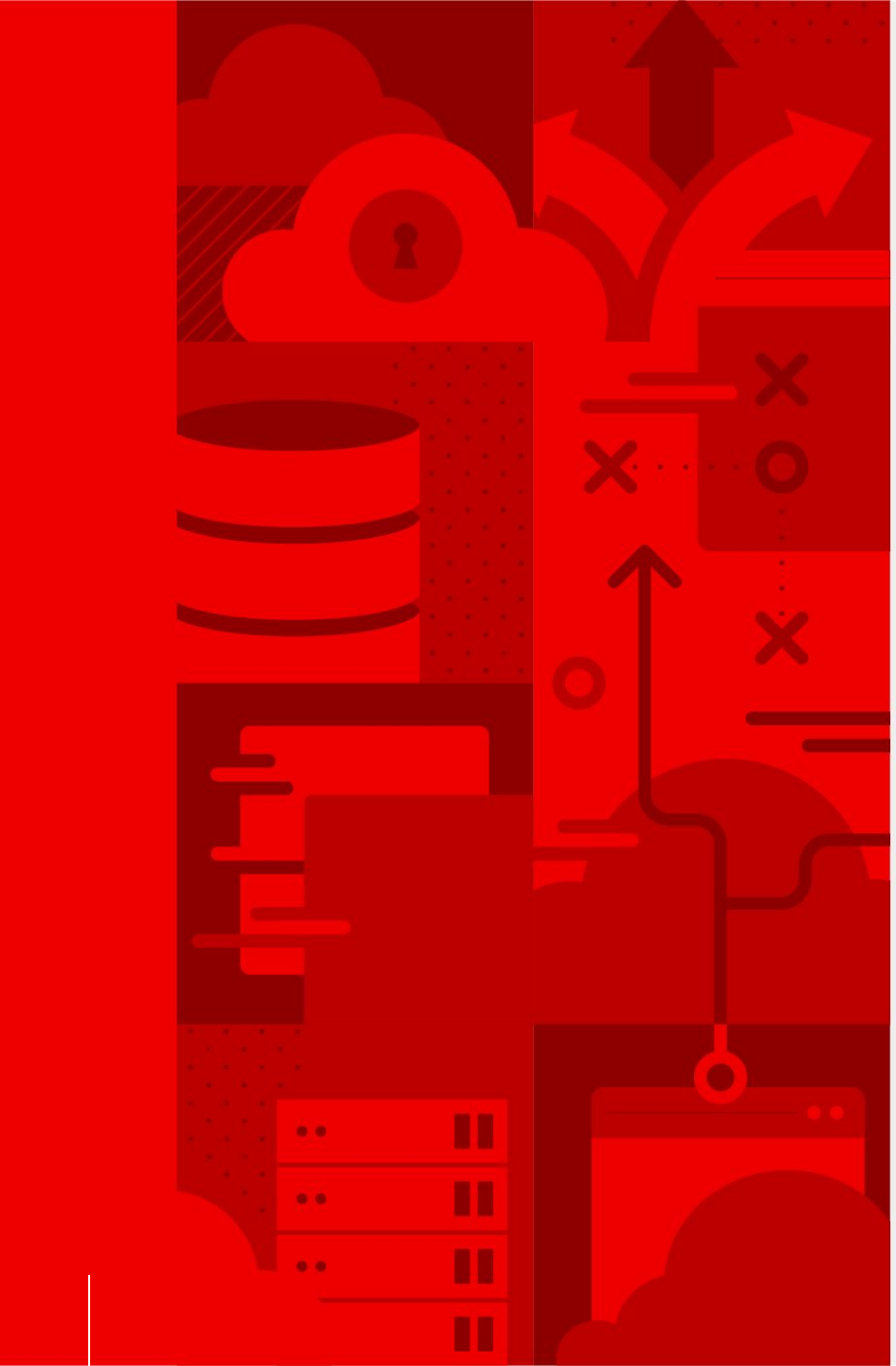
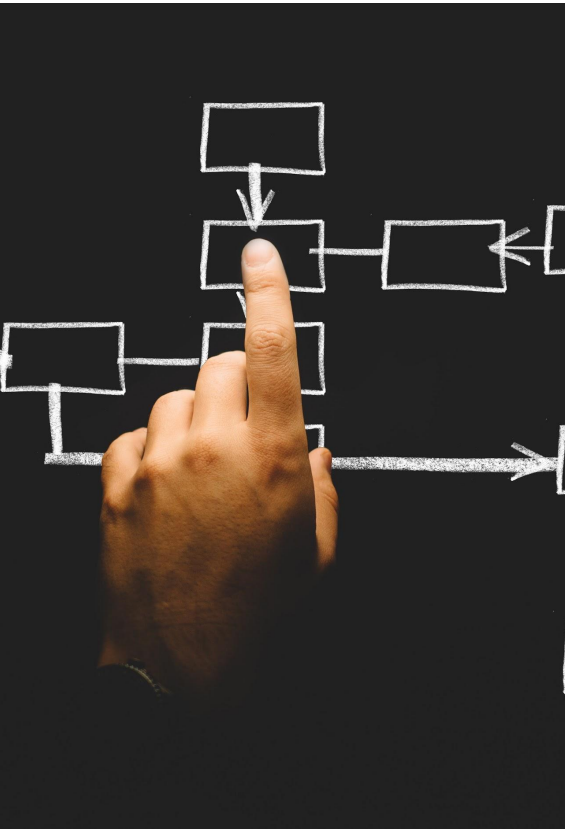


