




Bridging Platform Engineering and Observability: **Empowering Developers with Insights**

Kasper Borg Nissen, Developer Advocate at  dash0

Who?

Developer Advocate at Dash0

KubeCon+CloudNativeCon EU/NA 24/25 Co-Chair

CNCF Ambassador

Golden Kubestronaut

CNCG Aarhus, KCD Denmark Organizer

Co-founder & Community Lead Cloud Native Nordics



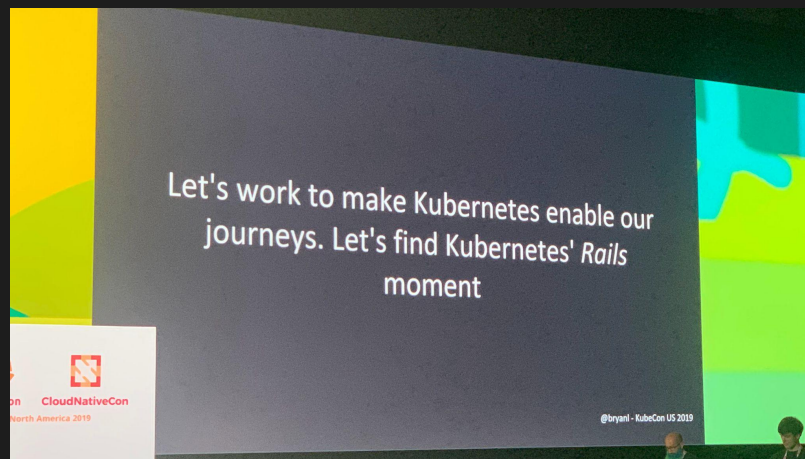
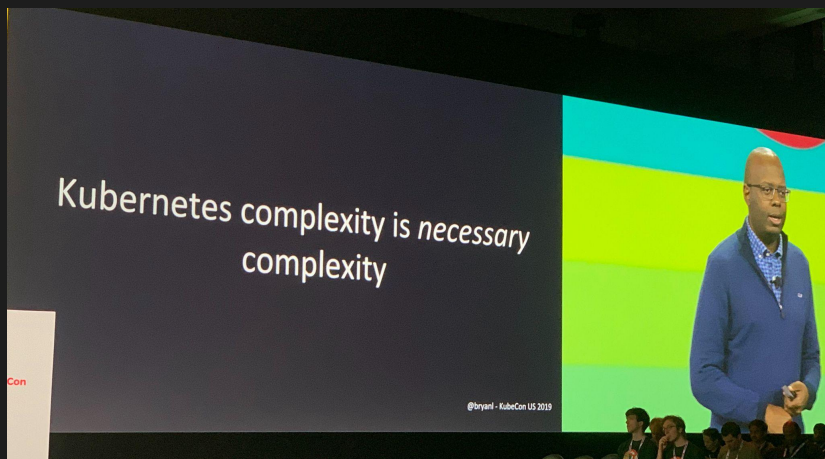
**GOLDEN
Kubestronaut**



tl;dr

- **OpenTelemetry** is standardizing telemetry collection.
- **Perses** is standardizing dashboards.
- Applying **Platform Engineering** principles transforms observability from an afterthought into a seamless, scalable, and developer-friendly experience.

Kubernetes' Rails moment



Bryan Liles at KubeCon+CloudNativeCon North America 2019

To some degree, Platform Engineering is enabling the Rails moment for Kubernetes in many organizations.

