Finding the needle in a Haystack

Ashish Aggarwal / Principal Engineer
Shreya Sharma / Technical Product Manager

@expediahaystack

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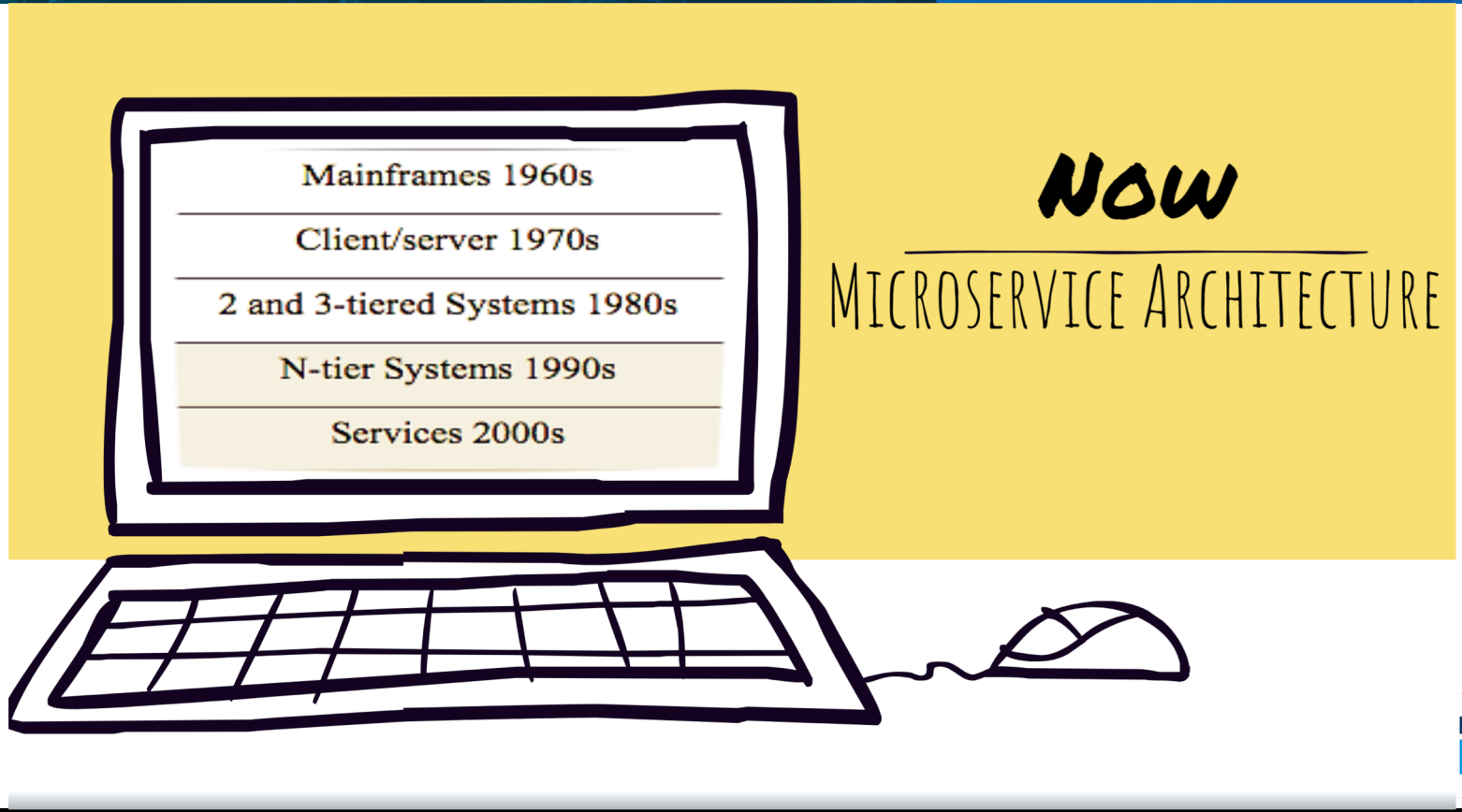
The Who

