



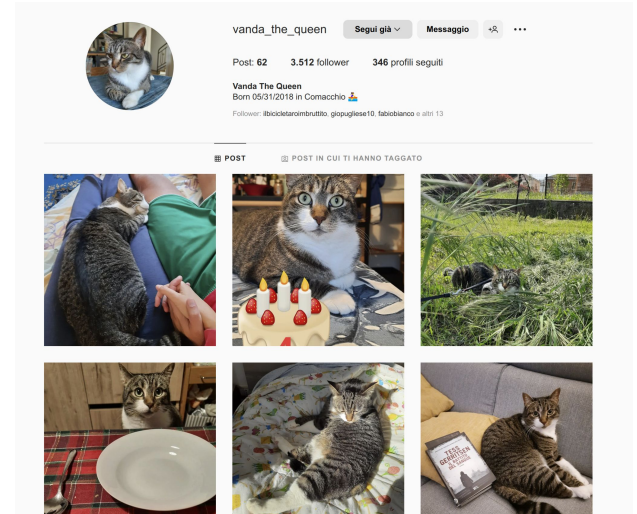
Stop logging,
Start observing



WHOAMI

Emilio Junior Francischetti

Restauratore Software



A long time ago in a monolith far,
far away....

Meanwhile on Loogine...

Q: Vorrei vedere la frequenza di un dato evento. Come faccio?

A: Mettici un **LOG**

Q: Vorrei vedere il flusso di una richiesta. Come faccio?

A: Mettici un **LOG**

Q: Vorrei vedere il payload in ingresso/uscita di un endpoint. Come faccio?

A: Mettici un **LOG**

LOGS



LOGS EVERYWHERE

Observability: Logs with Steroids

Q: Vorrei vedere la frequenza di un dato evento, Come faccio?

A: Mettici un **METRICA**

Q: Vorrei vedere il flusso di una richiesta. Come faccio?

A: Mettici un **TRACE**

Q: Vorrei vedere il payload in ingresso/uscita di un endpoint. Come faccio?

A: Mettici un **LOG**



LOGGING



OBSERVABILITY

Anatomy of a Metric

booking_total{instance="localhost:9090", job="prometheus"}

1



NAME

LABEL

LABEL

VALUE

Meet the Metrics: The Counter

Un contatore è una metrica che può solo crescere o azzerarsi al riavvio dell'istanza osservata.

A: Quanti ordini sono stati ricevuti?

Q: order_received_**total**{instance="180.17.0.1:8080", job="order"}

4




Suffisso per counter

Meet the Metrics: The Gauge

Un gauge è il risultato di una misurazione al momento del rilevamento della metrica

jvm_memory_used_**bytes**{area="nonheap",id="CodeHeap 'profiled nmethods'"} 2.2980992E7

jvm_memory_used_**bytes**{area="heap",id="G1 Survivor Space"} 2.097152E7



Unità base della metrica

http_server_requests_seconds_**max**{method="GET", status="200",uri="/actuator/prometheus"} 0.012181994

