dynatrace

OpenTelemetry

Getting started

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OpenTelemetry

- A way of collecting telemetry data to help analyze software's performance and behavior
- Open source, vendor-agnostic, 3+ years old
- Currently, around 800 developers and 120 companies contribute monthly

- History:
  - OpenCensus and OpenTracing were merged to form OpenTelemetry in 2019

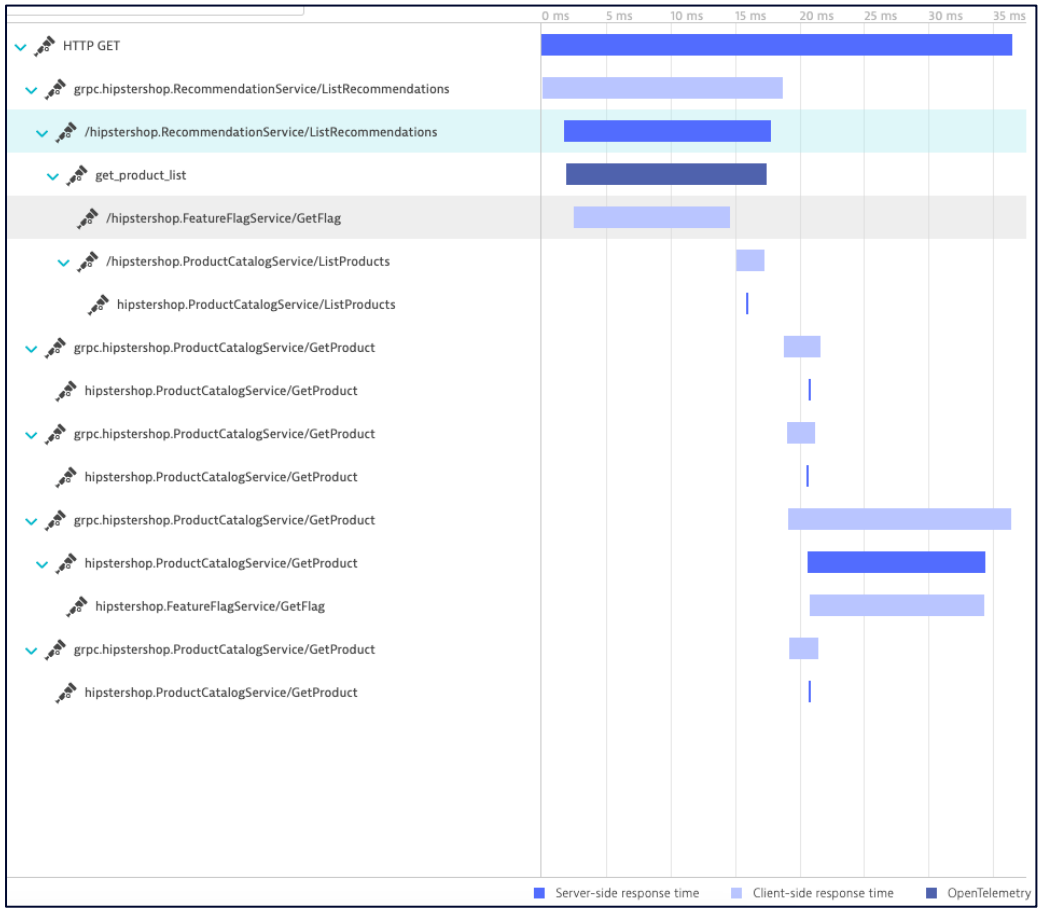
OpenTelemetry Signals

Traces-first strategy

- ✅ **Traces**
  - Used for unique user sessions and requests
  - Like logs, but with all the context you wish for (Request context, Resource context, start and finish time of an operation)

- ✅ **Metrics**
  - Measurements about a service, captured at runtime
  - Support for Prometheus and StatsD

- 🚧 **Logs**
  - Used for events outside user sessions, like system, infra, and application logs
  - Can be connected to a trace
  - Support for common logging libraries (Fluentd, Fluent Bit, Syslog, Filelog, k8s events)

