OpenTelemetry

La observabilidad desde el Open Source

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Observability?

Observability?

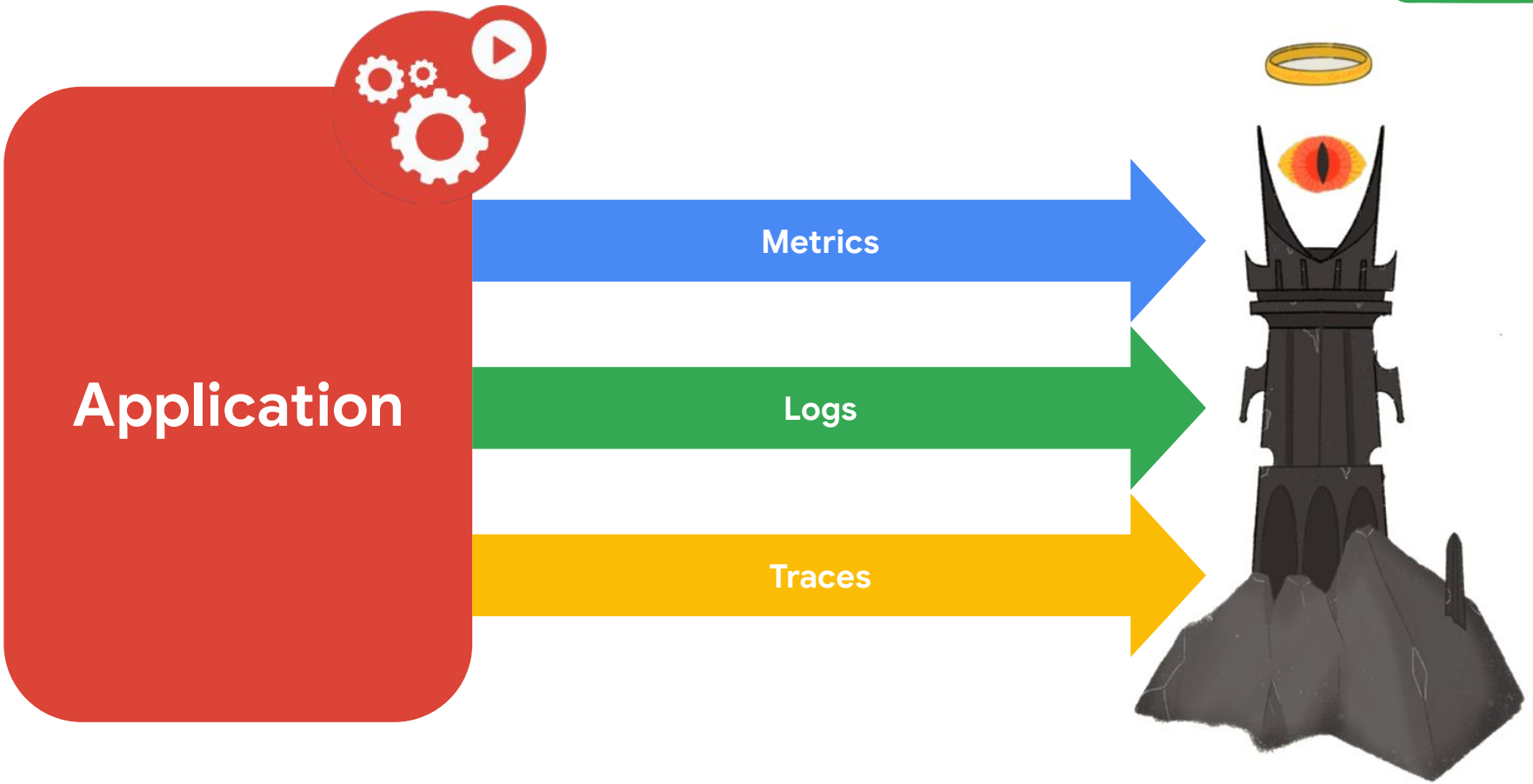
Application
BOOM!

Observability?

What do we usually do?

Check the stacktrace and read the code until find what is wrong

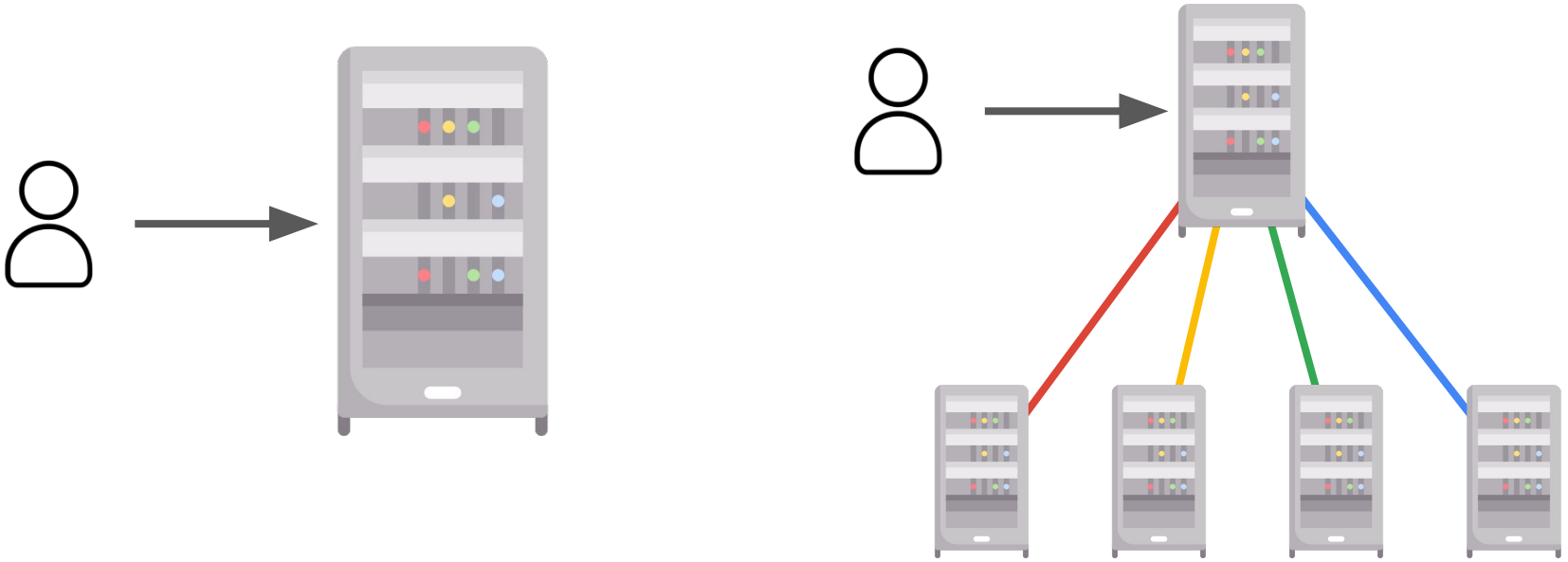
Observability?



