Adding Metrics Support to OpenTelemetry

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What is Observability?

“Monitoring tells you whether a system is working, observability lets you ask why it isn't working”
Adding Metrics Support

Specification - Semantic Conventions
Data Model
Data Protocol (OTLP)
Collector
Receivers
Exporters
Language SDKs
Adding Metrics Support - What

Getting it right means:
1. Data Model and OTLP Protocol
   a. Instrumentation
   b. Ensuring data model works for Prometheus and statsd compliance
   c. OTLP supports Prometheus and statsd
2. API
   a. Define and build easy-to-use API for each metric type
   b. Enable API owners to update with stability assumption
3. SDK
   a. Define how metric types work in the SDK
   b. Enhance SDK if new metrics types need to be supported
   c. Enable SDK can leverage new metrics within API
4. Collector
   a. Support OTLP data ingestion and aggregation
   b. Ensure push based implementation works (Prometheus and statsd support)
   c. Enable pull based implementation scales
Adding Metrics Support - How

How do we do this?

1. Parallelize work
   a. Multiple streams (workgroups in Metrics SIG) for
      i. Metrics Data Model and OTLP Protocol
      ii. Prometheus support
      iii. API and SDK prototypes and implementation in 3 languages
   iv. Collector
      1. Support OTLP data ingestion and aggregation
      2. Ensure OTLP pull based implementation works
      3. Enable Prometheus push based implementation works and scales

2. Each metric instrument is evaluated
   a. Owner / Maintainer collects community feedback, drives discussions, owns implementation completion to stability
Adding Metrics Support - Work in Progress

Checking the current status for each client in the README of its github repo is recommended. Client support for specific features can be found in the specification compliance tables.

Tracing
API: stable  
SDK: stable  
Protocol: stable  
Collector: experimental

- The tracing specification is now completely stable, and covered by long term support.
- The tracing specification is still extensible, but only in a backwards compatible manner.
- OpenTelemetry clients are versioned to v1.0 once their tracing implementation is complete.

Metrics
API: draft  
SDK: draft  
Protocol: stable  
Collector: experimental

- OpenTelemetry Metrics is currently under active development.
- The data model is stable and released as part of the OTLP protocol.
- Experimental support for metric pipelines are available in the Collector.
- Collector support for Prometheus is under development, in collaboration with the Prometheus community.
- The metric API and SDK specification is currently being prototyped in Java, .NET, and Python.

https://opentelemetry.io/status/
Thanks!

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