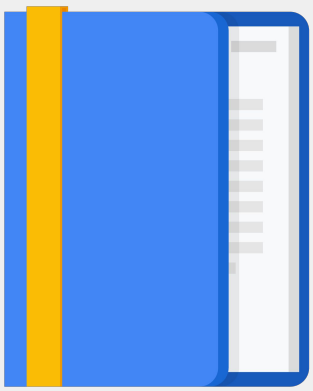
Google Cloud

Architecting Hybrid Infrastructure with Anthos

Observing Services using Service Mesh Adapters

Agenda



- **Telemetry Collection**
- Stackdriver
- On Premise Integration

Google Cloud

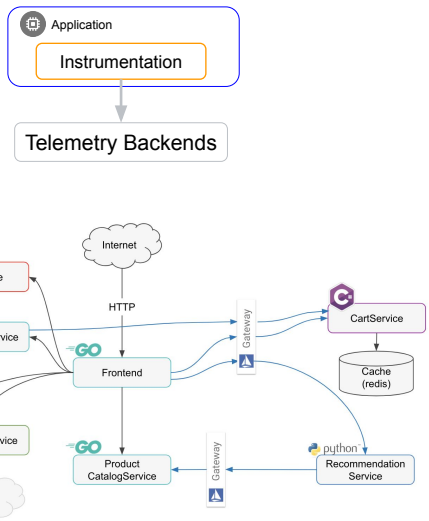
Telemetry

The word is derived from Greek the roots tele, “remote”, and metron, “measure”.

The challenge of collecting measurements on the use and performance distributed services

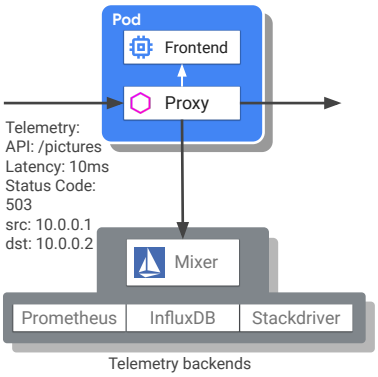
Traditionally supplied via the application instrumentation

Hard to manage in a Polyglot environments



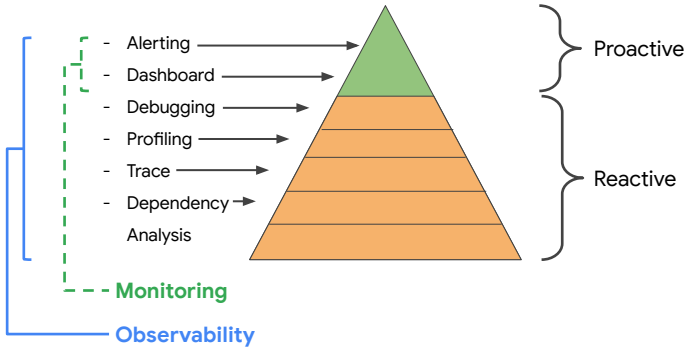
Istio's Telemetry

Since all communication goes through the mesh, Telemetry can be decoupled from the binaries.



Istio's Telemetry

In addition, you get **observability**, and an end to end overview of your whole network out of the box

