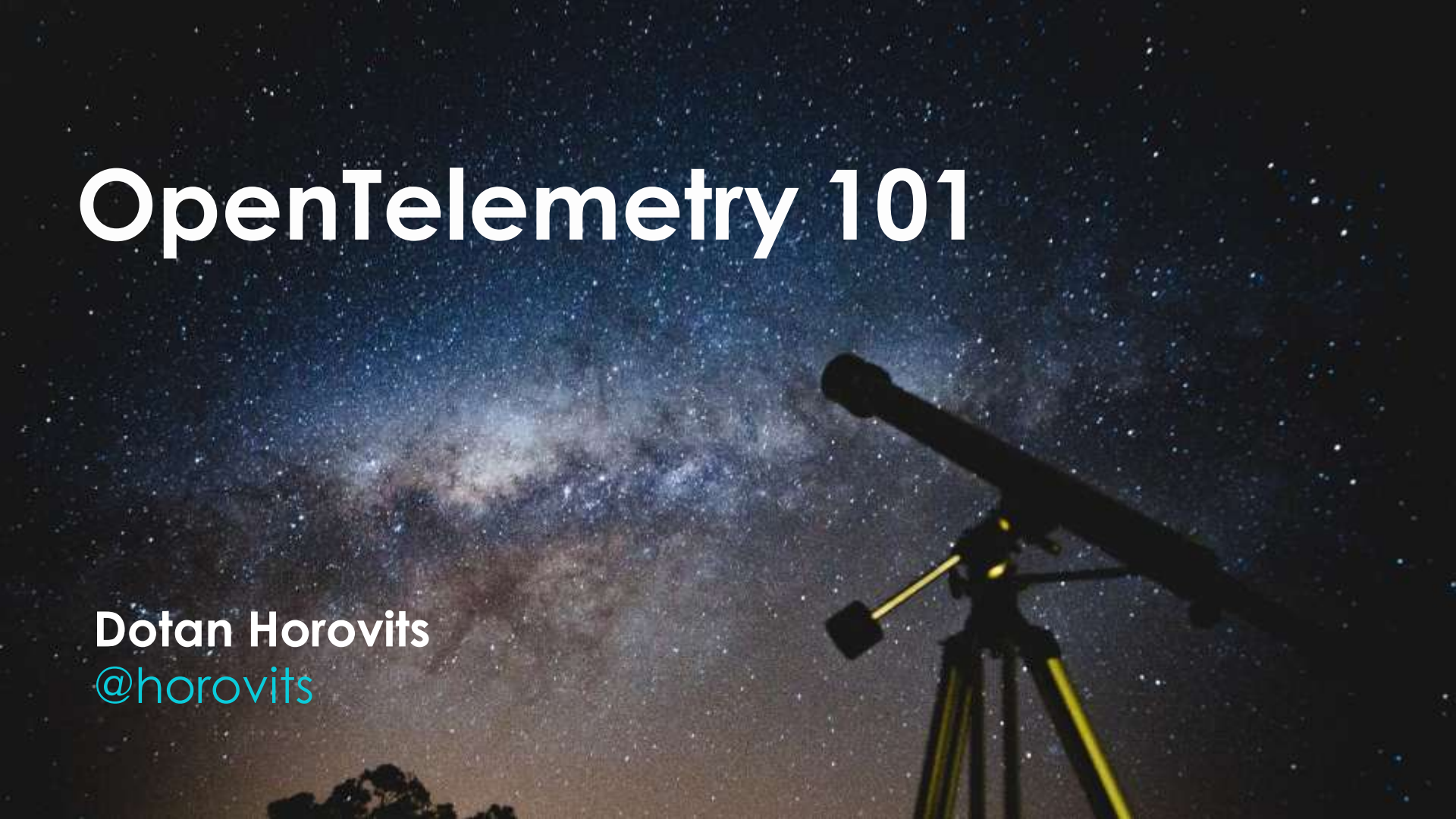
OpenTelemetry 101



Dotan Horovits
@horovits

AGENDA

- What is it
- Components
- Project status
- How to get started

Dotan Horovits

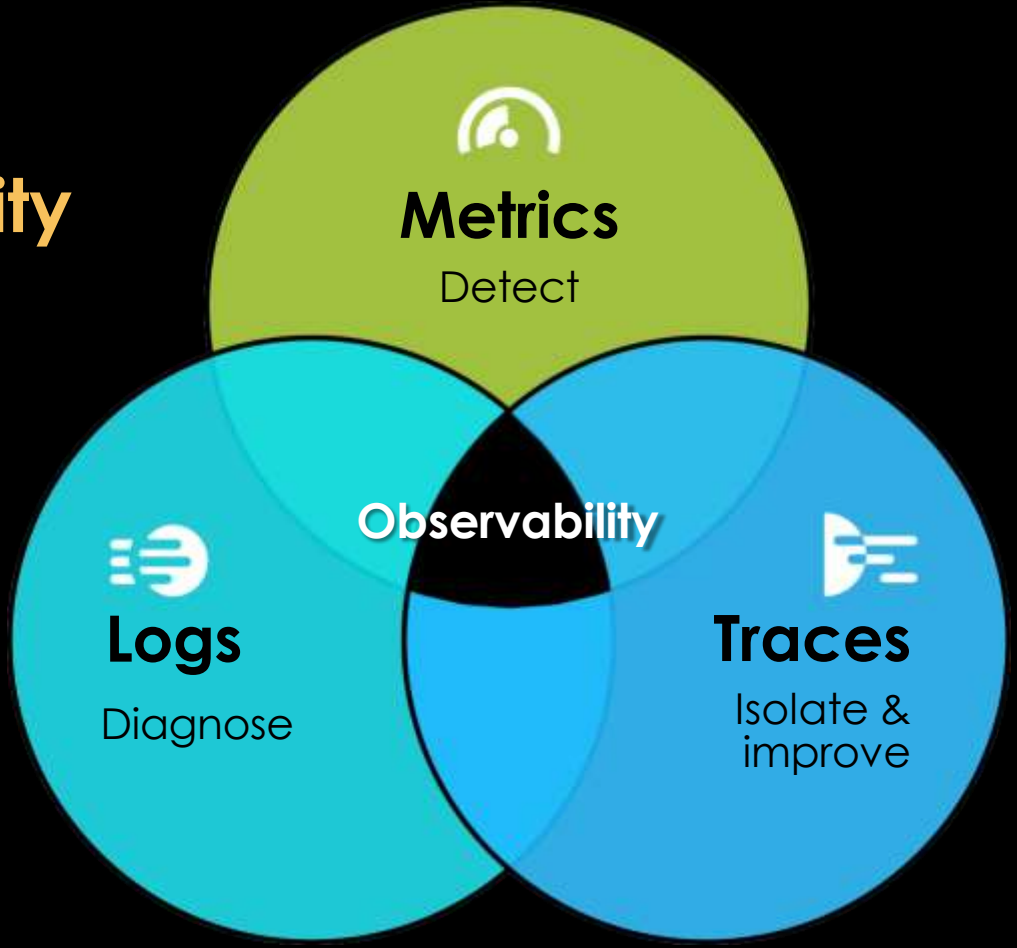
@horovits

- Principal Developer Advocate at logz.io
- 20 years in the hi-tech industry
- Developer, architect, product
- CNCF advocate, meetup organizer
- OpenObservability Talks podcast