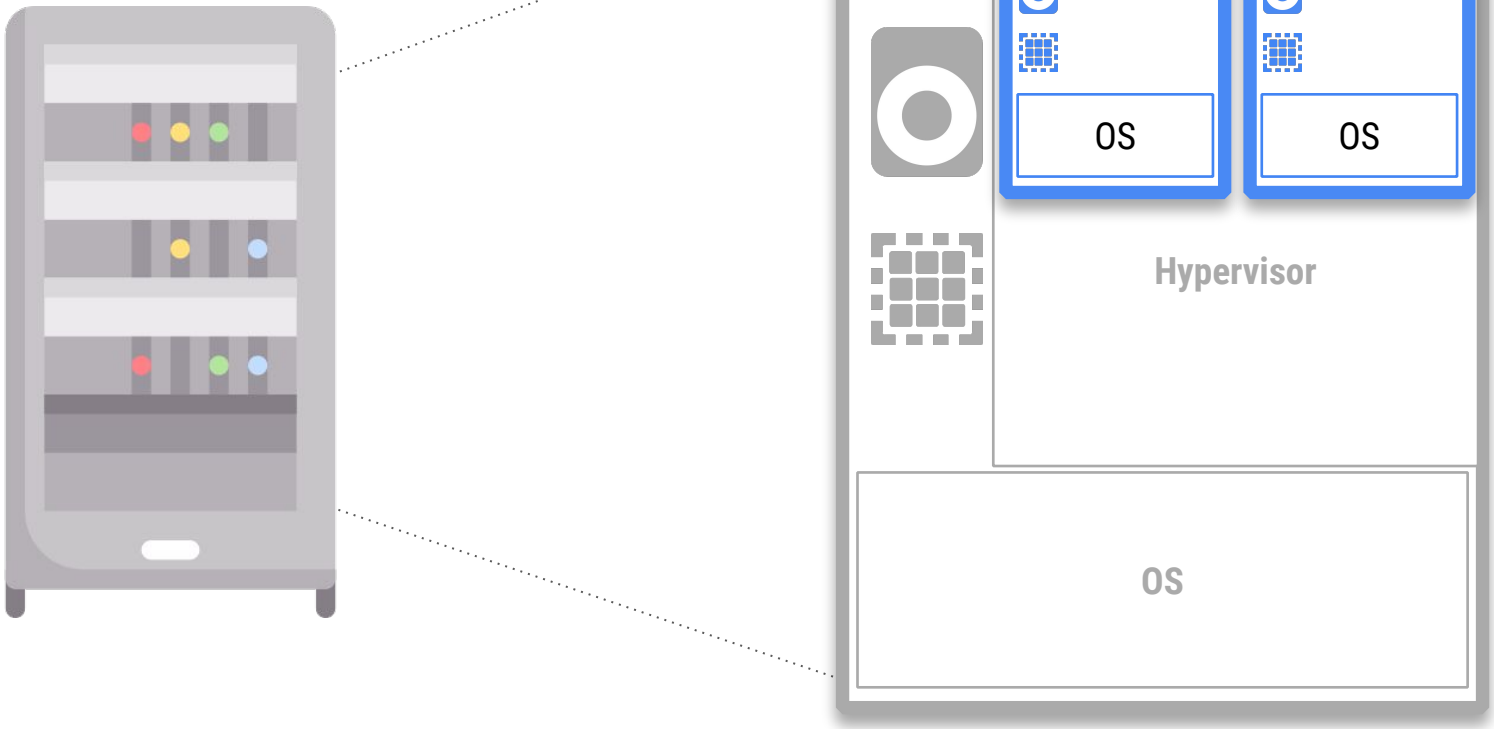
Why is “observability” something interesting?