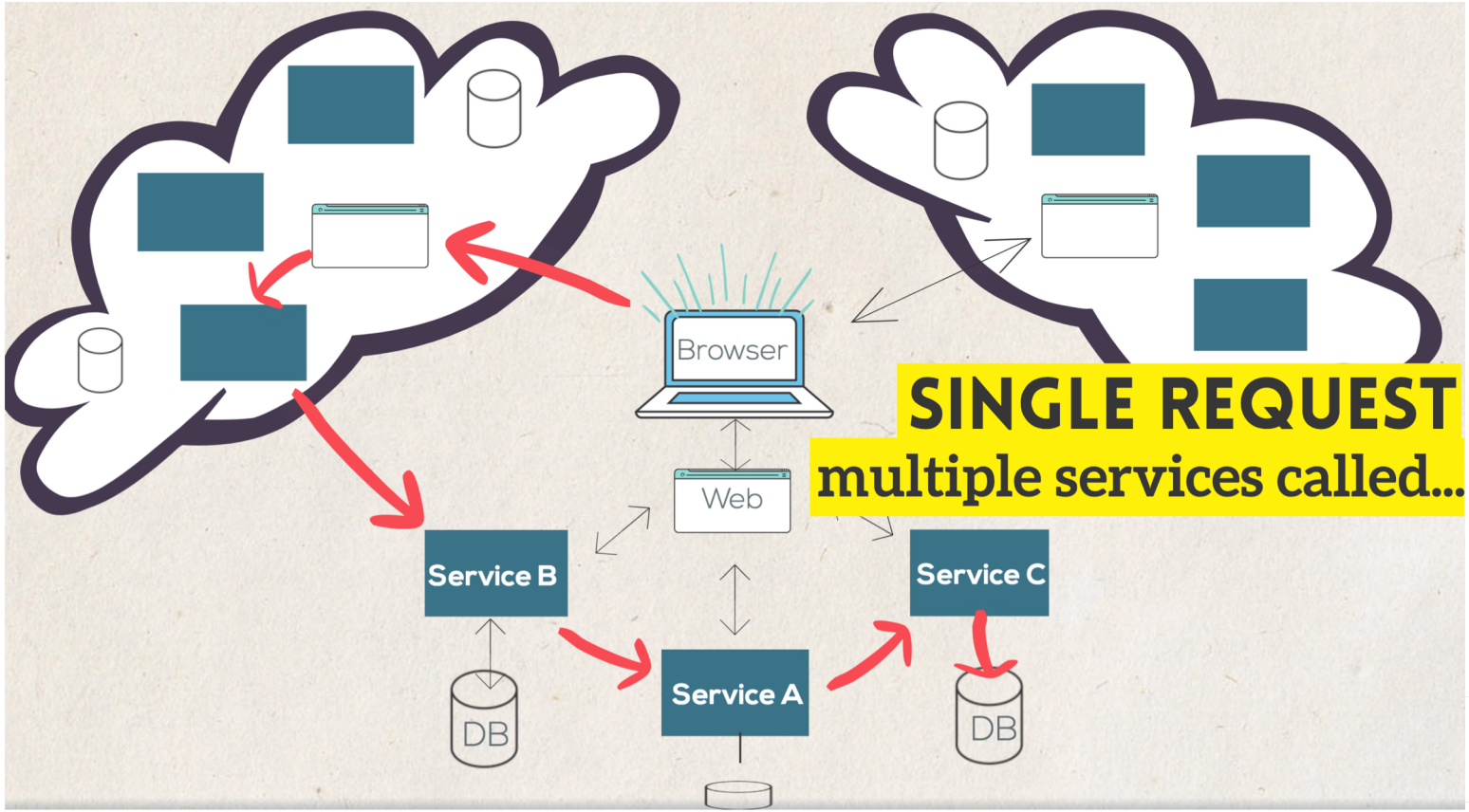
Bringing the world within reach

The What

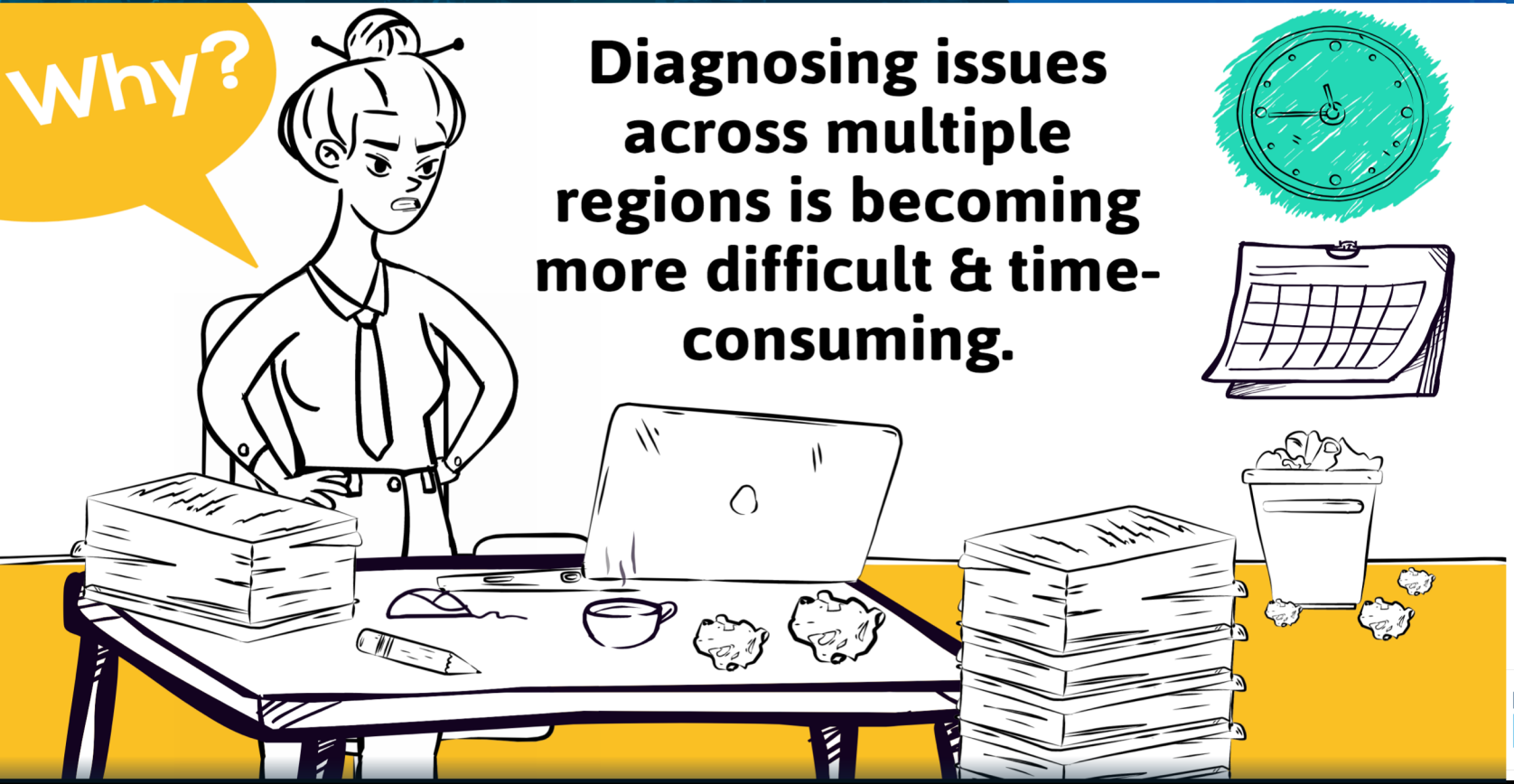
The Why



The Why continued



The final Why