The Principles of Platform Engineering



Self-Service Experience



Explicit and Consistent APIs



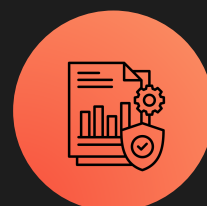
Paved Paths/
Golden Paths



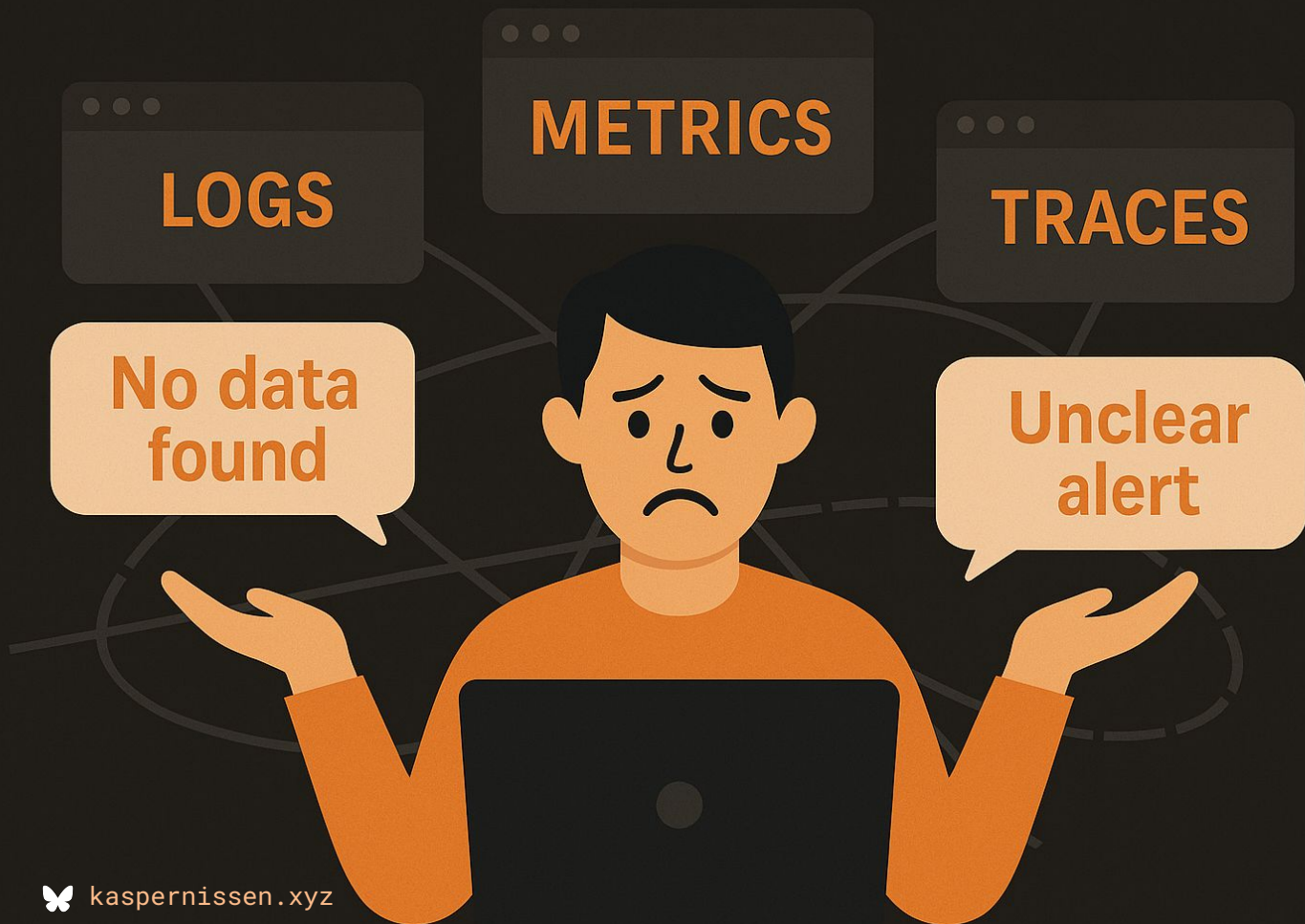
Modularity



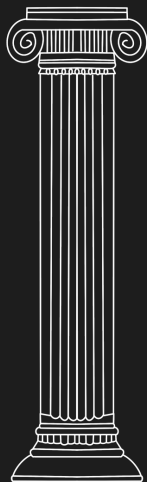
Platform as a Product



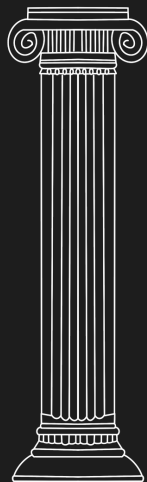
Core Requirements



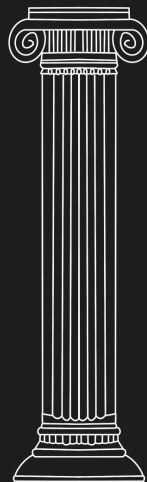
Observability is still fragmented



Metrics



Logs



Traces

Observability is still fragmented



We don't have a *metrics* problem,
or a *tracing* problem.
We have *systems* problems.



Metrics

Logs

Traces

Observability is often **fragmented**, leading to

Observability is often **fragmented**, leading to



Complex Query
Languages

Observability is often **fragmented**, leading to



Complex Query
Languages



Vendor lock-in

Observability is often **fragmented**, leading to



Complex Query
Languages



Vendor lock-in



Metadata Inconsistency

Observability is often **fragmented**, leading to



Complex Query
Languages



Vendor lock-in



Metadata Inconsistency



No instrumentation due to
high complexity

Observability is often **fragmented**, leading to



Complex Query
Languages



Vendor lock-in



Metadata Inconsistency



No instrumentation due to
high complexity

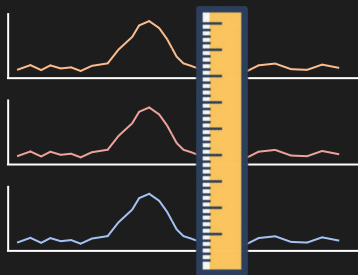


Lack of unified insights

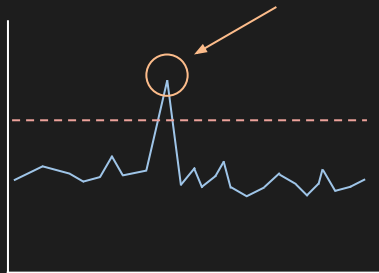
We need to find the **Rails** moment of
Observability.

A shift is happening.