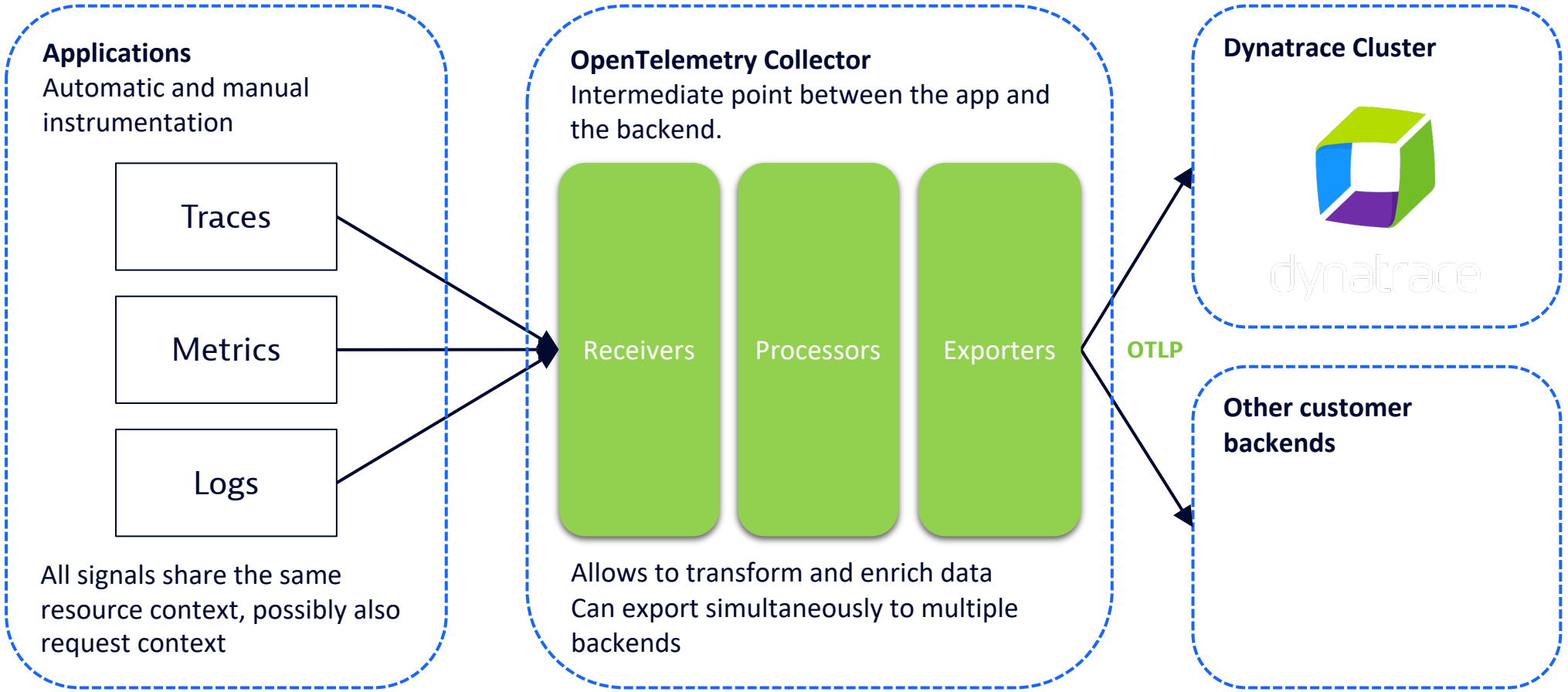


Current Status

- OpenTelemetry supports 11 languages
  - Different maturity levels

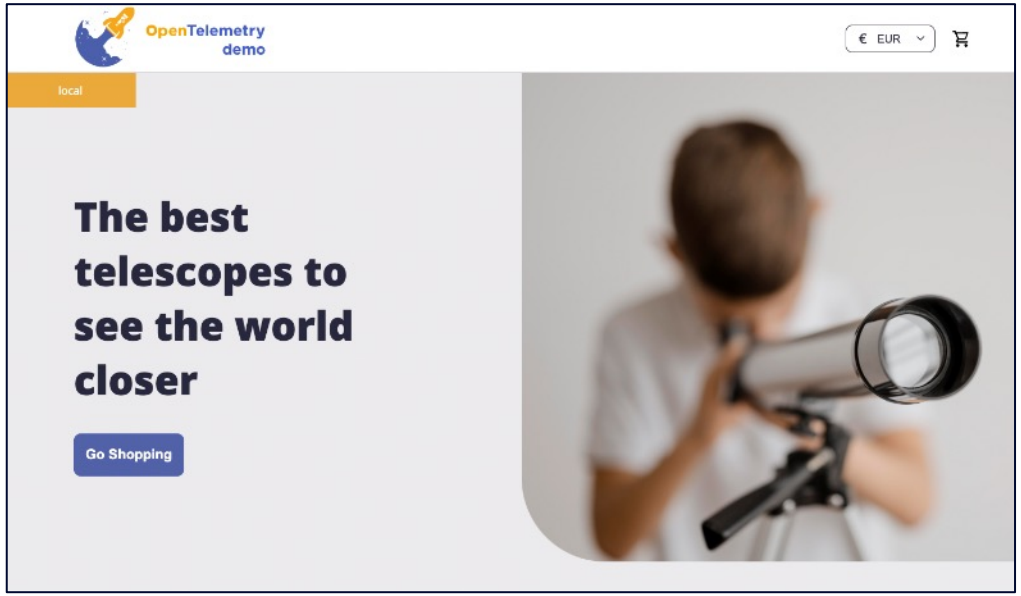
Language	Traces	Metrics	Logs
C++	Stable	Stable	Experimental
C#/.NET	Stable	Stable	Mixed*
Erlang/Elixir	Stable	Experimental	Experimental
Go	Stable	Alpha	Not yet implemented
Java	Stable	Stable	Experimental
JavaScript	Stable	Stable	Development
PHP	Beta	Beta	Not yet implemented