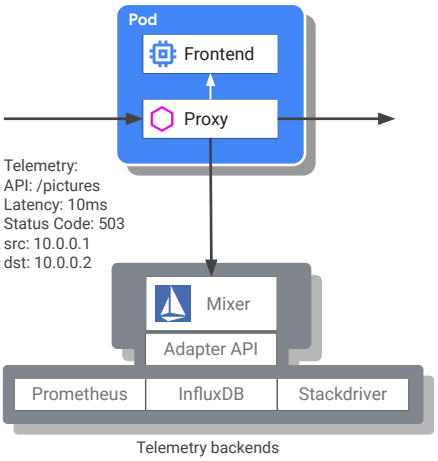


Mixer Observability

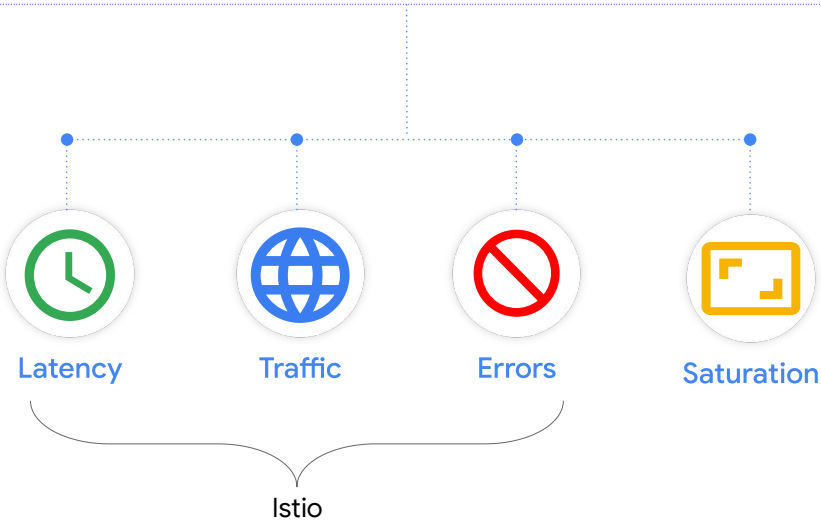
Mixer has an open API and a pluggable architecture

Standardize telemetry across hybrid environments

Send telemetry, and traces to your system of choice



The four golden signals



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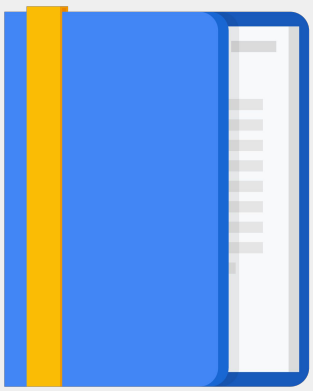

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Telemetry Backends Provide

Log aggregation

Log aggregation is the function of collecting metrics and logs from applications across the enterprise.

Monitoring

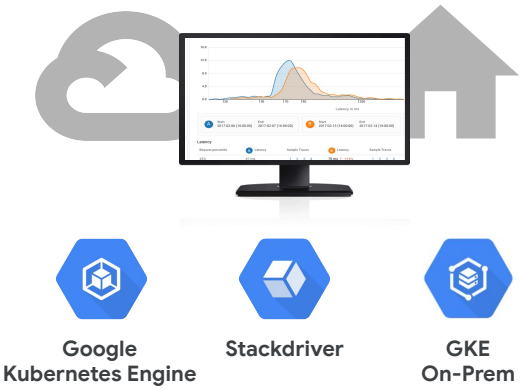
Monitoring is the function of capturing metrics and logging events and providing things like graphical displays or reports.

Alerting

Alerts are a function of monitoring to bring specific issues to Operations/Support at a specific threshold

