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CloudNativeCon

Europe 2026

#KubeCon #CloudNativeCon

Schema Inference Automation

A new era for Telemetry management



Who are we?



Arthur Silva Sens

*Software Engineer @ Grafana Labs
Prometheus and OpenTelemetry Maintainer*



Nicolas Takashi

*Observability Tech Lead @ Coralogix
Perses Maintainer*

Observability Day
EUROPE

Observability by Design: Leveraging OpenTelemetry Weaver To Take Control of Your Observability

Josh Suereth, Google & Laurent Querel, F5



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Observability Day

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A Practical Blueprint for Evolving Observability Schemas

*Benedikt Bongartz, Red Hat
& Sebastian Rabenhorst, Shopify*



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Observability by Design

- Treat observability like an API, not an afterthought!
- Design telemetry as part of the system contract!
- Instead of developers adding arbitrary telemetry, **signals are declared in a schema-like registry!**

OpenTelemetry Weaver



Observability by Design

Treat your telemetry like a public API



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Observability by Design

```
groups:
- id: metric.http_request_duration_seconds
  type: metric
  brief: 'HTTP request duration by endpoint and method'
  stability: stable
  attributes:
  - id: endpoint
    type: string
    examples:
    - /api/parcels
    - /api/parcels/{id}
  requirement_level: required
  stability: stable
```

- Maintain backwards compatibility
- Policy enforcement
- Code generation
 - Instrumentation
 - Dashboards
 - Alerts
 - Docs
 - Literally whatever your want.