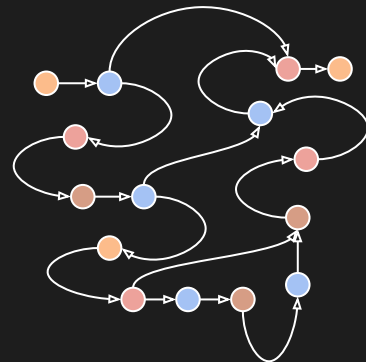
A shift toward correlation



Find related
information

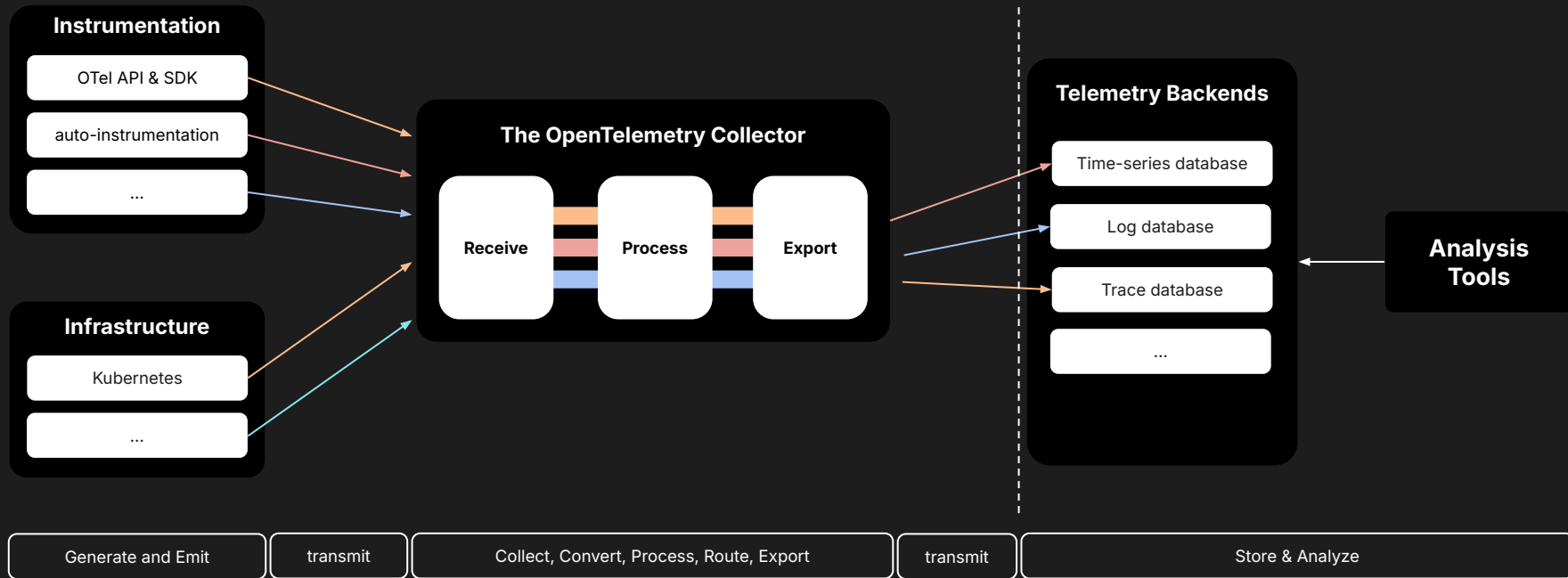


Jump between
signals

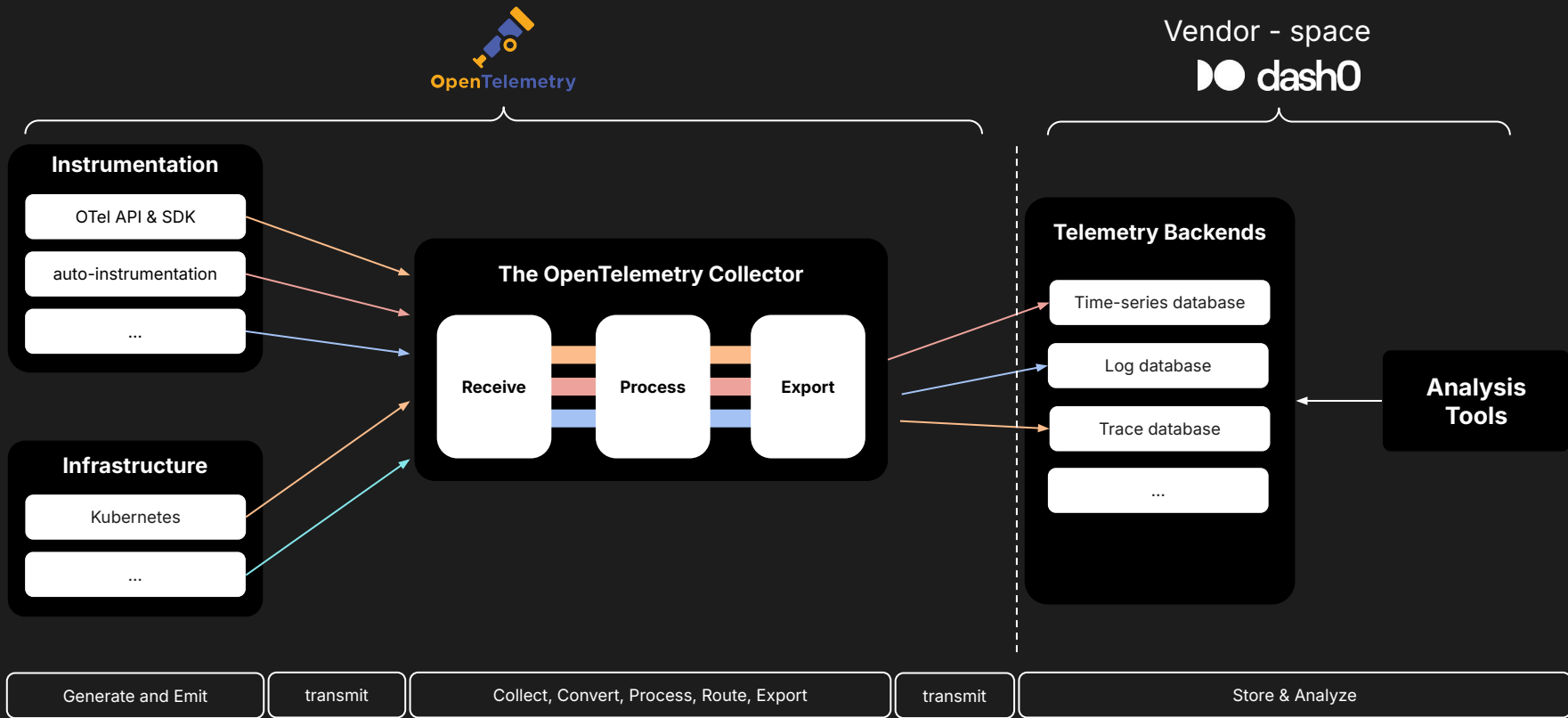


