

Research plan

Survey: OTel x Prometheus Interoperability '26

Research plan

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Issue: [Link](#)

Form: [Link](#)

README: TBD

Background

In 2024 we ran a survey about OTel and Prometheus interoperability to help inform some of the decisions communities were making to make these two projects more compatible. In 2026, new challenges are relevant for us and we have a new set of questions to ask.

Research questions

1. How easy is it for users to use OTel and Prometheus together?
2. How do users prefer to instrument their infrastructure and applications?

Method

To answer these research questions, we will run a survey where we will ask people who use both Prometheus and OpenTelemetry about their experience and opinions.

We will look for participants in two ways. First, we will use the usual SIG End-user channels (LinkedIn, Mastodon, and Bluesky), as well as a website banner if possible. Also, we will be collecting responses IRL at KubeCon Europe 2026 in Amsterdam – either at Prometheus booth, OpenTelemetry table, or randomly at the venue.

Questionnaire

Conversation starter for KubeCon

Hey, do you use Prometheus and OpenTelemetry? I am doing a survey about them. Would you like to share your experience with me, please?

The survey is anonymous; data will be published in our public repo under a public domain licence. Do you want me to read you a full privacy notice, or shall we skip to the questions right away.

Intro

Do OpenTelemetry and Prometheus play nicely in your stack? OTel and Prometheus communities want to know! This survey is our way of understanding how people use our tools in the real world — and where the rough edges are. Your experience matters to us!

Privacy notice: *The data collected in this survey will be anonymised and publicly shared in the GitHub repositories [prometheus-community/ux-research](#) and [opentelemetry/sig-end-user](#) under the [CC0 1.0](#) Universal public domain dedication. This means anyone can freely use, share, and build upon the data without restriction. By submitting this survey, you acknowledge that your anonymised responses will be made publicly available under these terms. Questions? Contact [#prometheus-ux-wg](#) or [#otel-sig-end-user](#) at CNCF Community Slack.*

Section 1: OpenTelemetry

1. Do you use OpenTelemetry in production for metrics? (*)
 - a. Yes
 - b. No <submit form>

Section 2: Prometheus

2. Where do you store your metrics primarily? (*)
 - a. Prometheus
 - b. Open-source Prometheus backend (Thanos, Cortex, Grafana Mimir)
 - c. Prometheus-compatible (or PromQL compatible) backend from a vendor
 - d. A backend not associated with Prometheus, not compatible with PromQL <submit form>
 - e. I don't know <submit form>
 - f. Other...(type in) <submit form>

Section 3: Role

3. What type of team do you work on? (*)
 - a. Dev
 - b. DevOps
 - c. Operations
 - d. SRE
 - e. Platform Engineering
 - f. Observability
 - g. Sysadmin
 - h. Sales Engineering
 - i. DevRel
 - j. Other...(type in) <submit form>

Section 5: Infrastructure instrumentation

4. How do you instrument infrastructure metrics collection? (choose all that apply) (*)

- a. I don't collect infrastructure metrics
- b. OTel receivers
- c. Prometheus exporters
- d. Built-in /metrics endpoint (without exporter)
- e. Built-in OTLP push
- f. OpenTelemetry eBPF Instrumentation (a.k.a. OBI)
- g. I don't know
- h. Other...(type in)

Section 7: Applications instrumentation

- 5. How do you instrument application metrics collection? (choose all that apply) (*)
 - a. I don't collect application metrics
 - b. OTel SDKs
 - c. Prometheus SDKs
 - d. OpenTelemetry eBPF Instrumentation (a.k.a. OBI)
 - e. I don't know
 - f. Other...(type in)

Section 8: Telemetry processing

- 6. What do you use to process or transform metrics data before you send it to storage? (choose all that apply) (*)
 - a. Nothing, it goes to storage right away
 - b. Prometheus relabeling rules or record evaluations
 - c. Open source OTel Collector (core, contrib)
 - d. Custom-built OTel Collector built with OCB
 - e. Vendor distribution of OTel Collector
 - f. I don't know
 - g. Other...(type in)

Section 9: Ease-of-use and open feedback

- 7. How easy or difficult is it to use OpenTelemetry and Prometheus together? (*)
 - a. Very easy
 - b. Somewhat easy
 - c. Neither easy nor difficult
 - d. Somewhat difficult
 - e. Very difficult

- 8. What would you like us to improve to make OpenTelemetry and Prometheus work better together? (optional)
 - a. <Open-ended>

Section 10: Demographic questions 1

9. What industry do you work in? (*)
 - a. Technology
 - b. Retail
 - c. Finance
 - d. Other
 - e. I am not employed right now <submit form>
 - f. I am a student <submit form>

Section 10: Demographic questions 2

10. Where in your observability journey is your organization? (*)
 - a. Beginner - Learning about observability / Have used monitoring tools
 - b. Intermediate - Setting up an observability practice
 - c. Expert - Having a well-established observability practice
11. How large is your organization? (*)
 - a. 1-49 employees
 - b. 50-99 employees
 - c. 100-999 employees
 - d. 1000+ employees
12. Do you work for an observability or APM (monitoring) vendor? (*)
 - a. Yes
 - b. No
13. Are you a Prometheus or an OpenTelemetry maintainer? (*)
 - a. Yes
 - b. No