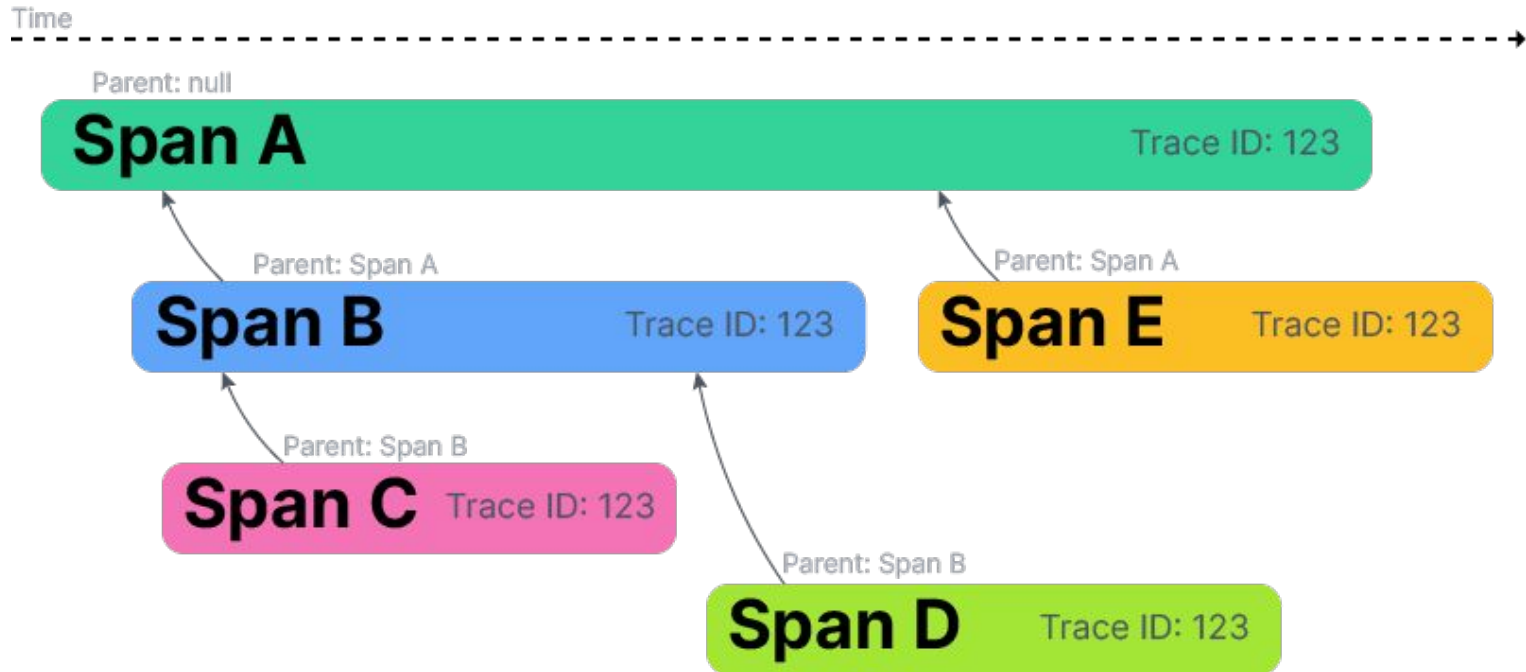


Qualificatore del valore

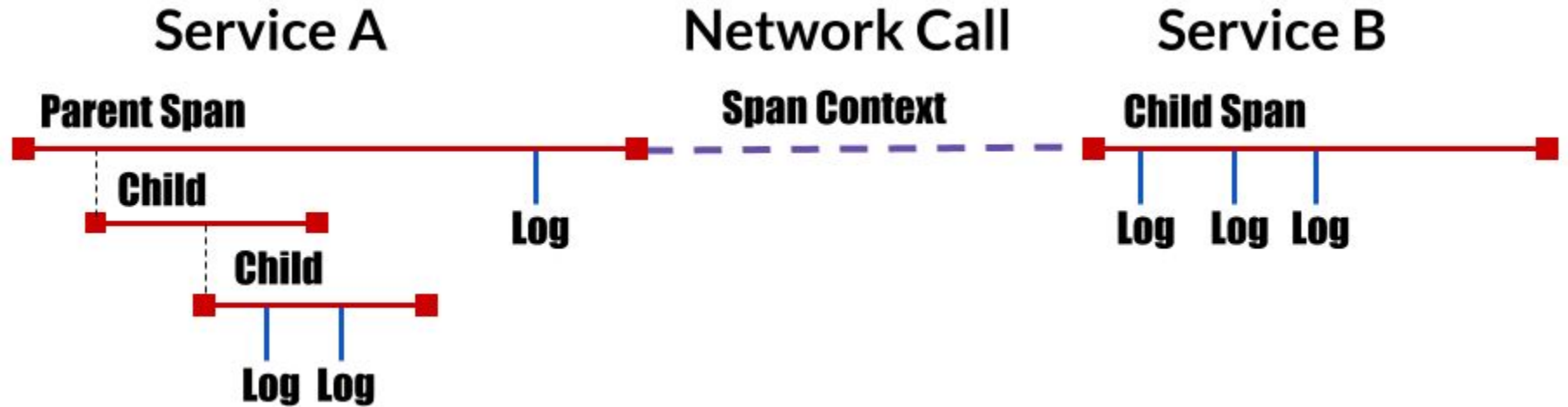
Prometheus for metrics



Anatomy of a Trace



Anatomy of a Trace



If you say Tracing, you say Jaeger



Anatomy of a Log

2023-02-06 22:40:37 INFO Order received successfully!!!



TIMESTAMP

LEVEL

MESSAGE

L for Logs: Loki





One Dashboard to rule them all: Grafana

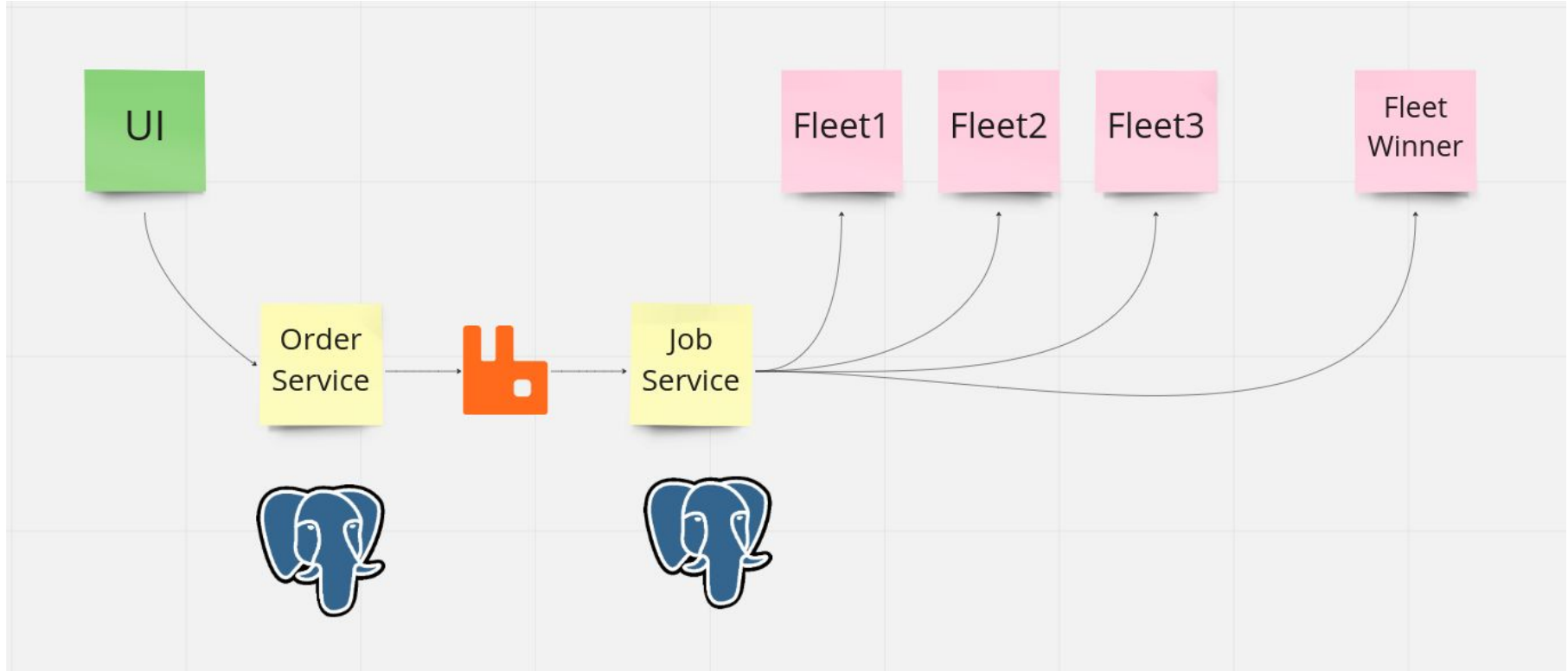


Query su moltissimi **Data sources**

Dashboard fatte dalle communities o **Custom**.