Jaeger
Deep dive

Juraci Paixão Kröhling
Software Engineer
@jpkrohling

Red Hat



Source: pexels.com

Components

* Client / Tracer
* Agent
* Collector
* Query / UI
* Ingester

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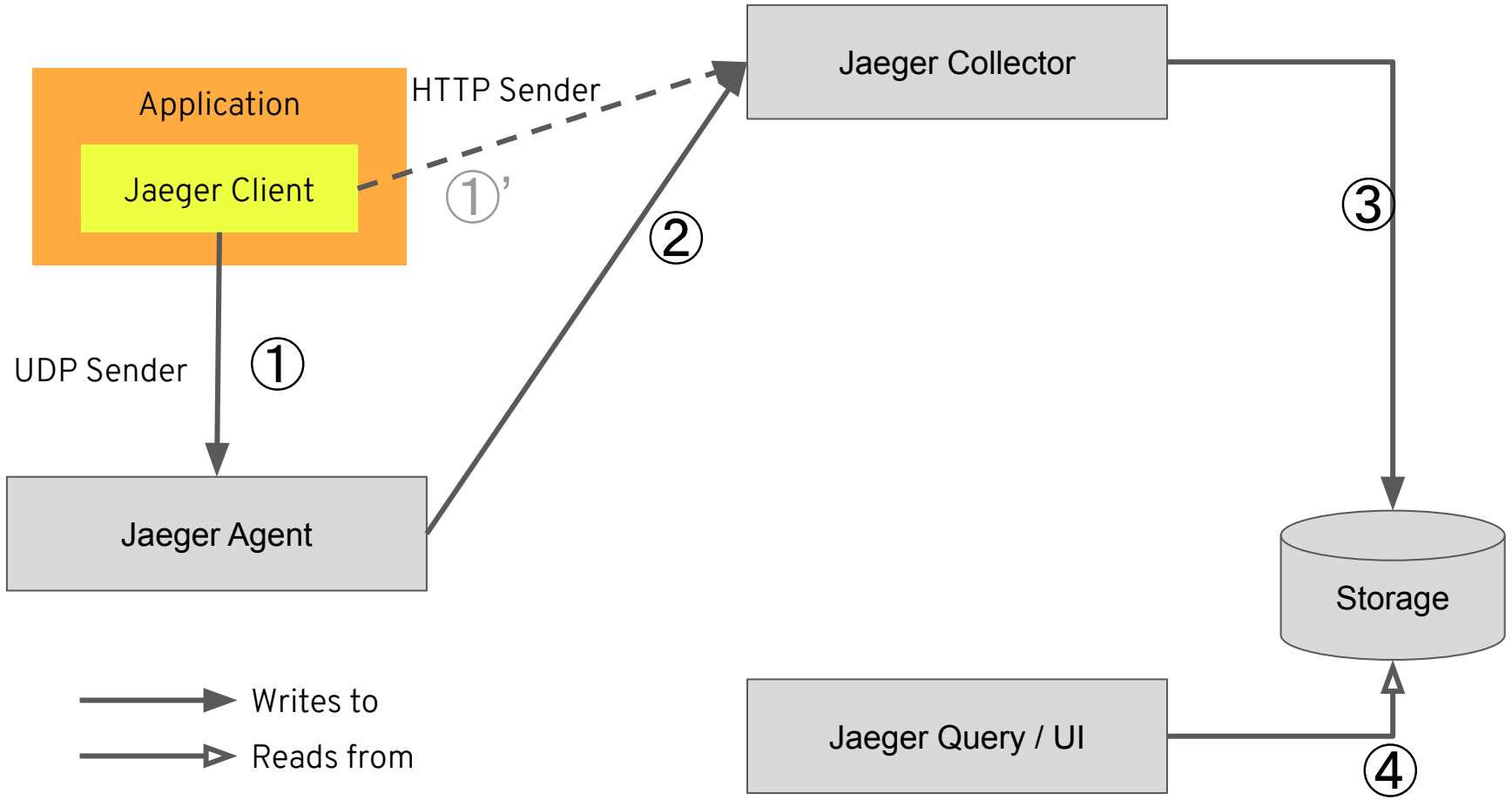
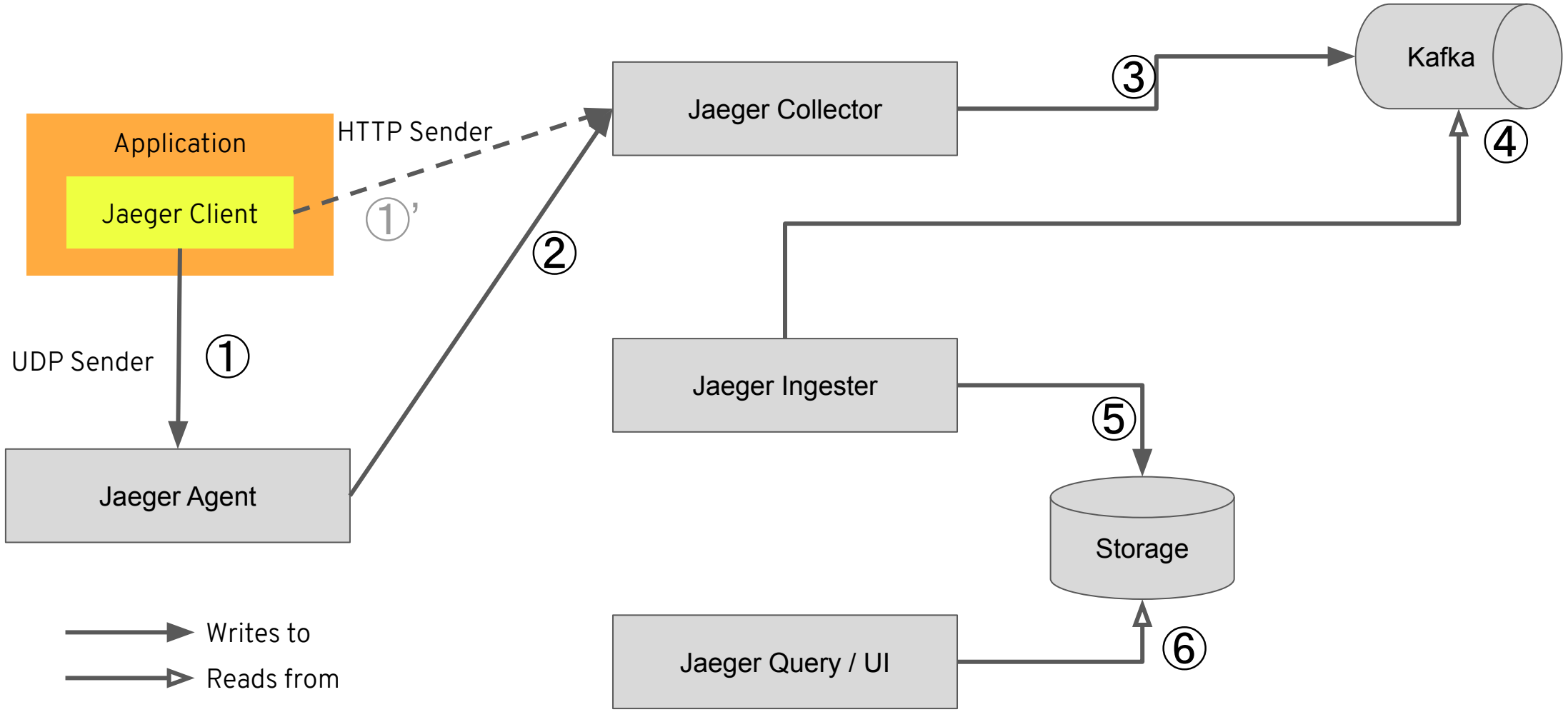
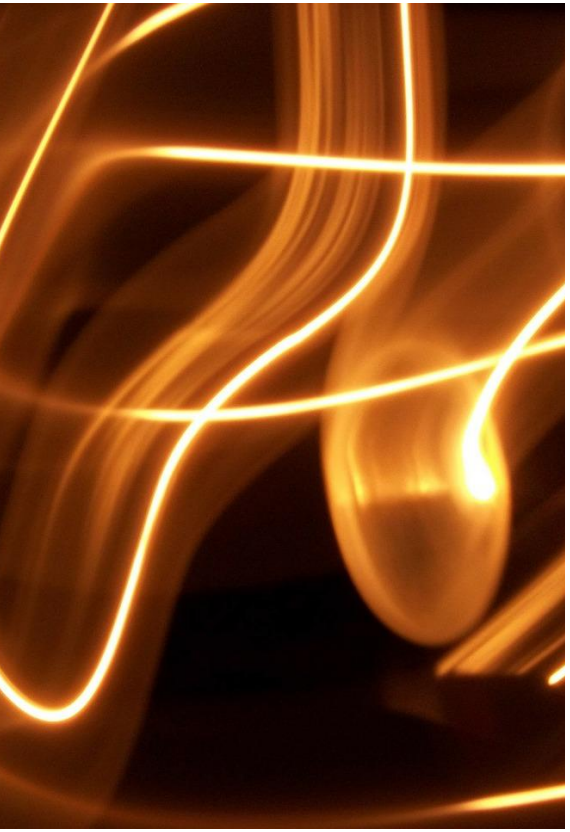

