

Distributed Tracing with Spring Cloud Sleuth and Zipkin

Chapter Content

- Spring Cloud Sleuth and Correlation ID
- Papertrail (with docker)
- Zipkin

- The flexibility of microservice comes at a price: complexity. Trying to debug can be maddening.
- We will look at several techniques for making distributed debugging possible:
 - Using correlation ID to link together transactions across multiple services
 - Aggregating log data from multiple service into a single searchable source
 - Visualizing the flow of a user transaction across multiple services and understanding the performance characteristics of each part of the transaction

- What Sleuth can do
 - Transparently create and inject a correlation ID into your service calls if one doesn't exist
 - Manage the propagation of the correlation ID to outbound service calls so that the correlation ID for a transaction is automatically added to outbound calls
 - Add the correlation information to Spring's MDC(Mapped Diagnostic Context) logging so that the generated correlation ID is automatically logged by Spring Boots default SL4J and Logback implementation
 - Optionally, publish the tracing information in the service call to the Zipkin-distributed tracing platform

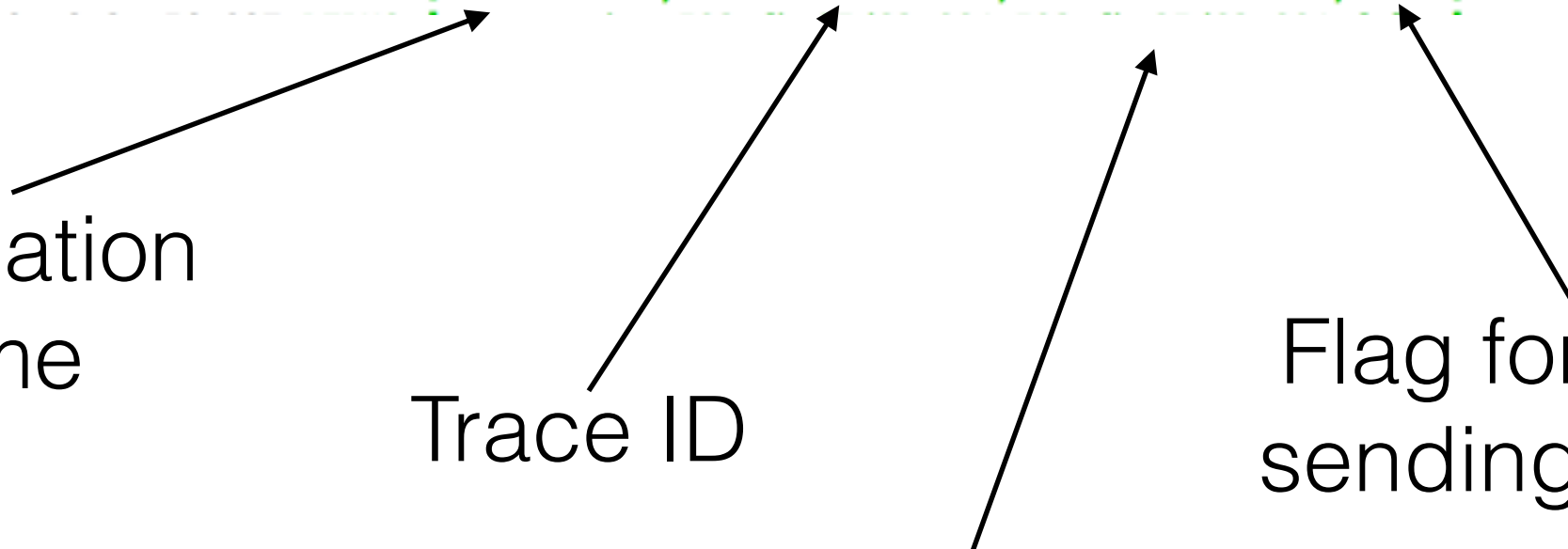
2017-09-19 18:21:56.097 DEBUG [userservice,5931fbe25d631664,5931fbe25d631664,false]