Alert con sistema di notifiche

Meet the App: Pizzify





**“Talk is
cheap. Show
me the code.”**

Linus Torvalds

We need a standard for it!

May 2019

OpenCensus + OpenTracing = OpenTelemetry (aka OTel)

Mission:

Standardizzare **API, SDK e tools vendor agnostic** per collezionare, trasformare ed esportare dati ad un **observability backend**



Current Status

Tracing

- **API**: stable, feature-freeze
- **SDK**: stable
- **Protocol**: stable

Metrics

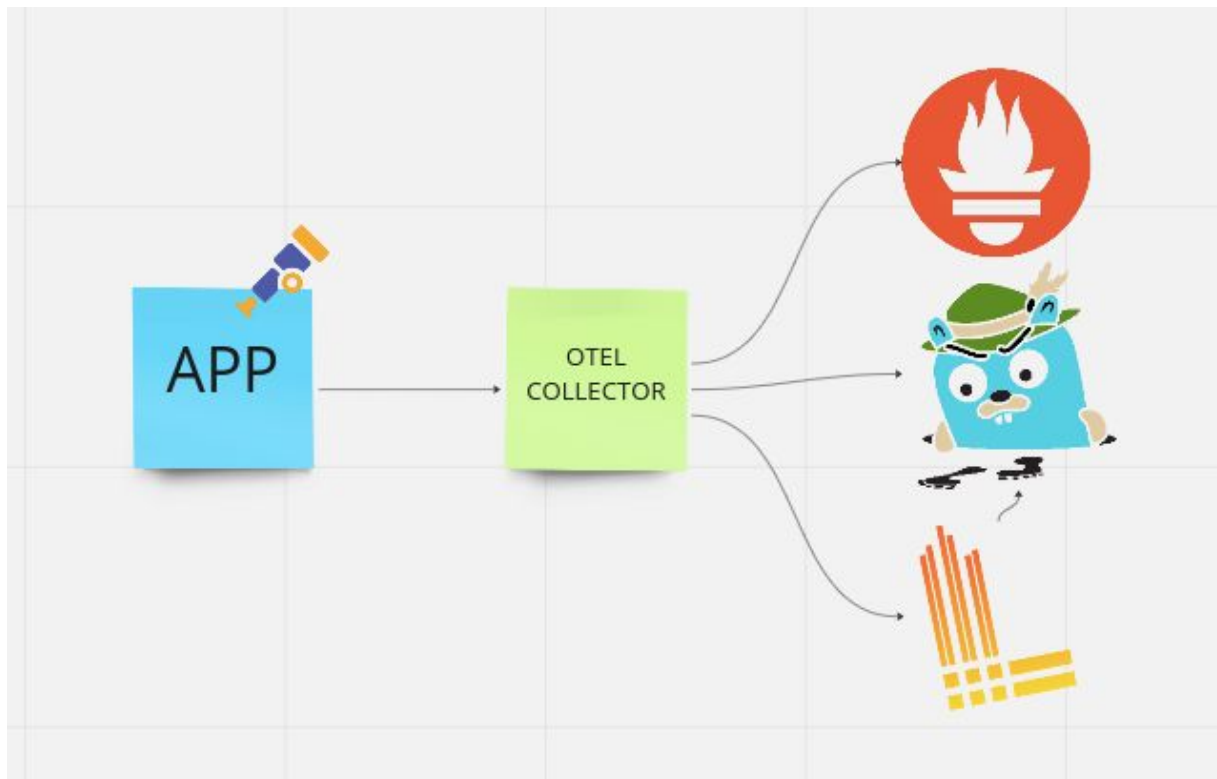
- **API**: stable
- **SDK**: mixed
- **Protocol**: stable

Logging

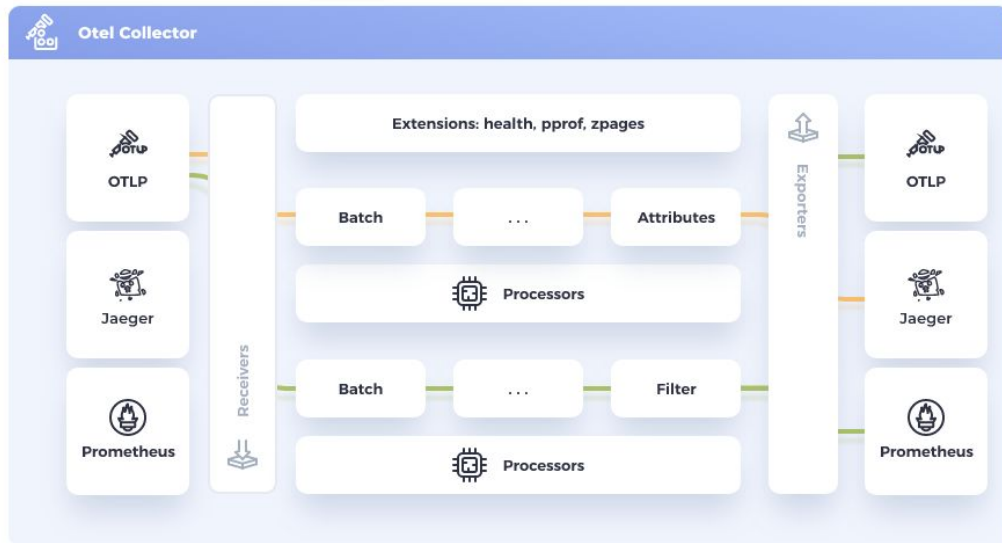
- **API**: draft
- **SDK**: draft
- **Protocol**: stable