Application
Jaeger Client
HTTP Sender
①'
②
Jaeger Collector
③
UDP Sender
①
Jaeger Agent
Storage
Writes to
Reads from
Jaeger Query / UI
④

Red Hat


Application
Jaeger Client
HTTP Sender
①'
UDP Sender
①
②
Jaeger Agent
Jaeger Collector
③
Kafka
④
Jaeger Ingester
⑤
Storage
Jaeger Query / UI
⑥
Writes to
Reads from

Red Hat



Source: pixabay.com

Tracer

* OpenTracing-compliant
* Official support for popular languages
* Community support for other languages
* OpenCensus exporter

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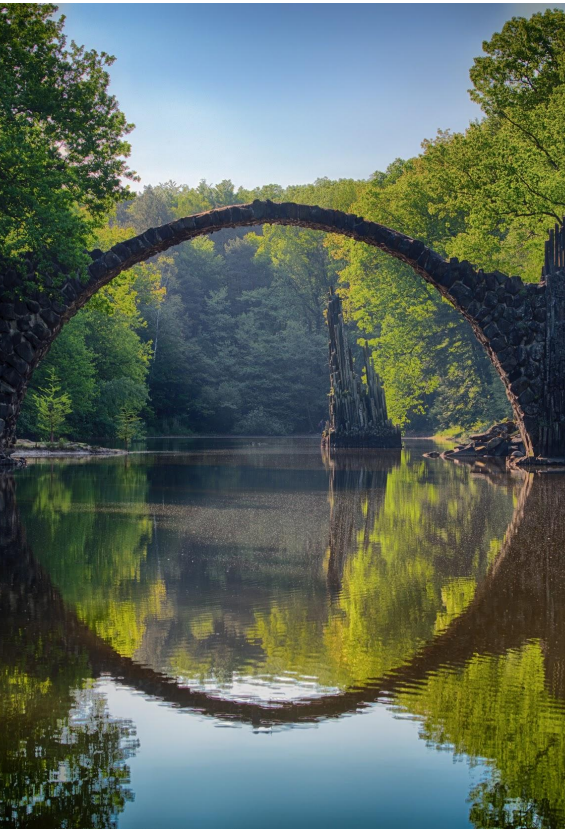

