



# Meetup Hosts

## November 16th, 2022



**Archy**  
CNCF Ambassador



**Sebastien / Prune**  
Lead Software Eng.

**Wunderkind**



**Mathieu Benoit**  
Dev Rel



**Marino Wijay**  
Dev Rel



# Agenda

- Introduction
- Prochains Meetup
- Récap KubeCon NA 2022
- Présentations éclairis
  - ◆ GitOps et artifact OCI + Helm charts
  - ◆ Istio ambient mesh
  - ◆ Configurer votre laptop pour K8s (tuto review)
- Discussions éclairis
  - ◆ Votre utilisation de GitOps ?
  - ◆ Mise en place du KCD Québec



# 16,986

ATTENDEES

64% 1ST-TIME ATTENDEES

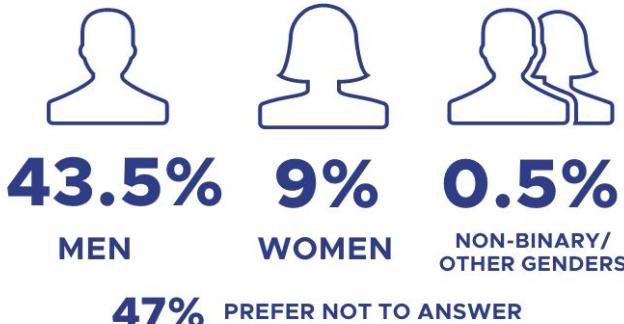
153 15 23

MEDIA +  
ANALYSTS  
CNCF-HOSTED  
CO-LOCATED  
EVENTS  
SPONSOR-HOSTED  
CO-LOCATED  
EVENTS



MOST REPRESENTED COUNTRIES

## USA, INDIA, CANADA



### ATTENDEES PER REGION



1,551 90 17 176

CFP SUBMISSIONS

MAINTAINER TRACK SESSIONS

KEYNOTES

BREAKOUTS

CFP ACCEPTANCE RATE: 12%

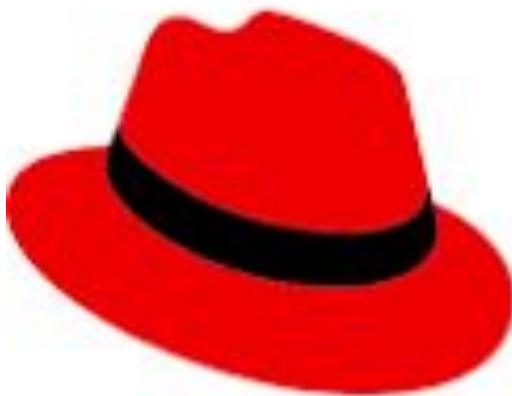
END USER TALKS: 33%

## GENDER MINORITY SPEAKERS: 21%

GENDER MINORITY KEYNOTE SPEAKERS: 48%



# Thank you to our sponsor!



**Red Hat**



# Become a Sponsor!





BUILDING FOR THE ROAD AHEAD

# DETROIT 2022

## Recap

# IN-PERSON DATA

**7,403**  
ATTENDEES

## ATTENDEES PER REGION



**MOST REPRESENTED COUNTRIES**  
**USA, CANADA, ISRAEL**

**61% 1ST-TIME ATTENDEES**

**111** MEDIA + ANALYSTS



**47.5%**

MEN



**11%**

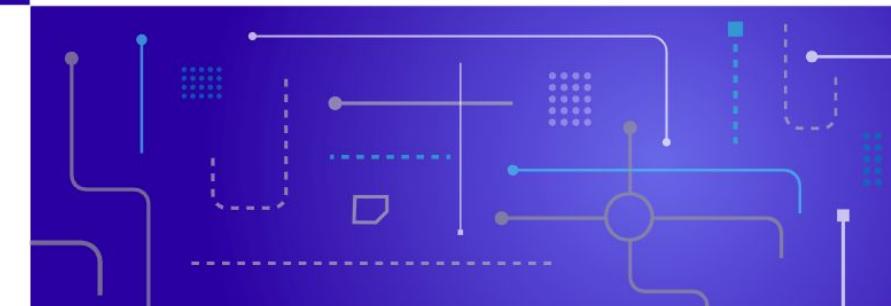
WOMEN



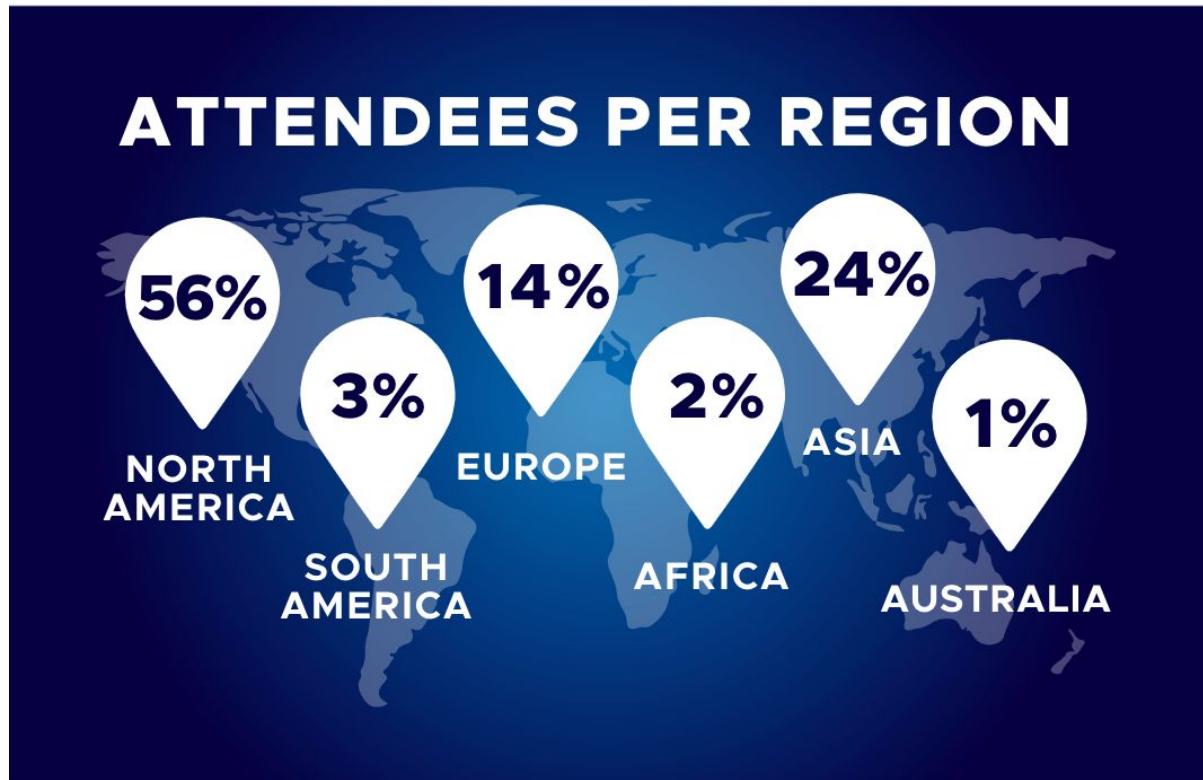
**0.5%**

NON-BINARY/  
OTHER GENDERS

**41%** DID NOT ANSWER



# VIRTUAL DATA



**MOST REPRESENTED COUNTRIES**  
**USA, INDIA, CANADA**

**9,583**  
ATTENDEES

66% 1ST-TIME ATTENDEES

42

MEDIA + ANALYSTS



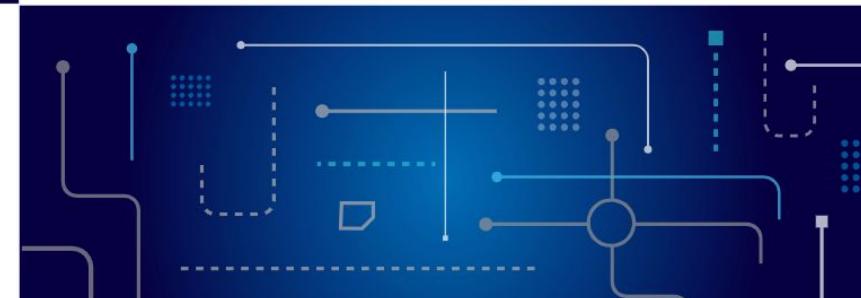
**40% 7% 0.5%**

MEN

WOMEN

NON-BINARY/  
OTHER GENDERS

**52.5% DID NOT ANSWER**



# Comparaisons

Affluence:

Globalement:

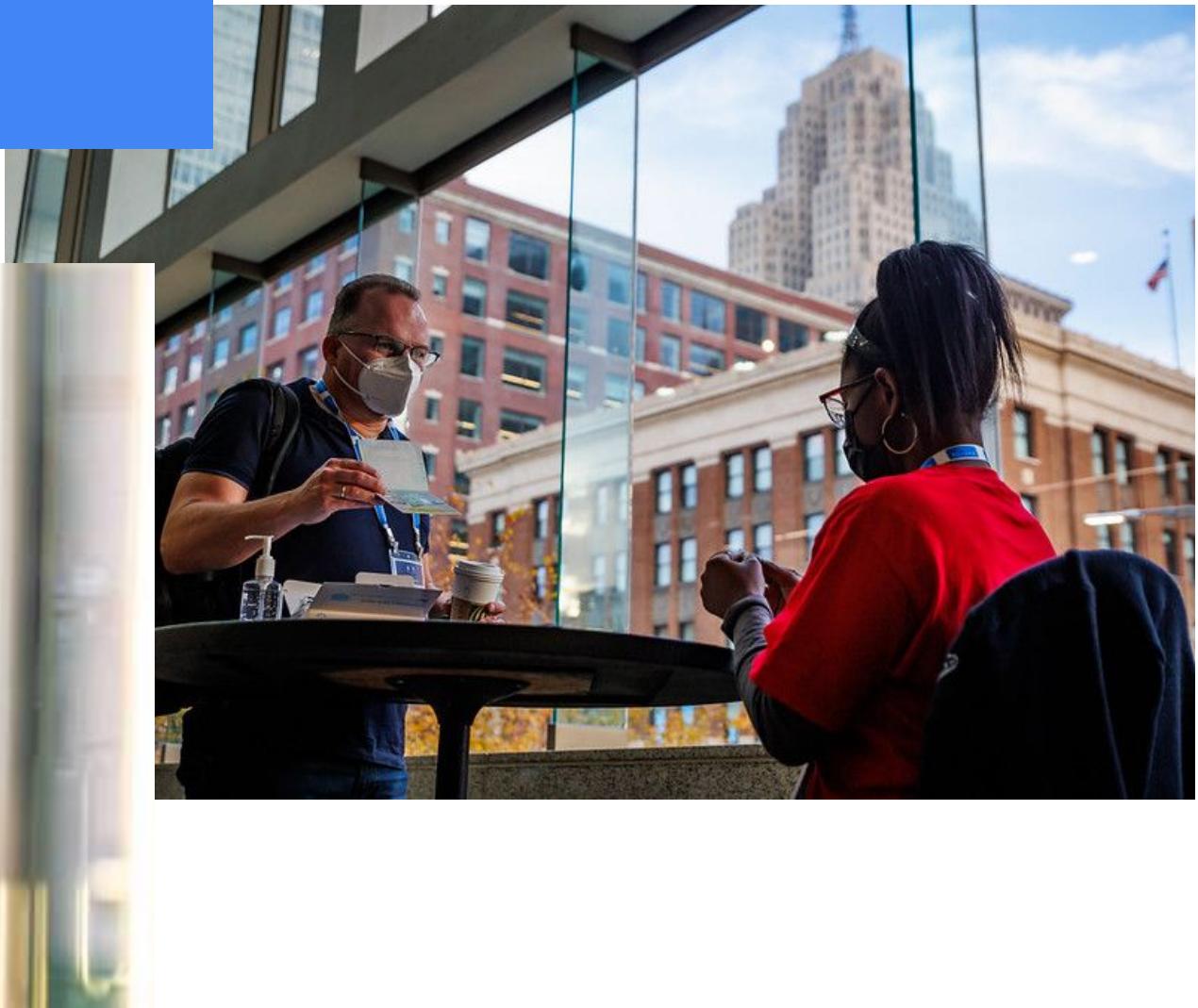
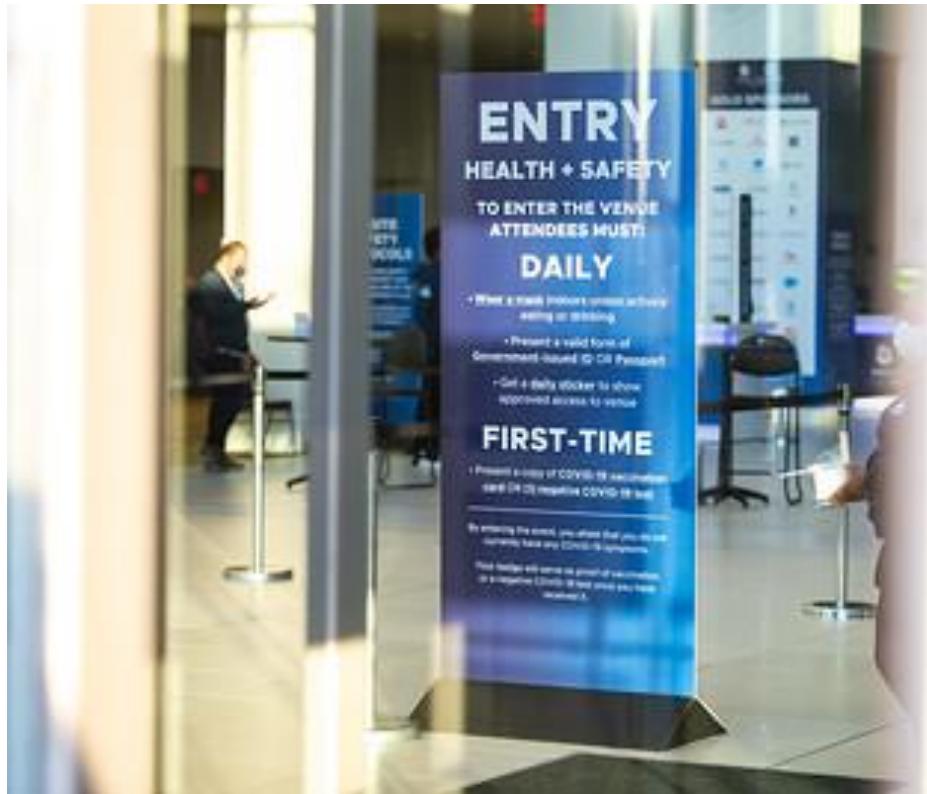
- NA 2021 vs NA 2022: **-27%**
- EU 2022 vs NA 2022: **-8.5%**

En Personne:

- NA 2021 vs NA 2022: **+109%**
- EU 2022 vs NA 2022: **+4.5%**



# Port du masque



# Kubecon NA Day 0 Events



# Kubecon NA Day 0 Events

## Multiplication des co-located events

- Continuous Delivery Summit
- GitOpsCon North America
- Application Networking Day
- PrometheusDay North America
- Kubernetes on Edge Day North America
- Kubernetes AI Day North America
- SigstoreCon North America
- ServiceMeshCon North America
- Reactive Summit
- BackstageCon North America
- Cloud Native eBPF Day North America
- Open Observability Day
- And more.....

## Thèmes faisant le buzz

- Supply chain everything!!
- Web Assembly continues to make major strides.
- A lot of managed services (K8s and more) are cropping up.
- Developer experience continues to be a challenge, but Backstage is in the lead...
- eBPF community continues to grow and adds more and more features.
- Marketing to the ‘edge’ is a battlefield

# Kubecon NA Day 0 Announcements

Les Day 0 events étaient vraiment centrés sur la technologie. Quelques annonces:

- [Project Sigstore announces General Availability](#)
- [SPIFFE & SPIRE projects graduate from incubation](#)
- [Crossplane gains traction](#)
- [Grafana Partners with Isovalent \(2\)](#)
- [Cloud Native Security Con is now in February!](#)

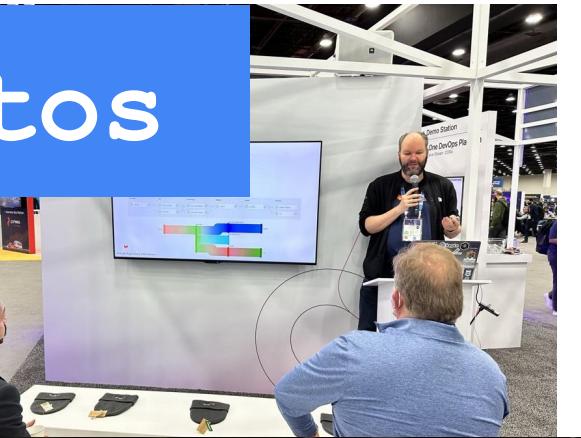
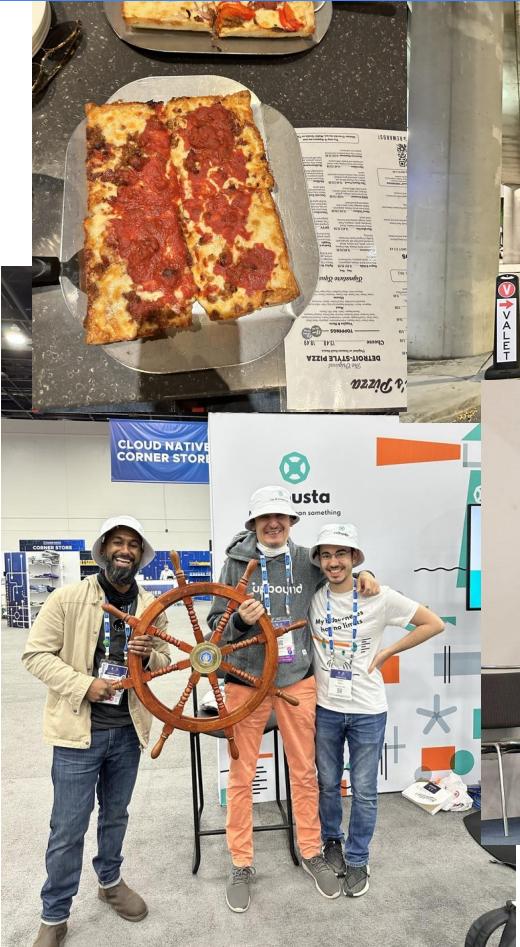
# Kubecon NA Day -2: Rejekts Conference