| Language | Traces | Metrics | Logs |
|---------------|--------|---------------------|---------------------|
| C++ | Stable | Stable | Experimental |
| C#/.NET | Stable | Stable | Mixed* |
| Erlang/Elixir | Stable | Experimental | Experimental |
| Go | Stable | Alpha | Not yet implemented |
| Java | Stable | Stable | Experimental |
| JavaScript | Stable | Stable | Development |
| PHP | Beta | Beta | Not yet implemented |
| Python | Stable | Stable | Experimental |
| Ruby | Stable | Not yet implemented | Not yet implemented |
| Rust | Stable | Alpha | Not yet implemented |
| Swift | Stable | Experimental | In development |

Meet the OTel Collector



Meet the OTEL Collector



OTEL COLLECTOR



**“Talk is
cheap. Show
me the code.”**

Linus Torvalds

No rose without a thorn

PODs: Molti più pod

Storage:

Prometheus: Grafana Mimir, VictoriaMetrics, Promscale

Jaeger: Cassandra, Elasticsearch, Kafka

Loki: Cassandra e altri

Babel Tower:

PromQL per metriche, **TraceQL** per trace e **LogQL** per log e molti altri

Recap

Metrics: **overview** del sistema. Use case: **monitoring** e **alerting**

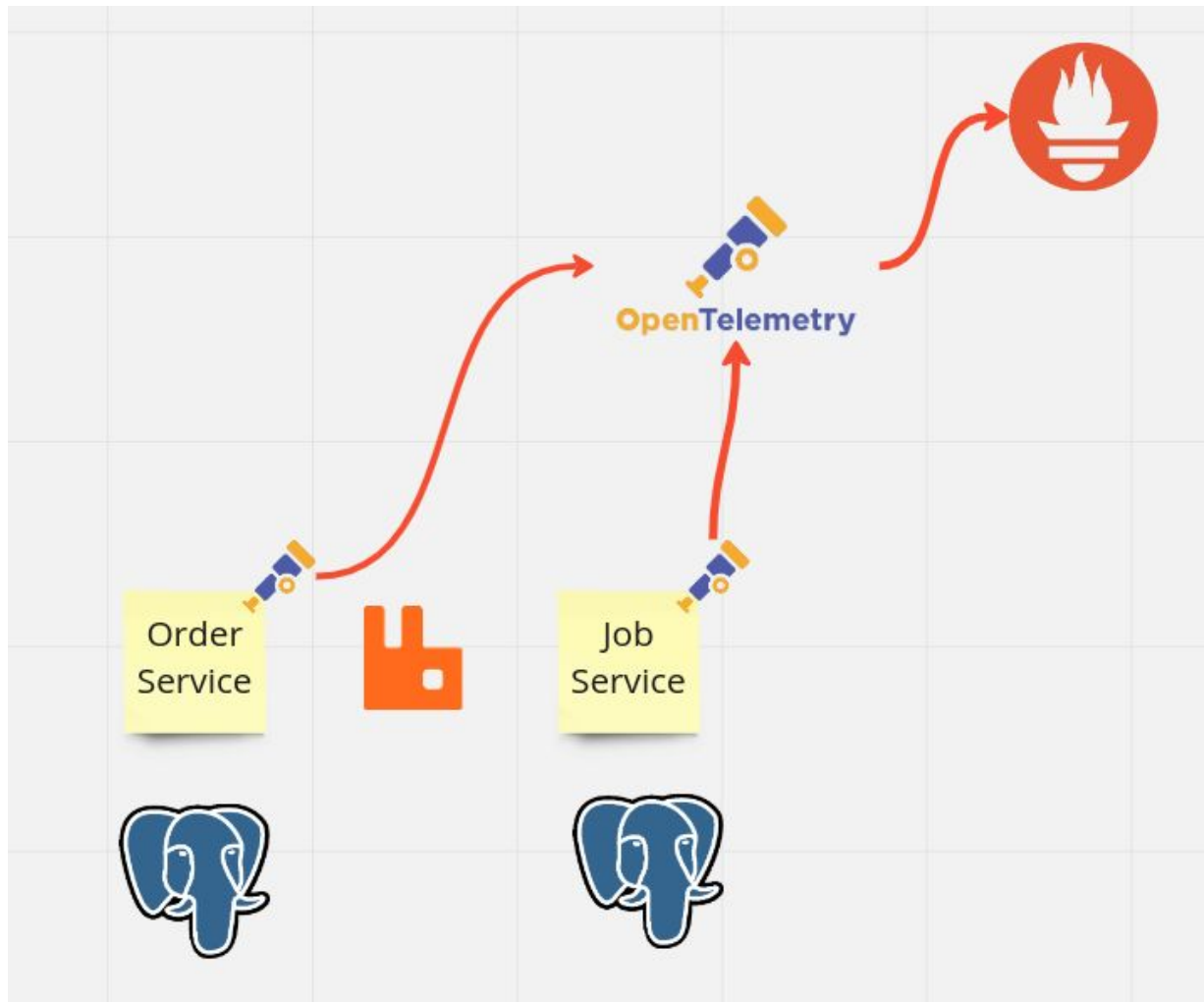
Traces: **troubleshooting**, **code review** e **monitoraggio performance**

