



KubeCon



CloudNativeCon

North America 2019

CNCF Project Updates

Bryan Liles



CoreDNS



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CoreDNS



Simplicity

We strive to keep things as simple as possible and have sane defaults. Here is the `Corefile` for `coredns.io`:

```
coredns.io {
  file db.coredns.io.signed {
    transfer to * 185.49.140.62
  }
  sign zones/coredns.io {
    key file Kcoredns.io.+013+16376
  }
}
```

Vitess



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Graduation!

Vitess

CLASS OF 2019



VITESS.IO

Graduation Process

1

Adoption

2

Maintainer
Diversity

3

Project
Health

What is Vitess?

Cloud
Native
Database

Massively
Scalable

HA

Based on
MySQL





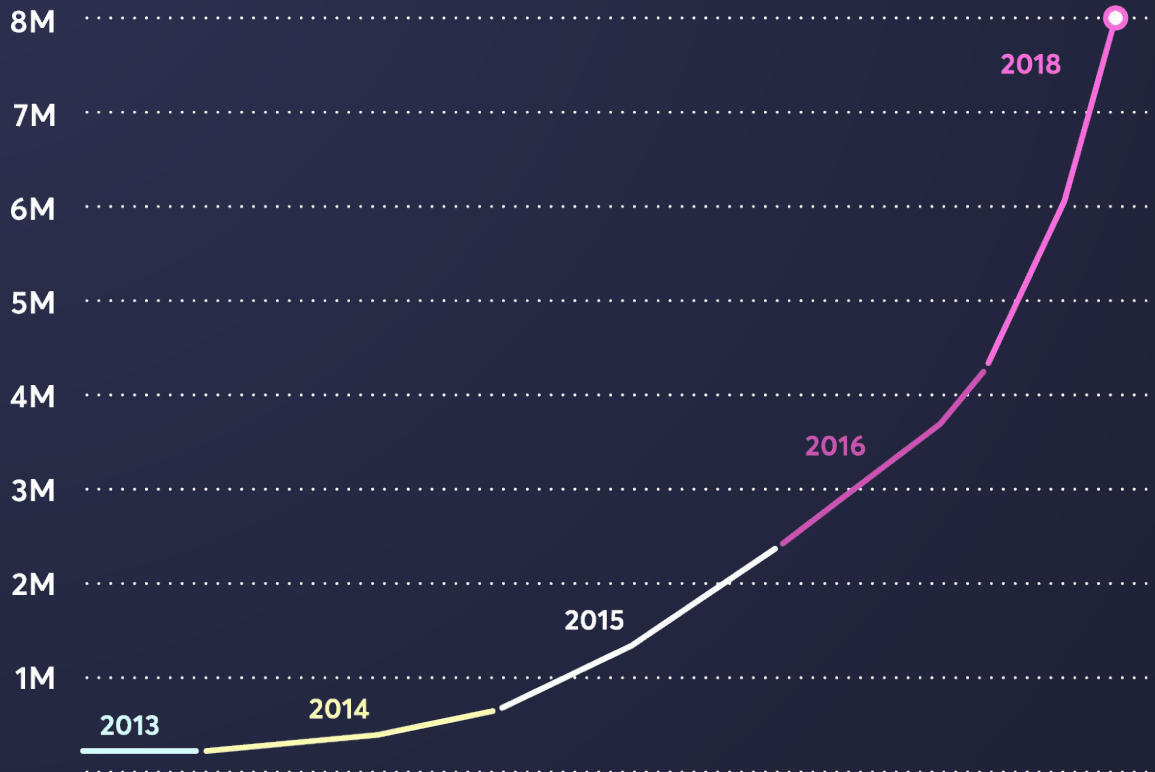
Case Studies





Slack Growth

Daily Active Users



8M+

Daily Active Users

4M+

Non-US Based Users

500k+

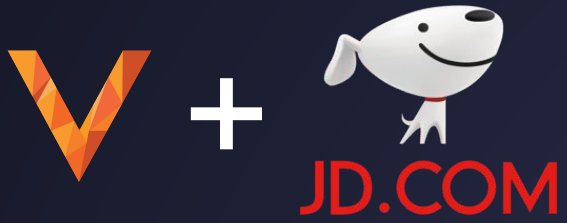
Organizations use Slack in more than 100 Countries



“Our goal is that all MySQL at Slack is run behind Vitess. There’s no other bet we’re making in terms of storage in the foreseeable future.”