A quick introduction

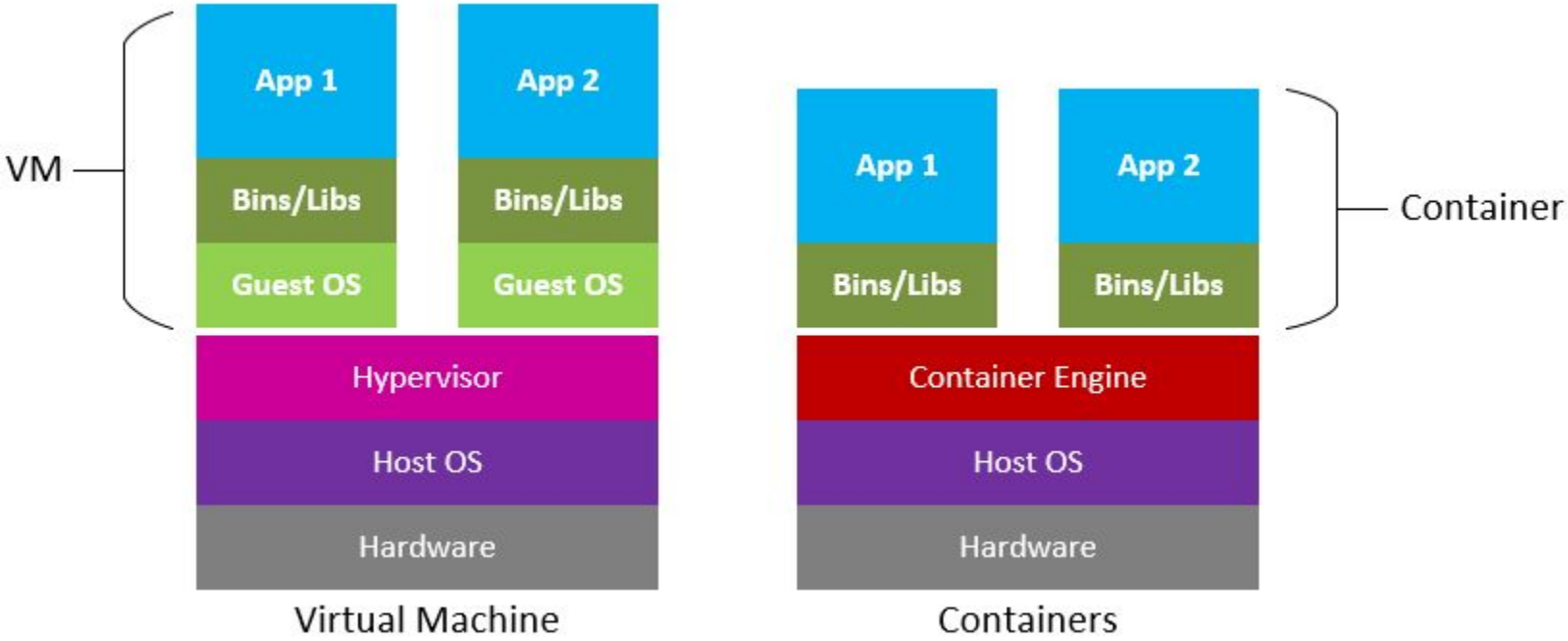
Scaling up the infra



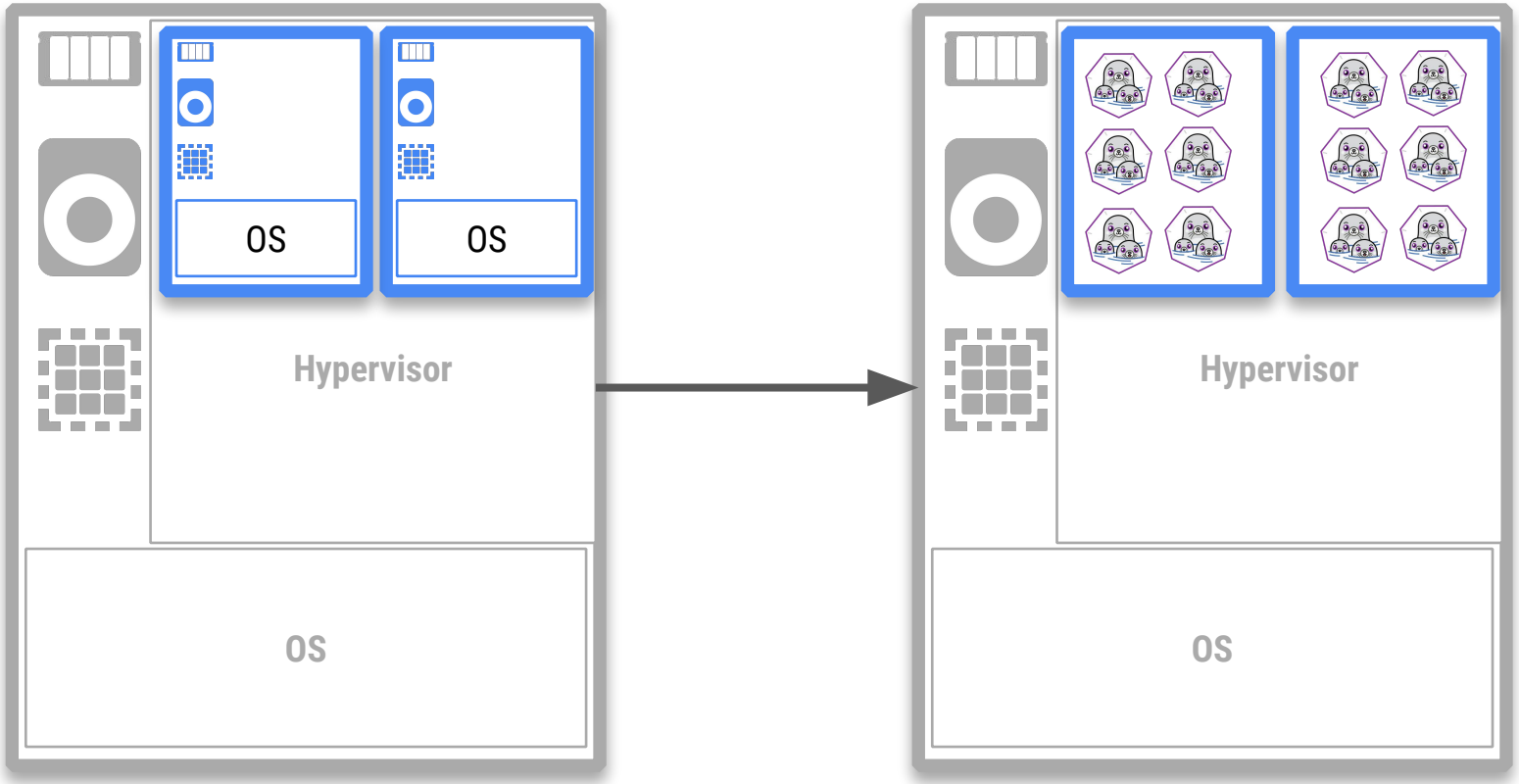
Scaling up the infra



Scaling up the infra



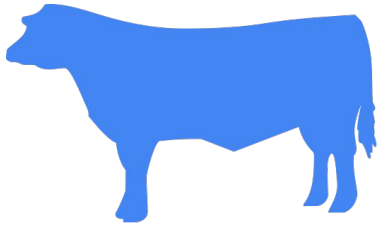
Scaling up the infra



Scaling up the infra

Pet (VM)

