

# Open-Source Metrics Primer

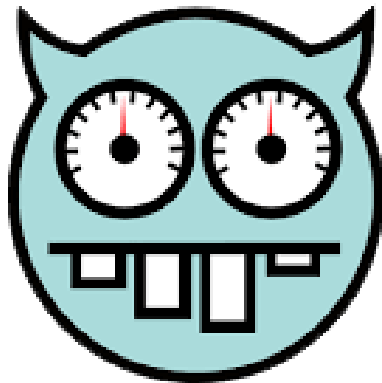


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Dynatrace



A metric system is a tool designed to collect, process, and visualize data about the performance and behavior of systems, services, or applications.

# Some open source metrics systems



## OTLP registry #3129

Merged micrometer-metrics:1.9.x ← shakuzen:otlp-registry on Apr 15, 2022 v1.9.0-RC1

Conversation 25 Commits 10 Checks 0 Files changed 14



shakuzen commented on Apr 14, 2022 • edited

Member

Implementation of publishing OTLP metrics format over HTTP in Protobuf. Some features are missing (see below) and overall there is room for improvement (e.g. performance), but I wanted to get this open for feedback and get a reasonable implementation in that we can iterate on before 1.9 GA.



Prometheus

DOCS

DOWNLOAD

COMMUNITY

SUPPORT & TRAINING

BLOG



OpenCensus

Easily collect telemetry like metrics and distributed t

OpenCensus and OpenTracing have merged to form [OpenTelemetry](#), which serves as the next major version of OpenCensus and OpenTracing.

## Our commitment to OpenTelemetry

Posted at: March 13, 2024 by Goutham Veeramachaneni (@Gouthamve) and Carrie Edwards (@carriedwards)

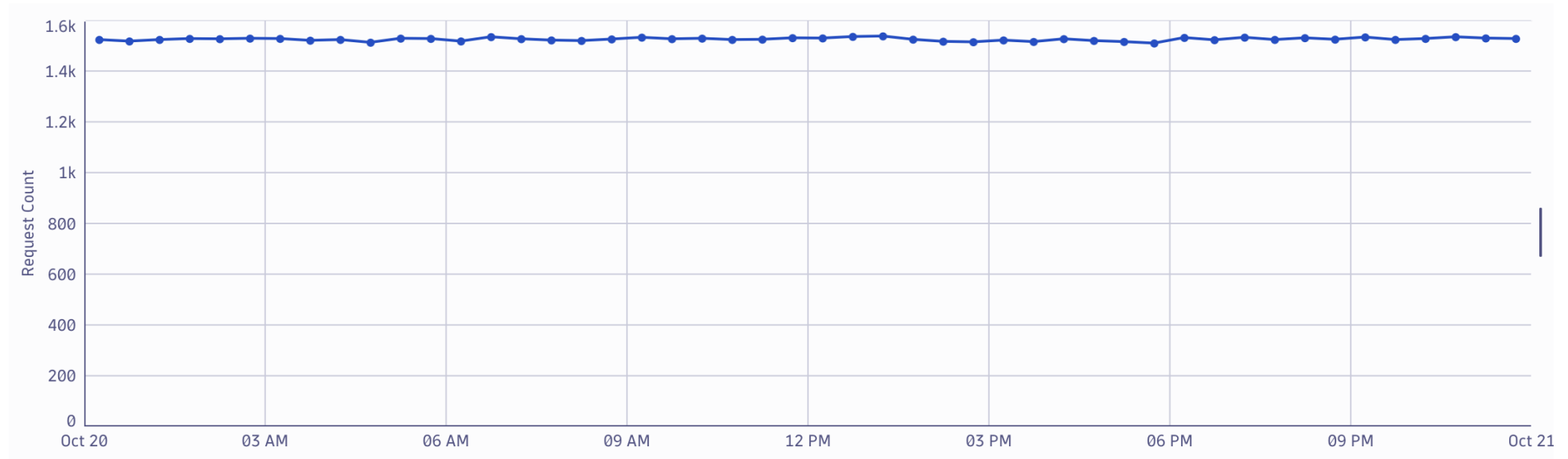
## Add statsdreceiver skeleton #566

Merged by bogdandrutu open-telemetry:master ← sonofachamp:statsd on Aug 19, 2020 cmd/chloggen/v0.55.0