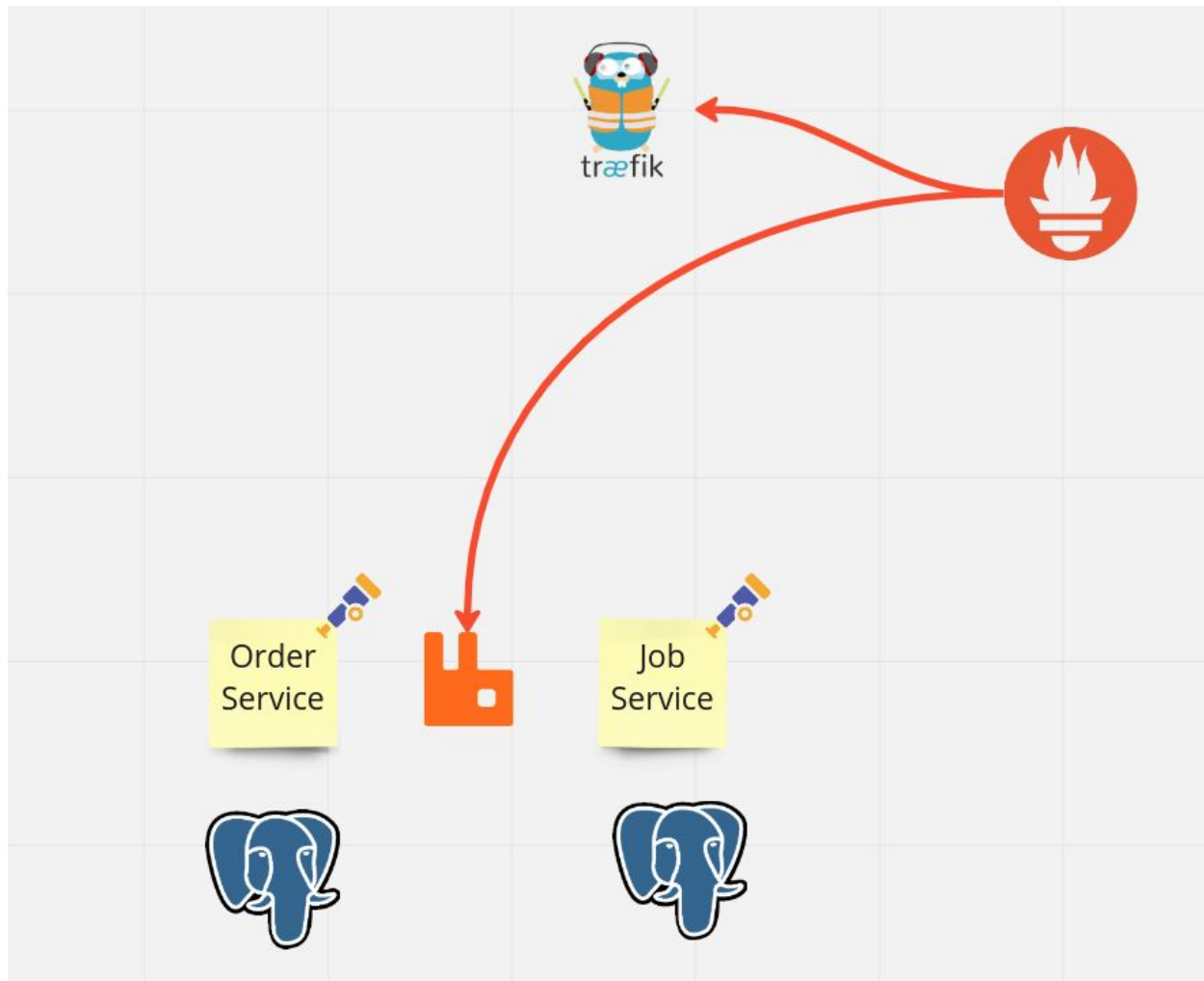
Logs: **dettaglio** operazioni

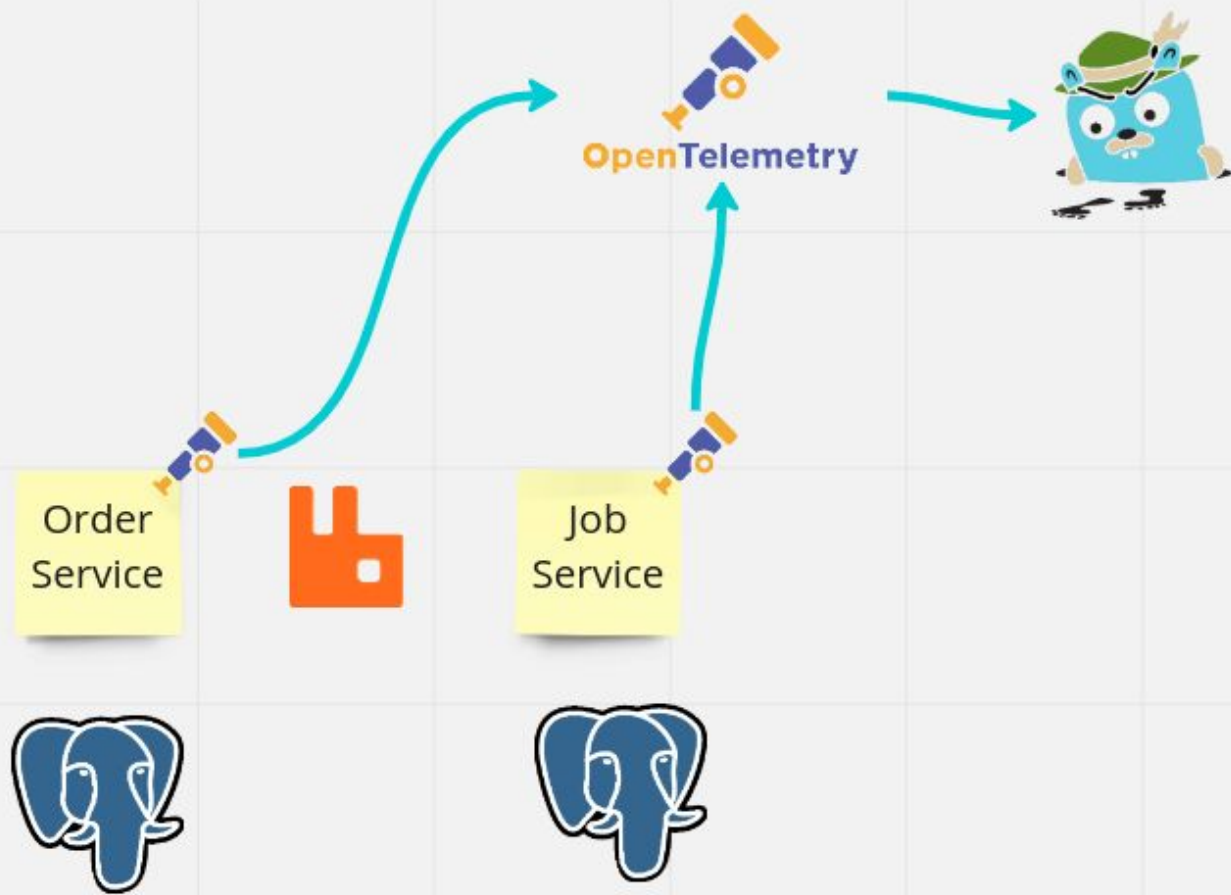
Open Telemetry: Instrumentazione