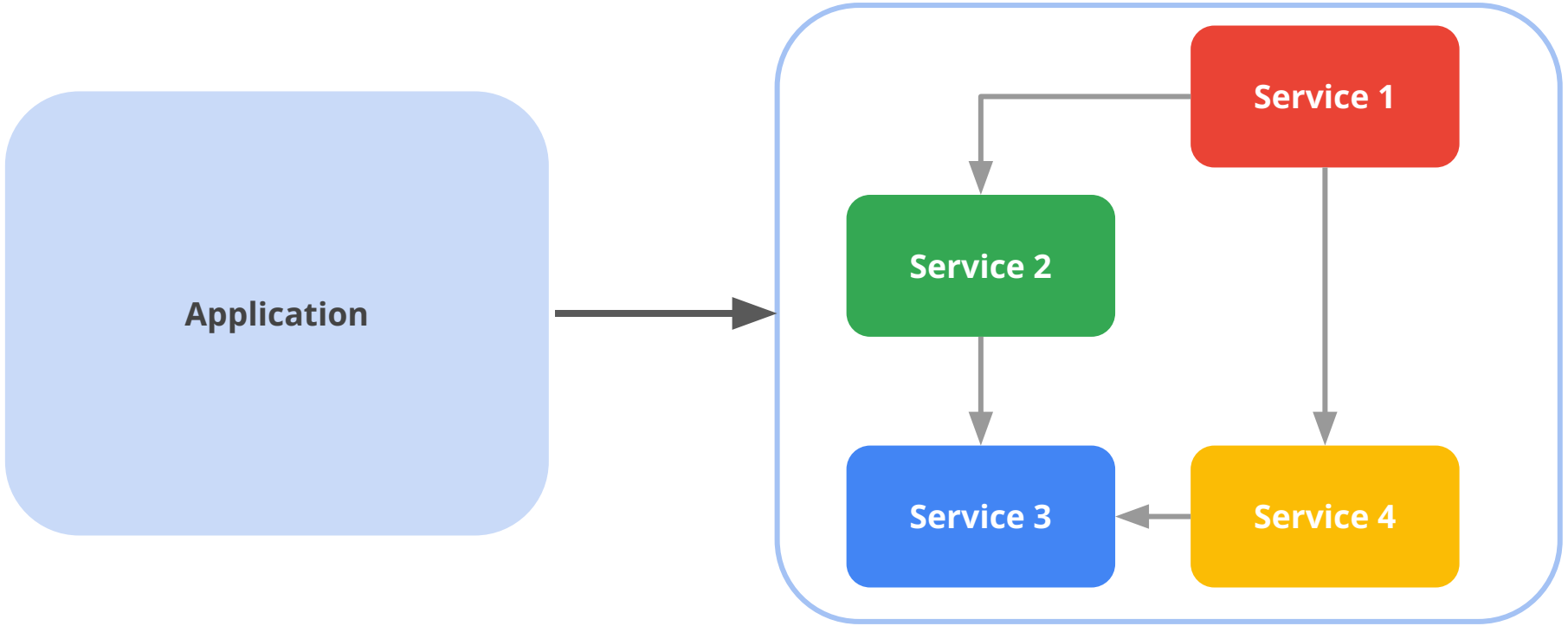
- Has a name
- Is unique or rare
- Personal attention
- If it gets ill, you make it better



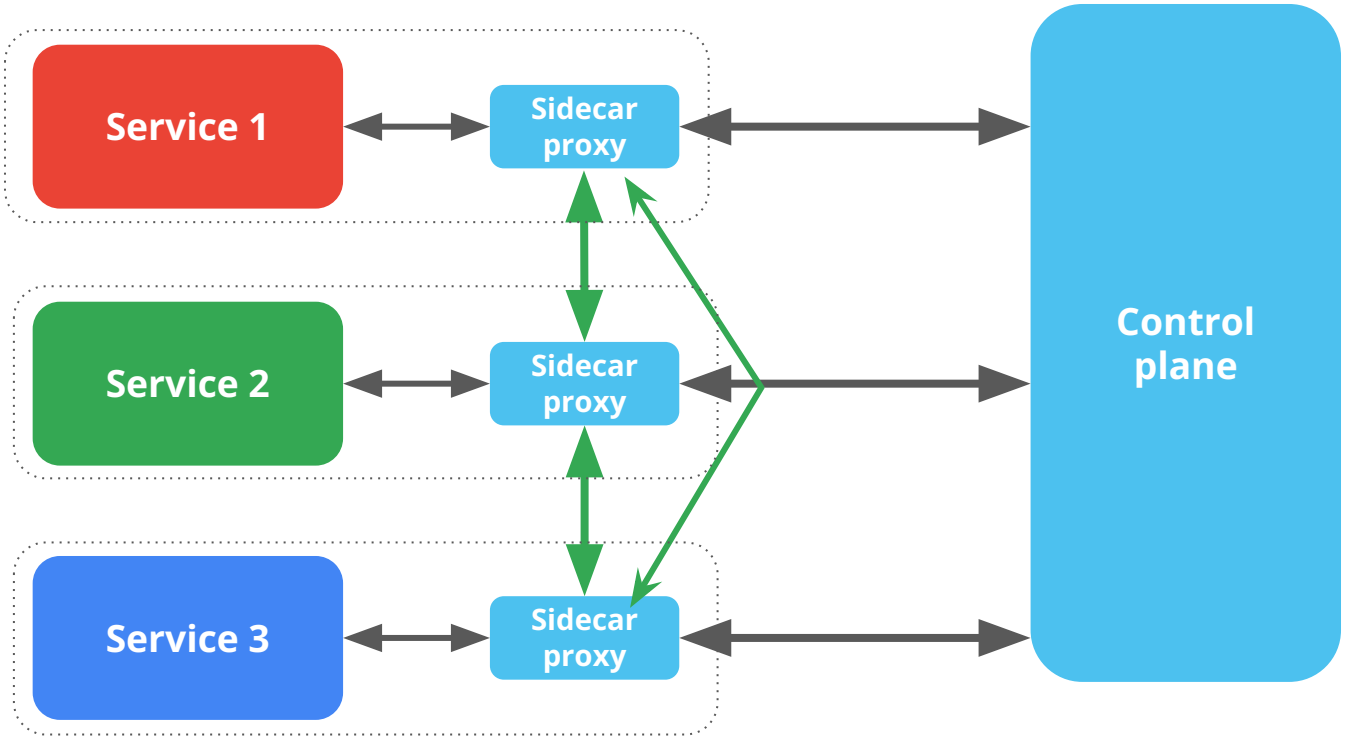
Cattle (containers)

- Has a number
- One is much like any other
- Run as a group
- If it gets ill, you sacrifice it

Microservices



Service meshs



Why do we need this?