- Michael Demmer, Principal Engineer





4000
Keyspaces

30,000
Pods

35M
Peak QPS!



Startup

All in
Kubernetes

Migrate
from cloud to
cloud

If you're moving to Kubernetes,
don't leave your data behind



Don't miss **these talks**

Building Resilient Systems

Today 11:50AM



Stateless Storage in the Cloud

Today 3:20PM



Gone in 60 Minutes

Thursday 2:25PM



About Sugu Sougoumarane

Co-creator, **Vitess**



CTO, **PlanetScale**



PlanetScale Booth

SE39

(Across from TheCube)

 @ssougou





Open source CNCF **service mesh**

36+ months in production

3,500+ Slack channel members

10,000+ GitHub stars

100+ contributors

Weekly edge releases

6-8 week stable releases

Open governance commitment



Shipped since Kubecon EU:

2.4: Traffic splitting and SMI support

2.5: Helm charts, **security audit**

2.6: Distributed tracing

Up next:

2.7 (2019): mTLS for all TCP traffic

2.8+ (2020): Mandatory mTLS, better multi-cluster, policy, mesh expansion, ...

Linkerd talks this week from:

Nordstrom
Microsoft

Paybase
Buoyant



LINKERD

Canary Rollouts

Helm



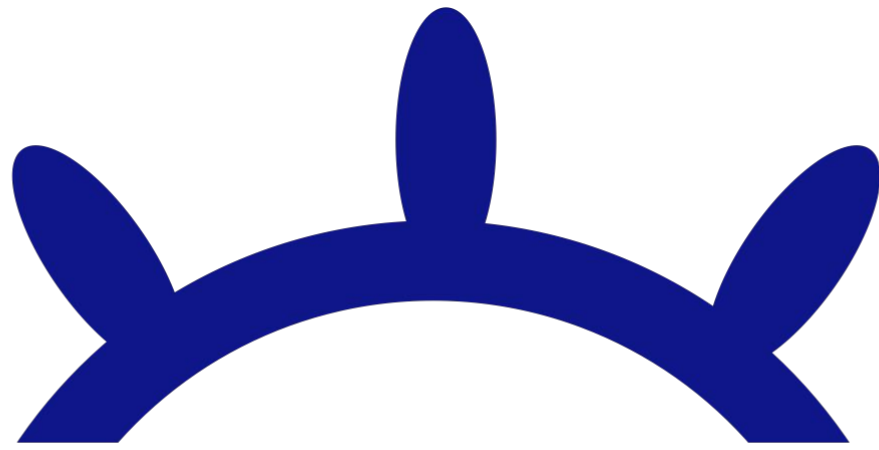
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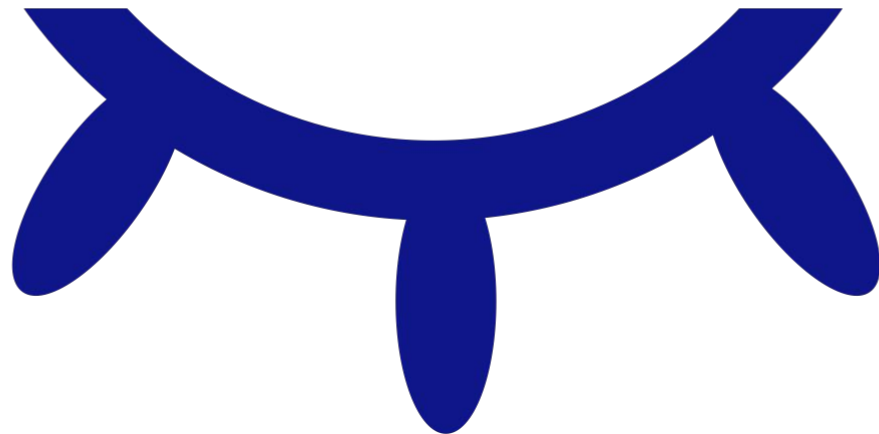
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HELM





1+ Million Downloads Per Month

Thank You Contributors

According to DevStats, in the past year **more than 600 people have contributed code** and **more than 3,500 people contribute in some way to the Helm org** in the past year.