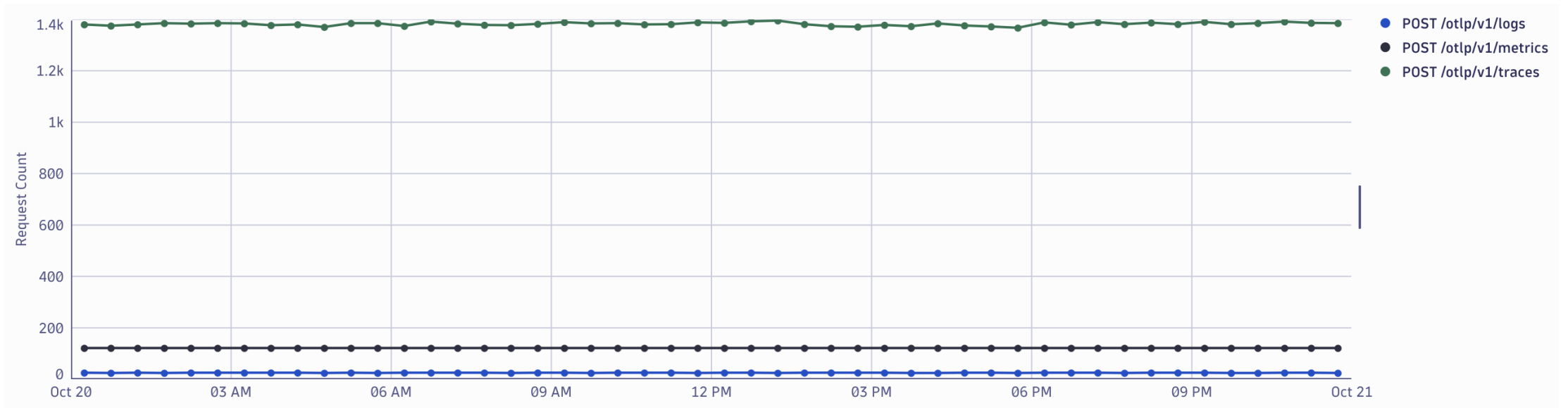
# General metrics concepts



# Timeseries – data points over time



# Timeseries – Splitting by dimensions





# OpenTelemetry metrics



# OpenTelemetry metrics

## API

- Create instruments
- Record measurements

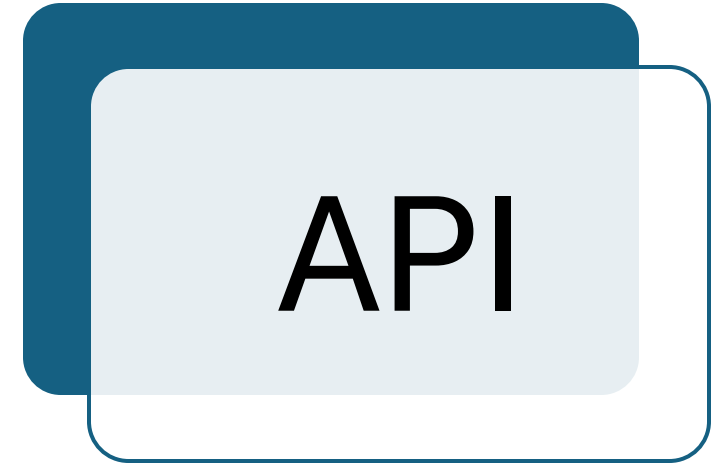
## SDK

- Implement API
- Export data

## OTLP

- Wire protocol
- Transport data to any backend

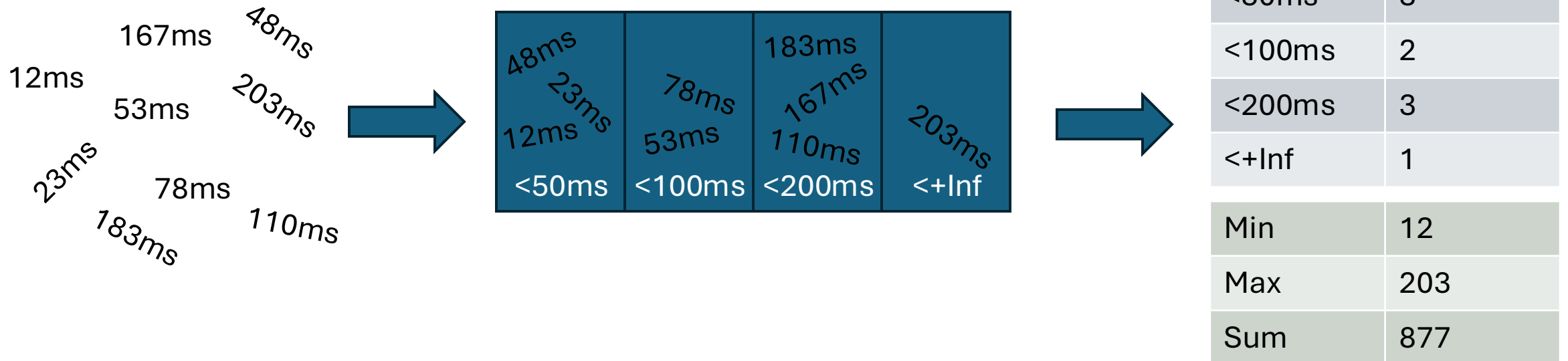
# OTel API: Instruments



- Counter
  - Value only ever goes up (request count)
- UpDownCounter
  - Value goes up and down (number of logged-in users, queue size)
  - UpDownCounters can usually be summed together
- Gauge
  - Value goes up and down (e.g. Temperature)
  - Adding Gauges together usually does not make sense
- Histogram
  - Aggregating statistic (e.g. distribution of request duration)

# A quick word about histograms

- Condense large amounts of data into a few data points on the wire
- Example: Request durations



# Demo time

- A coffeeshop (server) at a specific location
  - Available locations: Linz, Vienna, Sydney, New York
- Customers can
  - Enter (GET /enter)
  - Leave (GET /leave)
  - Order (POST /order)
  - Read the temperature on the outside of the store (GET /temp)
- Customers will order Tea more frequently when it's cold (<16 degrees)
  - Client app
- <https://github.com/pirgeo/otel-metrics-sample>

Thank you!