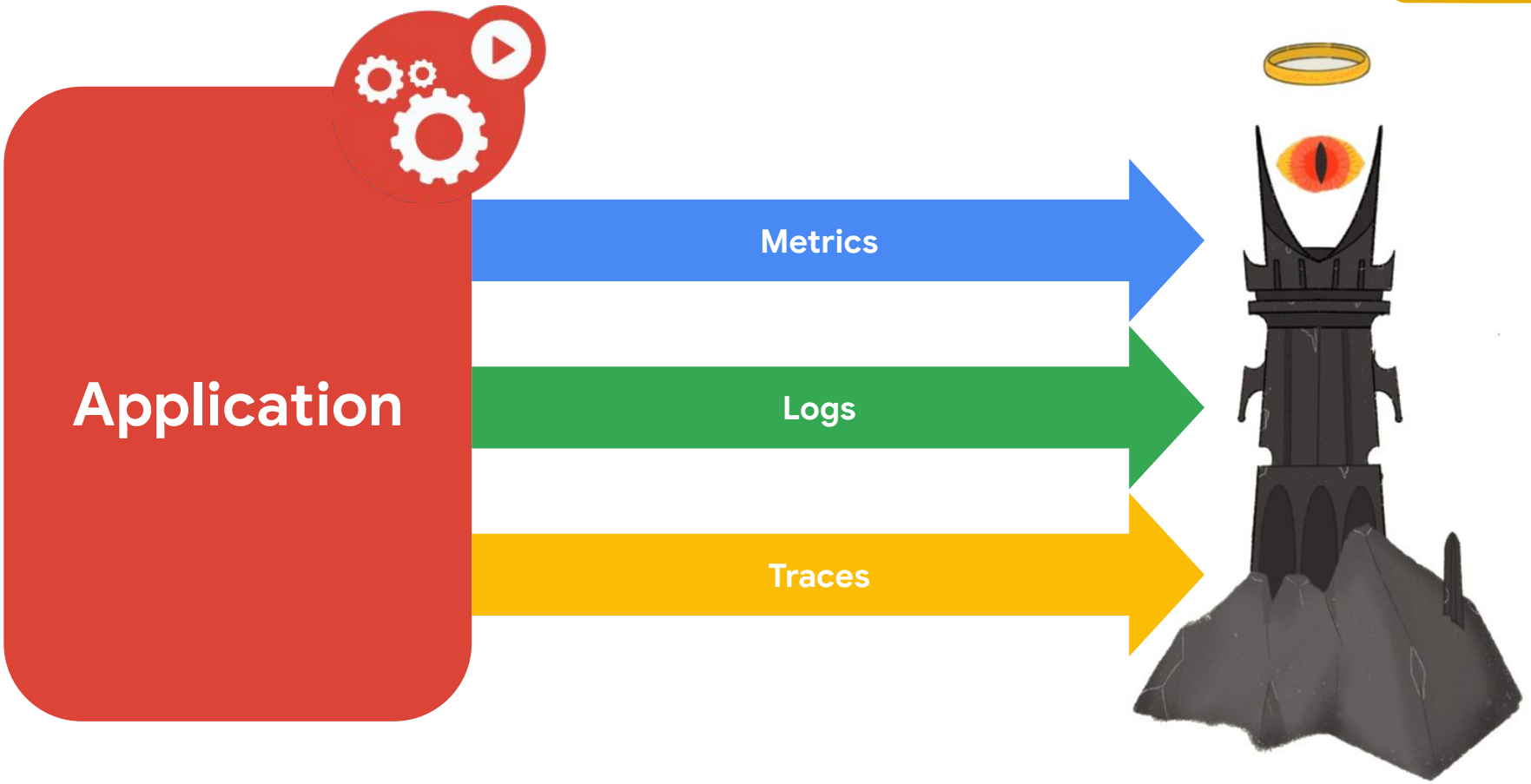
It all about the money!

It all about the money

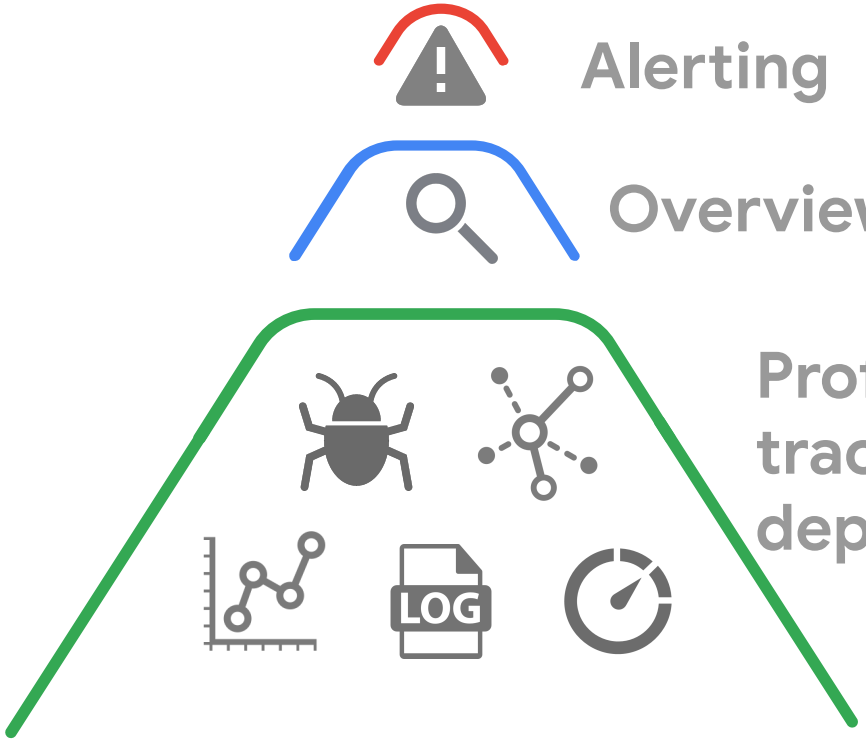
Disaster can not be avoided

- Untested code paths
- Corner cases
- Outages
- Human error
- Network issues: latency, bandwidth, reliability, homogeneity...

Ok so... observability


Application
Metrics
Logs
Traces

Observability and monitoring



Alerting

Overview (dashboards)

Profiling, debugging, tracing, logging, dependency analyses...

Monitoring

Observability

Failures appear

- What?
- When?
- Why?