15

Companies Employing
Project Maintainers

29

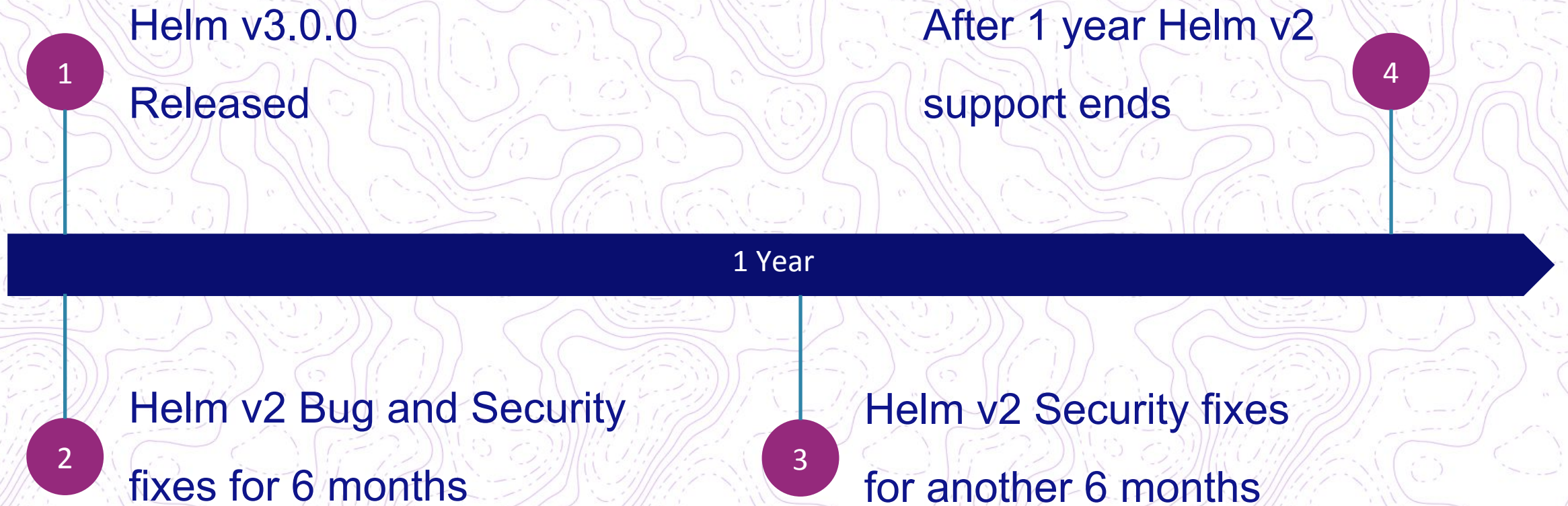
Total Project
Maintainers



“To conclude, in light of the findings stemming from this CNCF-funded project, Cure53 can only state that the Helm project projects the impression of being highly mature. This verdict is driven by a number of different factors described above and essentially means that ***Helm can be recommended for public deployment***, particularly when properly configured and secured in accordance to recommendations specified by the development team.”

From First Helm Security Audit Report (emphasis added)

Helm v2 Support



Jaeger



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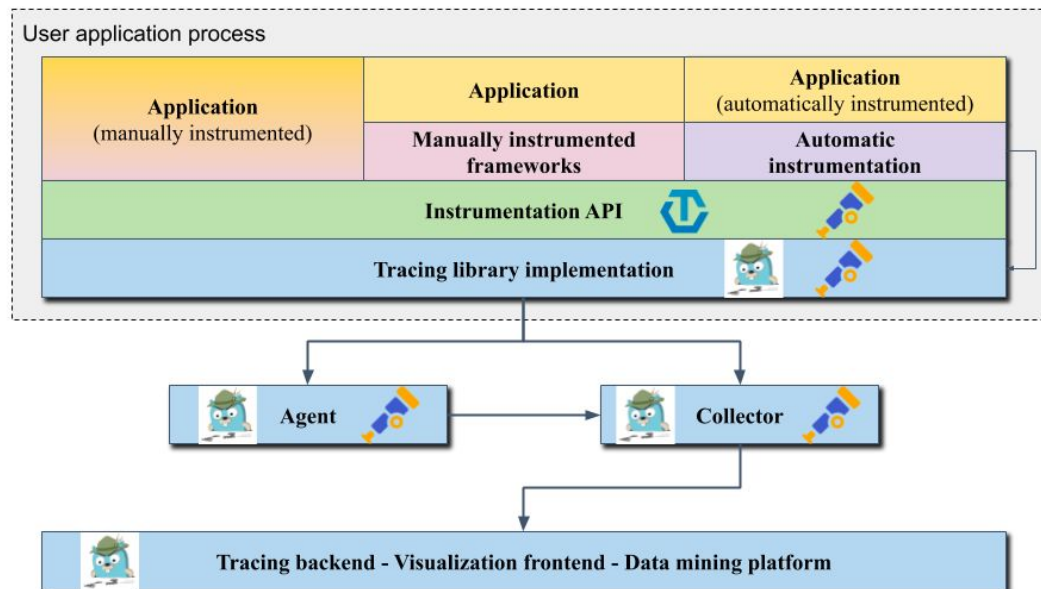
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JAEGER