codice **non invasiva**

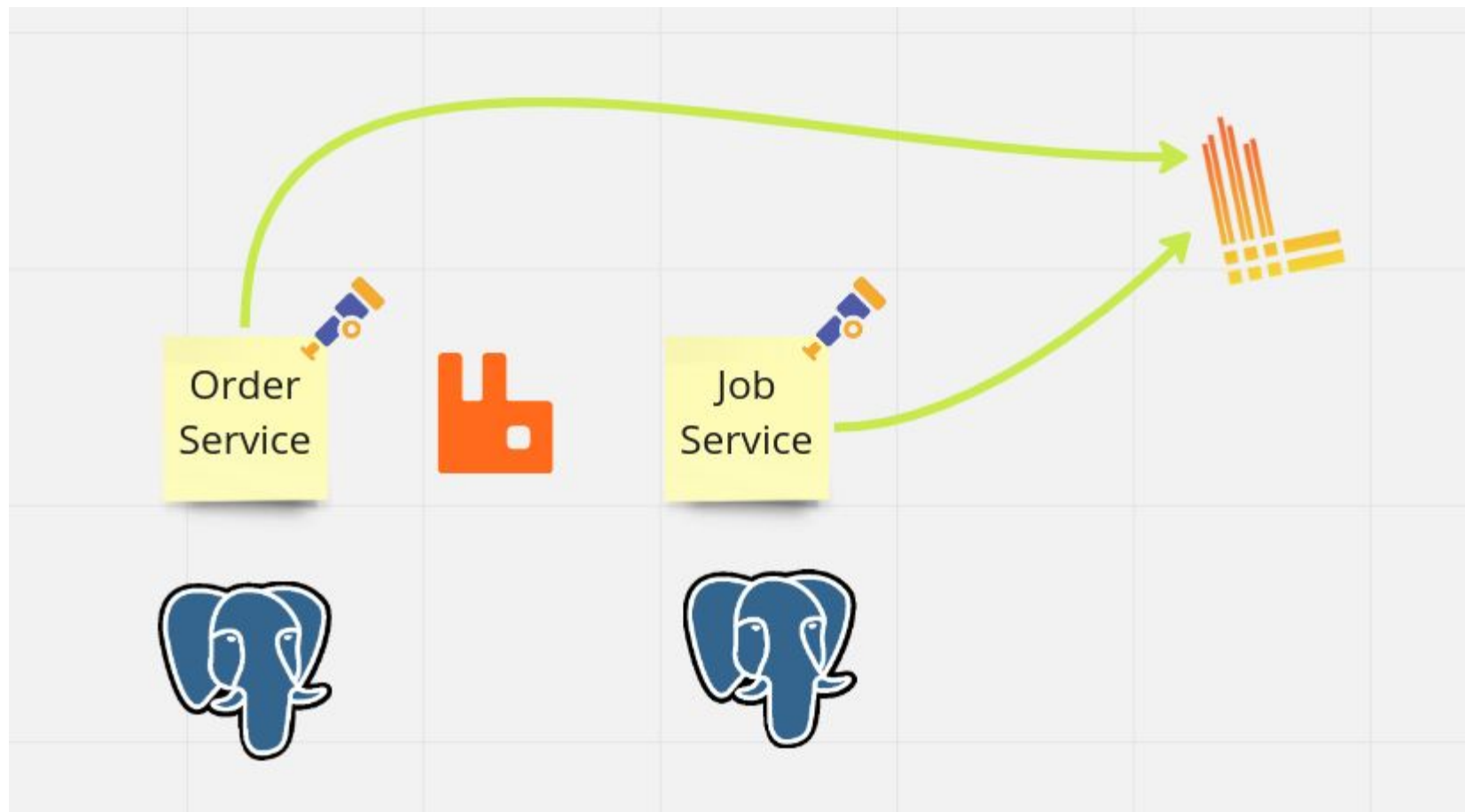
OTel Collector per **disaccoppiare** ed essere **vendor agnostic**