Distributed systems as context

Some technology examples

Tracing

Jaeger

Metrics and alerts

Prometheus, Thanos

Log Management

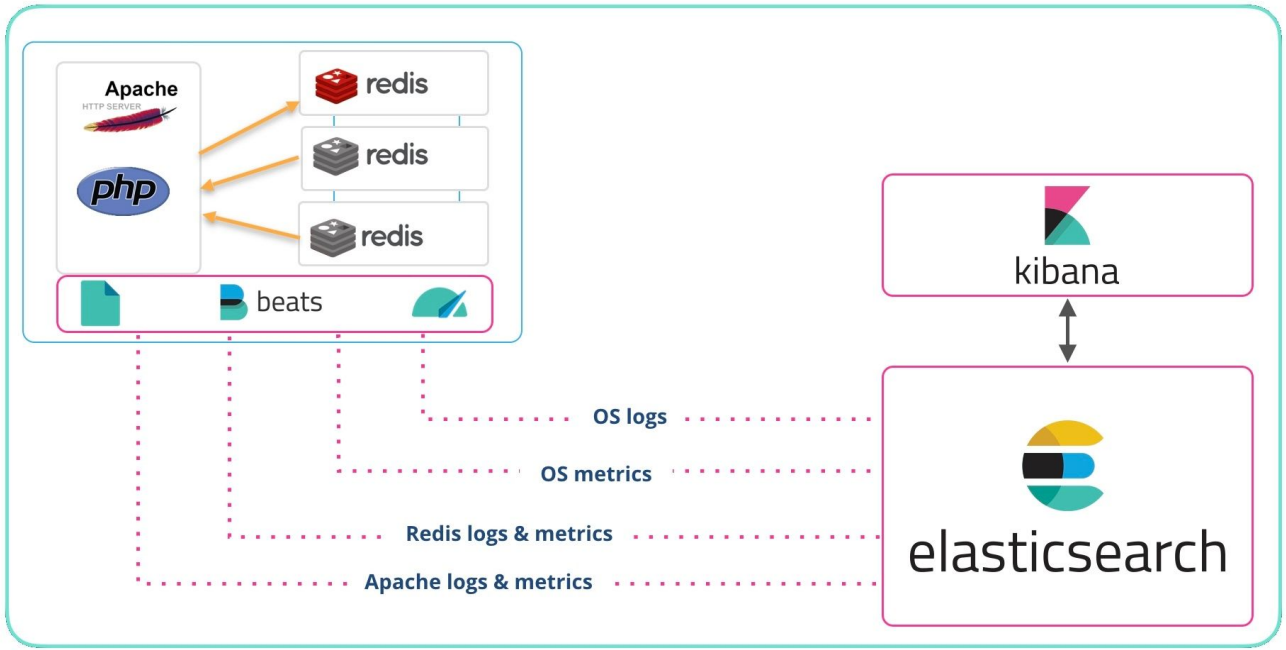
Elastic, Fluentd, Kibana

Management Dashboards

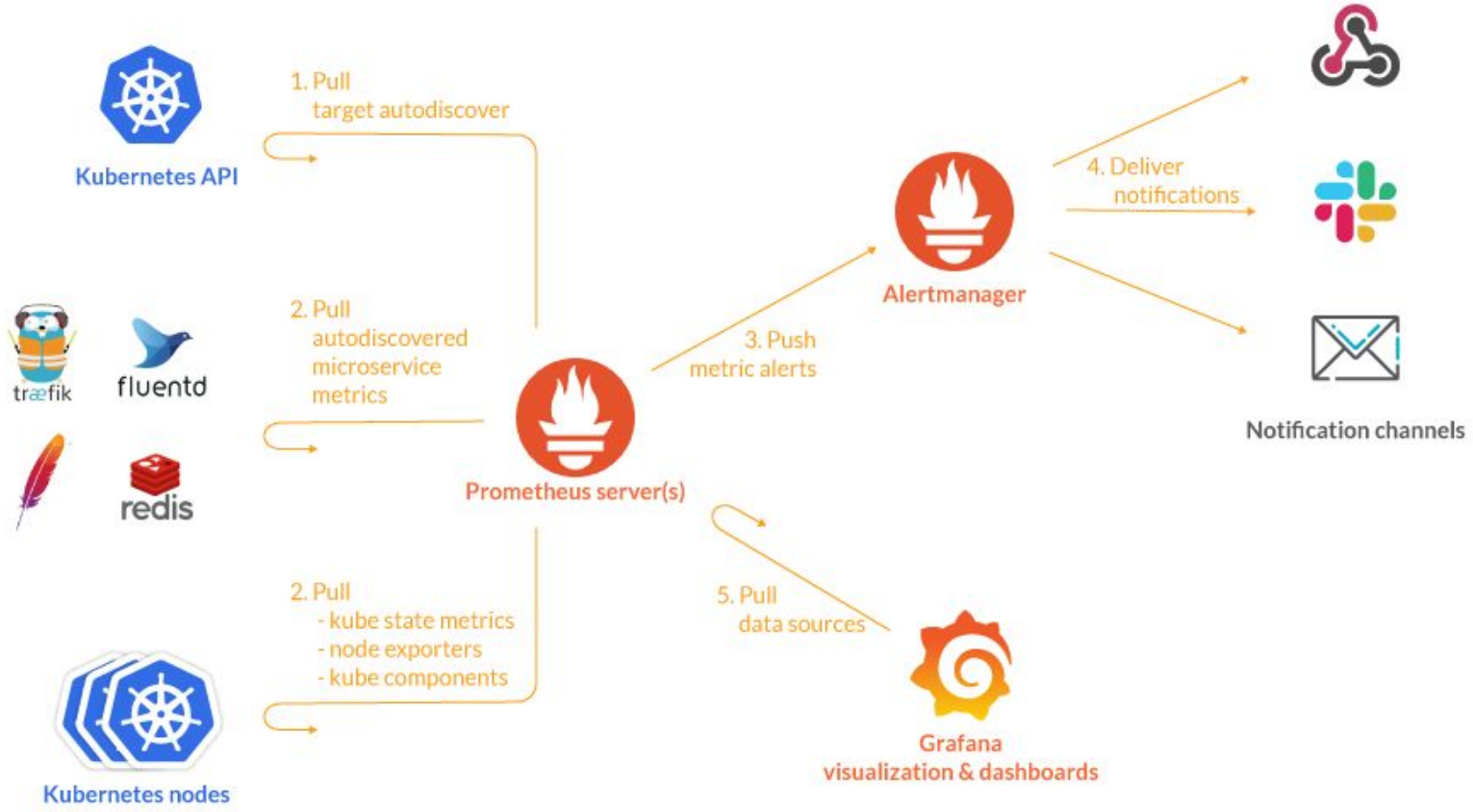
Kiali, Grafana, OpenShift UI

Logging

Solutions to manage and analyze big amounts of logs from different systems



Metrics


Kubernetes API
1. Pull
target autodiscover
traefik
fluentd
redis
2. Pull
autodiscovered
microservice
metrics
Prometheus server(s)
3. Push
metric alerts
Alertmanager
4. Deliver
notifications
Notification channels
2. Pull
- kube state metrics
- node exporters
- kube components
Kubernetes nodes
5. Pull
data sources
Grafana
visualization & dashboards