Python	Stable	Stable	Experimental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

OpenTelemetry Collector Pipelines



OpenTelemetry Demo Application

- An e-commerce demo application to run OpenTelemetry
  - The easiest way to get started and to test all OpenTelemetry features
  - Maintained by the OpenTelemetry project
  - Well documented



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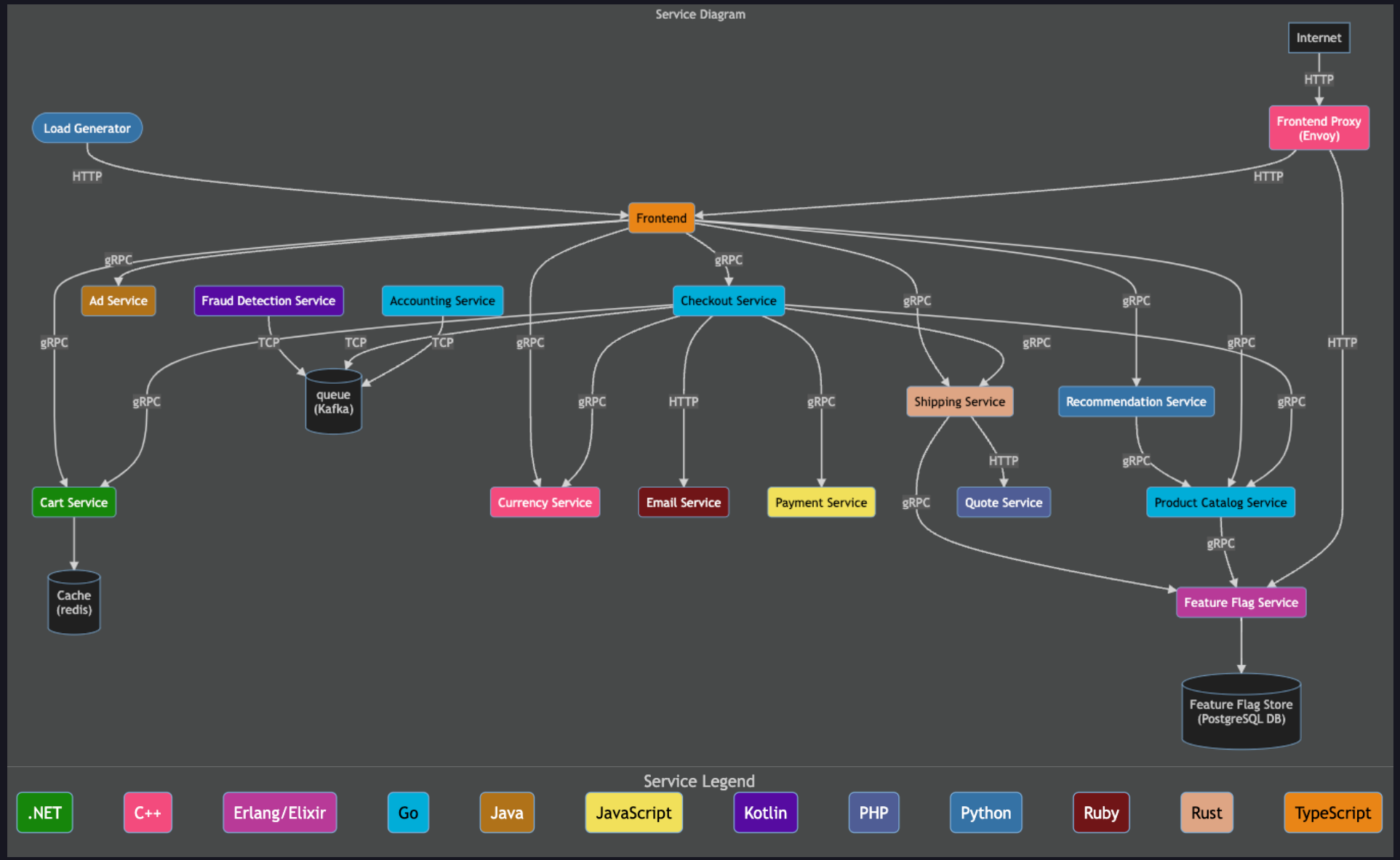