Cloud Native TLV

OPEN OBSERVABILITY TALKS

The vision: unified observability



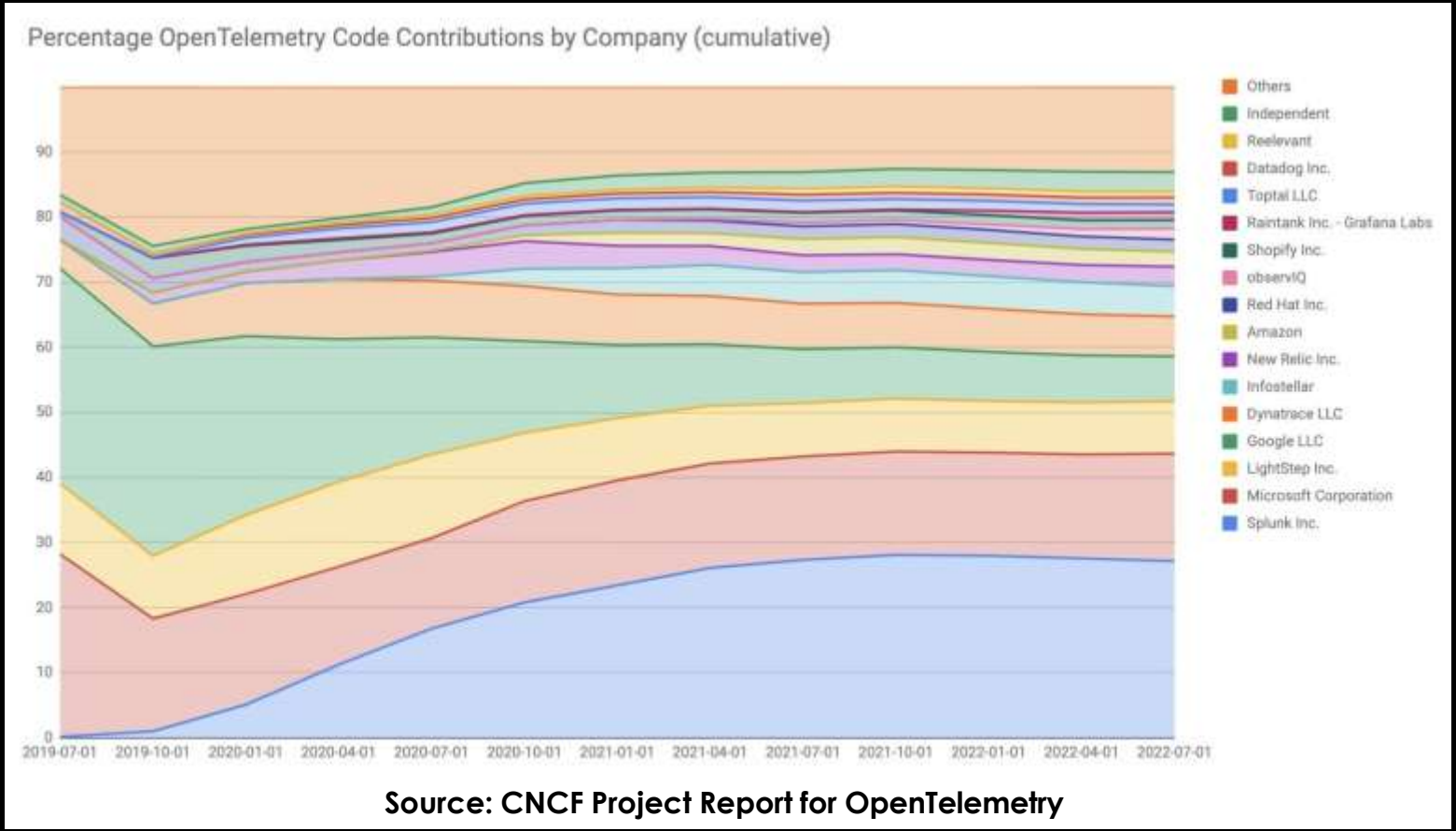
The reality: fragmented instrumentation

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."