Reconstruct chain of
events

A shift toward standardization



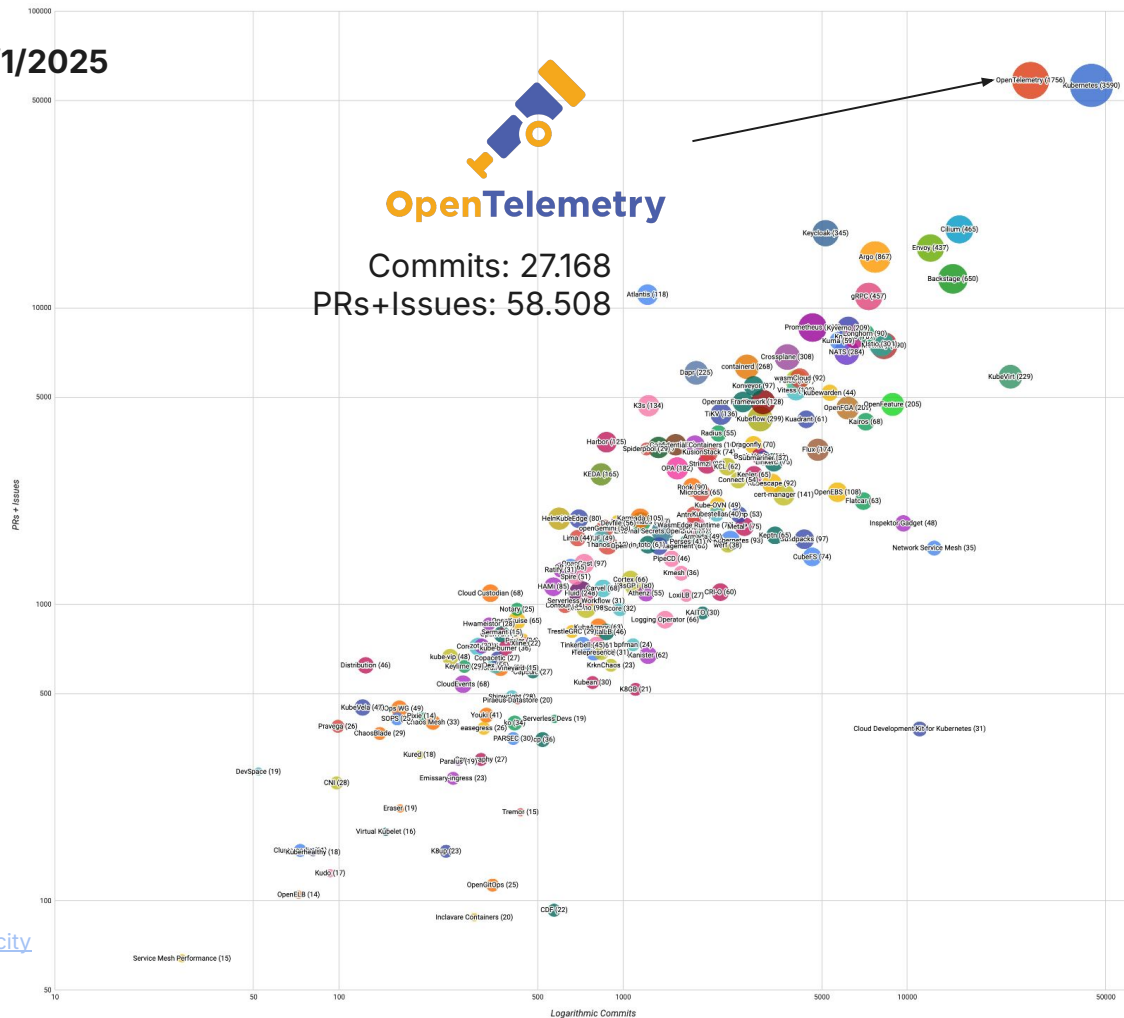
Inspired by visualizations from LFS148



A shift toward...



