What’s New in OpenTelemetry

Dotan Horovits
@horovits
The vision: unified observability

Metrics
- Detect

Observability
- Logs: Diagnose
- Traces: Isolate & improve

@horovits
The reality: fragmented instrumentation

- Protocol
- SDK
- Collector
- API
- Backend
- Agent
OpenTelemetry (a.k.a. OTel)

“OpenTelemetry is an observability framework – software and tools that assist in generating and capturing telemetry data from cloud-native software.”

Across Traces, Metrics, Logs

@horovits
OpenTelemetry Applies for CNCF Graduation
Project Stats

OpenTelemetry

@horovits
Second most active CNCF project

Source: CNCF Dev Stats
Second most active CNCF project

PROJECT SNAPSHOT

OpenTelemetry made its first commit to GitHub in April 2019. Since joining CNCF on May 17, 2019, OpenTelemetry has added:

- 67,250+ Pull requests
- 9,160+ Contributors
- 466,000+ Contributions
- 55,640+ Code commits
- 1,100+ Contributing companies

Source: CNCF Project Report for OpenTelemetry

@horovits
Second most active CNCF project

Source: CNCF Project Report for OpenTelemetry
Second most active CNCF project

Source: CNCF Project Report for OpenTelemetry
Major companies contribute
Major companies contribute
Flagged by Analysts as an Emerging Technology

Source: Gartner, Hype Cycle for Emerging Technologies
Quick Recap

OpenTelemetry
OpenTelemetry

A unified set of vendor-agnostic APIs, SDKs and tools for generating and collecting telemetry data, and then exporting it to a variety of analysis tools.

APPLICATION

Generate
Emit

COLLECTOR

Receive
Process
Export

OTLP

OTLP

@horovits
OpenTelemetry
OTel Logging is GA!

Source: PGNDIR

@horovits
State of the signals

**Generally Available**

- API, SDK, Protocol are stable
- Client libraries for Java, Go, .Net, C++, JavaScript, Python, PHP, Ruby, Swift, Erlang are stable
- OpenTracing and OpenCensus are deprecated

---

**Traces**

- API, SDK, Protocol are stable
- Client libraries for Java, Go, .Net, C++, JavaScript, Python, PHP are stable
- Collector supports metric pipelines
- Prometheus support

---

**Metrics**

- API, SDK, Protocol are stable
- Client libraries for Java, Go, .Net, C++, JavaScript, Python, PHP are stable
- Collector supports metric pipelines

---

**Logs**

- API, SDK, Protocol are stable
- Integration with existing logging frameworks
- Client libraries for Java, .Net, C++, PHP are stable
- Log appenders are under development in many languages
- New strongly-typed and machine-readable logging format

@horovits
Elastic Common Schema merge into OpenTelemetry

Announcing the Elastic Common Schema (ECS) and OpenTelemetry Semantic... Today, we’re very excited to make a joint announcement with Elastic about the future of Elastic Common Schema (ECS) and the OpenTelemetry Semantic...
Adding Continuous Profiling

The OpenTelemetry community is looking into supporting Continuous Profiling. Here's the vision draft. Great work by all the contributors! Check out OTEP-212 on GitHub and approve if you support:

https://lnkd.in/d9TRbPmK

Are you new to Continuous Profiling? Check out this intro post:

Adding Continuous Profiling

Dotan Horovits  
@horovits  

A major milestone for adding Continuous Profiling to #OpenTelemetry: The extension proposal (OTEP) outlining the data model has been merged 🎉

I need to look into that deeper @OpenObserv with the SIG members - @felixge @rperry joining me?  
#open-source #devops #observability

Introduces Profiling Data Model v2 #239

jsuereth merged 37 commits into open-telemetry:main from petethepig:profiing-pprofextended last week

OpenTelemetry and 3 others
Adding Continuous Profiling

Charting New Territory: OpenTelemetry Embraces Profiling

March Episode

DOTAN HOROVITS
Principal Developer Advocate, Logz.io

RYAN PERRY
Principal Product Manager, Grafana Labs

FELIX GEISENDÖRFER
Senior Staff Engineer, Datadog

@horovits
Adding Real User Monitoring support
Adding Real User Monitoring support (client-side tele.)

Proposal to create a SIG for Real User Monitoring #830
Closed martinkuba opened this issue on Sep 8, 2021 · 25 comments

Semantic conventions for browser events #3286
Closed scheler wants to merge 7 commits into open-telemetry:main from scheler:browser-events

Real User Monitoring (RUM) with Otel metrics #3500
Closed htxpoe opened this issue on Dec 21, 2022 · 2 comments

@horovits
Ease of Operation with Remote Agent Mgmt.

open-telemetry/opamp-spec

OpAMP Specification

OpAMP control plane

ServerToAgent  AgentToServer

OTel collector  OTel collector  OTel collector

receive telemetry signals
ingest telemetry signals

@horovits
Ease of Operation with Remote Agent Mgmt.

open-telemetry/opamp-spec
OpAMP Specification

open-telemetry/opamp-java
OpAMP protocol implementation in Java

open-telemetry/opamp-go
OpAMP protocol implementation in Go

@horovits
eBPF for auto-instrumentation

open-telemetry/open-telemetry-go-...
OpenTelemetry Auto Instrumentation using eBPF

Contributors: 31
Issues: 73

Where Are My App’s Traces??
Instrumentation in Practice

@horovits
OpenTelemetry demo reached GA
Sunsetting OpenCensus

(OpenTelemetry achieved feature parity)
OTel Day is Back!

@horovits
Getting Started

OpenTelemetry
Know your stack

Which languages?  
Which signals?  
Which protocols?  
Which analytics tools?

Then check status for each and follow respective guides
https://opentelemetry.io/status/  
https://opentelemetry.io/docs/  
https://opentelemetry.io/registry/  
https://github.com/open-telemetry/
Google "OpenTelemetry Guide", or go to: bit.ly/otel-kubecon
Thank you!

Dotan Horovits, @horovits