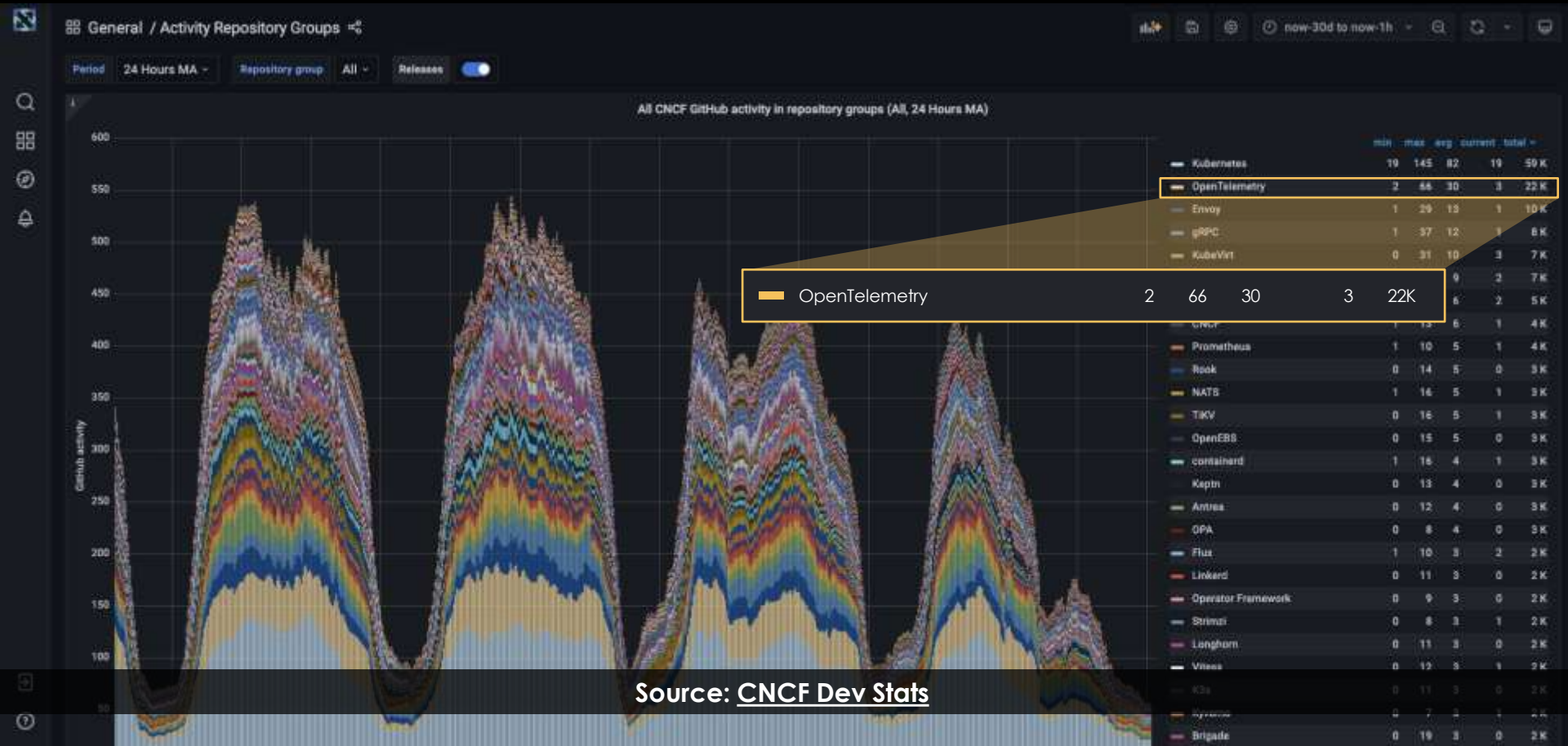
Across Traces, Metrics, Logs

Second most active CNCF project