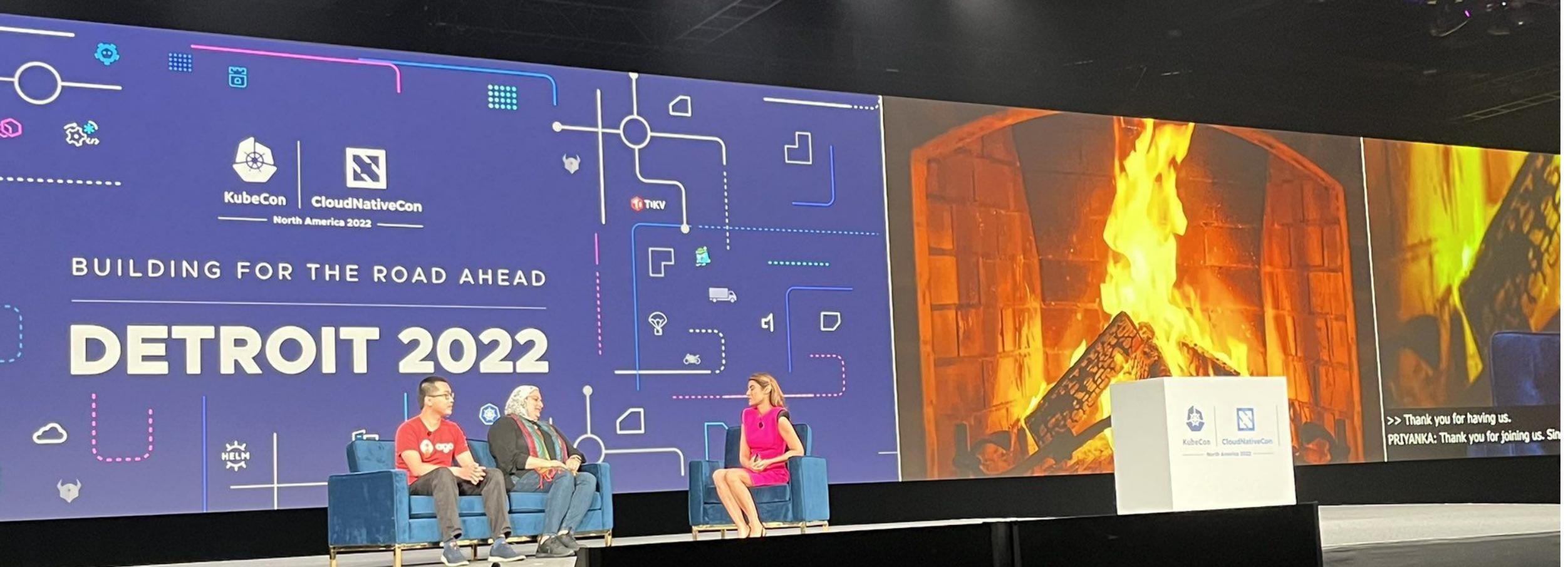


# KubeCon NA Top Announcements

1. Istio now Incubating Project
2. Red Hat Device Edge and MicroShift
3. Cilium on AKS
4. Cilium applies for CNCF Graduation
5. Fluentbit v2 adds Metric & Trace support
6. Cert-Manager is incubating

# Sessions and Photos





# Kubecon NA 2022 Trends by Marino

1. Edge Computing, K3s, Wasm
2. RUST
3. eBPF
4. SBOM
5. GitOPs EVERYTHING
6. Sidecar-less Service Mesh
7. Cilium becoming CNI standard for Hyperscalars

# Kubecon NA 2022 Trends by Mathieu

## 1. GitOps as core

ArgoCD, FluxCD

Progressive Delivery: Rollouts, Flagger  
IdPs @ Adobe and Intuit

## 2. Policies

Kyverno + Gatekeeper

CEL for Admission Control in 1.26

## 3. S3C is more concrete

SigstoreDay

"Sign everything"

## 4. Wasm is emerging

Microsoft + Docker + Fermyon

WasmDay

# Kubecon NA 2022 Trends by Prune

## 1. GitOps

So many (good) talks about Argo

## 2. Crossplane

So many (good) talks about Argo + Crossplane

## 3. K8s on Edge

## 4. Virtual Clusters for short-lived envs

## 5. eBPF everything

## 6. Support Opensource and contribute to projects !

It's easier than you think

# Prochains KubeCon Europe



# Prochains KubeCon NA



**KubeCon**



**CloudNativeCon**

North America 2023

**SAVE THE DATE**

**NOVEMBER 6-10, 2023**

**CHICAGO, ILLINOIS**

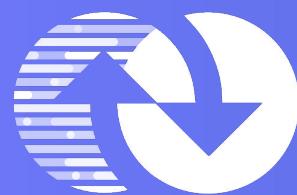
**#KUBECON + #CLOUDNATIVECON**



Canadian Speakers  
@ KubeCon NA 2022  
and GitOpsCon NA 2022



# Build and Deploy OCI Artifacts, and Helm charts, the GitOps Way

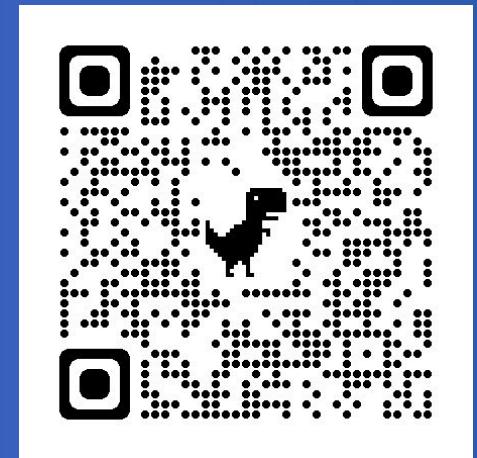


GitOpsCon  
NORTH AMERICA

October 25, 2022 | Detroit, MI



**Mathieu Benoit**  
DevRel Engineer  
*Google*



```
apiVersion: configsync.gke.io/v1beta1
kind: RootSync
metadata:
  name: root-sync-git
spec:
  sourceFormat: unstructured
  git:
    repo: https://github.com/mathieu-benoit/ci-with-helm
    revision: HEAD
    branch: main
    dir: .
    auth: none
```



```
tar -czf policies.tar.gz policies.yaml
oras push ghcr.io/mathieu-benoit/policies:0.1.0
```

```
apiVersion: configsync.gke.io/v1beta1
kind: RootSync
metadata:
  name: root-sync-oci
spec:
  sourceFormat: unstructured
  sourceType: oci
  oci:
    image: ghcr.io/mathieu-benoit/policies:0.1.0
    dir: .
    auth: none
```

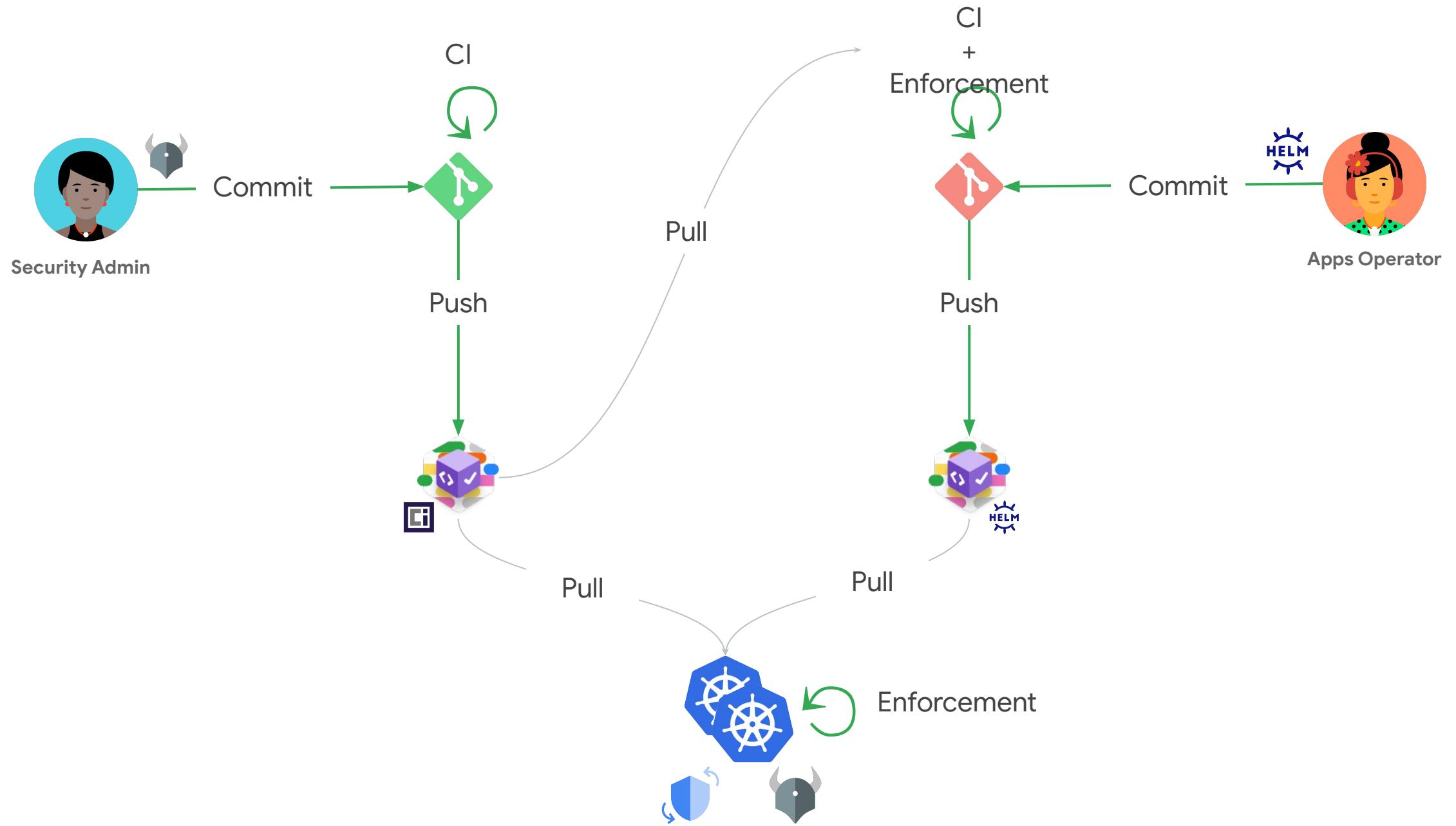


Generic  
Portable  
Efficient and fast  
Granular security  
Verification

```
helm package my-chart --version 0.1.0
helm push my-chart-0.1.0.tgz oci://ghcr.io/mathieu-benoit
```