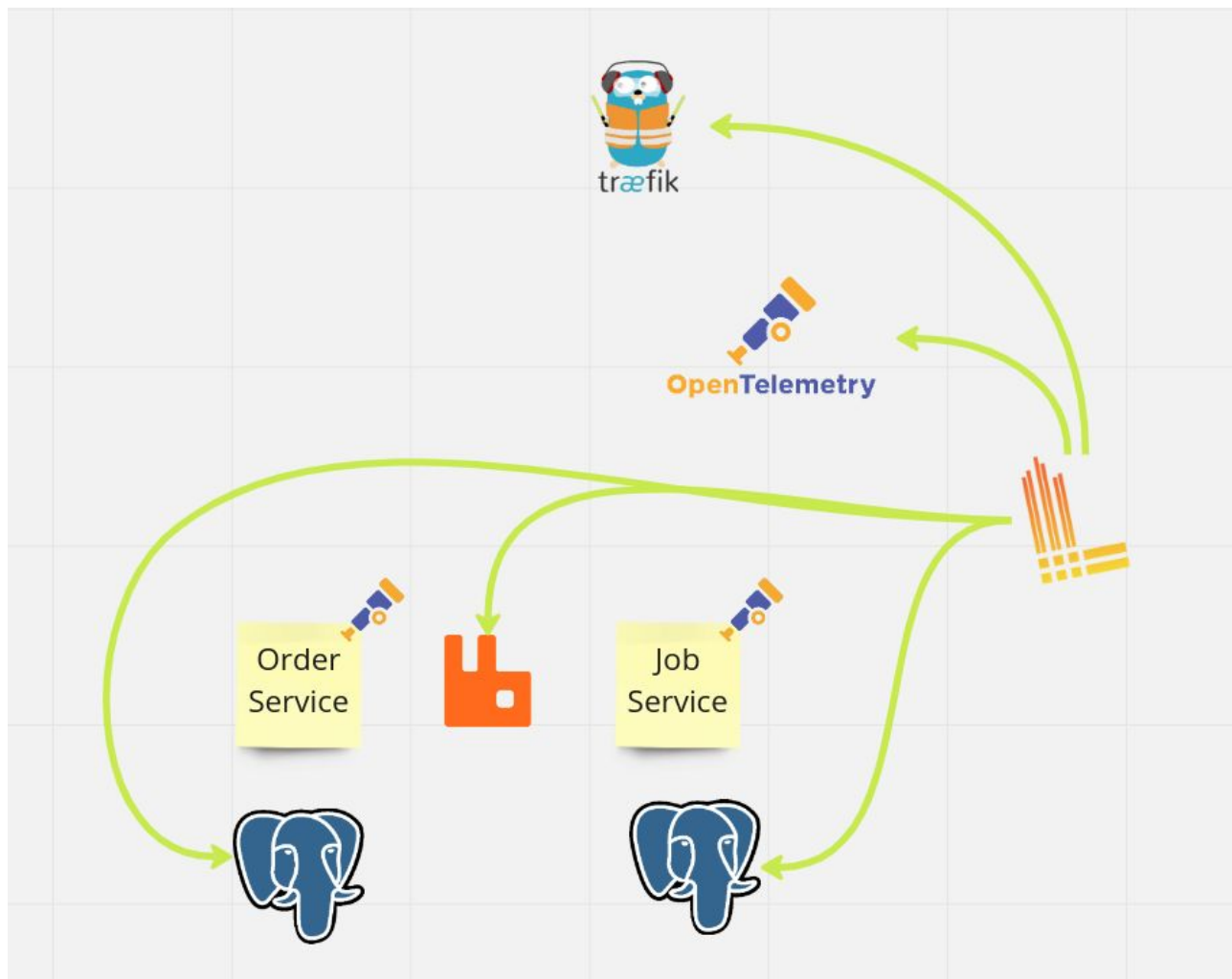
Grafana per **analisi** e **notifications**