Source: pexels.com

Agent

* Buffer between client and collector

* Runs on localhost

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Source: pixabay.com

Collector

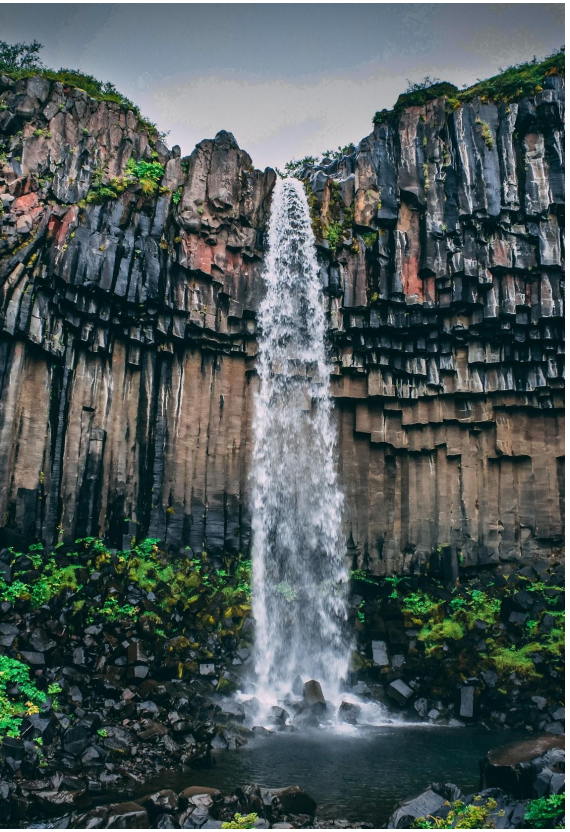
* Receives spans from agent and/or tracer

* Processes spans (cleanup, normalize, ...)

* Writes to backing storage

* Alternatively, sends to ingester

Red Hat



Source: pexels.com

Ingester

* Reads stream from Kafka

* Writes to backing storage

Red Hat

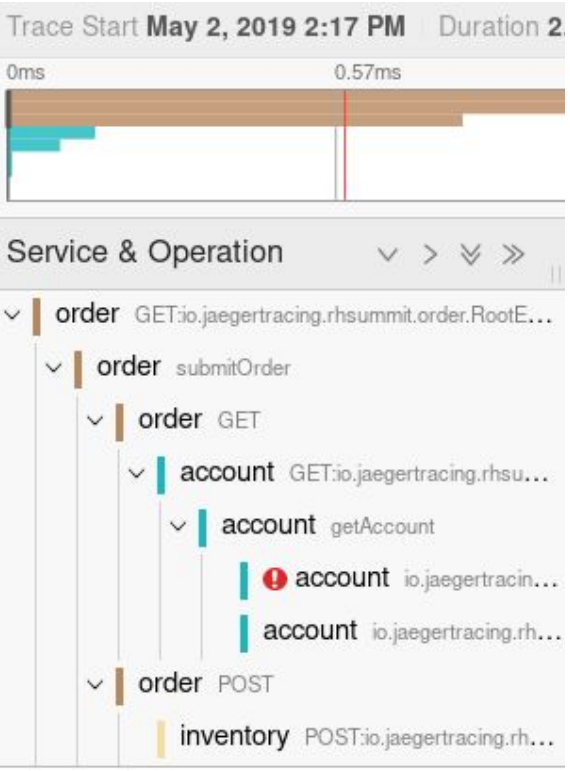
Source: pexels.com

Query

* REST endpoint

* Reads from the backing storage

Red Hat



User interface

* Trace list, trace view, trace search

* Trace diff / compare

* Basic service graph

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Source: pixabay.com

Deployment strategies

* All in one

* “Production” (individual components)