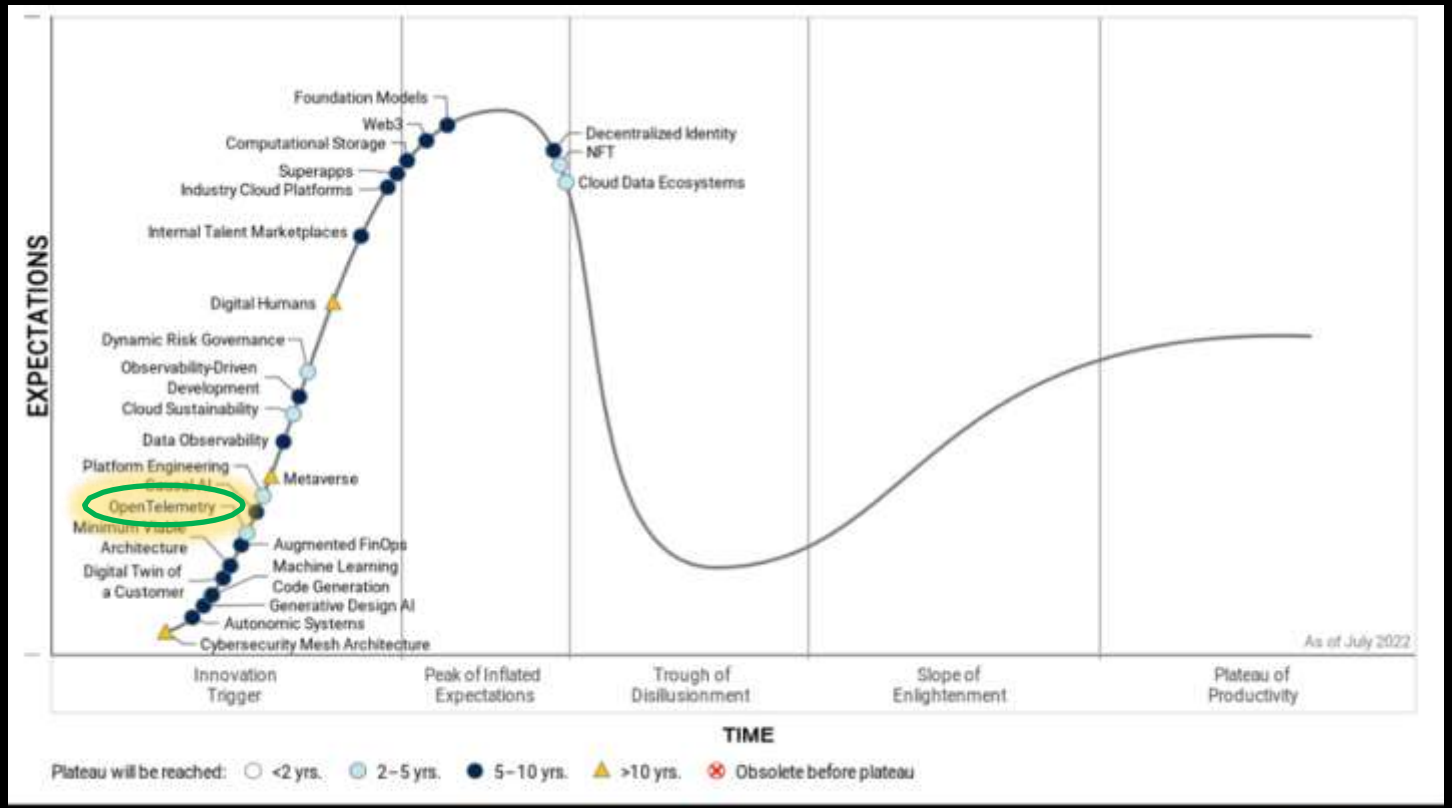
Source: CNCF Project Report for OpenTelemetry