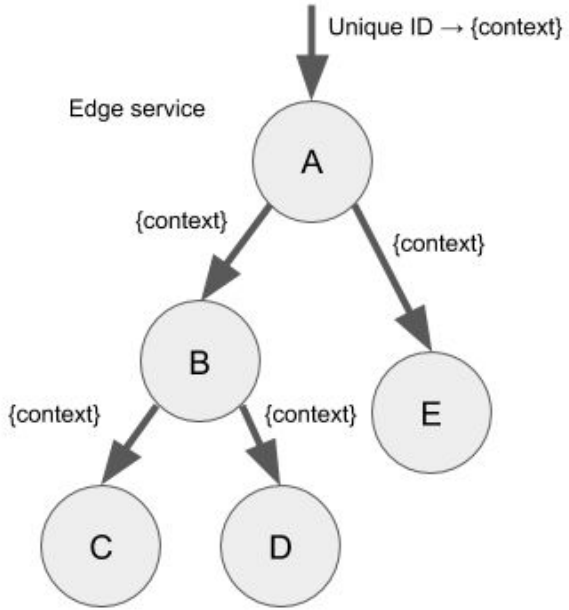
Distributed tracing

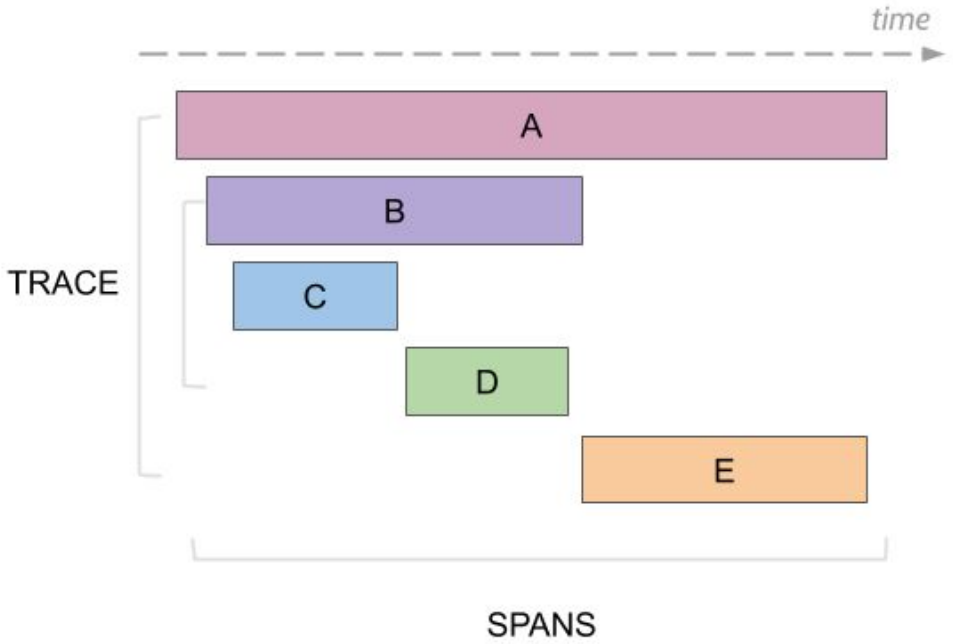
Distributed tracing

Tells the story of a request across services

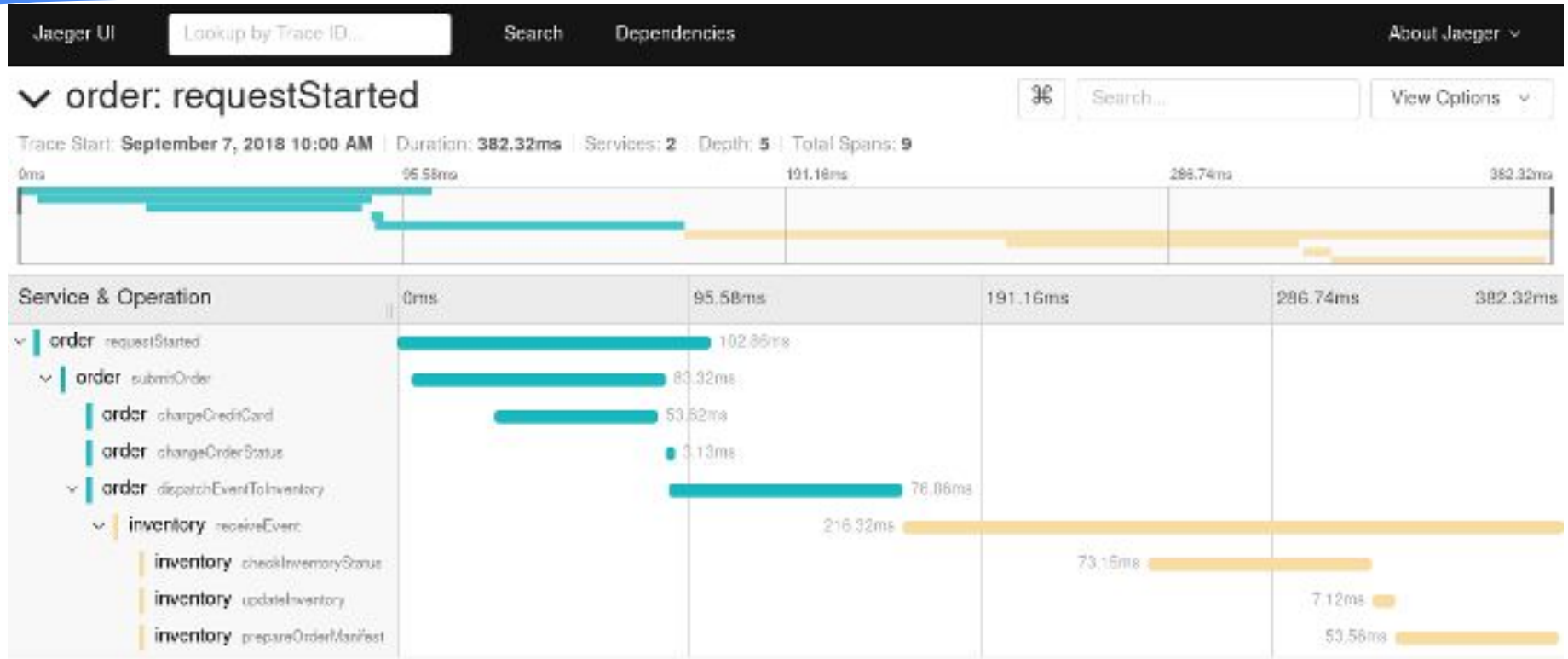
Which services were touched, when, in which order, what parameters were used...