Jaeger vs. OpenTelemetry



contrib
API
SDK

Agent & Collector

Open Policy Agent



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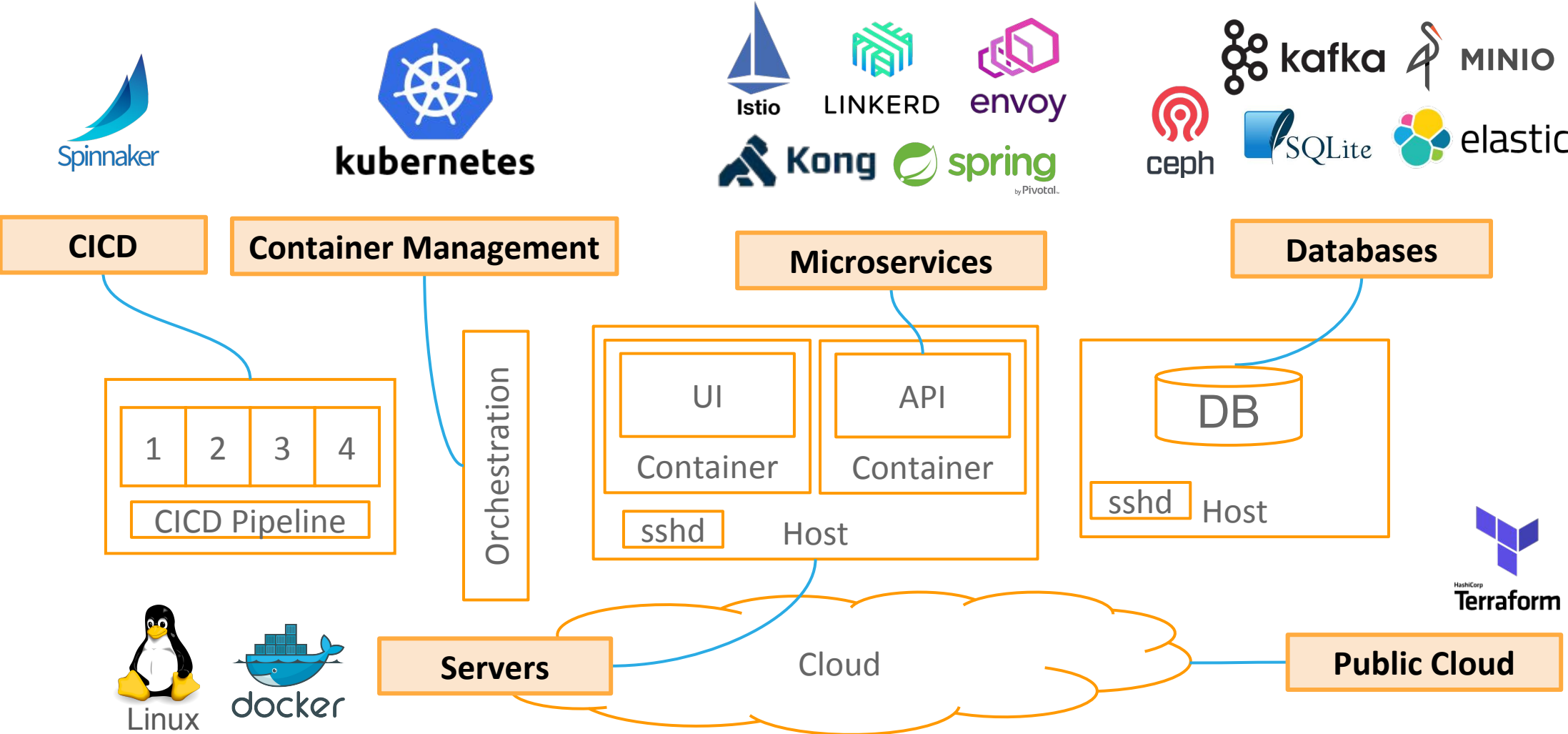