Second most active CNCF project



Source: CNCF Dev Stats

OpenTelemetry on Gartner's Emerging Tech.

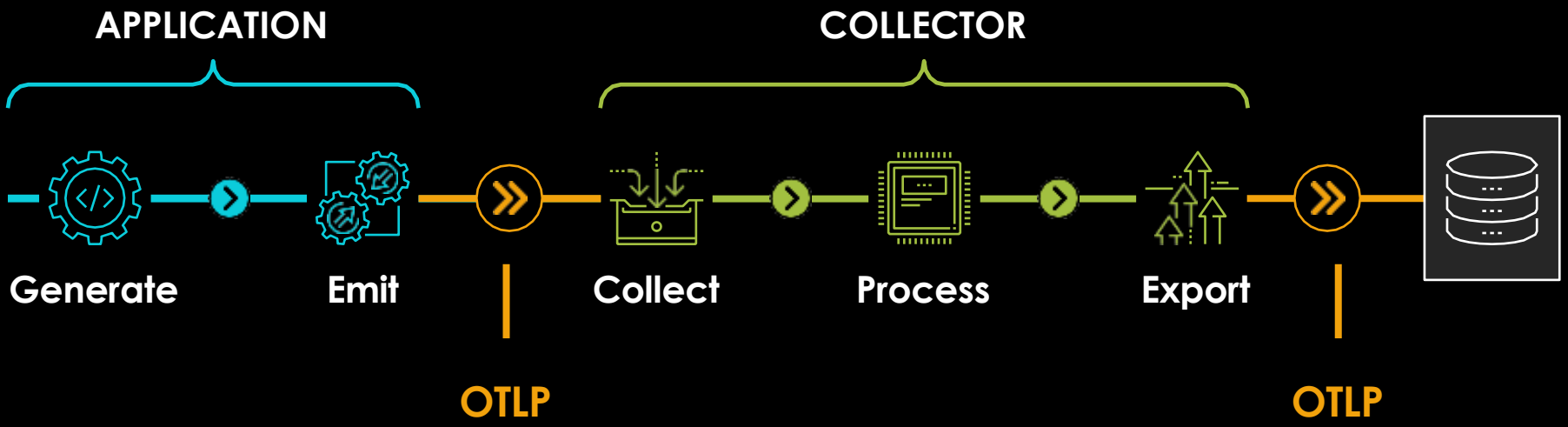


Source: Gartner, Hype Cycle for Emerging Technologies, 2022

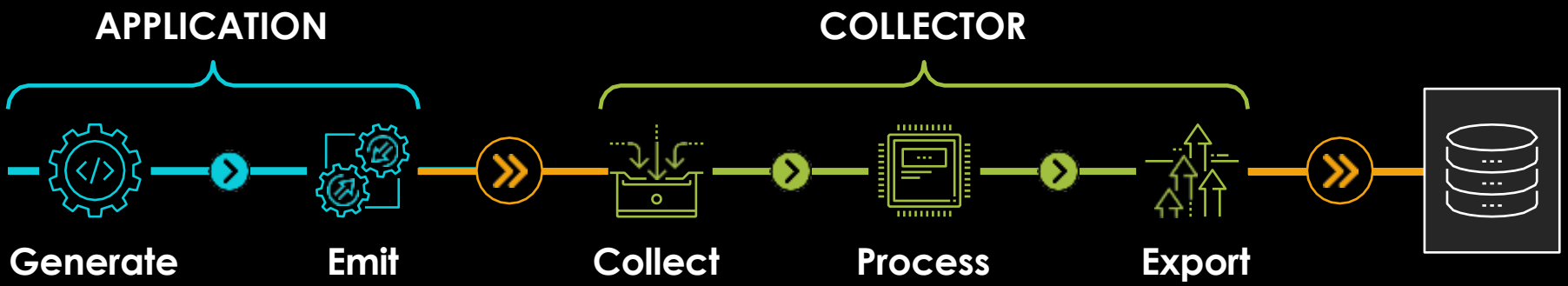
OpenTelemetry

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.