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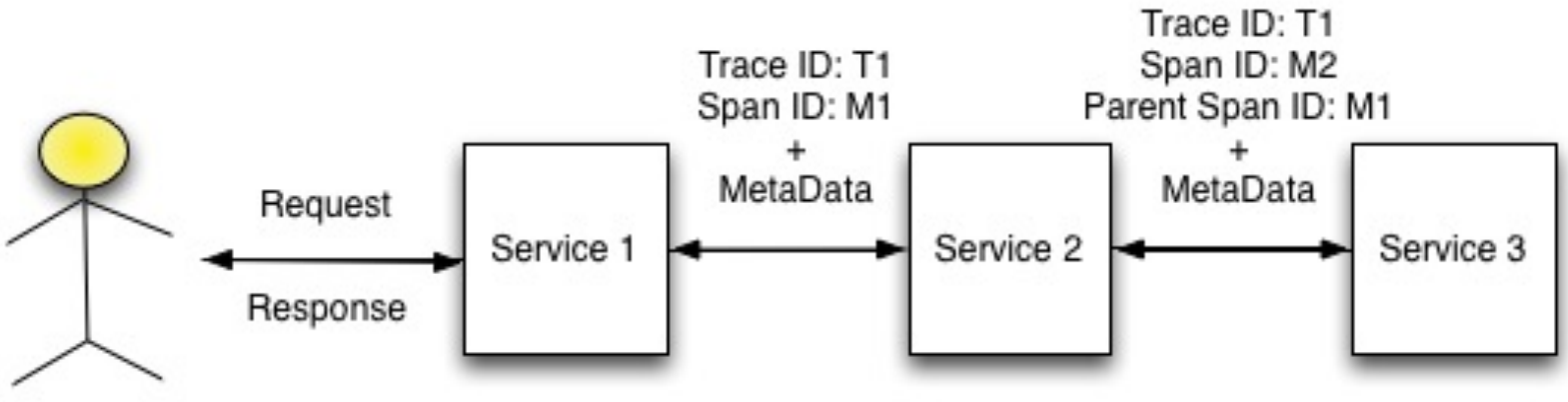
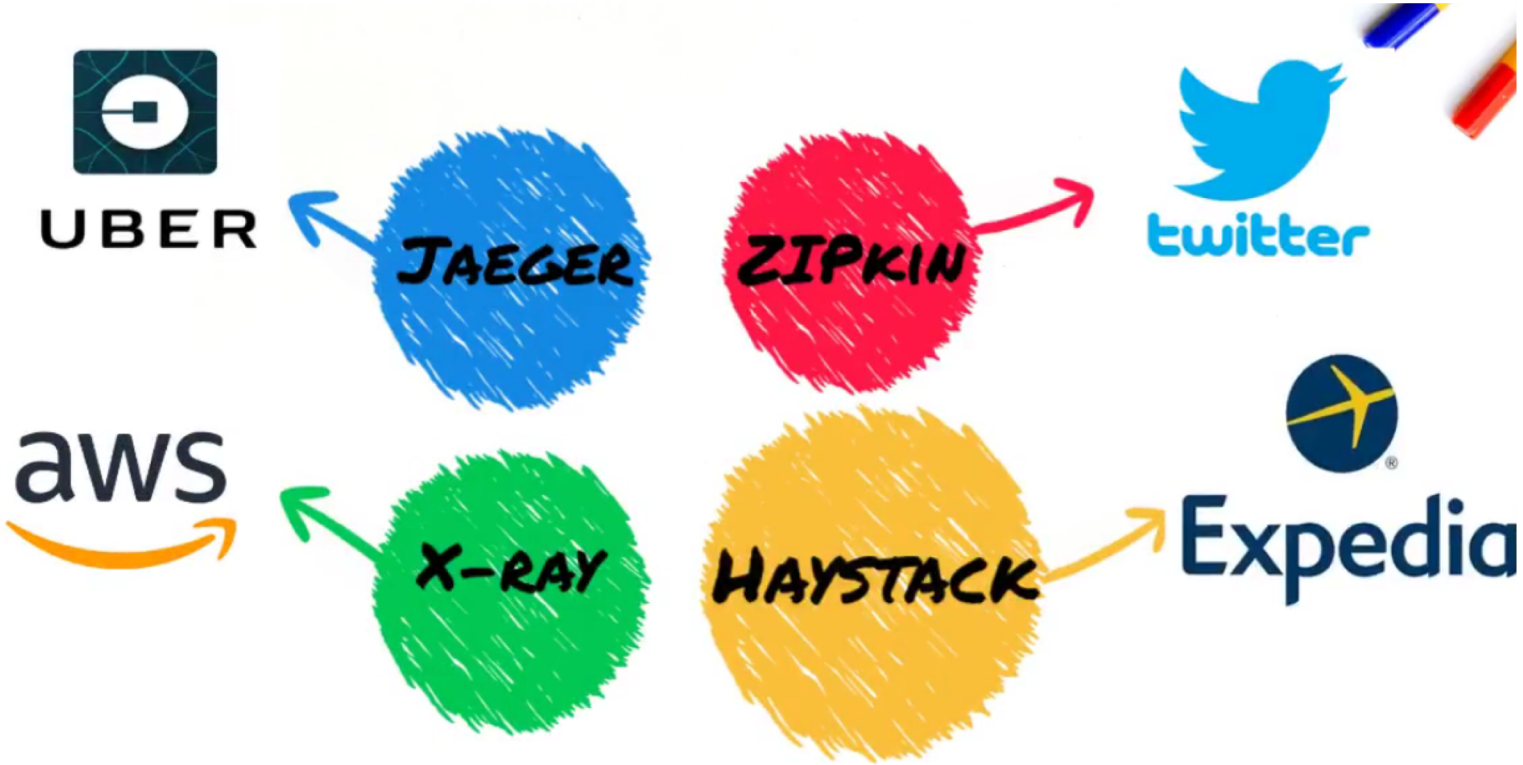
Source: hikingartist @ FLICKR