1/1/2024-1/1/2025



kubernetes

Commits: 44.486

PRs+Issues: 56.299

- Kubernetes (kubernetes.io) 3590 authors
- OpenTelemetry (opentelemetry.io) 1756 authors
- Argo (argoproj.github.io) 867 authors
- Backstage (backstage.io) 650 authors
- Prometheus (prometheus.io) 508 authors
- Cilium (cilium.io) 466 authors
- gRPC (grpc.io) 437 authors
- Envoy (www.envoyproxy.io) 437 authors
- Meshery (layers.io/meshery) 390 authors
- Keycloak (keycloak.org) 343 authors
- Crossplane (crossplane.io) 308 authors
- Istio (istio.io) 301 authors
- KubeFlow (kubeflow.org) 299 authors
- NATS (nats.io) 284 authors
- Contained (contained.io) 268 authors
- Fluentd (fluentd.org) 268 authors
- Fluid (github.com/fluid-cloudnative) 248 authors
- KubeVirt (kubewirt.io) 229 authors
- Dapr (dapr.io) 225 authors
- Kyverno (kyverno.io) 209 authors
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- Falco (falco.io) 167 authors
- External Secrets Operator (external-secrets.io) 167 authors
- KEDA (keda.sh) 165 authors
- Helm (helm.sh) 159 authors
- etcd (etcd.io) 152 authors
- Jaeger (jaeger.readthedocs.io/en/latest) 150 authors
- cert-manager (cert-manager.io) 141 authors
- TKV (tikv.org) 136 authors
- K3s (k3s.io) 134 authors
- Operator Framework (operatorframework.io) 128 authors
- Harbor (goharbor.io) 128 authors
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- Thanos (thanos.io) 110 authors
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- LitmusChaos (litmuschaos.io) 107 authors
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- Confidential Containers (github.com/confidential-containers)
- Volcano (volcano.sh) 99 authors
- Buildpacks (buildpacks.io) 97 authors
- OpenCost (kubecost.com) 97 authors
- Komeroy (komeroy.io) 97 authors
- Strimzi (strimzi.io) 95 authors
- OVN-Kubernetes (ovn-kubernetes.io) 93 authors
- WarmCloud (warmcloud.com) 92 authors
- KubeScap (github.com/kubescape) 92 authors
- Longhorn (github.com/longhorn) 90 authors
- Rook (rook.io) 90 authors
- Spiffe (spiffe.io) 87 authors
- HAM (project-ham.io) 85 authors
- K8sPT (k8spt.ai) 80 authors
- KubeEdge (kubedge.io) 80 authors
- WarmEdge Runtime (warmedge.org) 79 authors
- Linked (linked.io) 76 authors
- Metal³ (metal3.io) 75 authors
- Ceph (ceph.io) 74 authors
- KusionStack (kusionstack.io) 74 authors
- Dragonfly (dfty.io/en-us) 70 authors
- Karos (karos.io) 68 authors
- Cloud Custodian (cloudcustodian.io) 68 authors

108 more

So, why OpenTelemetry?