OpenTelemetry



OpenTelemetry Specification



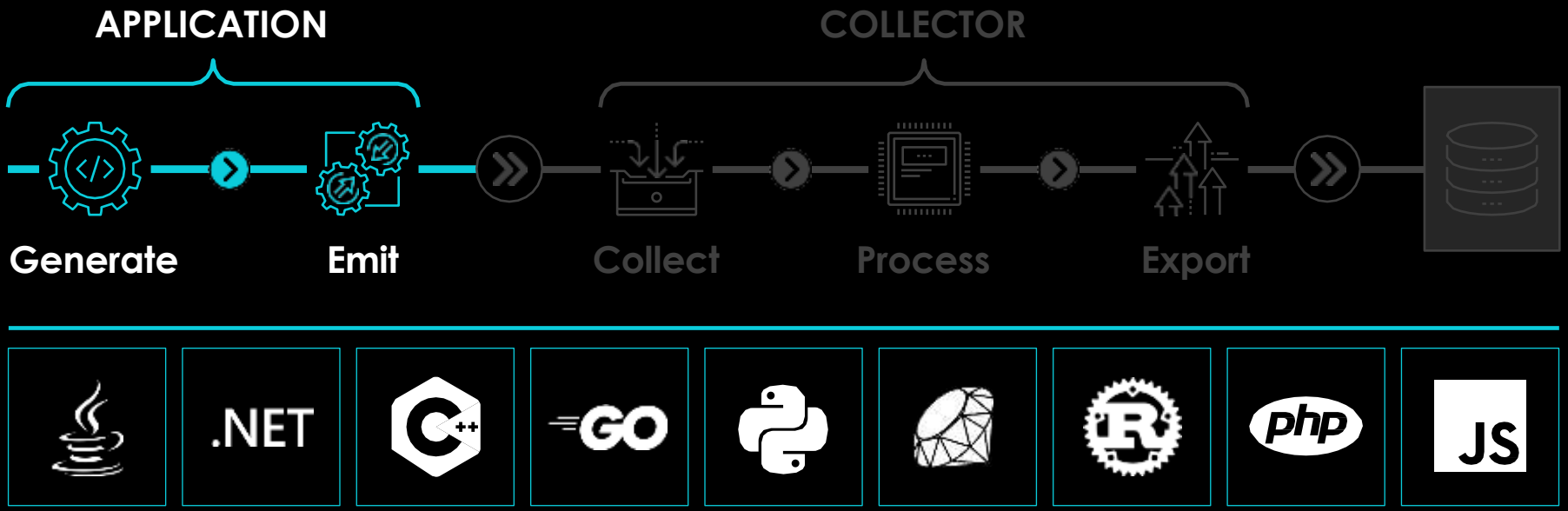
Cross-language requirements for all OpenTelemetry implementations

