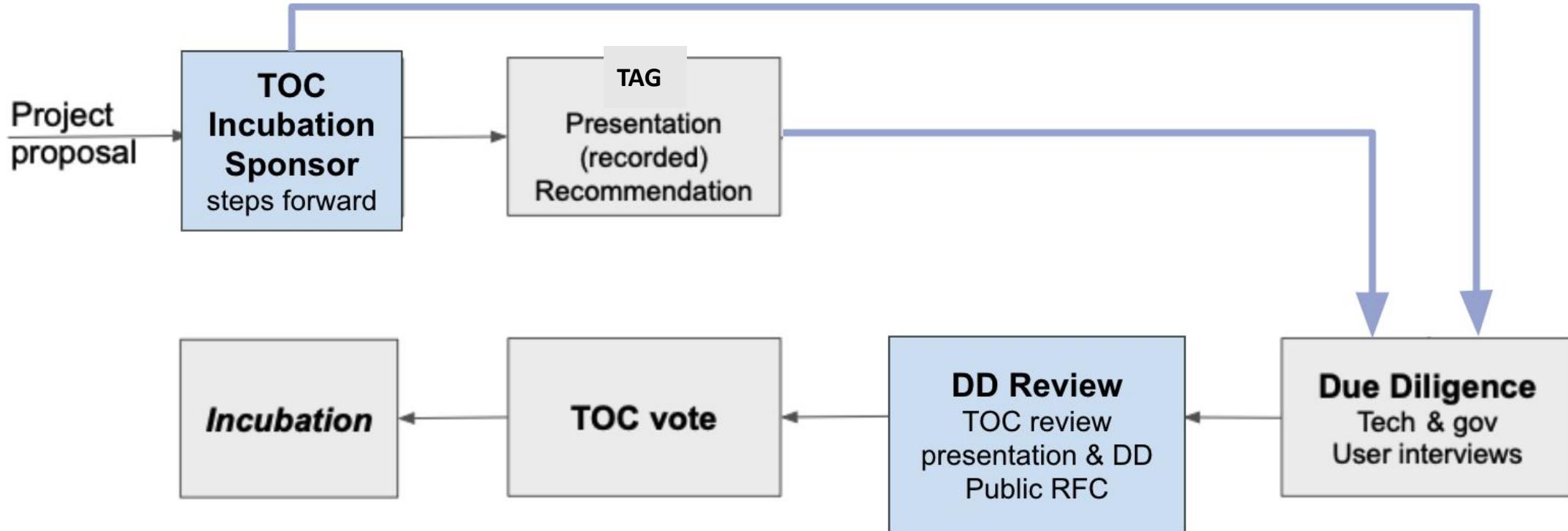
Cloud Native Overlap

Similar projects

Sandbox Application: Outcomes



Incubation



- Document that it is **being used successfully in production by at least three independent adopters** which, in the TOC's judgement, are of adequate quality and scope.
- Have a **healthy number of committers**. A committer is defined as someone with the commit bit; i.e., someone who can accept contributions to some or all of the project.
- Demonstrate a substantial **ongoing flow of commits** and merged contributions.
- Since **these metrics can vary significantly** depending on the type, scope and size of a project, the TOC has final judgement over the level of activity that is adequate to meet these criteria.
- A **clear versioning scheme**.
- Specifications must have at least one public reference implementation.

Incubation: Due Diligence

- Background
- Project Goal
- Current Status
 - Sub-projects
- Future Plans
- Project Scope
 - Value-add to the CNCF ecosystem
 - Alignment with other CNCF projects
- Formal Requirements
- Users
 - Adopter Interviews
- Other Considerations/Context
 - Where does it fit in the market and technical ecosystem?

Incubation: Due Diligence [isogo.to/dd](#)

Cilium Graduation Due Diligence Overview

TOC Sponsors: Emily Fox, Katie Gamanji (CNCF TOC)

Authors: Bill Mulligan (Isovalent), Liz Rice (Isovalent), Thomas Graf (Isovalent)

This Document

The purpose of this document is to provide the Cilium project technical review Due Diligence [described here](#). Its goal is to provide data to help TOC to decide on promoting Cilium to Graduation.