Instrument once,
use everywhere



Separate telemetry
generation from
analysis



Make software
observable by
default



Improve how we use
telemetry

**That's all great, but how do I make it
easily accessible for my developers?**

Platform Engineering for Observability



Self-Service Experience



Explicit and Consistent APIs



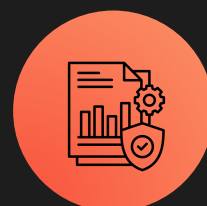
Golden Paths



Modularity



Platform as a Product



Core Requirements

Platform Engineering for Observability



Self-Service Experience
Auto-Instrumentation



Explicit and Consistent APIs
Semantic Conventions



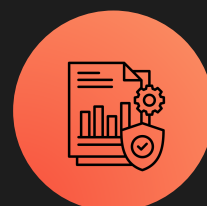
Golden Paths
Observability built-in



Modularity
Collector Pipelines



Platform as a Product
Documentation + Support



Core Requirements
Cross-signal correlation

OpenTelemetry Operator



Instrumentation



OpenTelemetryCollector



OpAMPBridge



TargetAllocator



OpenTelemetry
Operator

Auto-Instrumentation with the OpenTelemetry Operator



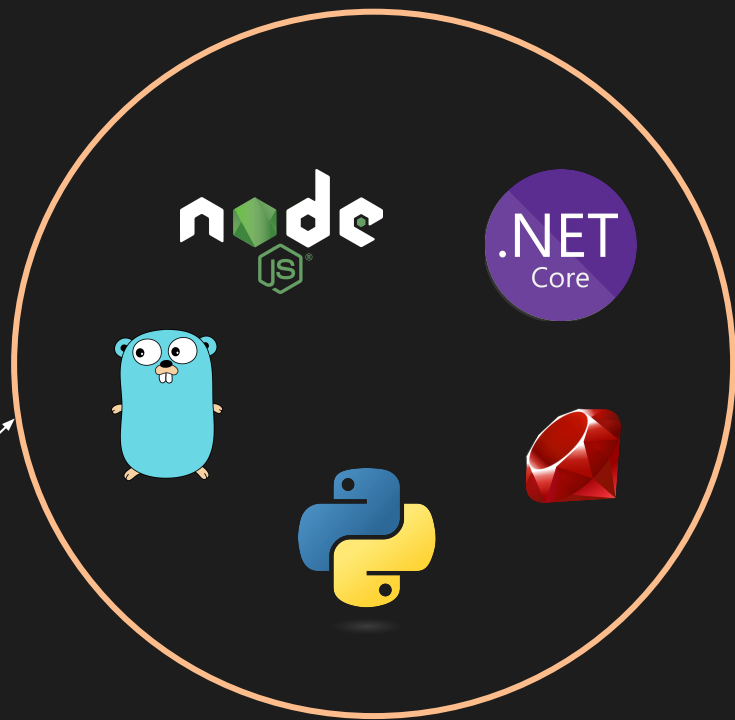
Instrumentation

*Instructs how to inject
auto-instrumentation*

*Injects
instrumentation in
to the pod*



OpenTelemetry
Operator



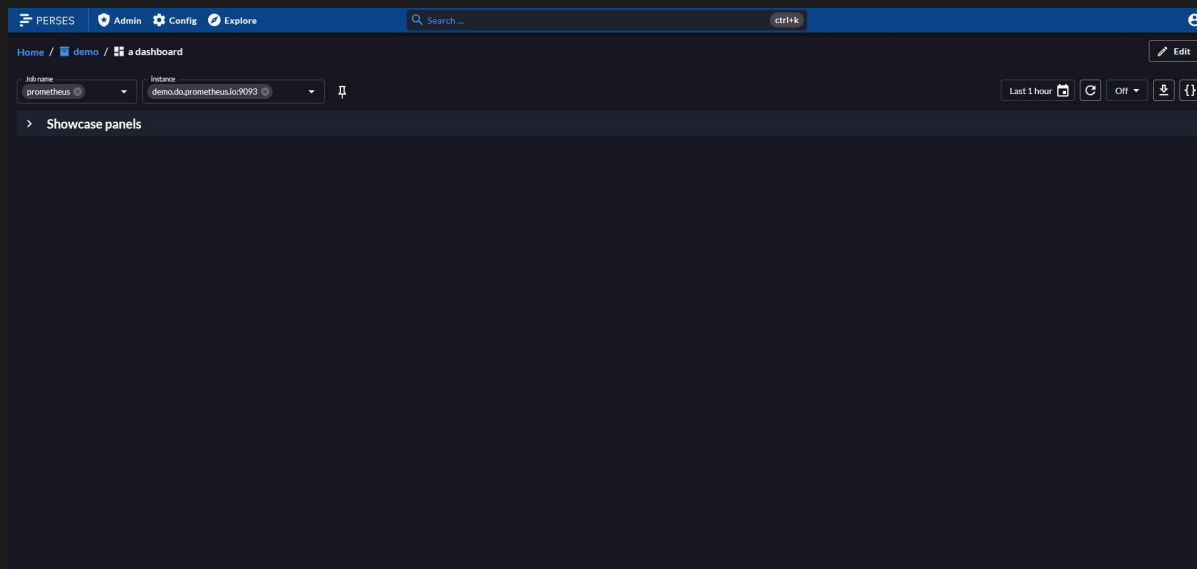
Observability doesn't **stop** at
instrumentation.

Persees



An open specification for
dashboards.