API specification | SDK specification | Data specification

For traces, metrics and logs

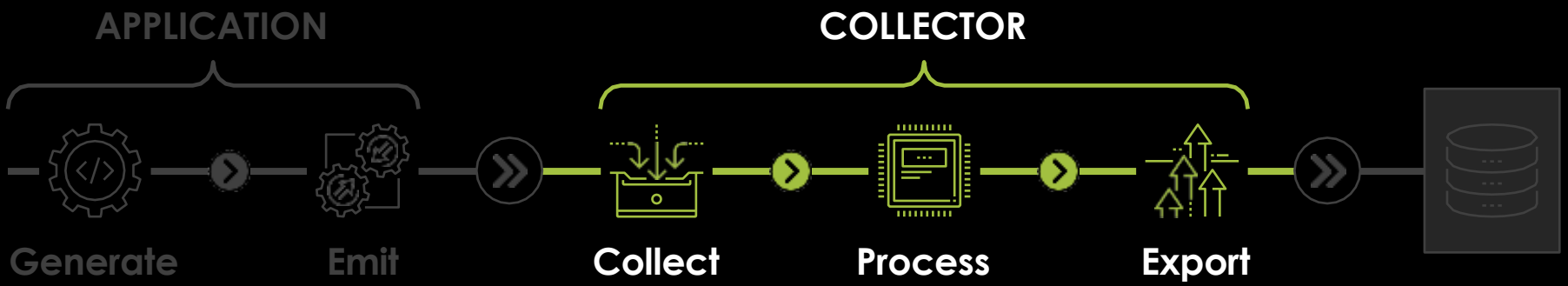
OpenTelemetry Client Libraries

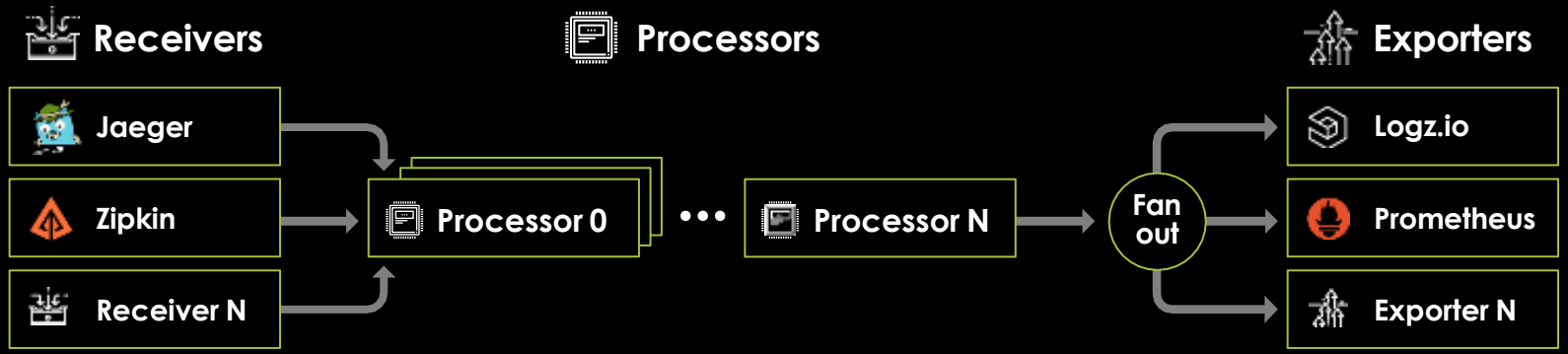
OpenTelemetry



OpenTelemetry Collector

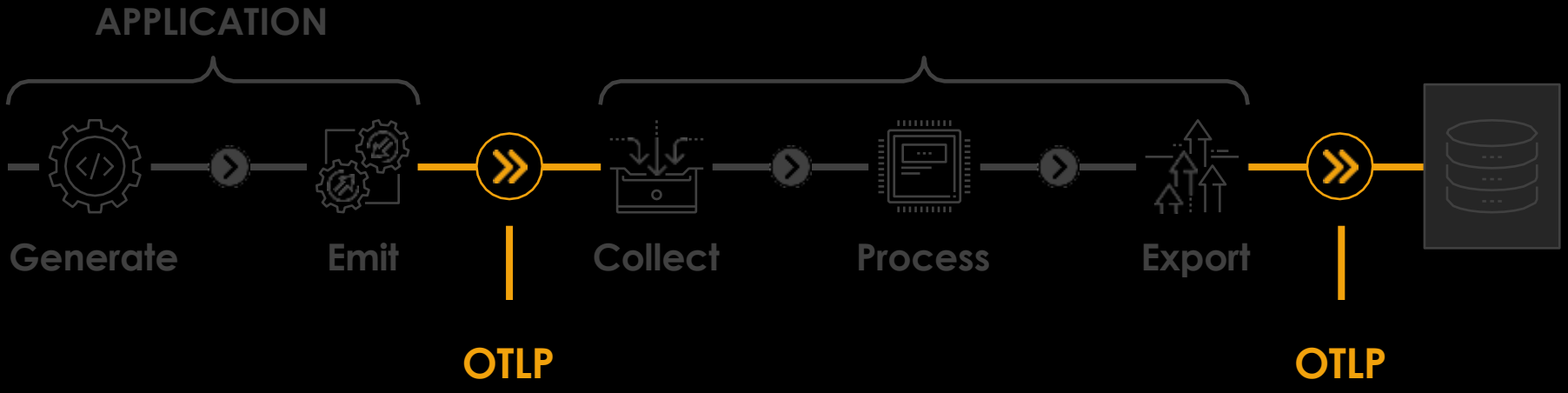
OpenTelemetry





OpenTelemetry Protocol (OTLP)