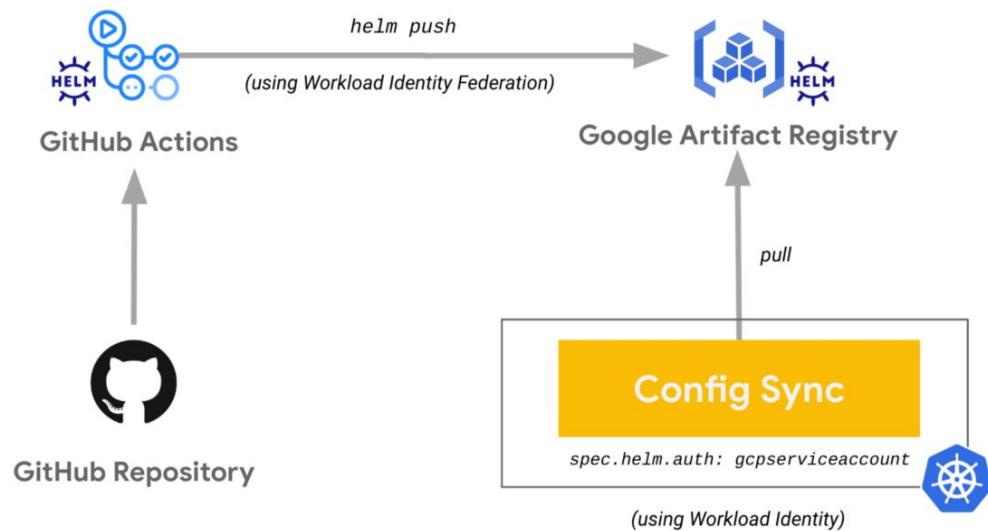
```
apiVersion: configsync.gke.io/v1beta1
kind: RootSync
metadata:
  name: root-sync-helm
spec:
  sourceFormat: unstructured
  sourceType: helm
  helm:
    repo: oci://ghcr.io/mathieu-benoit
    chart: my-chart
    version: 0.1.0
    releaseName: my-chart
    namespace: my-chart
    auth: none
```



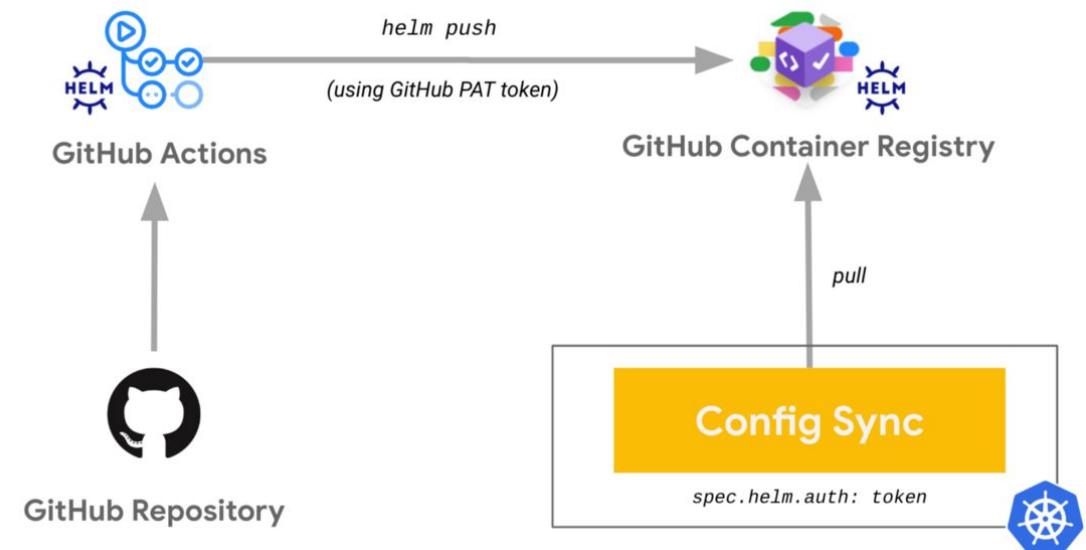


# Resources

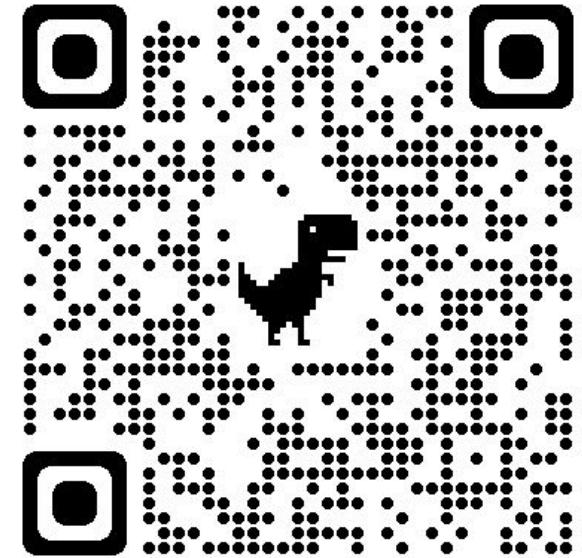
- Recording
  - [youtu.be/08ARHTeiXmo](https://youtu.be/08ARHTeiXmo)
- Setups and demos
  - [github.com/mathieu-benoit/ci-with-helm](https://github.com/mathieu-benoit/ci-with-helm)
- Config Sync project
  - [github.com/GoogleContainerTools/kpt-config-sync](https://github.com/GoogleContainerTools/kpt-config-sync)



[CI/GitOps with GitHub actions \(WIF\) and GAR](#)



[CI/GitOps with GitHub actions \(PAT\) and GHCR](#)



# Setup your Laptop for Kubernetes and get produktive



**Archy**  
CNCF Ambassador  
*Google*



**Prune**  
Software Engineer  
**Wunderkind**



# Notre KubeCon Na 2022 Présentation



# Tutoriel en ligne

[https://rebrand.ly/k8s\\_tools](https://rebrand.ly/k8s_tools)

KubeCon NA 2022 Tutorial - K8s Setup Tools

Setup your Shell for Kubernetes and get productive quickly

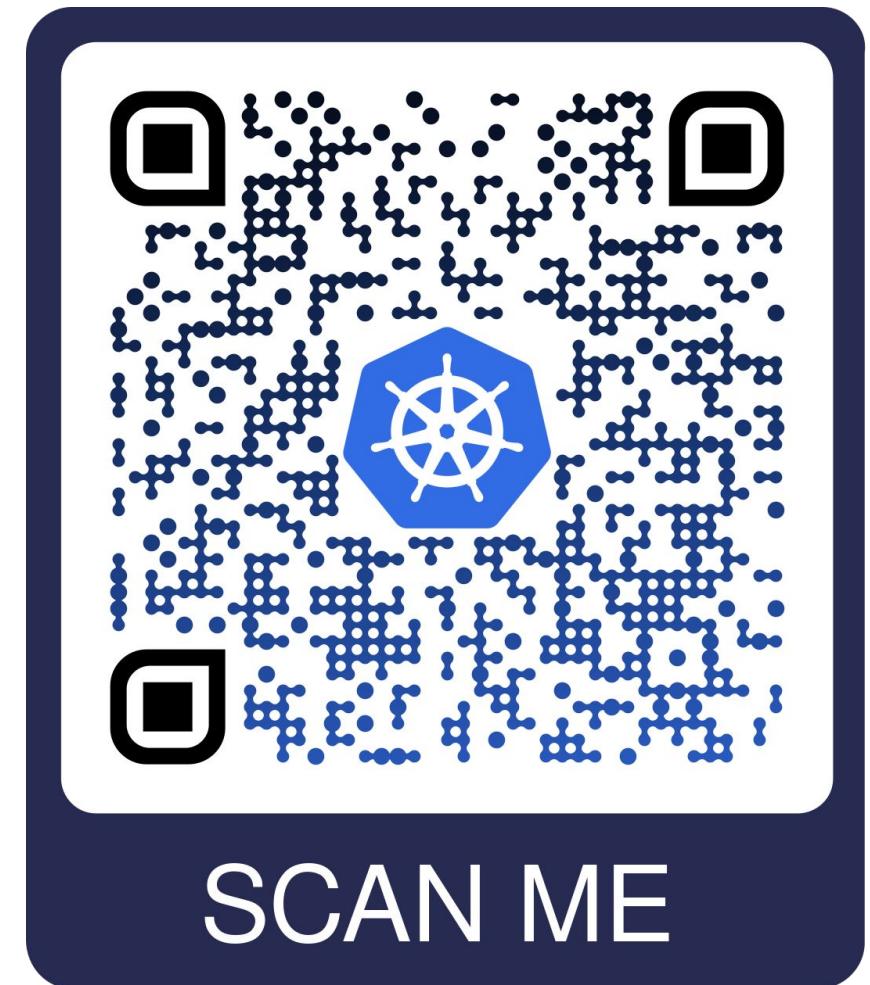
This site is the companion to the KubeCon 2022 NA talk:

[Set Up Your Shell For Kubernetes Productivity And Be Efficient Quickly - Sebastien "Prune" Thomas, Wunderkind & Archy Ayrat Khayretdinov, Google](#)