CNCF Sandbox project



Dashboards as Code



Dashboards as Code



Perses



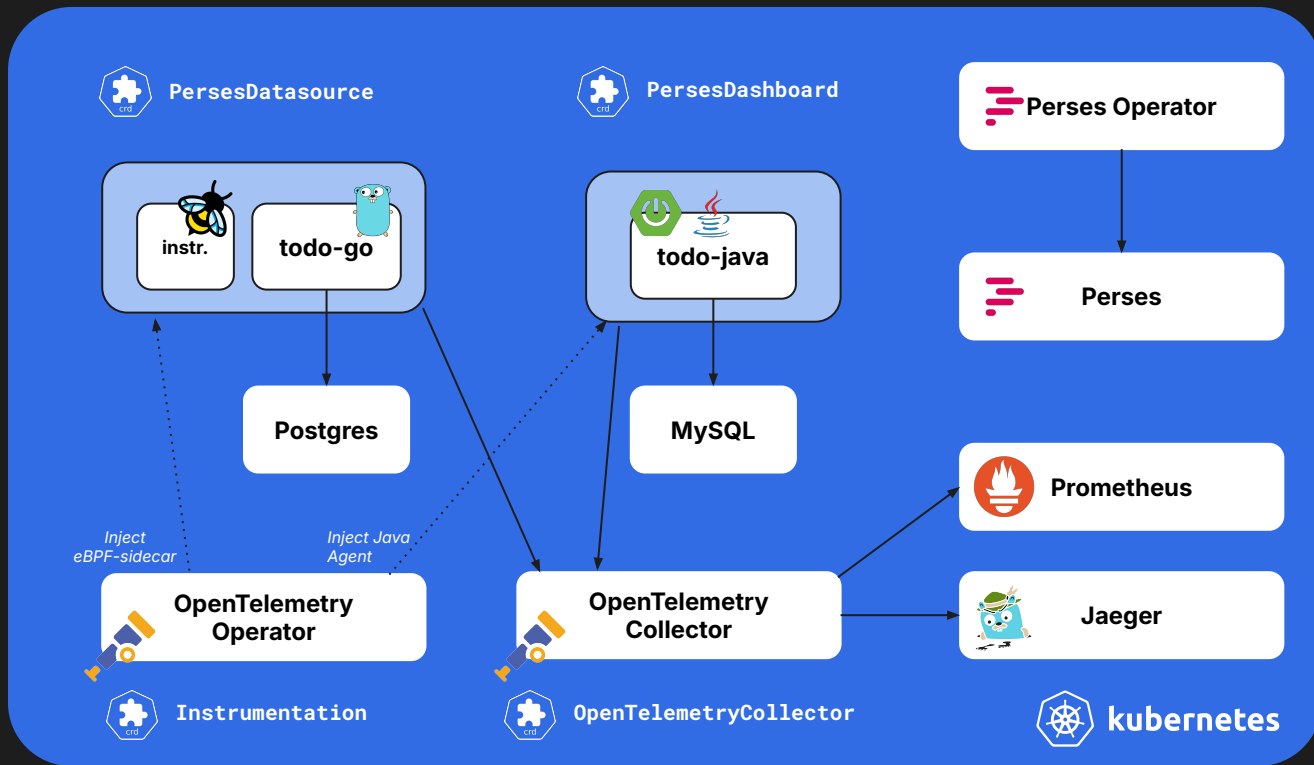
PersesDatasource



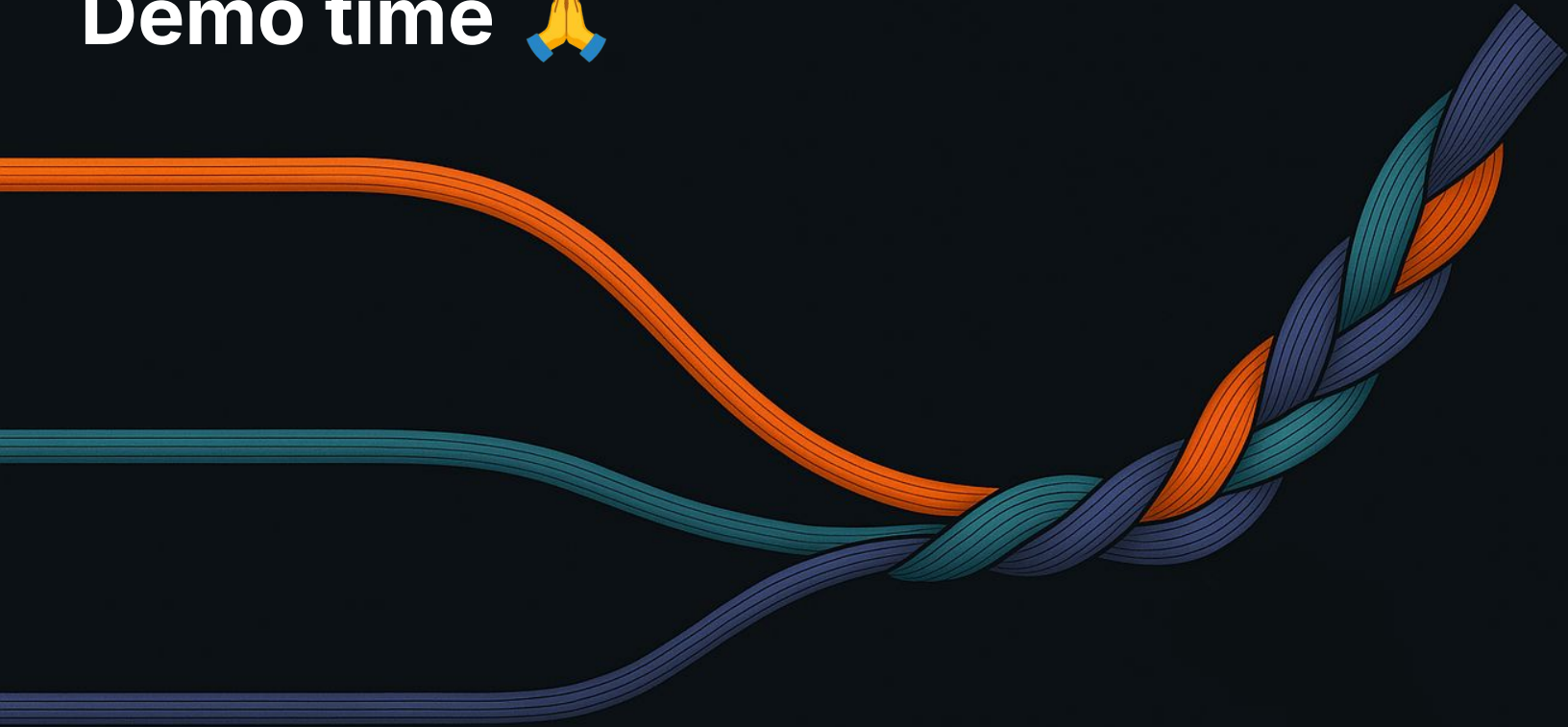
PersesDashboard

perses-operator

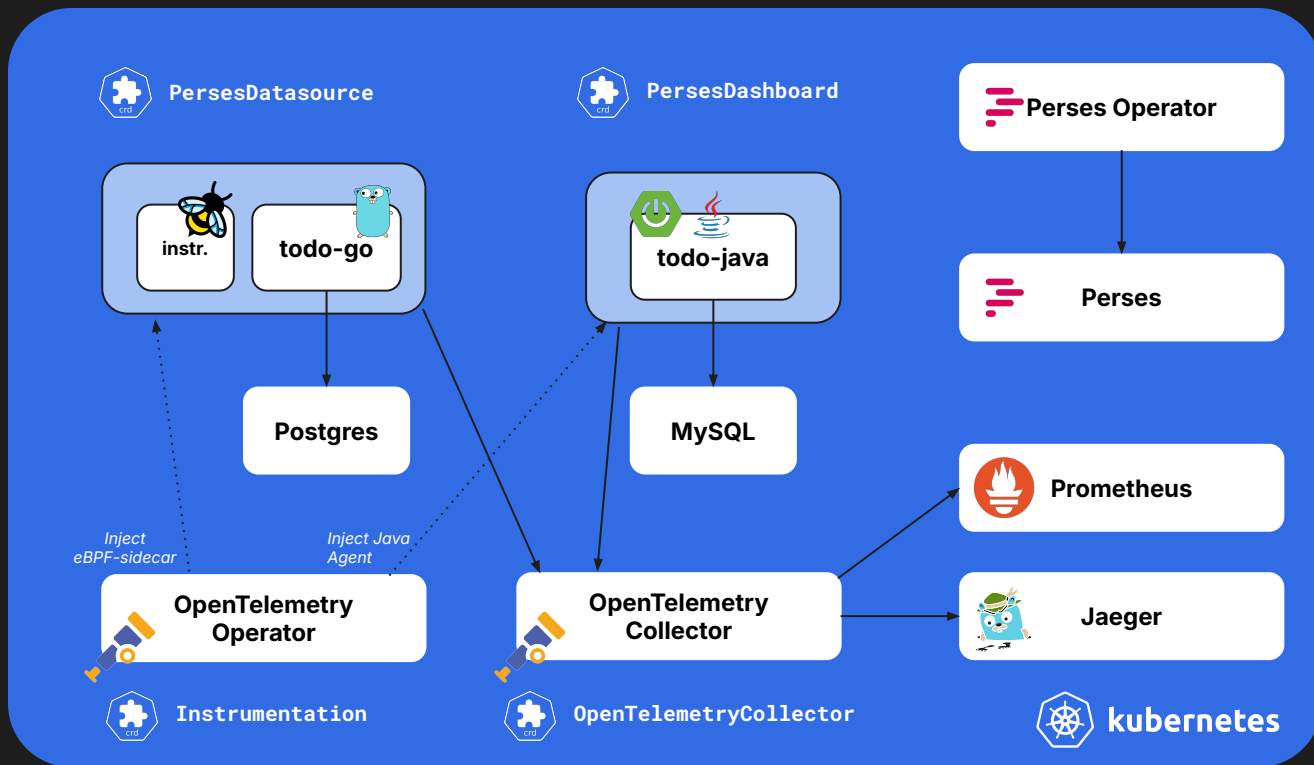
Demo



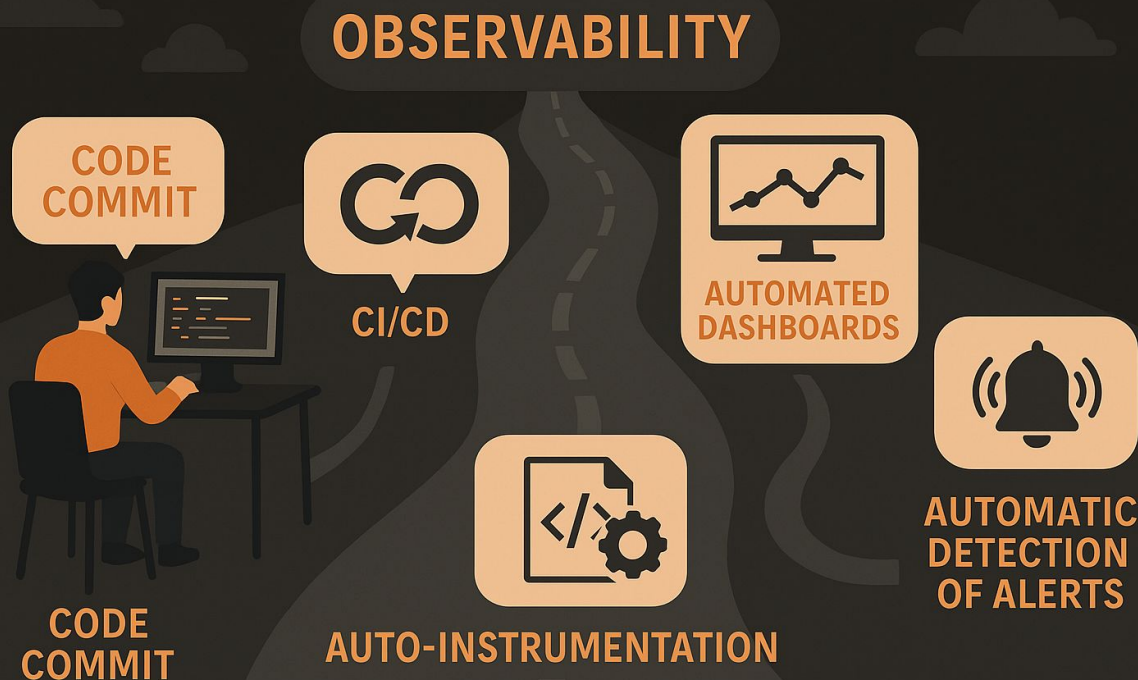
Demo time 🙏



Let's recap...



The Real Goal: Observability as a Paved Path



Observability is evolving - fast.

OpenTelemetry is **standardizing** telemetry collection.

Perses is standardizing dashboarding.

Applying **Platform Engineering** principles
can transform **observability** from an afterthought into a
seamless, scalable, and **developer-friendly experience**.

Observability is a **systems problem**
- not a tracing, logging, or metrics problem.

When we connect signals together,
we empower developers to solve problems
faster.

Thank you!

Metrics

Traces

Logs

Open
Standards



PERSES

Thank you!

Metrics

Traces

Logs



Open
Standards



PERSES