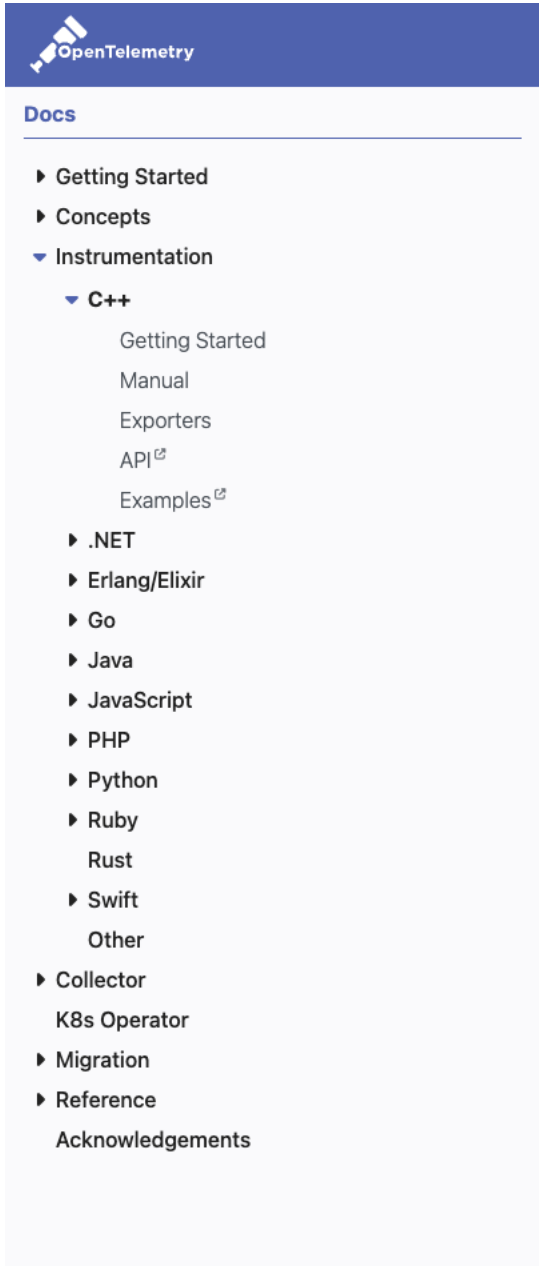
When to consider OpenTelemetry?

- You need to instrument applications with languages not supported by OneAgent
- You want to use open standards to add tailored business-specific telemetry
- You need telemetry from environments where agents can't be installed
- You already use frameworks with native OpenTelemetry support

OneAgent	OpenTelemetry
Java	Java
.NET	.NET
Node.js	JavaScript/TypeScript
PHP	PHP
Go	Go
C++ (SDK)	C++
Python (SDK)	Python
	Erlang/Elixir
	Ruby
	Rust
	Swift

Links

- **OpenTelemetry Docs**
  - https://opentelemetry.io/docs/
- **Demo Application**
  - https://github.com/open-telemetry/opentelemetry-demo
- **Send data to Dynatrace with OpenTelemetry**
  - https://www.dynatrace.com/support/help/extend-dynatrace/opentelemetry
- **Running the OpenTelemetry demo application with Dynatrace (blog)**
  - https://www.dynatrace.com/news/blog/opentelemetry-demo-application-with-dynatrace/



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