The How

Distributed Tracing by Google



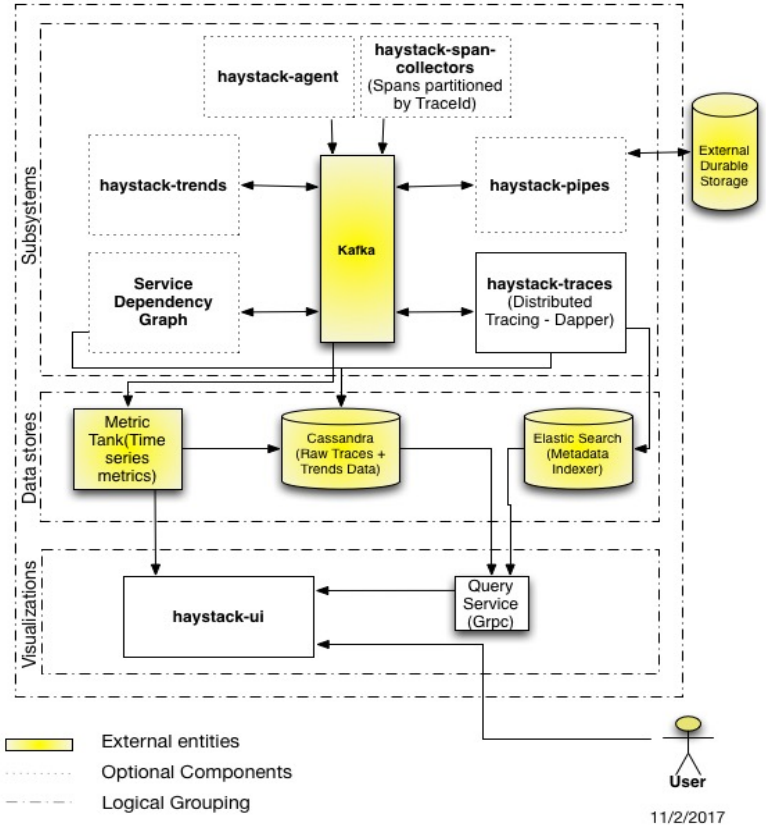
The Where and when



The Why again: Build our custom solution

UUID Support	• Existing solutions did not support UUID's as identifiers for Span
Extensible Platform	• Ability to build more systems to make use of this immensely useful data stream
Open Tracing	• Open Tracing Compliance so the organization is not coupled to a single implementation
Open Source	• Opportunity to contribute to the open-source community