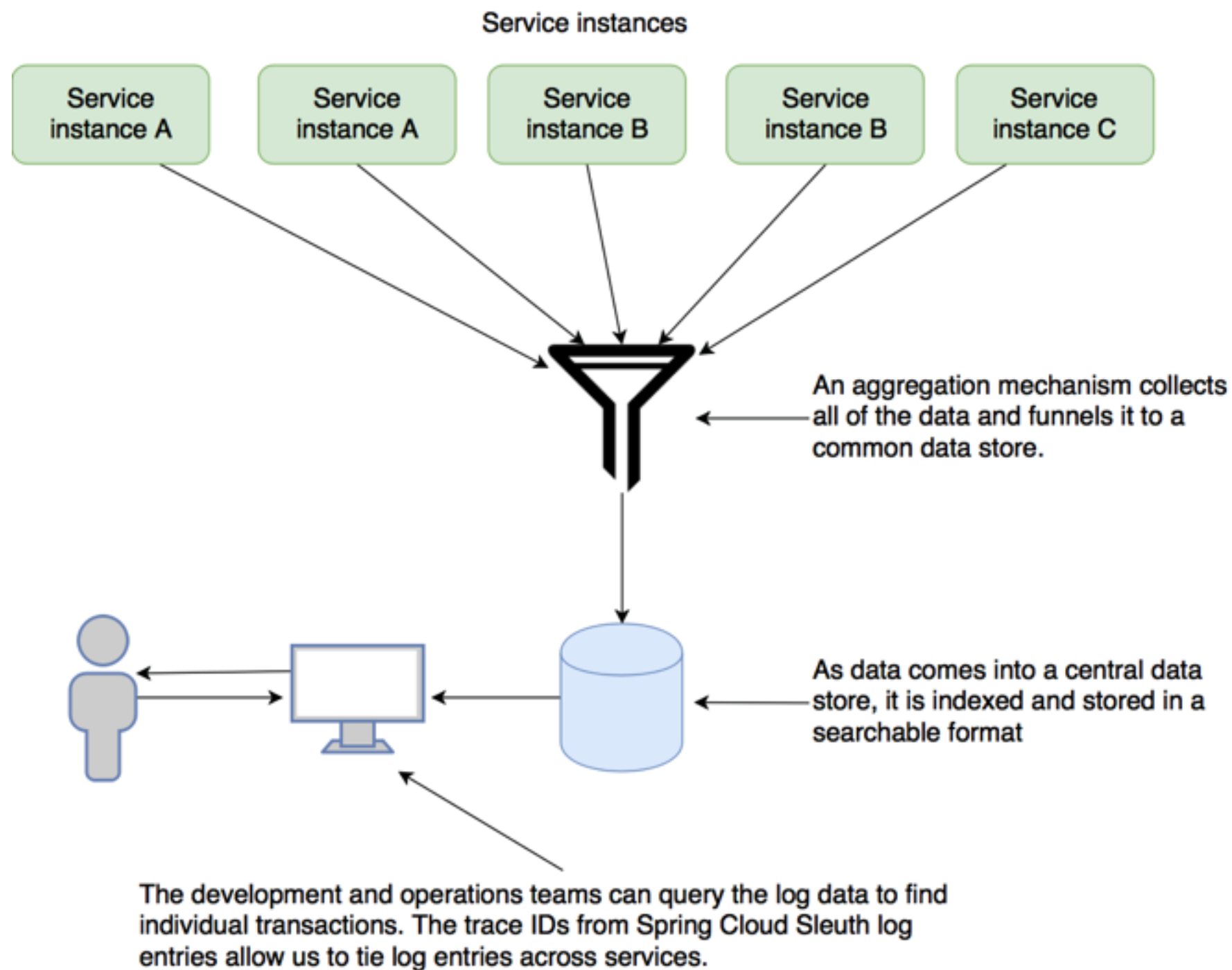
Application
name

Trace ID

Span ID

Flag for whether
sending to Pipkin





Product Name	Implementation Models	Notes
Elasticsearch, Logstash, Kibana (ELK)	Open source Commercial Typically implemented on premise	General purpose search engine Can do log-aggregation through the (ELK-stack) Requires the most hands-on support
Graylog	Open source Commercial Typically implemented on premise	Open-source platform that's designed to be installed on premise
Splunk	Commercial only On-premise and Cloud-based	Oldest and most comprehensive of the log management and aggregation tools Originally an on-premise solution, but have since offered a cloud offering
Sumo Logic	Freemium Commercial Cloud-based	Freemium/tiered pricing model Runs only as a cloud service Requires a corporate work account to signup (no Gmail or Yahoo accounts)
Papertrail	Freemium Commercial Cloud-based	Freemium/tiered pricing model Runs only as a cloud service

1. The individual containers write their logging data to standard out. Nothing has changed in terms of their configuration.