Stackdriver

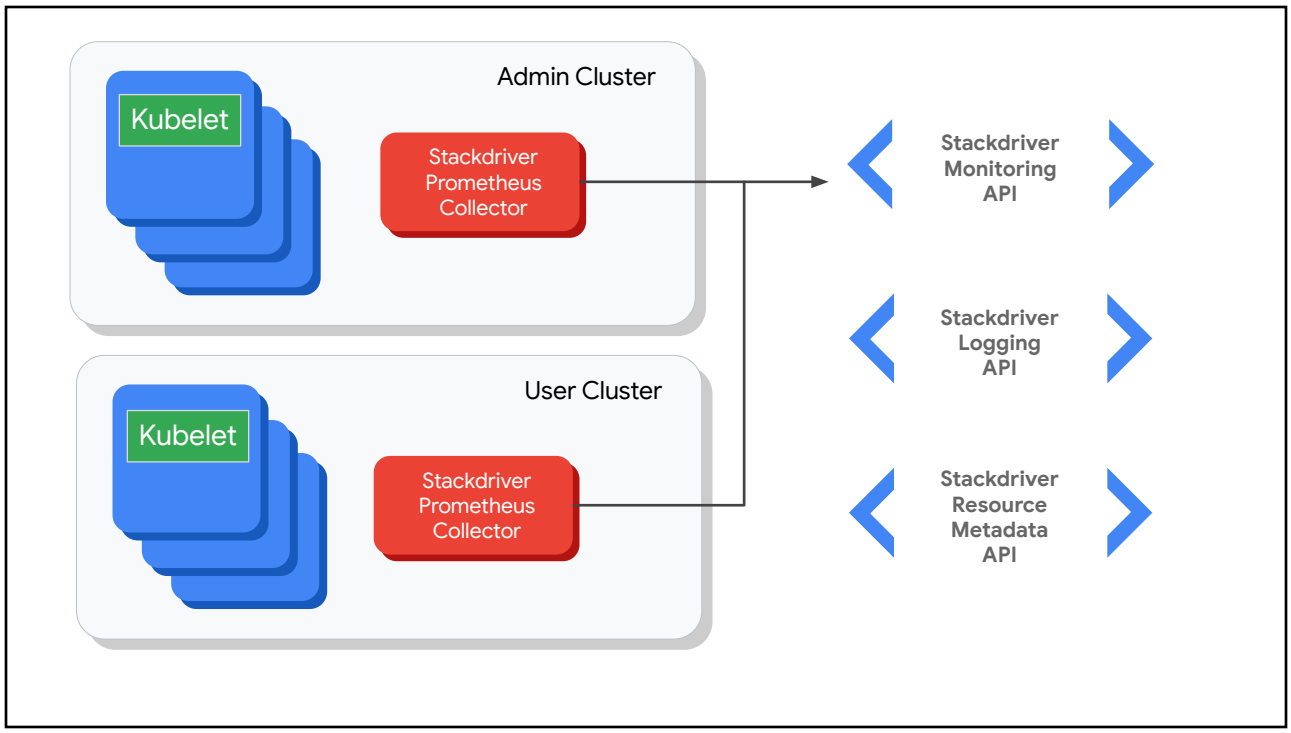
- Cloud based solution
- Single pane of glass for both environment
- Fully managed including 3 agents
  - Logging
  - Monitoring
  - Metadata



Stackdriver Configurations

Three configuration levels for logging and monitoring:

- All components logged and monitored, enabledStackdriverForApplications enabled
- System components only logged and monitored enabledStackdriverForApplications disabled (default)
- All off, operator deleted Support SLAs no longer apply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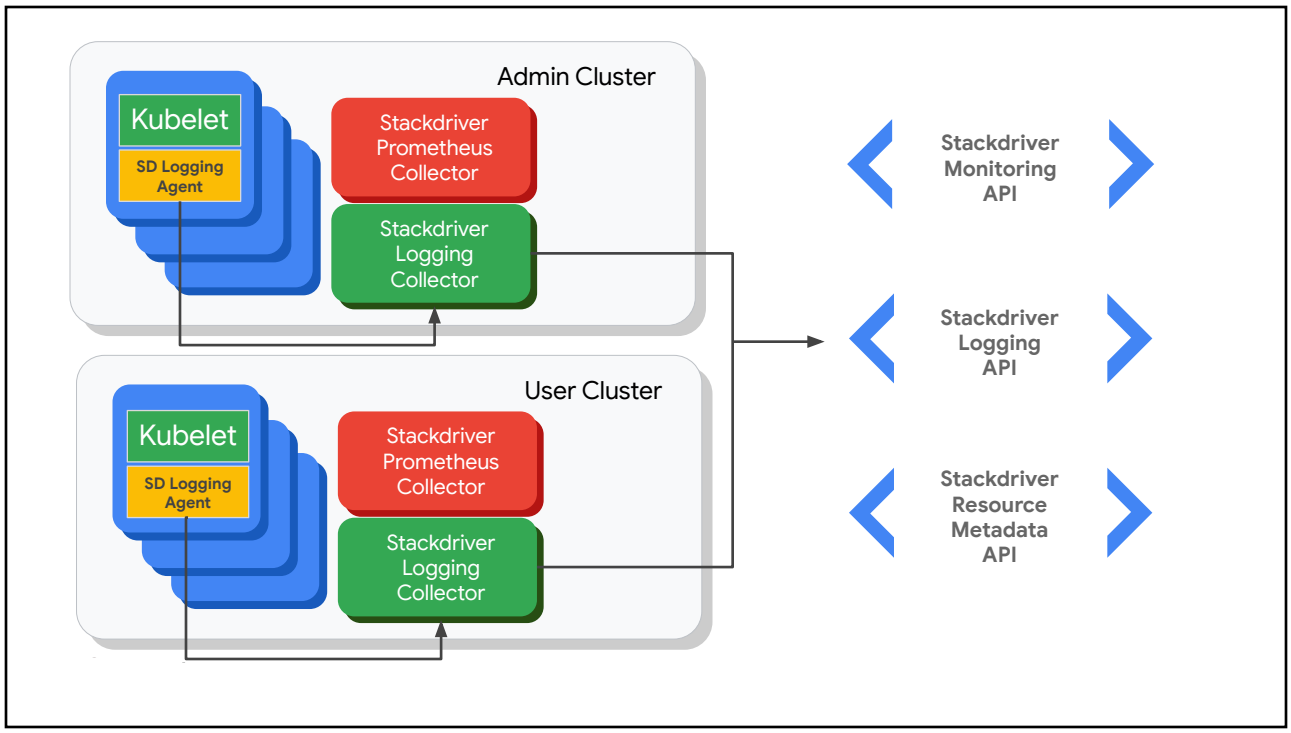
Kubelet
Stackdriver Prometheus Collector
User Cluster
Kubelet
Stackdriver Prometheus Collector
Stackdriver Monitoring API
Stackdriver Logging API
Stackdriver Resource Metadata API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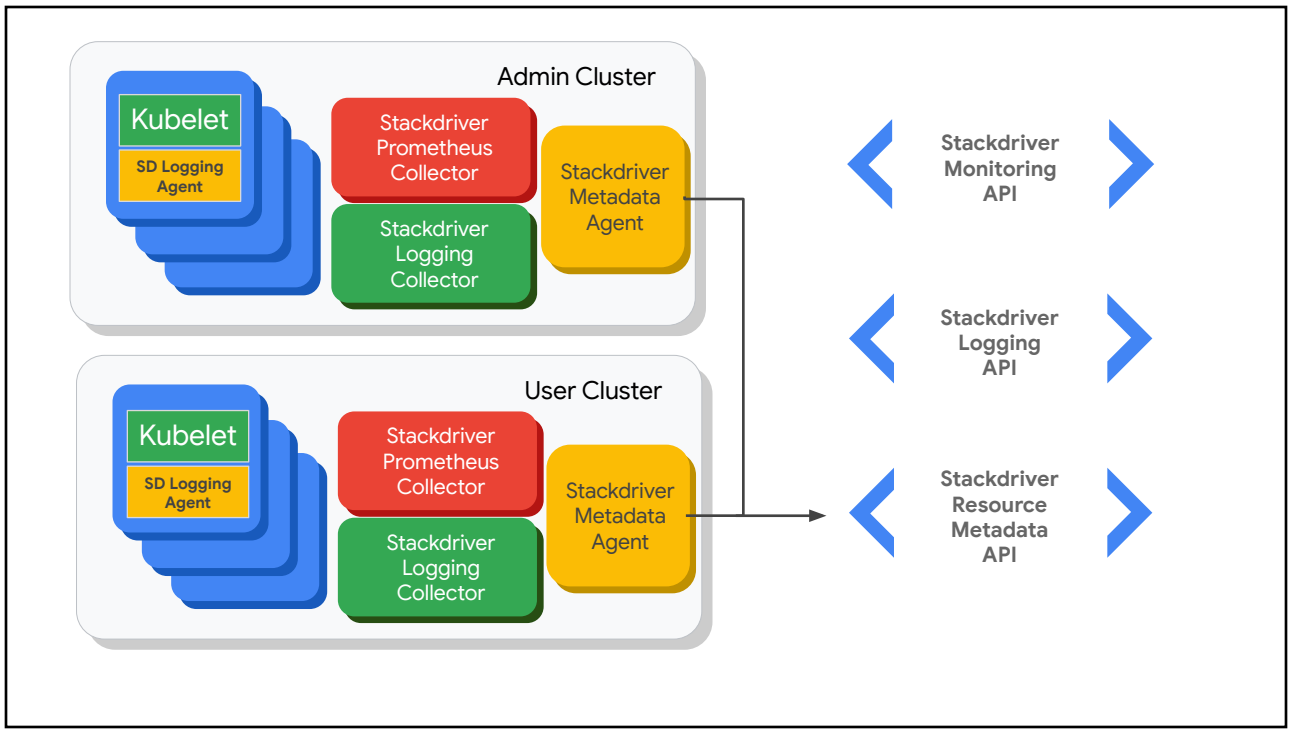
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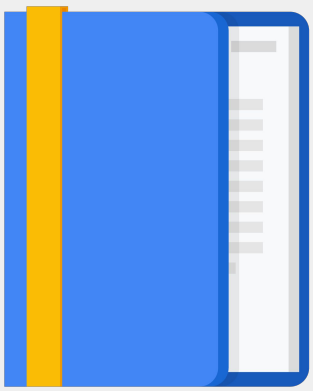