Open Policy Agent (OPA)

Torin Sandall, Styra



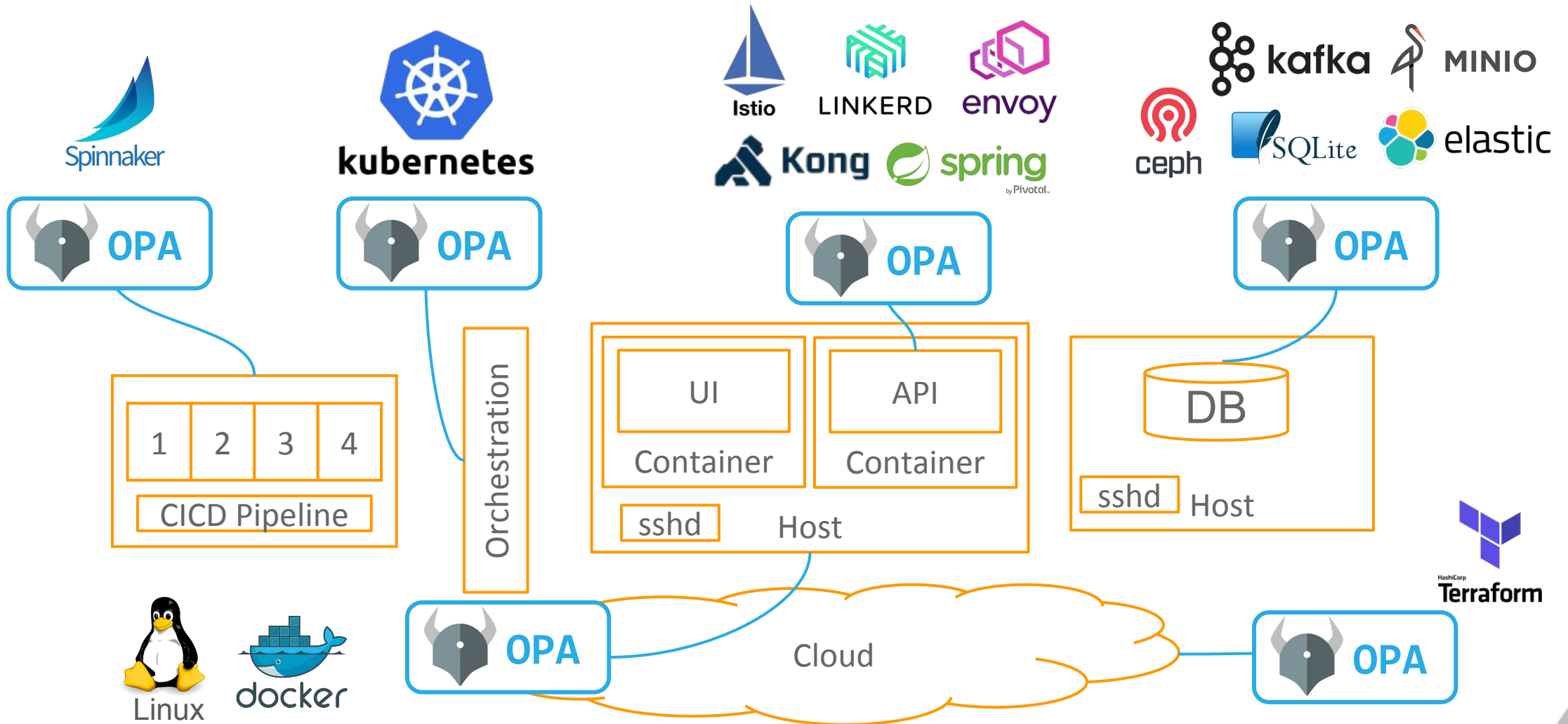
Heterogeneity & dynamism make policy management challenging.



openpolicyagent.org



OPA unifies policy across the stack.