Haystack Architecture



Haystack Components

Traces

Trends

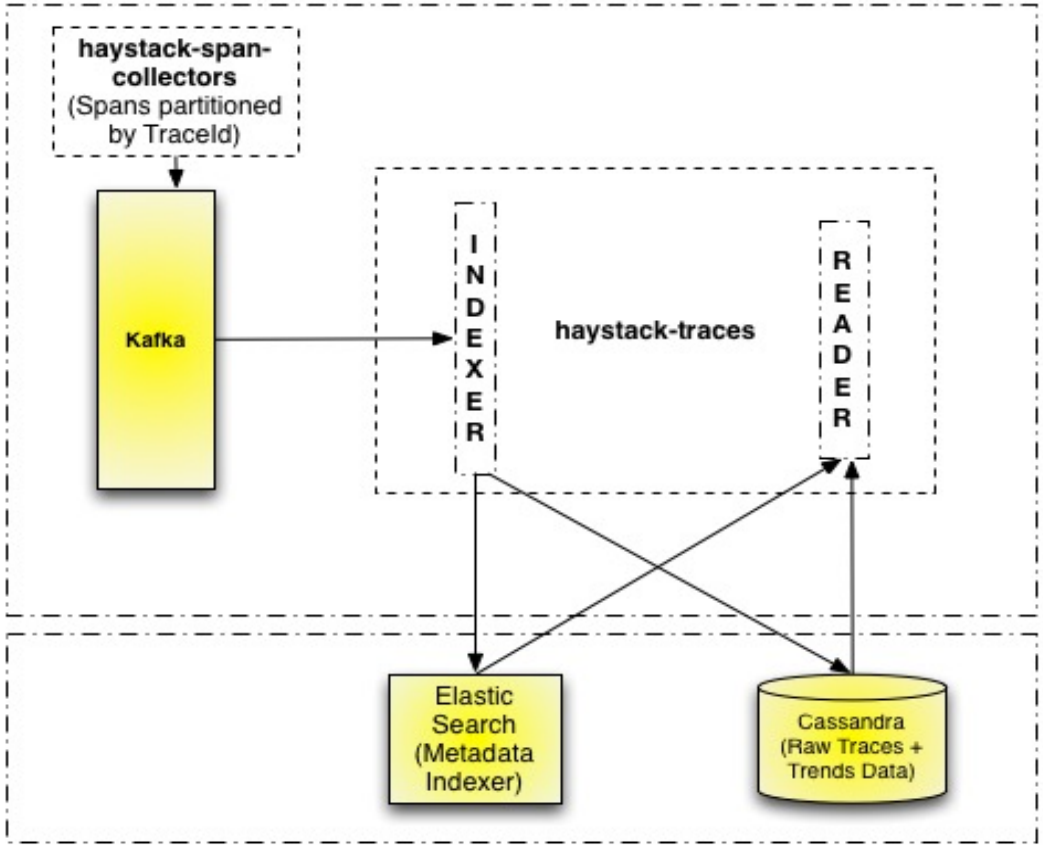
Service Graph

Latency Cost

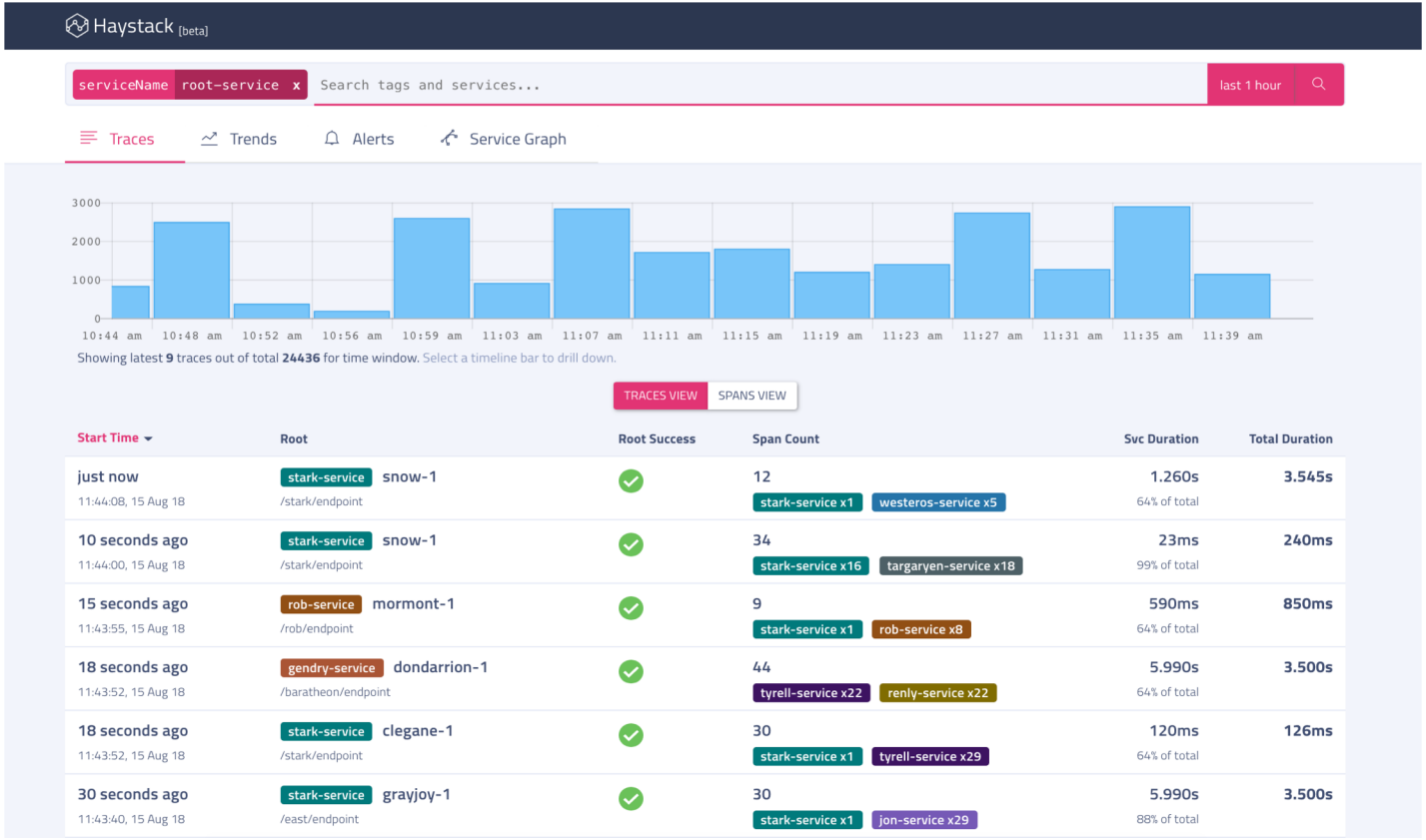