OBSERVABILITY
— **NIRVANA** —



Observability by Design

Observability by ~~Design~~ Incident

Observability by ~~Design~~ Incident

Cargo-Culting

Observability by Design Incident

Cargo-Culting

Copy-pasting

Observability by Design Incident

Cargo-Culting

Copy-pasting

Accident

Implement `weaver registry infer` command #1138

 **Merged** [jerbly](#) merged 21 commits into `open-telemetry:main` from `ArthurSens:weaver-registry-infer`  last month

 Conversation **69**

 Commits **21**

 Checks **23**

 Files changed **5**



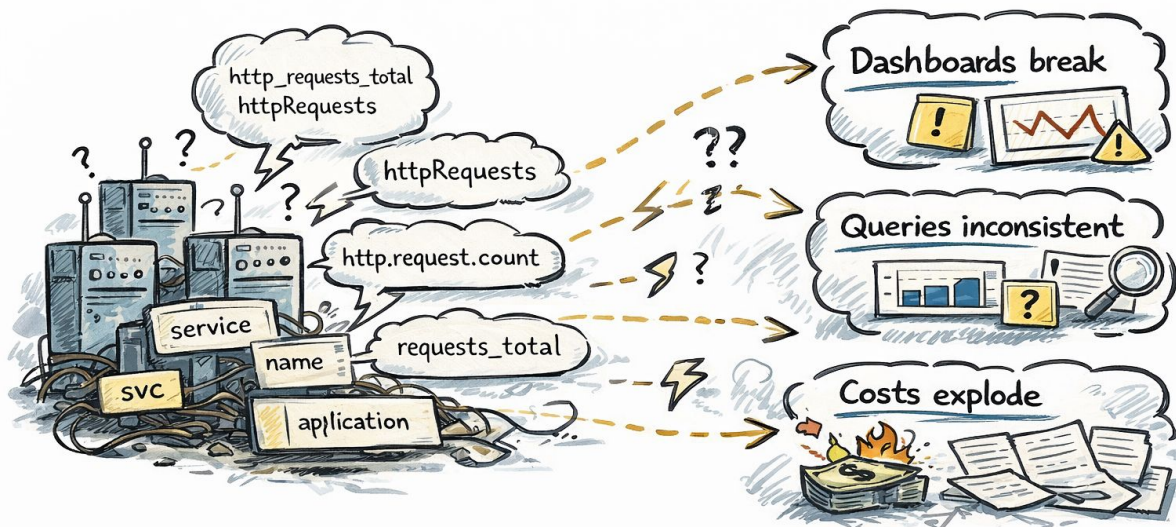
ArthurSens commented on Jan 14

Member



Observability by Design

Legacy Observability Chaos



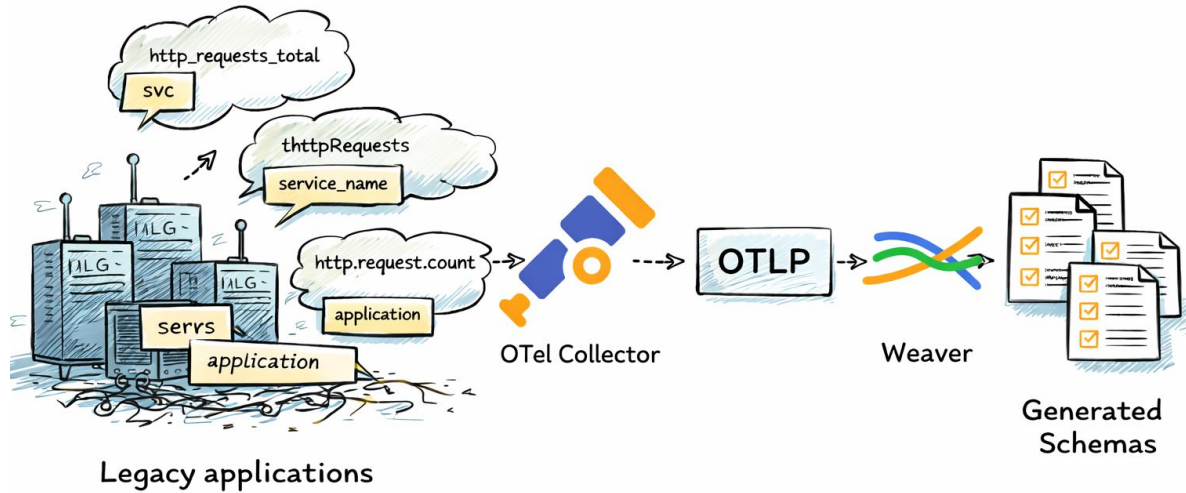
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Schema Inference



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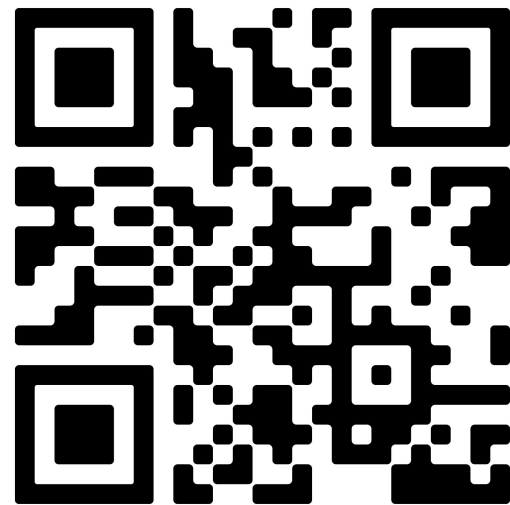
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DEMO TIME!!!