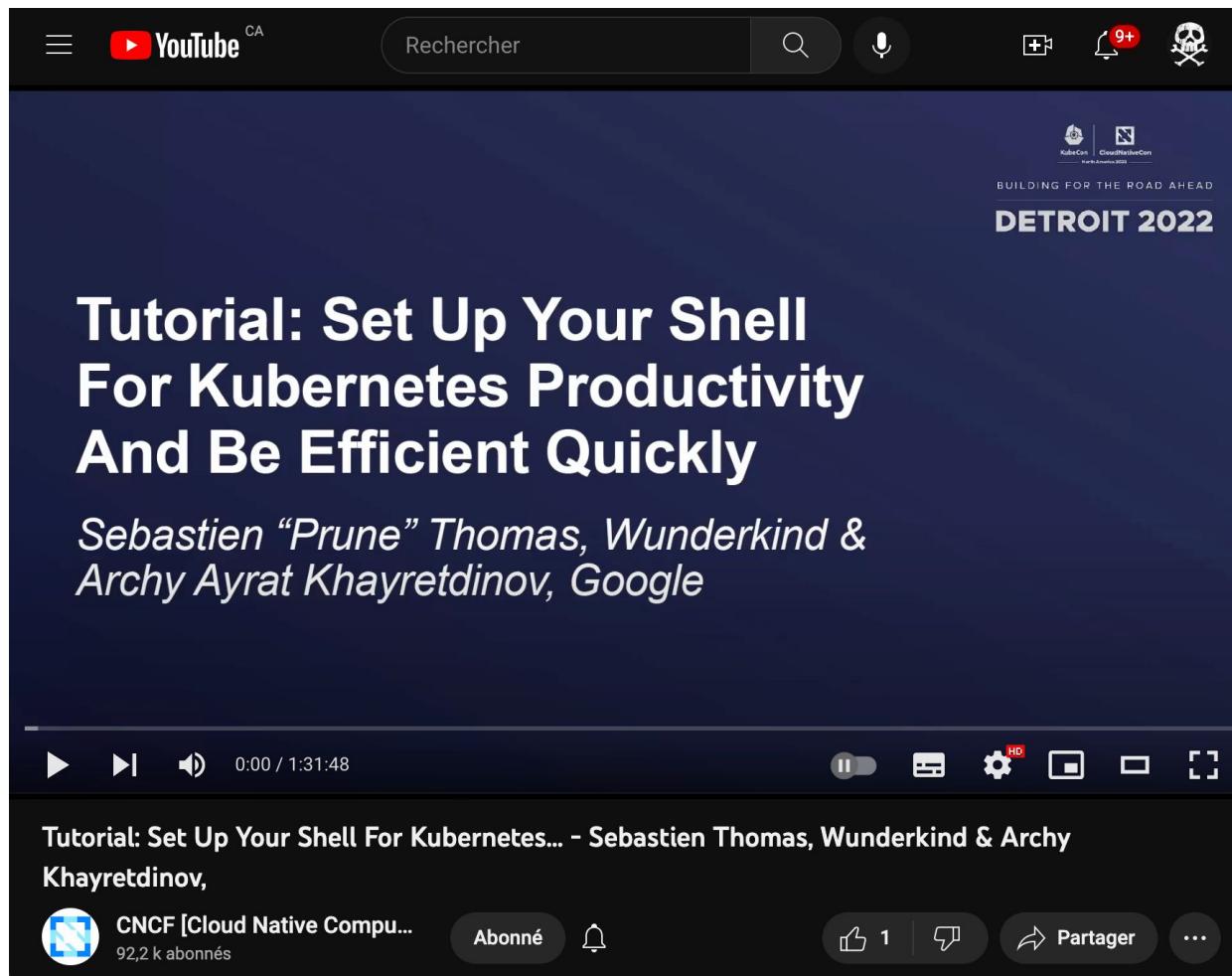
Follow this website to run the demos on your own laptop.

Also check [the slide deck that was used during the presentation](#).

You can also watch the KubeCon Na 2022 talk on [Youtube](#).

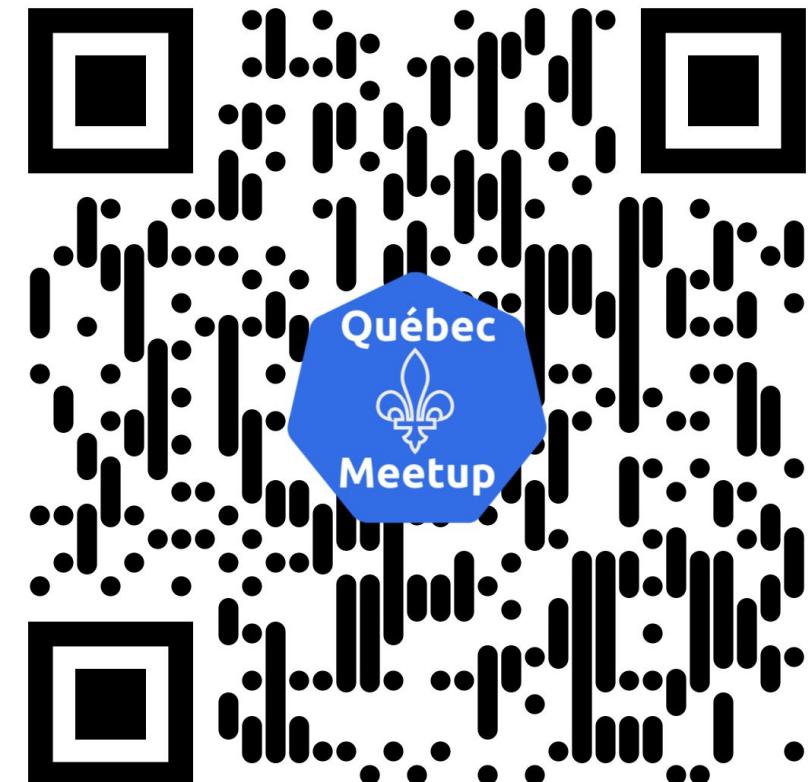


# Tutoriel en ligne



Dispo sur Youtube !

<https://youtu.be/TKYAEjNg4Hw>



# Online tutorial

- Installer Docker et un cluster K8s local
- Configurer son shell / Terminal
- Installer les bons utilitaires pour améliorer Kubectl
- K8s UI / Interfaces
- Intro à la gestion des déploiements et autre trucs cool
- quelques commandes pour une utilisation avancée
- manipuler les fichiers yaml comme un pro



# Tutorial example content

## Demo

```
export KUBECOLOR_OBJ_FRESH=12h # highlight resources newer than 12h
k get pods -A
k run another-test-pod --image=alpine:latest sleep 30
k get pods
sleep 10
k get pods

prune@arcadia:~
```

NAME	READY	STATUS	RESTARTS	AGE
test-pod	0/1	CrashLoopBackOff	5 (18s ago)	6m24s
coredns-6d4b75cb6d-j2774	1/1	Running	0	20h
coredns-6d4b75cb6d-jvng9	1/1	Running	0	20h
etcd-demo-control-plane	1/1	Running	0	20h
kindnet-wx2sx	1/1	Running	0	20h
kindnet-wx9jg	1/1	Running	0	20h
kube-apiserver-demo-control-plane	1/1	Running	0	20h
kube-controller-manager-demo-control-plane	1/1	Running	43 (3h58m ago)	20h
kube-proxy-6wh5v	1/1	Running	0	20h
kube-proxy-nknzg	1/1	Running	0	20h
kube-scheduler-demo-control-plane	1/1	Running	43 (3h57m ago)	20h
local-path-provisioner-6bb4c567f-6fhrr	1/1	Running	0	20h
pod/another-test-pod	created			
NAME	READY	STATUS	RESTARTS	AGE
another-test-pod	0/1	ContainerCreating	0	0s
test-pod	0/1	CrashLoopBackOff	5 (18s ago)	6m24s

## Kubernetes status

Some applications also benefit from a specific dynamic prompt, triggered by the name of the command.

If your shell is well configured, typing `k` or `kubectl` should add a new section to the right prompt that displays the current context:

```
prune@arcadia:~
```

When the selected namespace is NOT default, it is also added to the context:

```
prune@arcadia:~
```

`k ns kube-system`  
Context "minikube" modified.  
Active namespace is "kube-system".

Refer to [Dynamic Prompt section](#) to get more infos.

```
kind create cluster --name=dev --config kind-dev.yaml -v9 --retain
```

Here's the regular logs when starting a Kind cluster:

```
enabling experimental podman provider
Creating cluster "dev" ...
✓ Ensuring node image (kindest/node:v1.24.4)
✓ Preparing nodes
✓ Writing configuration
✓ Starting control-plane
✓ Installing CNI
✓ Installing StorageClass
✓ Joining worker nodes
Set kubectl context to "kind-dev"
```

You can check that everything is working. Each K8s node is actually a running container:

```
podman ps
```

CONTAINER ID	IMAGE
6993dbdf82b	docker.io/kindest/node@sha256:adfaebada924a26c2c9308edd53c6e33b3d4e4!
dd461d2b9d4a	docker.io/kindest/node@sha256:adfaebada924a26c2c9308edd53c6e33b3d4e4!

```
stern multi
```

output

```
+ multi-deployment-6f4fd4f8b8-vnqbx > first
+ multi-deployment-6f4fd4f8b8-vnqbx > second
+ multi-deployment-6f4fd4f8b8-lg2b8 > second
+ multi-deployment-6f4fd4f8b8-lg2b8 > first
multi-deployment-6f4fd4f8b8-lg2b8 second starting second container
multi-deployment-6f4fd4f8b8-vnqbx second starting second container
multi-deployment-6f4fd4f8b8-lg2b8 first starting first container
multi-deployment-6f4fd4f8b8-vnqbx first starting first container
```

Here's a detailed explanation:

```
stern multi
```

containers in a pod

second

first

second

first

second

first

second

first

actual logs

pods, each in a different color



# Istio Ambient Mesh

solo.io Developer Advocacy



# Marino Wijay



Developer Advocate - DevRel @ Solo

 [@virtualized6ix](https://twitter.com/virtualized6ix)