Alerts

Pipes

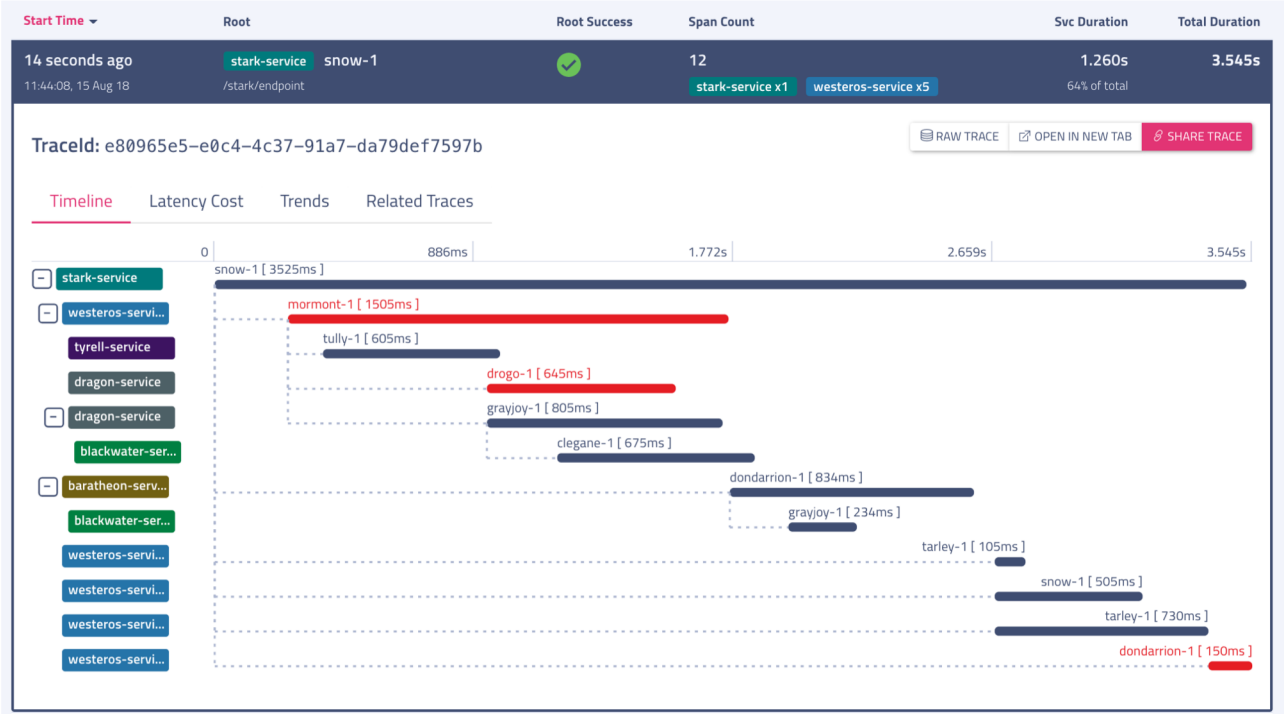
Traces component Architecture



Traces component



Traces Waterfall View



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