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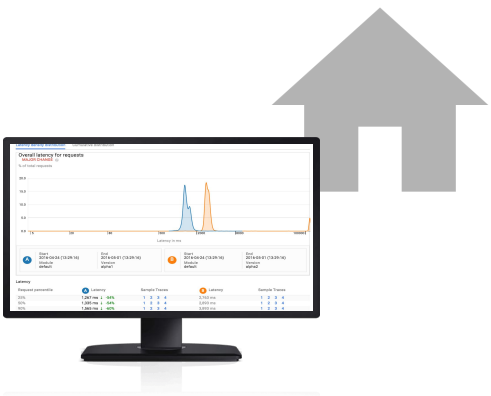
Google Kubernetes Engine

Stackdriver



Kubernetes

Prometheus

Elasticsearch

GKE On-Prem Logging and Monitoring Scenarios

Cloud-based

Stackdriver Monitoring

Stackdriver Logging

Within your data center

Prometheus + Grafana

Elasticsearch + Kibana (GCP Marketplace)

On cluster

- CNCF supported open source project
- *De facto* monitoring standard in Cloud Native world
- Inspired by Google's own monitoring tool: Borgmon
- Great integration with Kubernetes and other OSS components (Grafana)
- Lots of exporters!

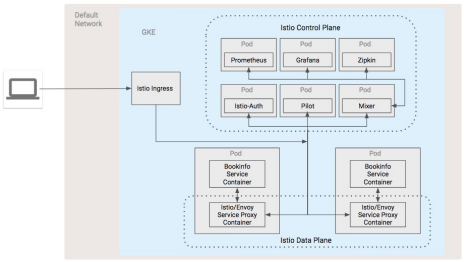
Observability Stack Defaults

	GKE	GKE On Prem
Metrics	Stackdriver Monitoring	Prometheus
Logging	Stackdriver Logging	None
Visualisation	Stackdriver UI	Grafana

Lab

Telemetry and Observability with Istio

60 min



Objectives

- Understand the installation of the Istio Telemetry Add-Ons
- Query Istio metrics with Prometheus
- Visualize Istio metrics with Grafana
- Generate and visualize traces with Jaeger
- Visualize your service Mesh with Kiali

tinyurl.com/SVL0827Day1