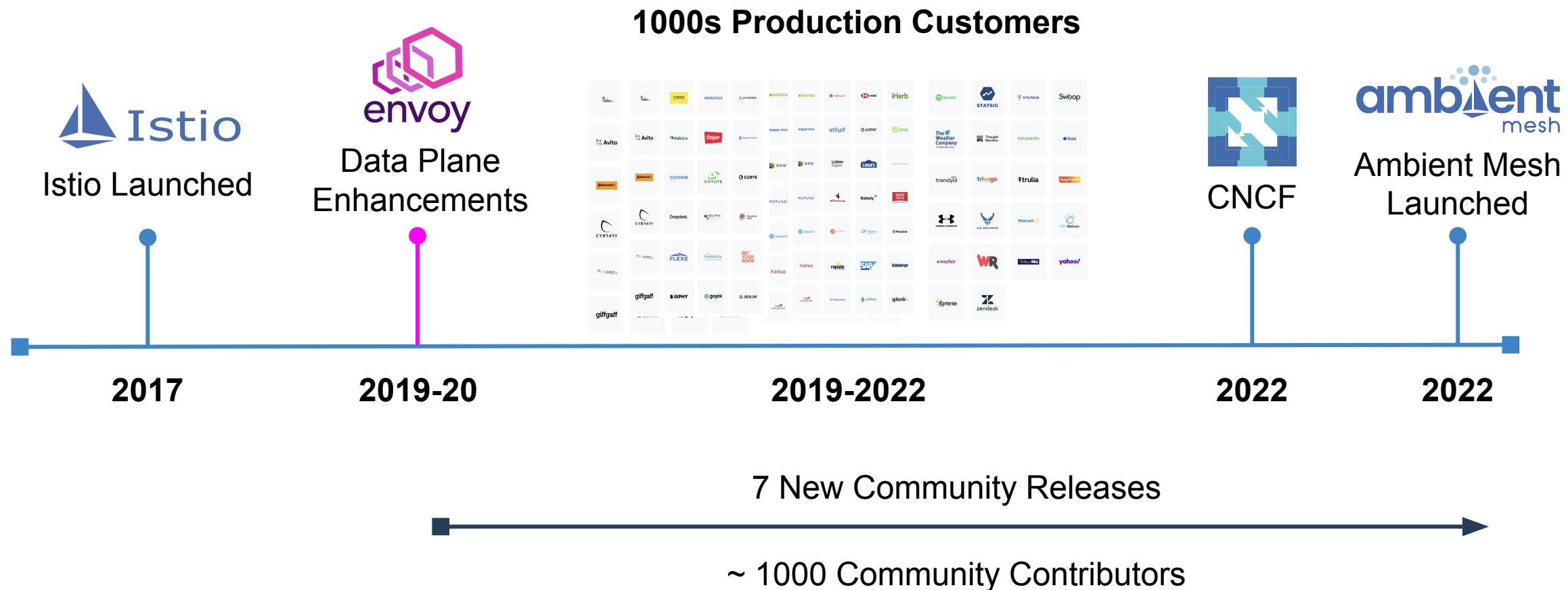
 [marino.wijay@solo.io](mailto:marino.wijay@solo.io)

 <https://www.twitch.tv/virtualized6ix>

 <https://marinow.hashnode.dev>

 <https://www.linkedin.com/in/mwijay/>

# Istio - The Industry's Leading Service Mesh



# Introducing Istio Ambient Mesh



A new, open source contribution to the Istio project, that defines a new sidecar-less data plane.



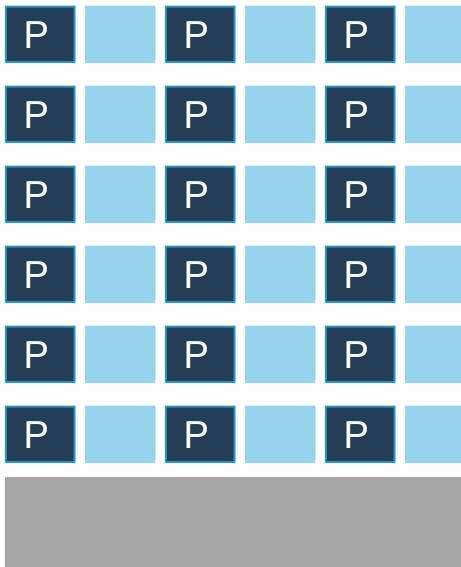
Solo.io and Google are the lead contributors to Istio Ambient Mesh.



# What is Istio Ambient Mesh?

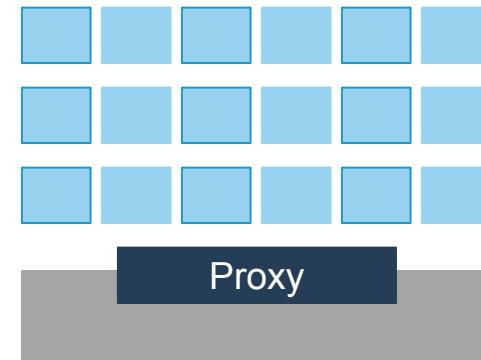


Move from Sidecar Proxy per-pod architecture  
to a Proxy per-node architecture.



**Istio Sidecar Data Plane**  
1 Pod/Container = 1 Proxy

*“Making the Mesh  
Transparent to Applications”*



**Ambient Mesh Data Plane**  
1 Node = 1 Proxy

**Business Owner**

- Reduced Compute Cost
- Improve Business Continuity
- Increase Business Flexibility

**Platform Team**

- Simplified Operations
- Reduced Maintenance
- Simplified Upgrades
- Easier to Add Applications
- Less Day-2-Day Complexity
- Adapt to Application Needs
- Offer SLAs for Applications
- Many Apps = 1 Platform

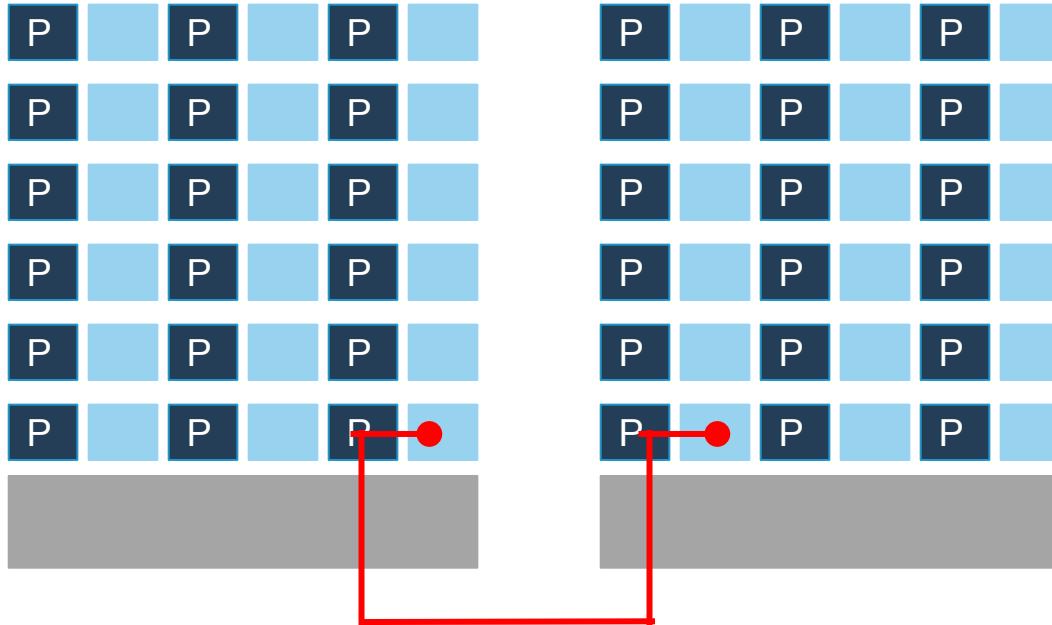
**Application Team**

- Mesh is transparent to Apps
- Applications won't break
- Flexible Performance Available
- Manage Security vs Performance