Background

- Link to TOC PR: <https://github.com/cncf/toc/pull/952>
- Link to GitHub organisation: <https://github.com/cilium>

Project Goal

Cilium is a networking, observability, and security solution with an eBPF-based dataplane (To learn more about eBPF, visit [eBPF.io](#)). As a CNI, it provides a simple flat Layer 3 network with the ability to span multiple clusters in either a native routing or overlay mode. Cilium is L7-protocol aware and can enforce network policies on L3-L7 using an identity based security model that is decoupled from network addressing.

Cilium implements distributed load balancing for traffic between pods and to external services, and is able to fully replace kube-proxy, using efficient hash tables in eBPF allowing for [almost unlimited scale](#). It also supports advanced functionality like integrated ingress and egress gateway, bandwidth management and service mesh, and provides deep network and security visibility and monitoring through Hubble and Tetragon.

Current Status

Cilium has 21,000+ GitHub stars and 750+ contributors across the various repos in the [Cilium GitHub org](#) and 14,500+ users registered for the [Cilium community Slack](#). Cilium was open sourced in 2015, hit the

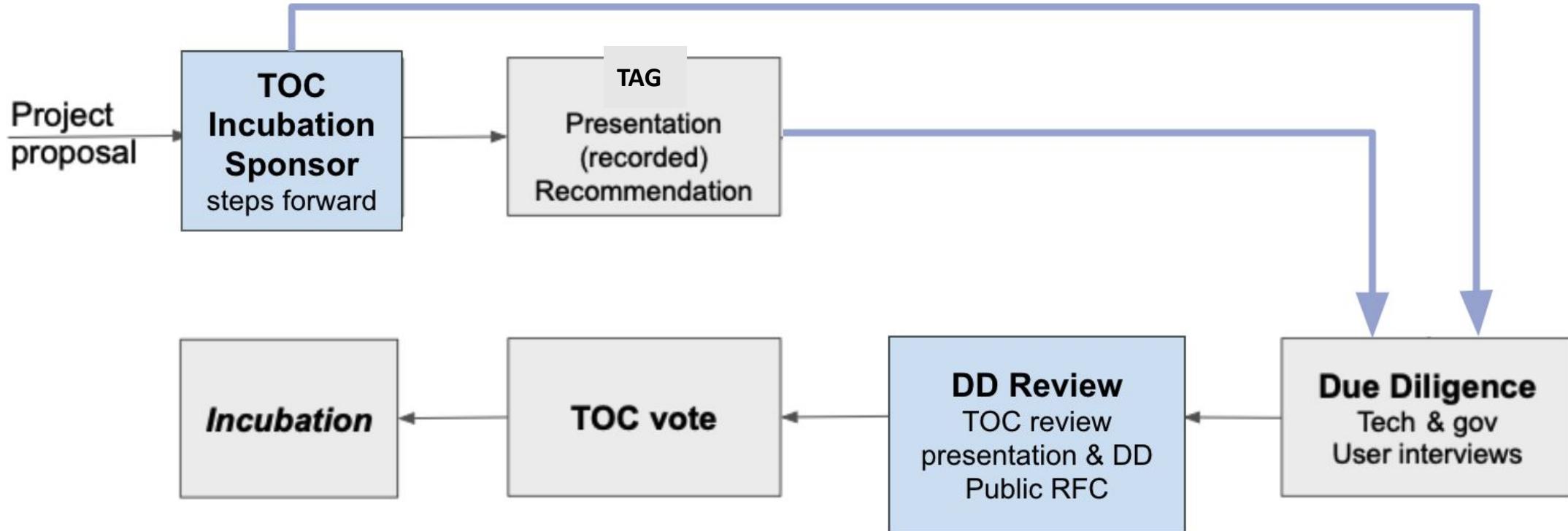
Experience Benefits Challenges

What was the motivation and experience in integrating the project with existing services? Any community engagement?

What are the top benefits of adopting the project, compared with other products in this space?