Schema Inference

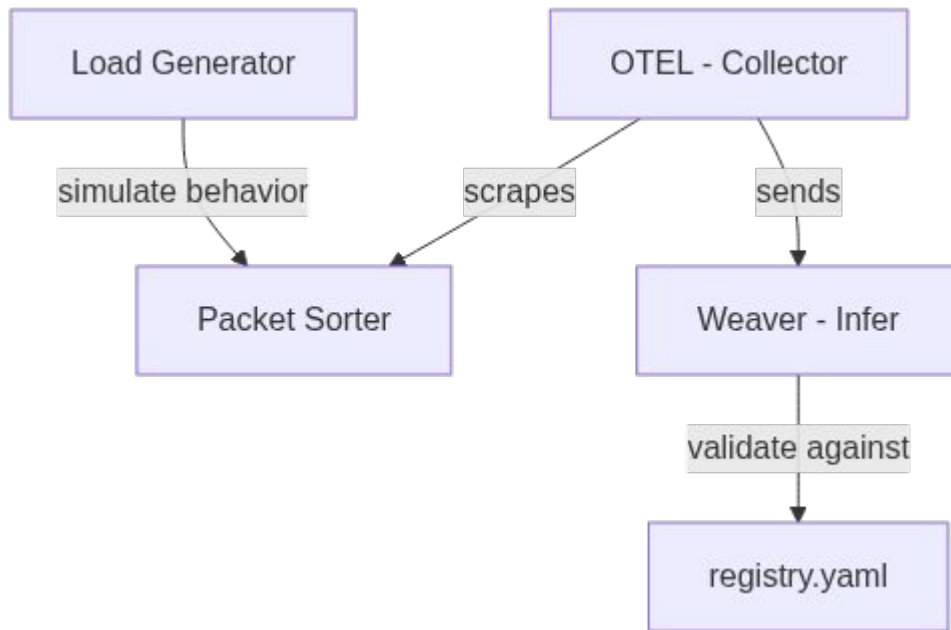


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Live Check

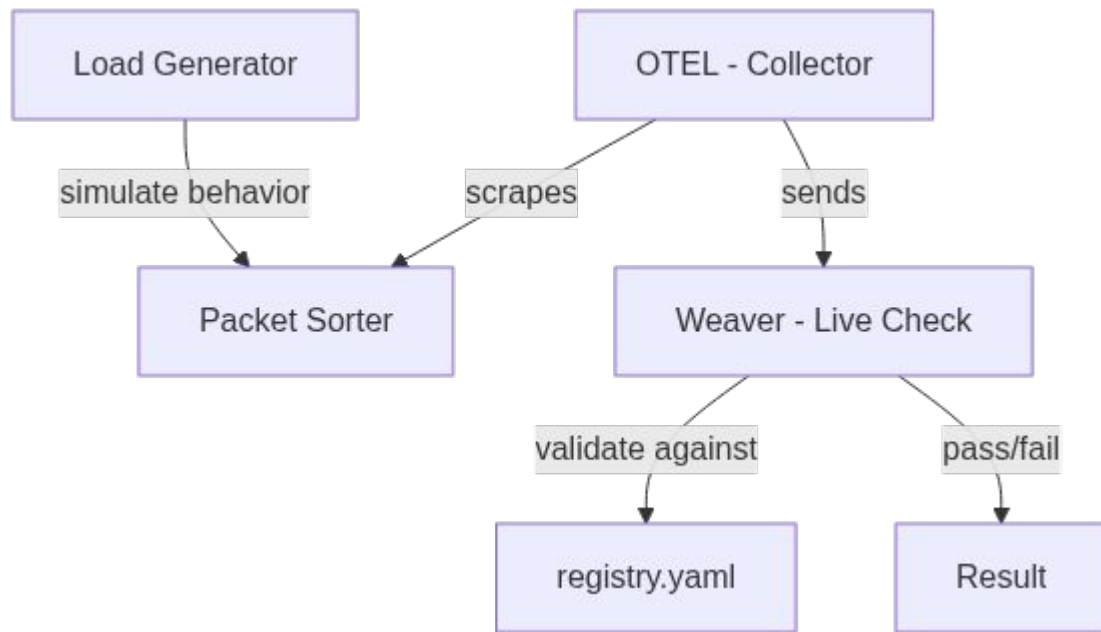


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Live Check



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 **github-actions** bot commented 2 days ago

Contract test failed

The telemetry emitted by this PR no longer matches the committed contract in `registry/registry.yaml`.

What to do next

1. Run `make live-check` locally.
2. Review the instrumentation change against `registry/registry.yaml`.
3. If the contract changed intentionally, update the registry in the same PR.

Why this check exists

- The app can still build and run while telemetry silently drifts.
- This CI check protects schema compatibility during instrumentation migrations.

Output

```
=====
Live-Check Results
=====

x Found 1 contract issue(s):

- [violation] http_request_duration_milliseconds: Metric does not exist in the registry.

=====
Live-check validation complete!
=====
```

Code Generation



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The Schema

Centralized Contract

- Registry Schema

The Artifacts

Safe Implementation

- Documentation
- Dashboards
- Typed SDKs

Overview



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Schema Infer

Contract Testing

Code Generations

Schemas-aware Prometheus



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prometheus / prometheus

Q Type / to search

Issues 513 Pull requests 244 Discussions Actions Projects Wiki Security 2 Insights

promql: Implement support for versioned OTel semantic conventions #17702

View status Code

Draft aknuds1 wants to merge 6 commits into prometheus:main from aknuds1:arve/otlp-semconv-schema

Conversation 1 Commits 6 Checks 31 Files changed 21 +2,888

aknuds1 commented on Dec 16, 2025 • edited Contributor

Reviewers bwplotka



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Thanks for the collaboration and PR reviews!



jsuereth



lquerel



jerbly



Imolkova



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Thank You All