# Istio enables Zero-Trust Security

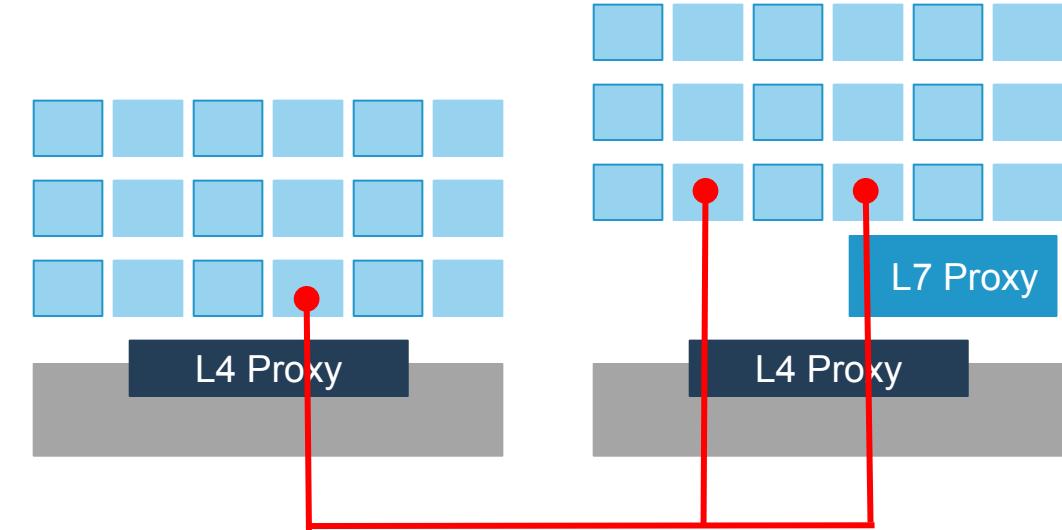


## Istio Security with Sidecar Proxy



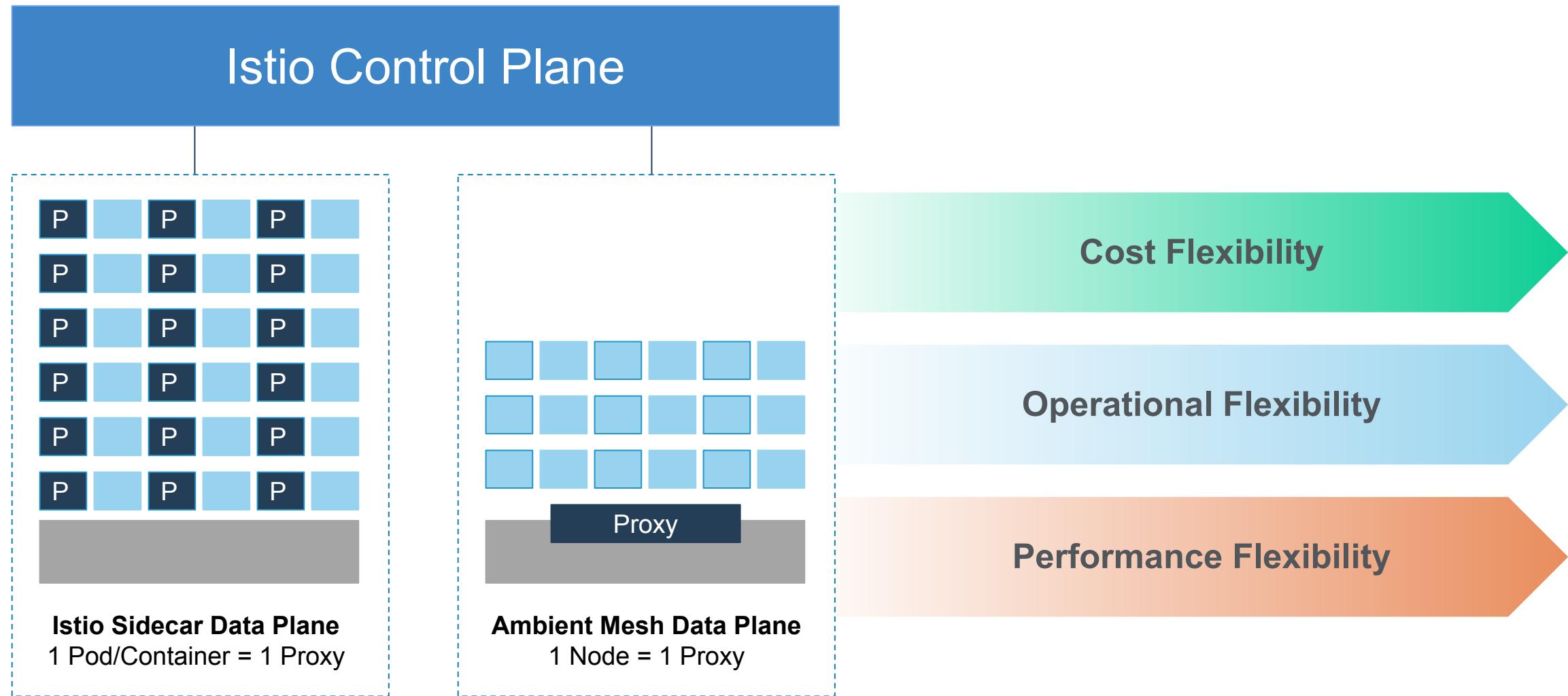
- All traffic goes through Proxy
- Proxy manages mTLS, Identity
- Proxy manages L7 Application Filters | Policies

## Istio Security with Ambient Mesh



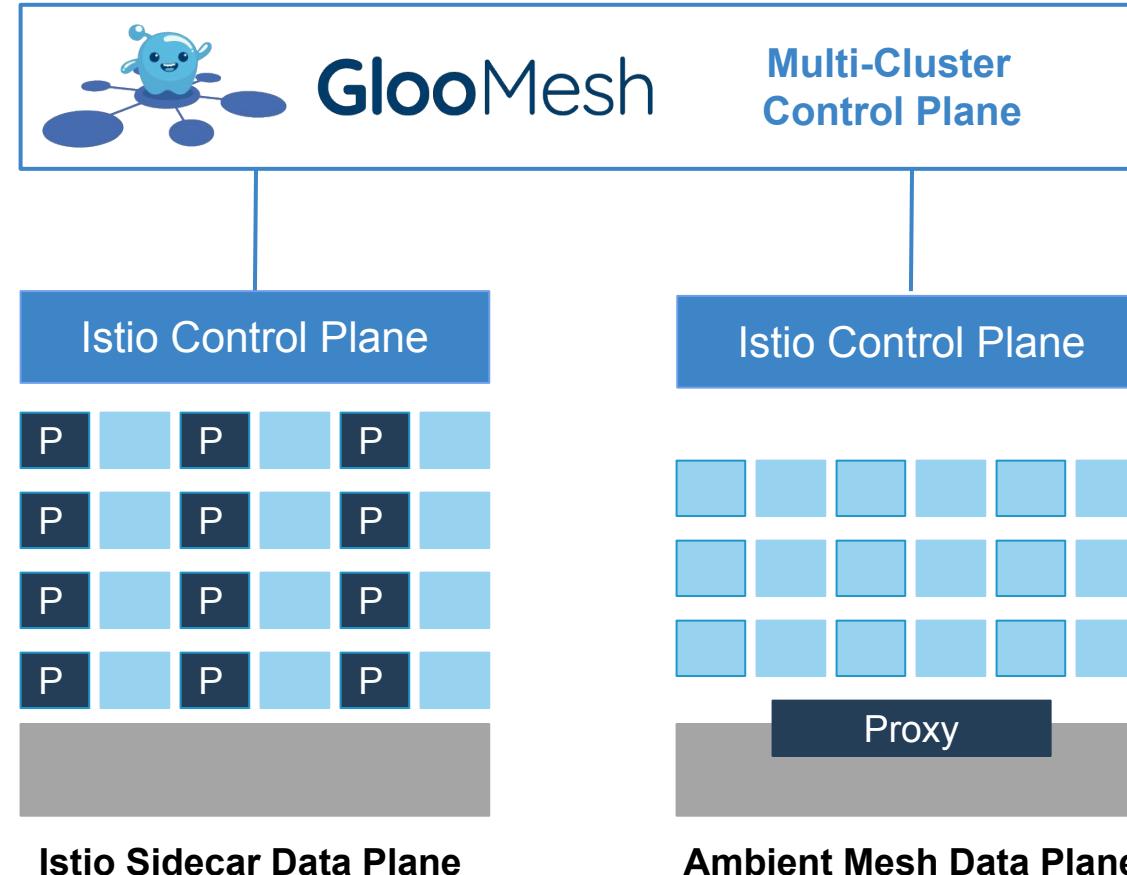
- All traffic goes through Proxy
- L4 Proxy manages mTLS, Identity
- L7 Proxy manages L7 Application Filters | Policies