Thank you message

Lessons learned

Notes

1. How well do you understand Prometheus?
 - a. Areas
 - i. Libraries
 - ii. Formats
 - iii. Server configuration
 - iv. PromQL
 - b. Evaluations
 - i. Not at all familiar
 - ii. Somewhat familiar

- iii. Expert
- 2. How familiar are you with OpenTelemetry?
 - a. Areas
 - i. Libraries
 - ii. OTLP
 - iii. Collector
 - iv. Operator
 - b. Evaluations
 - i. Not at all familiar
 - ii. Somewhat familiar
 - iii. Expert

Meeting notes

Meeting notes

Summary of topics

1. Do users prefer to run **Prometheus exporters or OTel Collector receivers**? Why do people choose one over the other?
2. Do users prefer to write instrumentation with the **Prometheus SDK or the OTel SDK**? Why do people choose one over the other?
3. Do users prefer a **queryless experience**, or do they prefer to **write queries themselves**? Why do people choose one over the other?
4. Do people find the incompatibility between OTel and Prom **naming conventions** severely problematic?
5. Do people find the incompatibility between OTel and Prom **types** severely problematic?

OpenTelemetry Prometheus Workgroup

[Agenda link](#)

1. [Andrej] Prometheus x OTel interoperability survey
 - a. We have 3 research questions (exporter preference, SDK preference, query writing approach). Anything else popped up?
 - i. Do users prefer to run **Prometheus exporters or OTel Collector receivers**? Why do people choose one over the other?
 1. David: Push via OTLP is another option.
 2. David: Depends if it is more OTel or Prom focused.
 3. Arthur: If prometheus exporter is more popular, we can push more
 4. David: Are Prom exporters and OTel Collector used together? Or people don't do that?
 5. David: Is it a real user group who use Prom exporter and collector & OTel. If so, exporters as collector receivers would be helpful for them.
 - ii. Do users prefer to write instrumentation with the **Prometheus SDK or the OTel SDK**? Why do people choose one over the other?
 - iii. Do users prefer a **queryless experience**, or do they prefer to **write queries themselves**? Why do people choose one over the other?
 1. Arthur: In Prom, querying is required. In OTel, people might be more used to vendors pre-built dashboards.
 2. David: PromQL is the best OSS OTel query language, but it is not OTel query language.
 3. Arthur: We might be loosing adoption if we focus too much on making people write query by hand.
 4. David: Would be cool to have a Prom+OTel stack?

5. David: Asking people about
 - b. What are your hypotheses? What decisions do you want to make based on these data?
 - c. Krajo: One area – what are the “top 3 things you would like to improve in interoperability?”
 - d. Krajo: Naming conventions... I will have to think about this. It includes semantic conventions. Would you mind if SDK would lint for you your metric names?
 - e. David: Would you like if exporter would use OTel schema format. It would be cool to have a signal around I would like to start with Prom metrics and end up with OTel one, or the other way around? E.g. Do you often find yourself in a need to translate Prom name of a metric to OTel metric.
 - f. Arthur: How much of a pain it is for you that Prom and OTel semantic conventions are different.
 - g. David: One area is type compatibility. Some types in OTel do not have representation in Prom and many types in Prom without representation in OTel:
 - i. Should OTel have a stateset type?
 - ii. Should Prometheus have an updowncounter type?

Prometheus UX/Design Working Group

[Agenda link](#)

1. We need to understand what they are monitoring.
 - a. Is it just infra vs apps?
 - i. Arthur Silva Sens This is true in general. Infra companies are using dev tools. But end users are not doing this.
2. What is their monitoring setup.
 - a. Instrumentation
 - i. Exporter/receiver
 - ii. SDK
 - iii. OTel specific: OBI
 - iv. CNCF: Jaeger, FluentD
 - v. Other
 - b. Querying
 - i. Query-less
 1. Natural language based
 2. Opinionated
 - ii. Query by hand
 - c. Storage
 - i. Prometheus
 - ii. CNCF: Thanos, Cortex, Jaeger
 - iii. Other
 - d. Query language
 - i. PromQL

- e. Collector
 - i.
- f. Visualization?
- 3. We need to understand whether they considered other things.
 - a. Here and later we can focus only on OTel & Prom.
- 4. What make them choose one thing over another.
 - a. Do we have a list of common reasons? Or do we want to let people explain open endedly? – we cannot have too many open ended questions.

Notes

1. Arthur Silva Sens They might monitor mixture of infra & apps and use mixture of Exporters & receivers & SDKs for different thngs
2. Query less – UI-based, natural language based (AI assistants), opinionated solutions (vendor has opinions on how certain things are done)?
3. PromQL can be used outside Prometheus (Mimir, Dash0,...)
4. We have to come up with a specific talk track on how to approach people
 - a. Hey are you a Prometheus user? Hey, have you ever used OTel?
5. 2 booths at KubeCon
 - a. Prometheus booth, and most likely OTel will have its own. If we both work on this, we can cover both.
 - b. We can ask people and fill the survey for them, the old school way.
6. Google Form, we will be typing responses.

Hypotheses

1. Personas
 - a. Prometheus old-schooler
 - b. Mix
 - c. OTel + Vendor fan
1. People who use Prometheus for instrumentation, prefer writing PromQL by hand more, than those who use OTel for instrumentation.