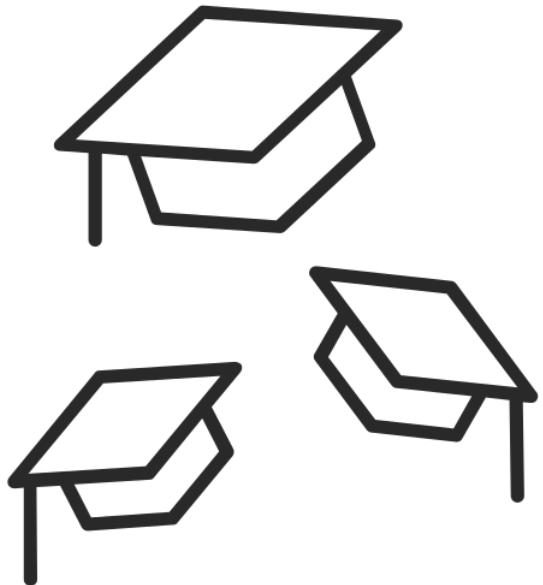
What challenges did the end user experience with the project adoption?

Incubation



Graduation (Due Diligence)

- Committers from **at least two organization**
- Core Infrastructure Initiative **Best Practices Badge**
- Independent and third party **security audit**
- Explicitly defined criteria for:
 - **GOVERNANCE.md** - project governance and committer process
 - **OWNERS.md** - current and emeritus committers
 - **MAINTAINERS.md** - onboarding, offboarding, & emeritus criteria
 - **ADOPTERS.md** - list of project adopters



Cloud Native Guideposts (WIP)

- Adoption
 - Companies publicly using the project
 - Good documentation
- Security
 - Audits
 - Badging
 - Threat model
- Contribution contribute.cncf.io/maintainers/
 - Getting started and contributing guides
 - Public discussions
 - Open governance
 - Flow of contributions and maintainers
 - Contributor ladder

Why CNCF? Project Benefits

- Design
- Program Management
- Legal Services
- Tools
- Technical Documentation
- CI
- Certs and Training
- Marketing*

* Sandbox projects don't get marketing support

Project Benefits: Jira

The screenshot shows a Jira board titled "CNCF Service Desk / CNCF Service Desk". The board has a header with the CNCF logo and navigation links. On the right, there are three circular icons: a magnifying glass for search, a blue circle with the number "2" for "Requests", and a user profile icon.

CNCF Service Desk

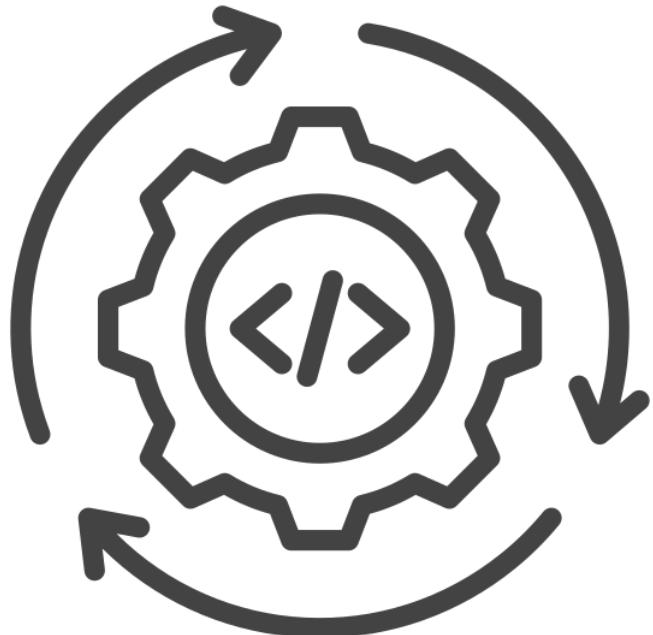
Welcome! The CNCF Service Desk is meant for projects and maintainers

What can we help you with?

- Program management**
governance help, legal help, contractors, third-party services
- Technical Docs**
technical docs
- Creative services**
project artwork, logos and websites
- Legal**
trademark, copyright, patents, licenses and CLAs
- Certification**
expert certification, software conformance and training

A Perspective on Overall Project Lifecycle

- Entry and moving levels criteria is constantly evolving!
- Tailored approach
 - Direct incubation submission
 - Linkerd steering committee
- Close collaboration with TAGs
- Archiving
 - Brigade, rkt, and OpenTracing
- Annual reviews



TOC GitHub Repo

<https://github.com/cncf/toc>

#toc in CNCF Slack

TOC Mailing list

cncf-toc@lists.cncf.io

TOC Meeting Every 1st Tuesday

TAG Contributor Strategy

<https://github.com/cncf/tag-contributor-strategy>



Please scan the QR Code above
to leave feedback on this session