# Istio enables Service Mesh flexibility

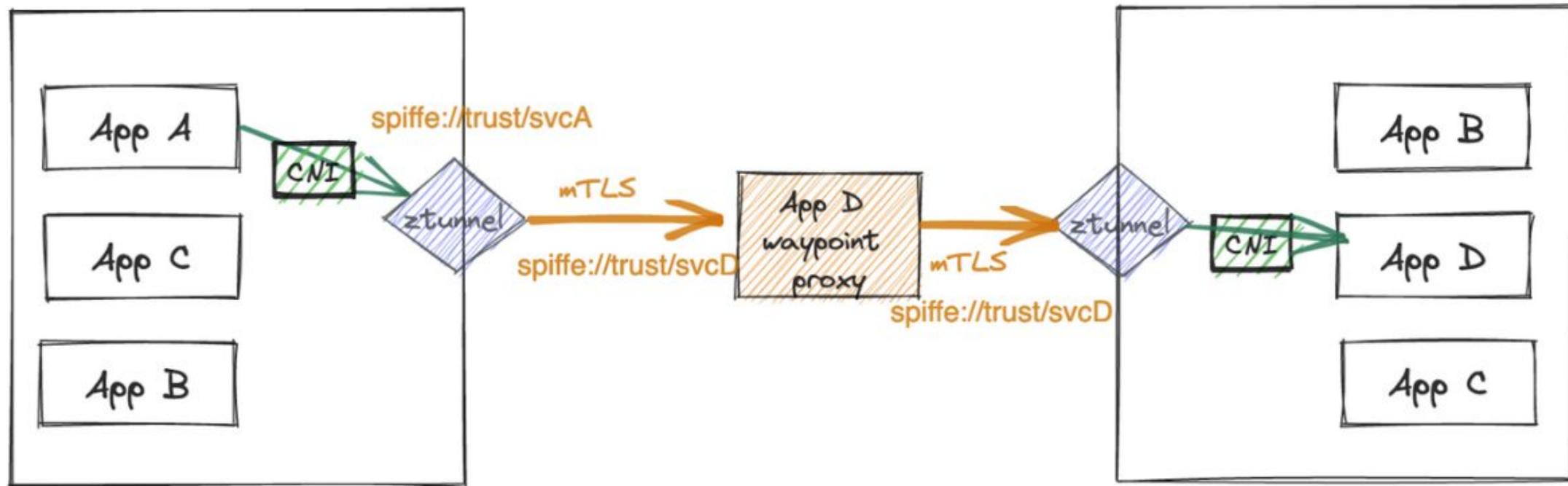


# Gloo Mesh - The Future of Service Mesh

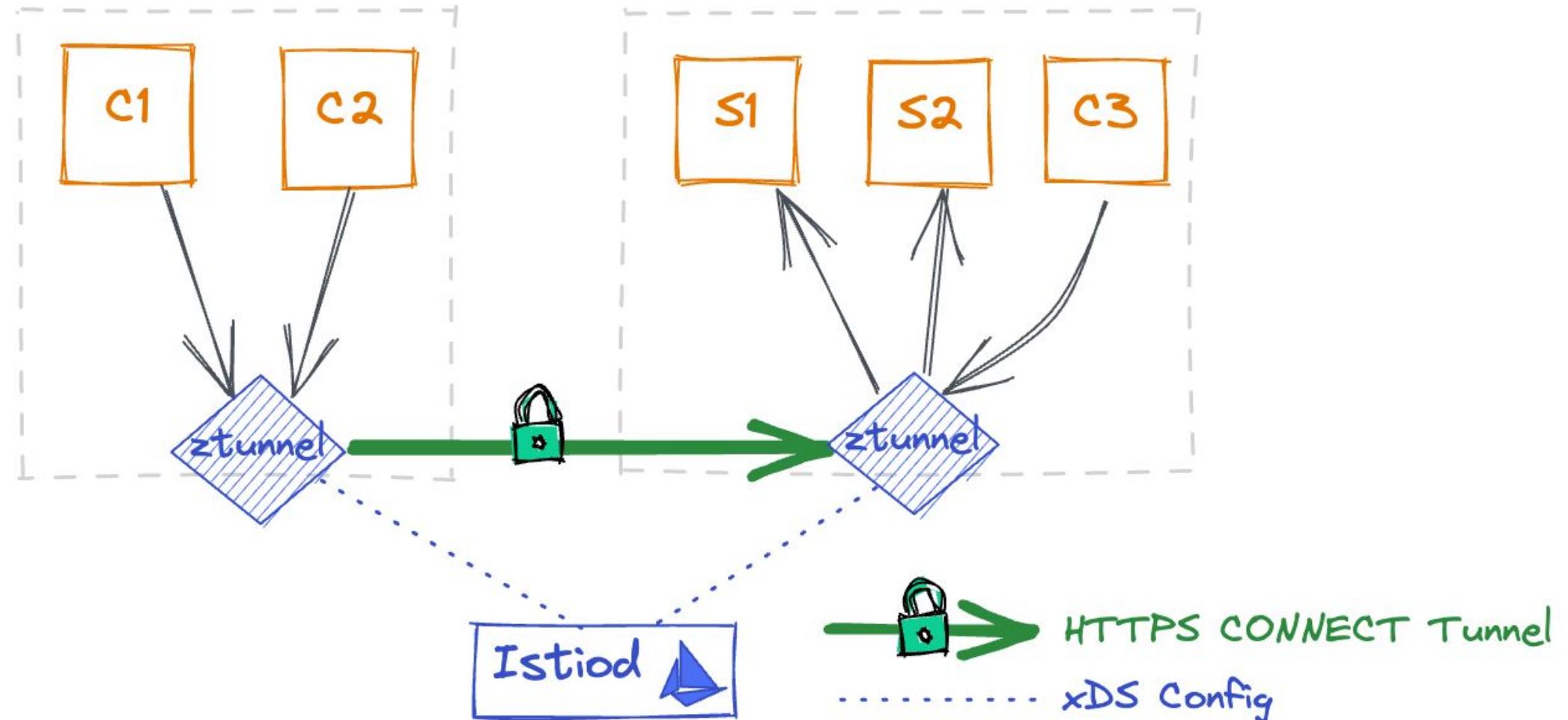
Built on Istio



# Architecture: Visualizing ztunnel

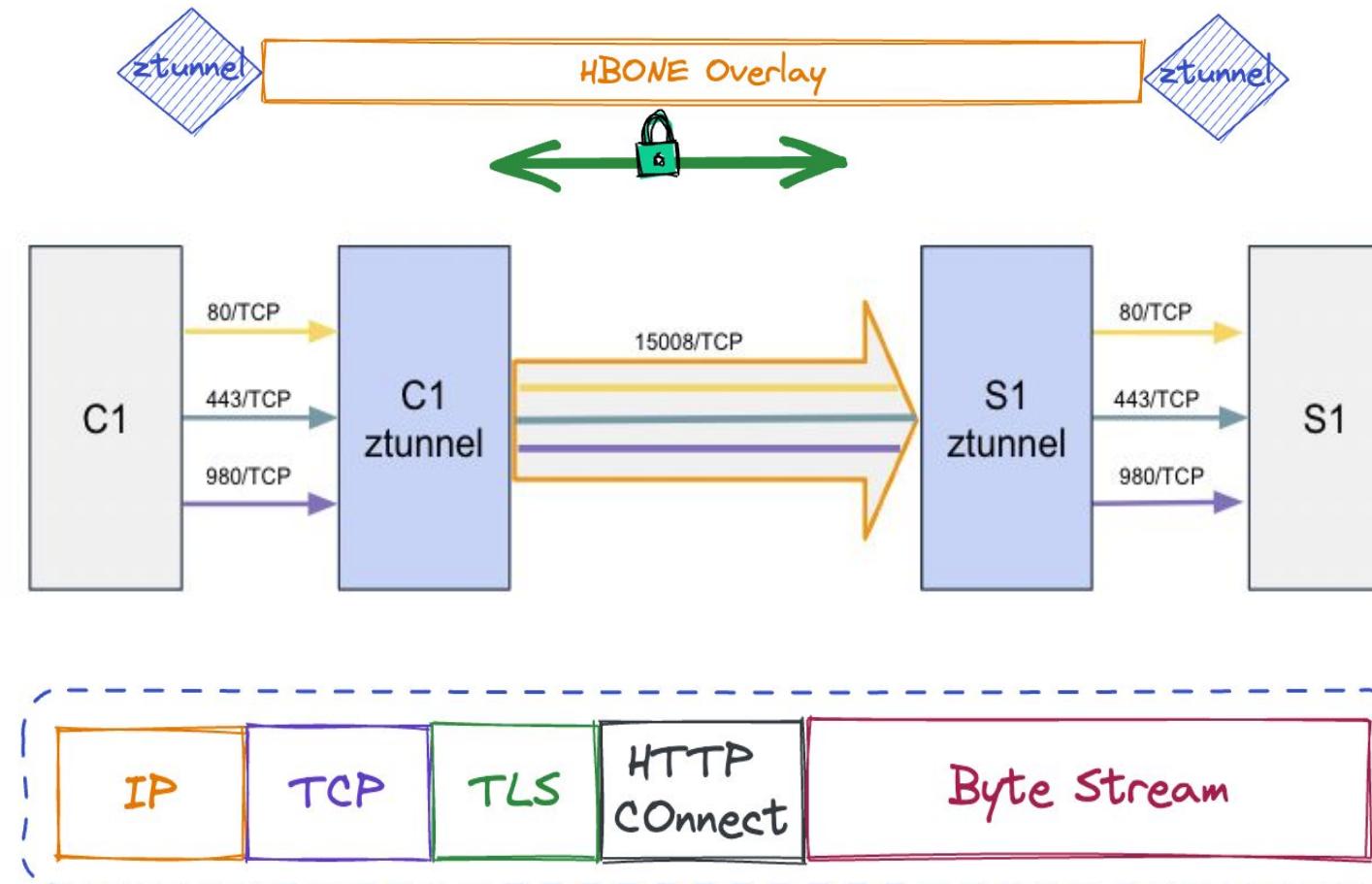


# Architecture: Visualizing ztunnel



# HBONE - The protocol used to connect nodes

HTTP Based Overlay Network Encapsulation protocol



source: <https://www.solo.io/blog/understanding-istio-ambient-ztunnel-and-secure-overlay/>

<https://slack.solo.io/>



# Thank You



solo.io

- <https://solo.io>
- <https://solo.io/blog>
- <https://slack.solo.io>
- <https://gloo.solo.io>
- <https://envoyproxy.io>
  - <https://istio.io>
- <https://webassemblyhub.io>

# Meetup Announcements



CLOUD NATIVE  
COMPUTING FOUNDATION

# Next Meetup in Toronto, Thursday Nov. 17th

- **In-Person in Toronto**

Join us at Cohere Thursday Nov. 17th

- Istio Ambient Mesh Interactive Workshop
  - Lightning Talks
  - Happy Hour sponsored by Solo.io
- 
- **RSVP - <https://community.cncf.io/toronto/>**



# Next Meetup in Montreal, Tuesday Nov. 22nd

- **In-Person in Montreal**

Join us at PWC - Montreal Tuesday Nov. 22nd

- Istio Ambient Mesh Interactive Workshop
  - Lightning Talks
  - Happy Hour sponsored by Solo.io
- **RSVP - <https://community.cncf.io/montreal/>**

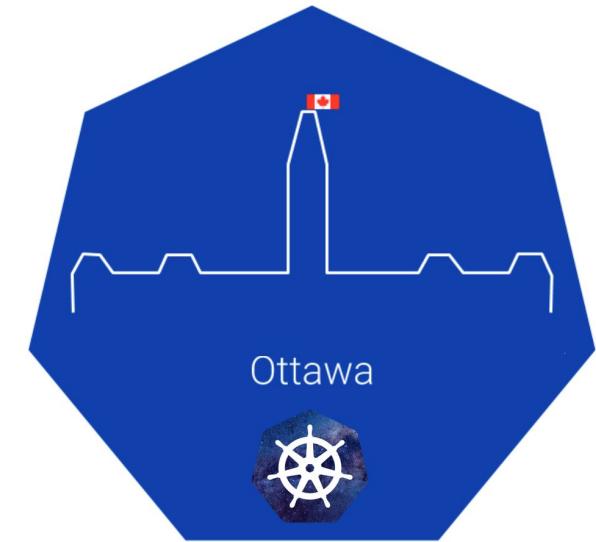


# Next Meetup in Ottawa, Nov. 23nd

- **In-Person in Ottawa**

Join us at PWC-Ottawa Tuesday Nov. 23nd

- Istio Ambient Mesh Interactive Workshop
  - Lightning Talks
  - Happy Hour sponsored by Solo.io
- **RSVP - <https://community.cncf.io/ottawa/>**

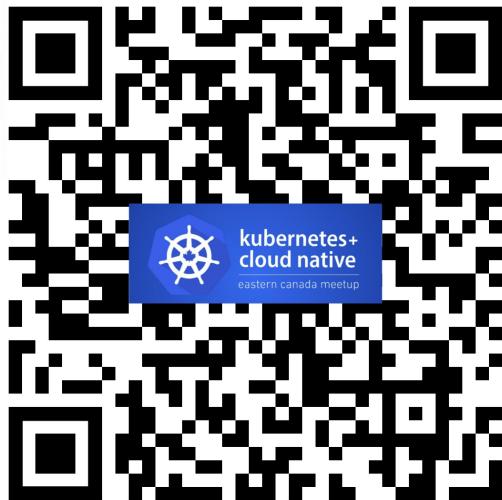


# Follow Us & Stay Connected!



Cloud Native Canada #CloudNativeCA

Listed group



Kubernetes Canada Community

151 subscribers



CloudNativeCanada

4 Tweets

kubernetes+ cloud native

eastern canada meetup

Edit profile

CloudNativeCanada  
@CloudNativeCA

@CloudNativeCA



# CFP Open for Online events

- **(Virtual) Tech Talk**
  - CFP link: <https://www.papercall.io/virtual-cncf-eastern-canada>
  - Who: CNCF Ambassadors, CNCF Project Maintainers, community members, sponsors, etc.
  - Focus: cool projects, topics, tools: special guest speakers
  - How long: 45 min format per speaker + Q&A
- **In-Person Meetups**
  - CFP link Montreal: <https://www.papercall.io/cncf-montreal>
  - CFP link Ottawa: <https://www.papercall.io/cncf-ottawa>
  - CFP link Toronto: <https://www.papercall.io/cncf-toronto>
  - CFP link Quebec City: <https://www.papercall.io/cncf-quebec>
  - CFP link Kitchener-Waterloo: <https://www.papercall.io/cncf-waterloo>
  - CFP link Halifax: Coming soon!