Spans

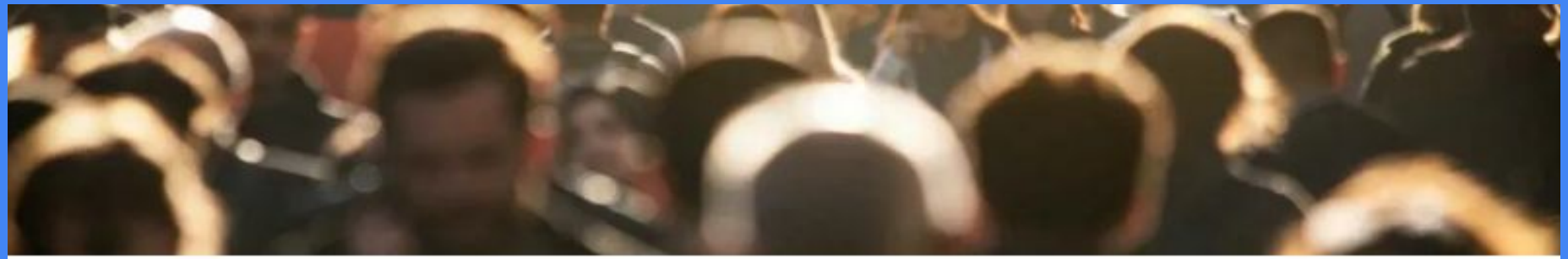

Unique ID → {context}
Edge service
A
{context}
{context}
B
{context}
{context}
E
C
D


time
A
B
C
D
E
TRACE
SPANS

Spans


Jaeger UI
Lookup by Trace ID...
Search
Dependencies
About Jaeger
order: requestStarted
Search...
View Options
Trace Start: September 7, 2018 10:00 AM | Duration: 382.32ms | Services: 2 | Depth: 5 | Total Spans: 9
0ms
95.58ms
191.16ms
286.74ms
382.32ms
Service & Operation
order requestStarted
order submitOrder
order chargeCreditCard
order changeOrderStatus
order dispatchEventToInventory
inventory receiveEvent
inventory checkInventoryStatus
inventory updateInventory
inventory prepareOrderManifest
102.86ms
83.32ms
53.62ms
3.13ms
76.86ms
216.32ms
73.15ms
7.12ms
53.56ms

dev.to/iblancasa



Israel Blancas

Posted on Feb 15

Edit Manage Stats

Observability: the basics

#observability #tracing #logging #metrics

Some technology examples

Tracing

Jaeger

Metrics and alerts

Prometheus, Thanos

Log Management

Elastic, Fluentd, Kibana

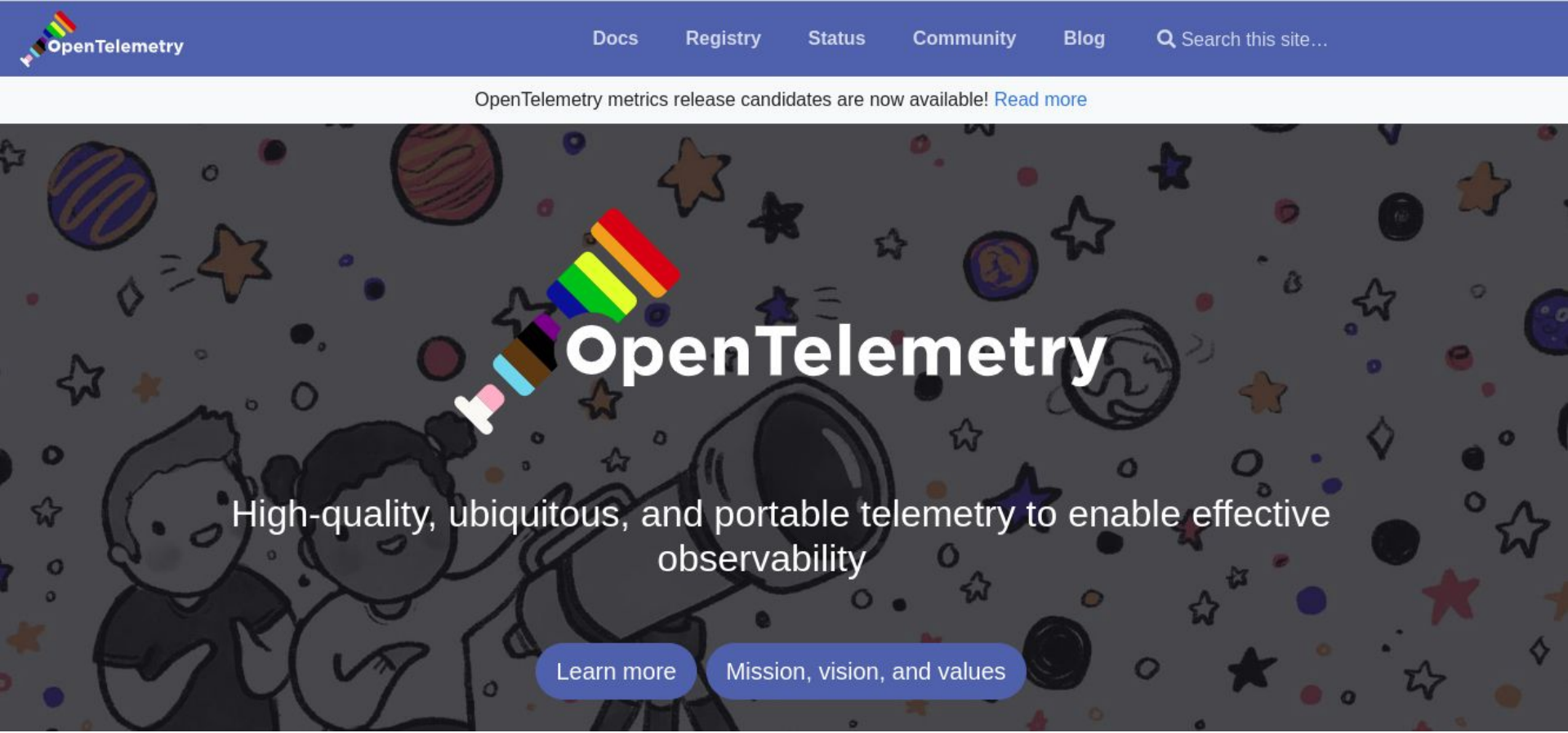
Management Dashboards

Kiali, Grafana, OpenShift UI

Solution

Solution

Otel Collector
OTLP
Jaeger
Prometheus
Receivers
Extensions: health, pprof, zpages
Batch
...
Attributes
Processors
Batch
...
Filter
Processors
Exporters
OTLP
Jaeger
Prometheus



opentelemetry.io

Thank you!

Questions?

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