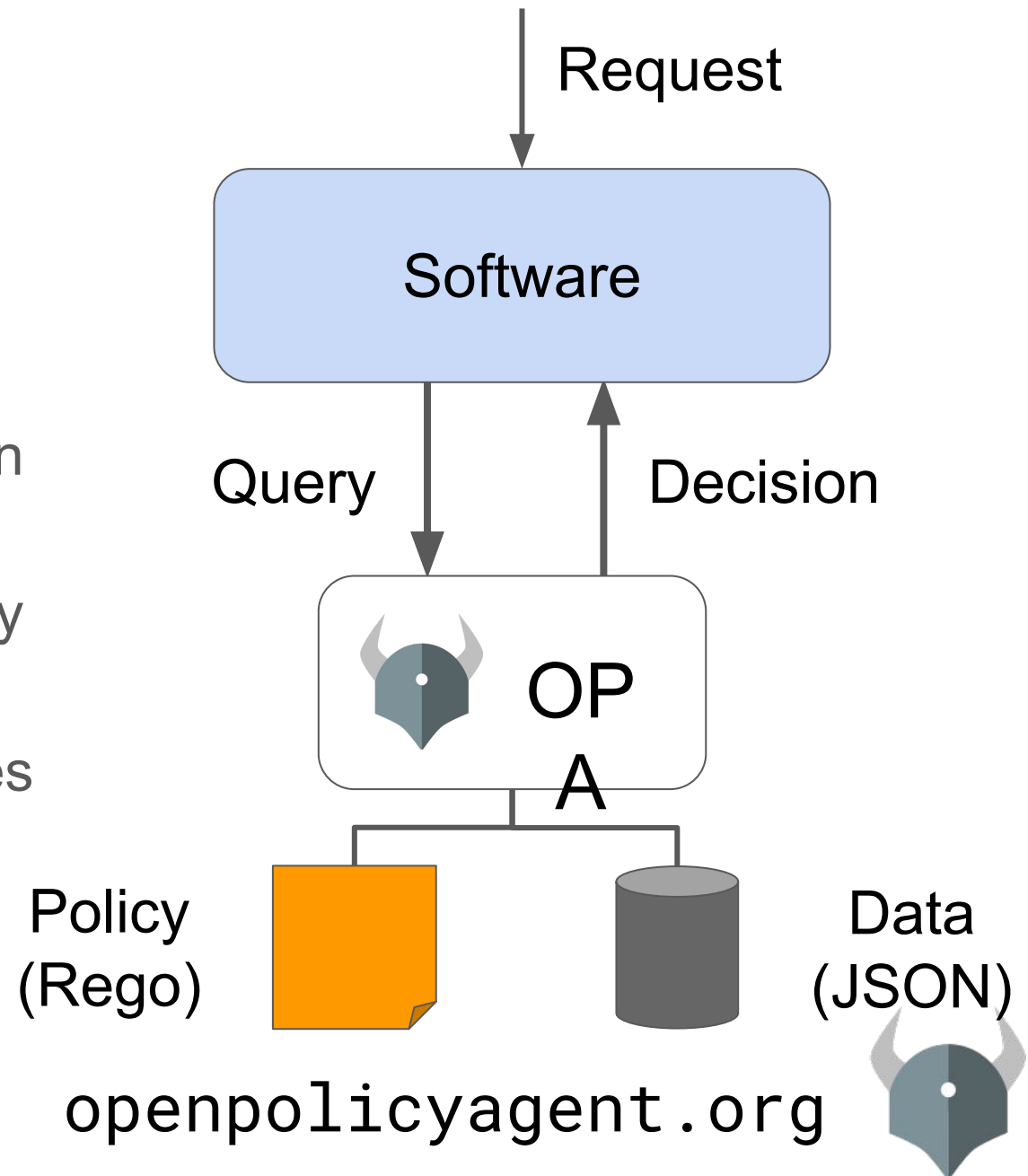


openpolicyagent.org



OPA: General-purpose Policy Engine

- Declarative Policy Language (Rego)
- Library (Go), sidecar/host-level daemon
- Management APIs for control & visibility
- Tooling to build, test, and debug policies



Production Users & Metrics



Pinterest Microservices, Kafka

Atlassian Microservices

Capital One Kubernetes, CICD

TripAdvisor Kubernetes

Fugue Public Cloud

Chef Application

Security Track (Thursday)