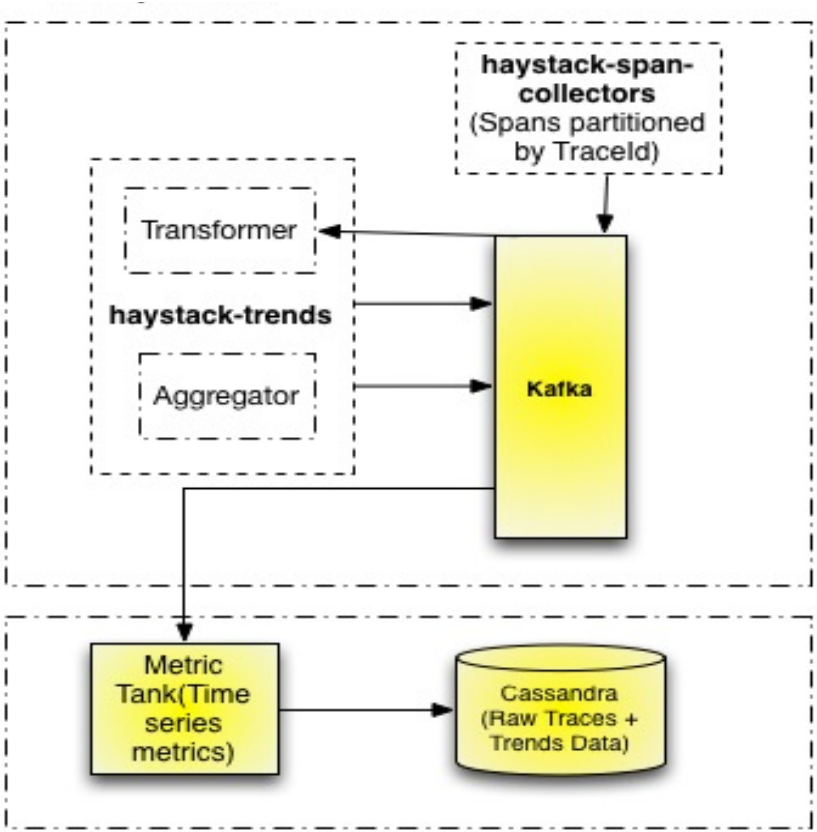
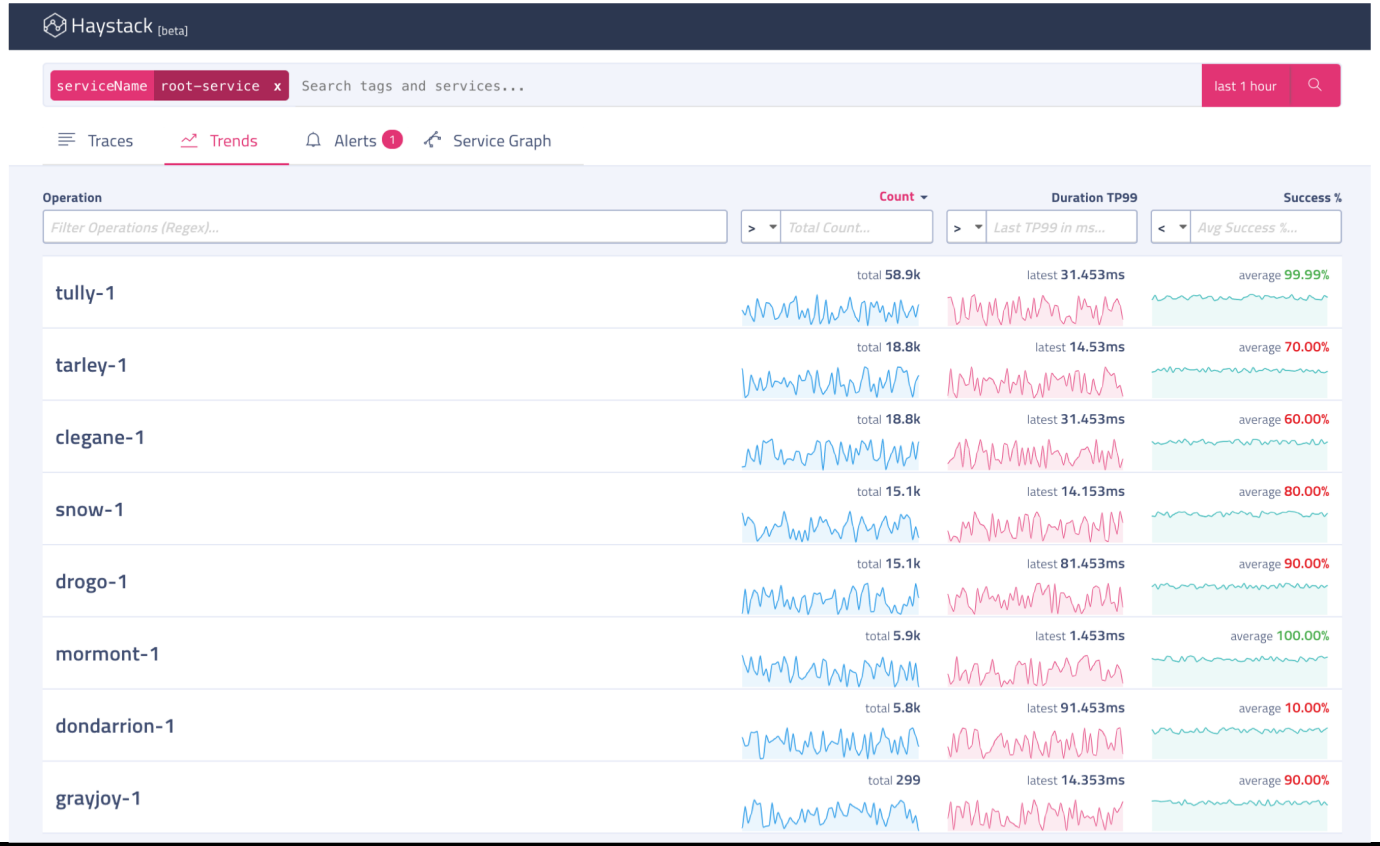
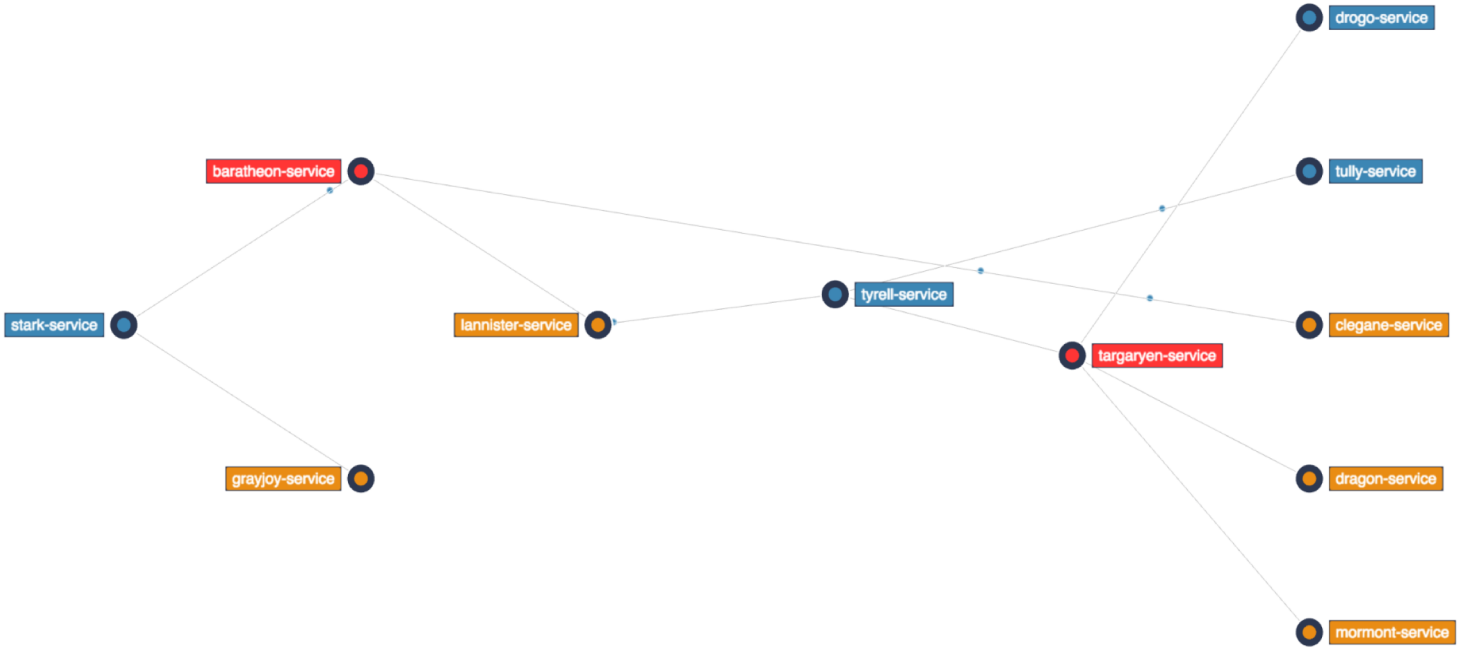
Trends component Architecture