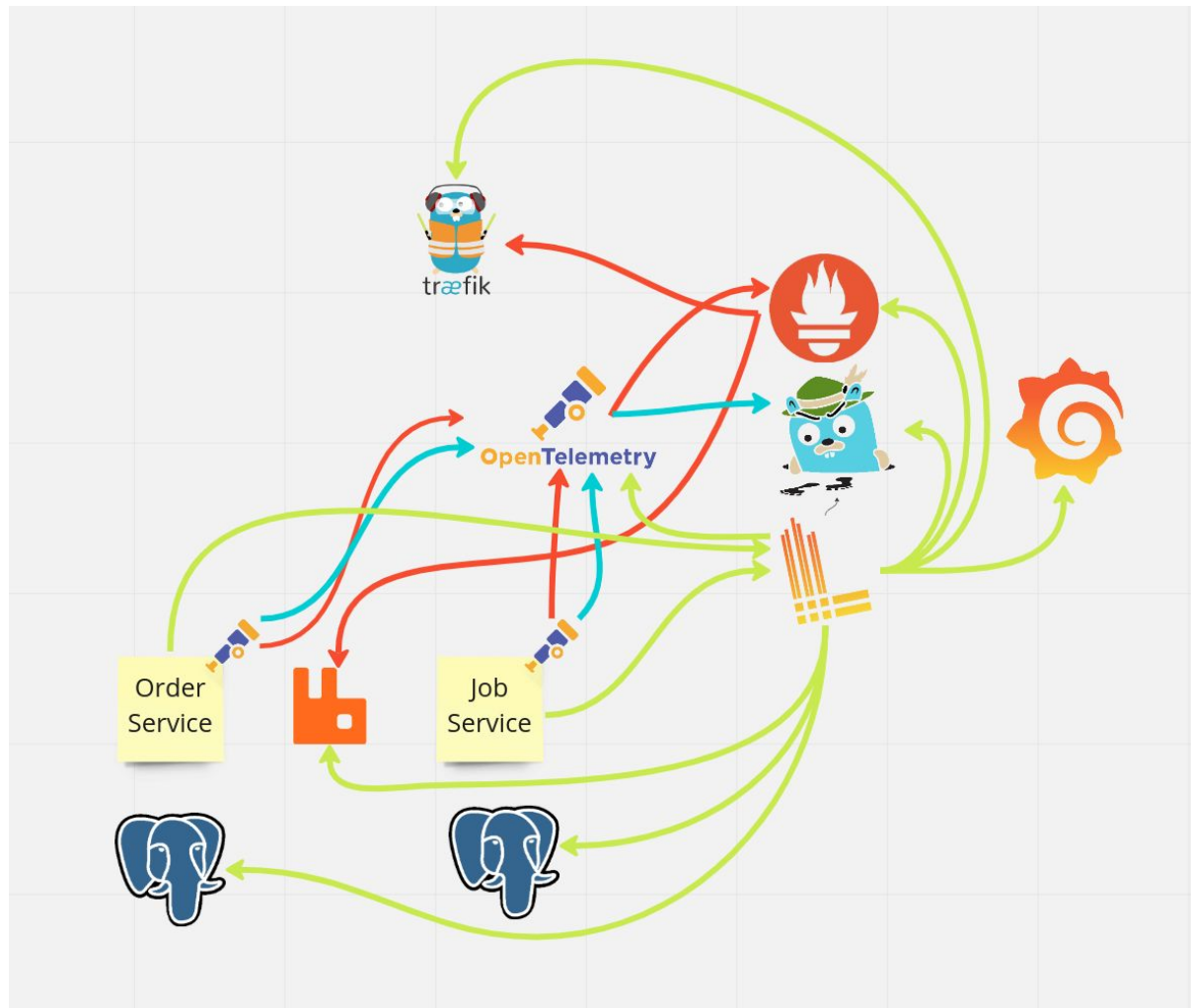


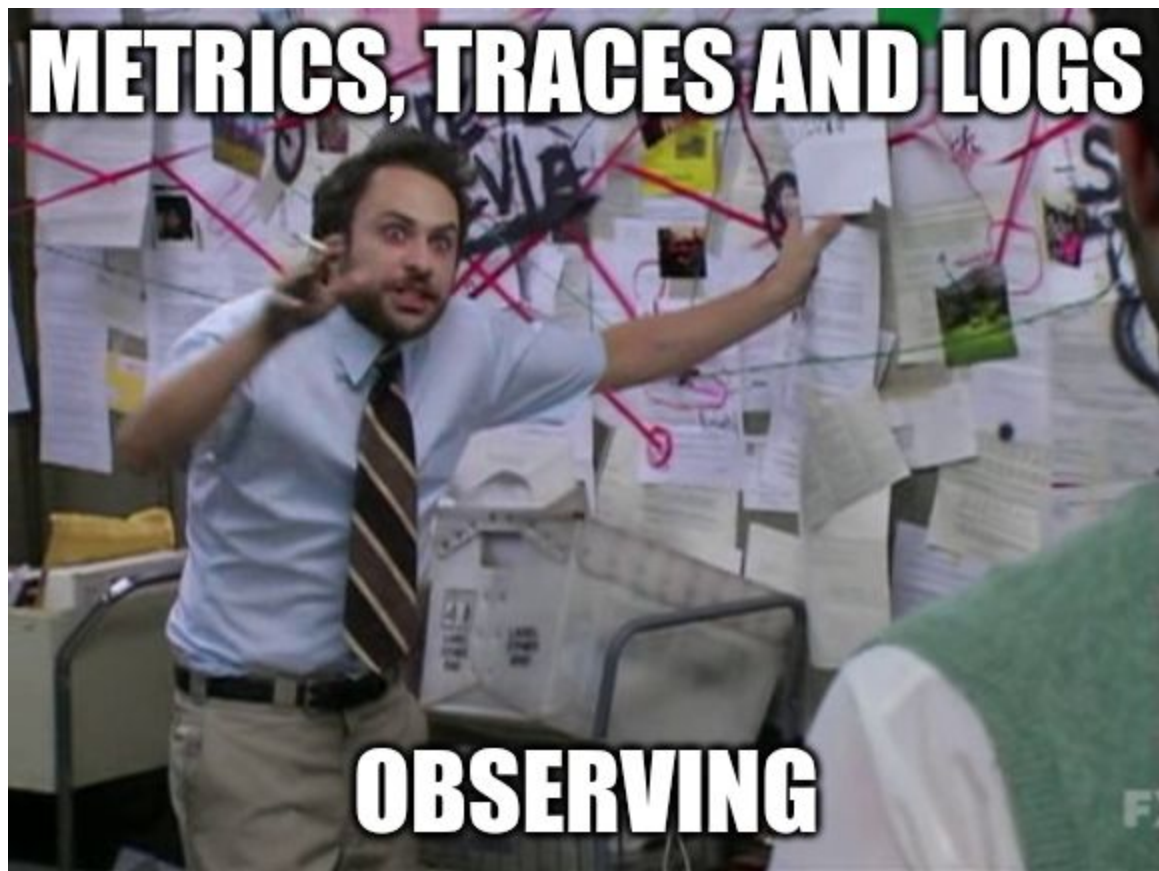
















Repo as a gift



<https://github.com/ejf-coders51/stop-logging-start-observing>