



Monitoring

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Who am I?



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What is monitoring?



Monitoring is the art of knowing, precisely and in real-time, if a system is running correctly in production. A well-implemented monitoring solution allows to:

- find problems before they affect the users
- find the root cause of performance issues, outages, and disruptions
- automatically detect anomalies



Demo Time!



Analytics platform that allows you to query, visualize, alert on and understand your metrics. Allows create, explore, and share dashboards with plots and visualizations of data stored in many different data sources.

Prometheus



Open-source systems monitoring and alerting toolkit originally built at SoundCloud.
It has 2 main components:

- Prometheus server, which scrapes and stores time series data
- Client libraries, for instrumenting application code

What to instrument?



The short answer is to instrument everything. Every library, subsystem and service should have at least a few metrics to give you a rough idea of how it is performing.

-- from: <https://prometheus.io/docs/practices/instrumentation/>

Instrumentation in practice



Things to measure:

- number of operations
- latency
- errors rate

Examples:

- incoming APIs calls
- outgoing network requests
- interaction with databases

Counter



Cumulative metric that represents a single monotonically increasing counter whose value can only increase (or be reset to zero on restart).

Examples:

- number of requests served
- tasks completed
- errors

Gauge



Metric that represents a single numerical value that can arbitrarily go up and down.

Examples:

- temperature
- current memory usage
- number of concurrent requests

Histogram



Samples observations (usually things like durations or sizes), counts them in configurable buckets and provides a sum of all observed values.

Examples:

- network latency
- query response time
- expensive operation duration



Demo Time!

Resources



- Demo source code: <https://github.com/davidepedranz/monitoring-workshop>
- Prometheus website & documentation: <https://prometheus.io>
- Grafana website: <https://grafana.com/>



Questions?