Source: pixabay.com

Deployment targets

* Bare metal

* Kubernetes via Helm

* Kubernetes via Operator

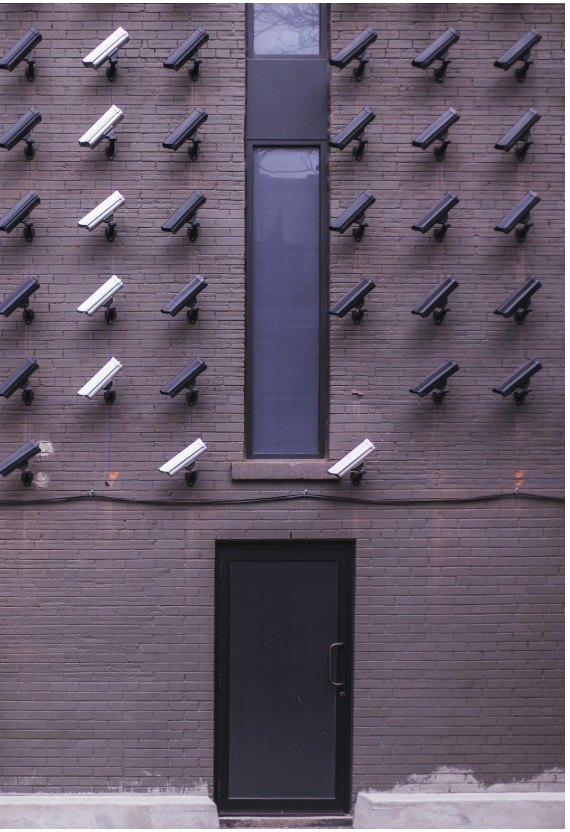
Red Hat

Source: pexels.com

Configuration options

* Each component has its set of `--help` options
* Command-line options
* Environment variables
* Configuration file

Red Hat



Source: pexels.com

Monitoring

* Most components have `/metrics` endpoint

* Expvar and Prometheus

* Internal state is exposed via metrics/gauges

Red Hat

Source: pexels.com

Performance tuning

* Careful with “dropped” spans!

* “Bounded queues everywhere” (by @ledor473)

* Check out the tuning guide

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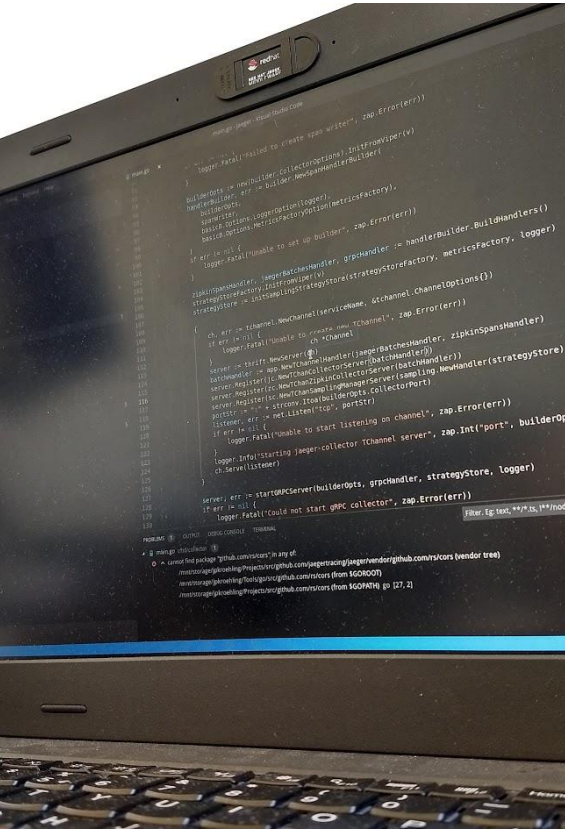

Join us

* jaegertracing.io/get-in-touch

* Bi-weekly meetings

* Tons of “good first issue” items

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