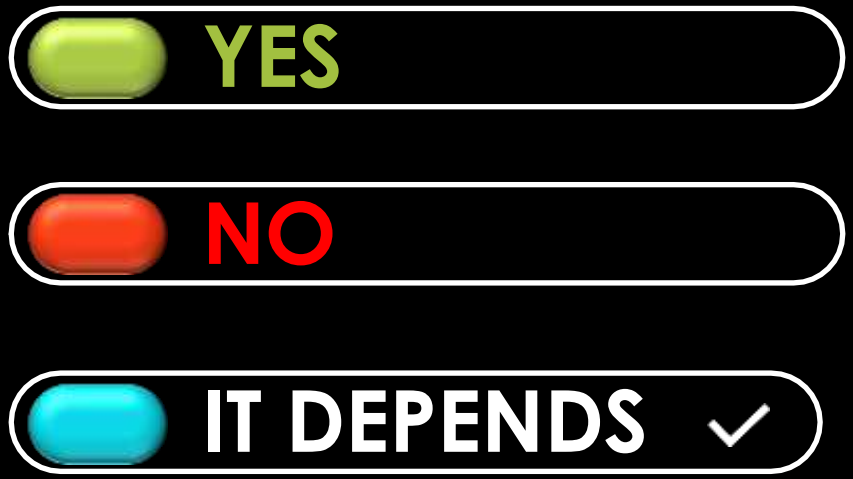
OpenTelemetry



Transport: grpc and HTTP 1.1 | Encoding: protobuf | Telemetry data model

Is OpenTelemetry GA?

OpenTelemetry



Status for...

Metrics Tracing Logging

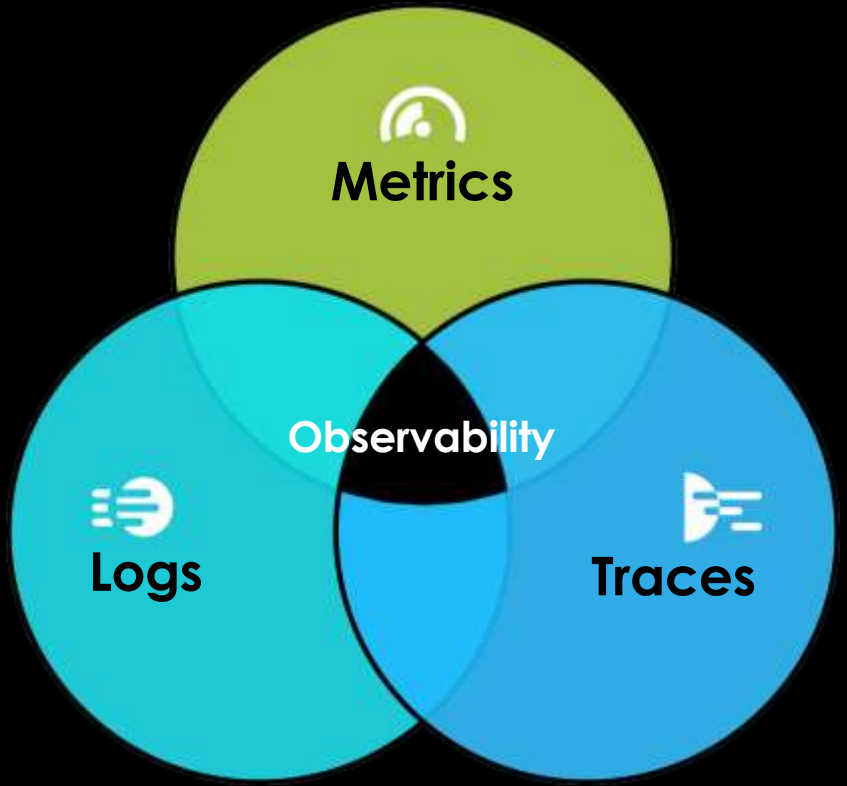
Collector C++ .Net API Protocol

Receivers

GoLang Java

Exporters SDK

State of the signals



State of the signals

Generally Available

- API, SDK, Protocol are stable
- Client libraries >v1.0 for Java, Go, .Net, Python, C++, JavaScript, Ruby, Erlang, Swift
- Working on PHP, Rust and more
- Long-term support, backwards compatibility, and dependency isolation

Release Candidate

- RC announced May ‘22
- API, SDK, Protocol are stable
- Client libraries in Java, .NET, Python, JavaScript in RC
- Working on and more languages
- Prometheus support

Experimental

- Protocol is Stable
- API, SDK are experimental
- Focusing first on integration with existing logging systems
- Log appenders are under development in many languages
- ECS support kicked off

More OpenTelemetry Updates

- Adding Continuous Profiling
- Adding Real User Monitoring support (client-side tele.)
- eBPF for auto-instrumentation
- Ease of Operation with Remote Agent Management
- OpenTelemetry demo reached GA
- Port 4317 is registered @IANA for OpenTelemetry

OpenTelemetry Roadmap and Latest Updates blog:
https://www.cncf.io/blog/2022/07/07/opentelemetry-roadmap-and-latest-updates/

How do I get started with OpenTelemetry?

Metrics

Tracing

Logging

Collector

C++

.Net

API

Protocol

Receivers

GoLang

Java

Exporters

SDK

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/

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https://opentelemetry.io/docs/
https://opentelemetry.io/registry/
https://github.com/open-telemetry/

GUIDE TO
OPENTELEMETRY
OpenTelemetry
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Thank you!
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