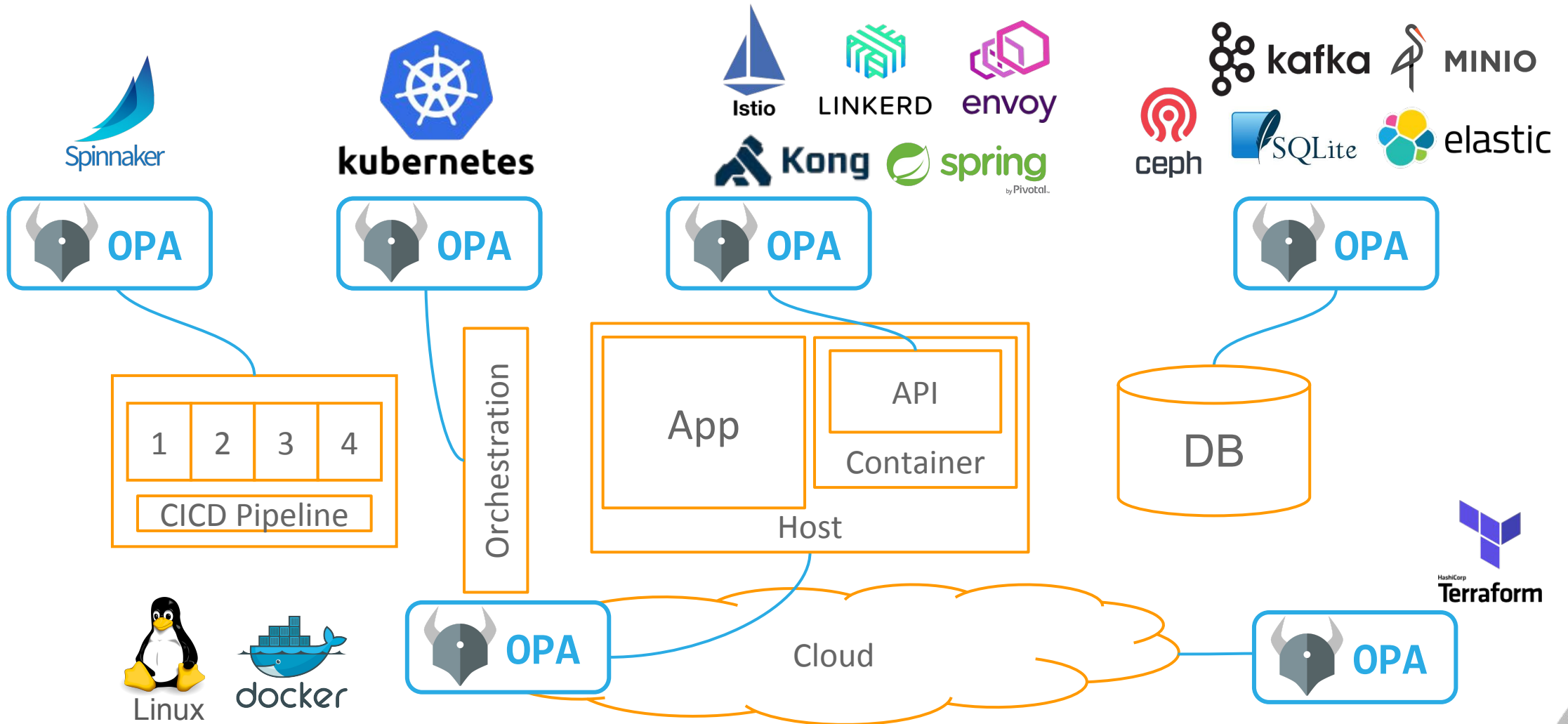
Yelp	Microservices
Goldman Sachs	Kubernetes

Project Metrics (YoY)

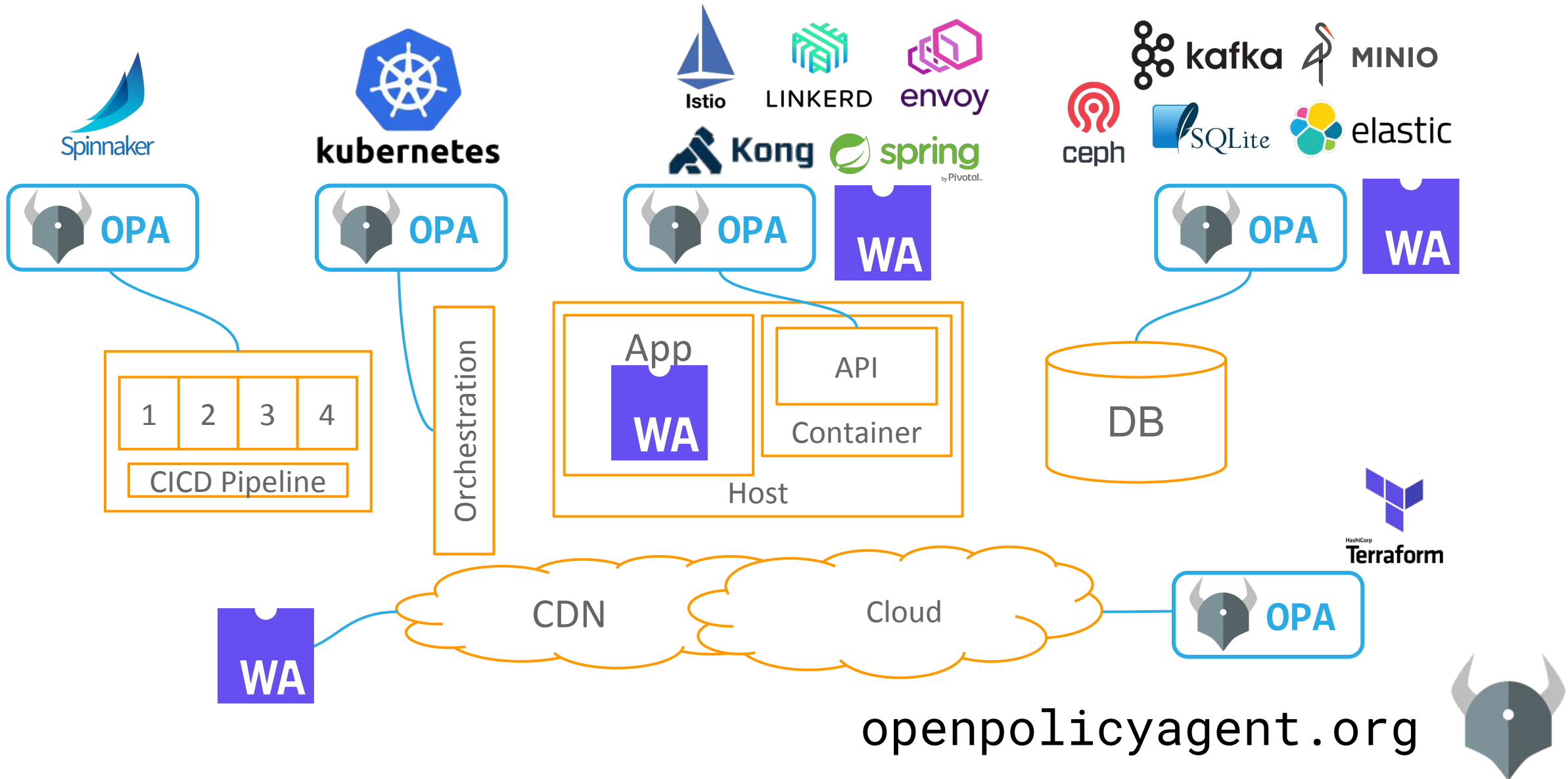
1.4K Slack Members (260%)
4M Image Pulls (>1,000%)
1.1K Commits (98%)
90 Contributors (120%)



OPA decouples decision-making from enforcement.



Wasm emerging as standard execution environment.



Latest OPA (v0.15.1) compiles any Rego to Wasm.



Initial benchmarks show 20x speedup.

See blog.openpolicyagent.org for more information.



openpolicyagent.org



openpolicyagent.org

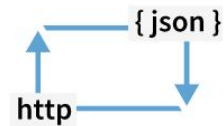


etcd

Features

Simple interface

Read and write values using standard HTTP tools, such as curl



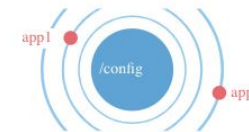
Key-value storage

Store data in hierarchically organized directories, as in a standard filesystem

```
/config
  /database
  /feature-flags
  /verbose-logging
  /redesign
```

Watch for changes

Watch specific keys or directories for changes and react to changes in values



Optional SSL client certificate authentication



Benchmarked at 1000s of writes/s per instance



Optional TTLs for keys expiration



Properly distributed via Raft protocol

CloudEvents



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cloudevents

- Achieved incubation status
- Released 1.0