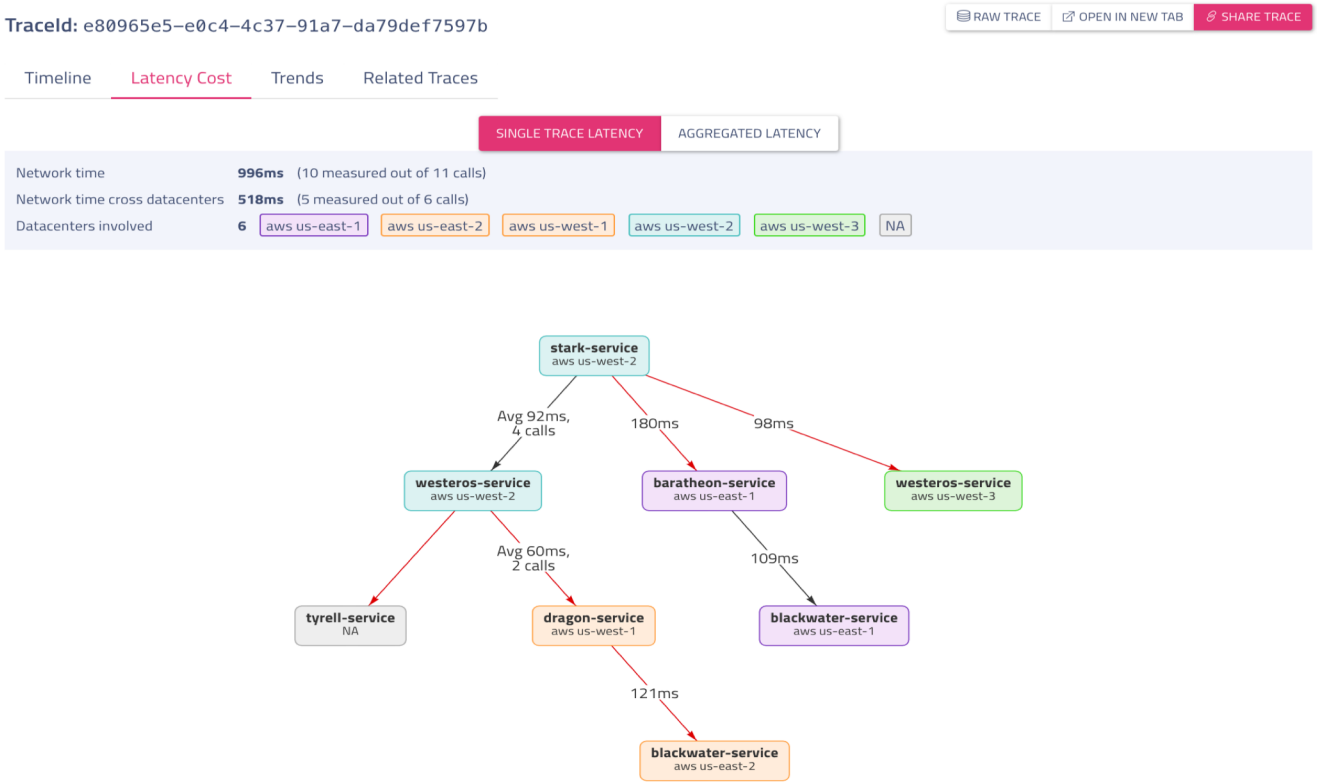
Trends component



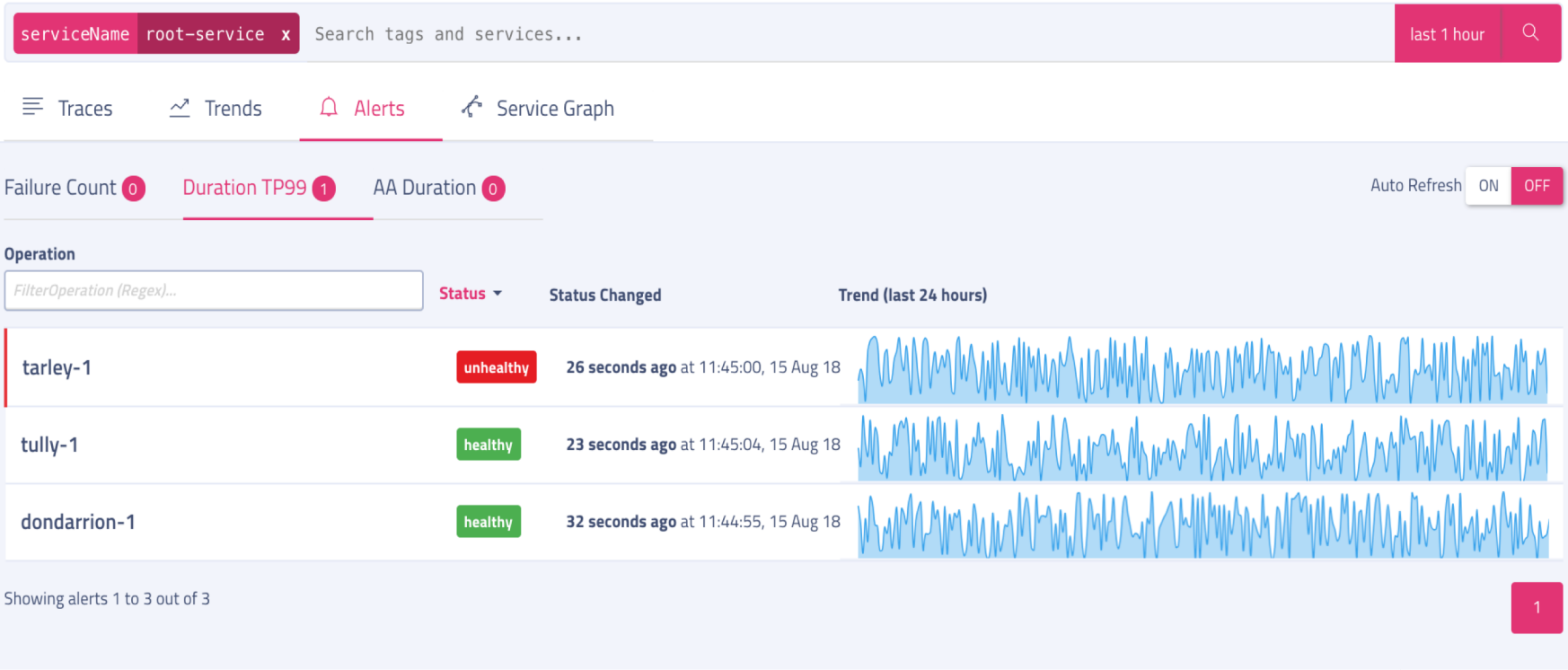
Service Graph component



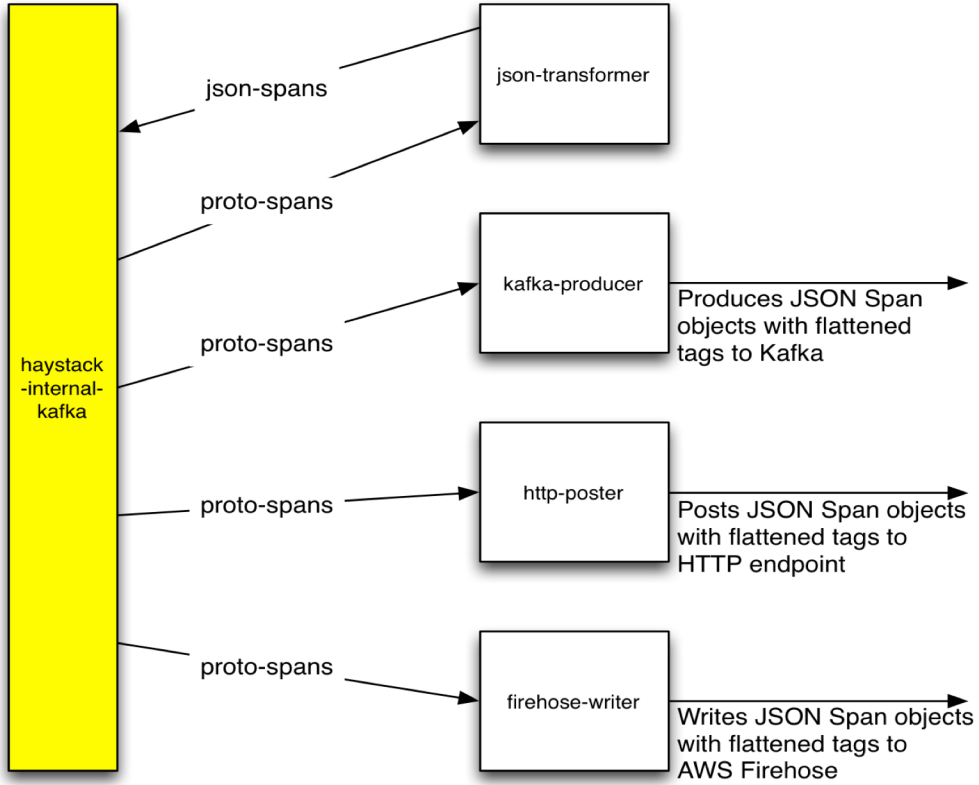
Network Latency Cost component



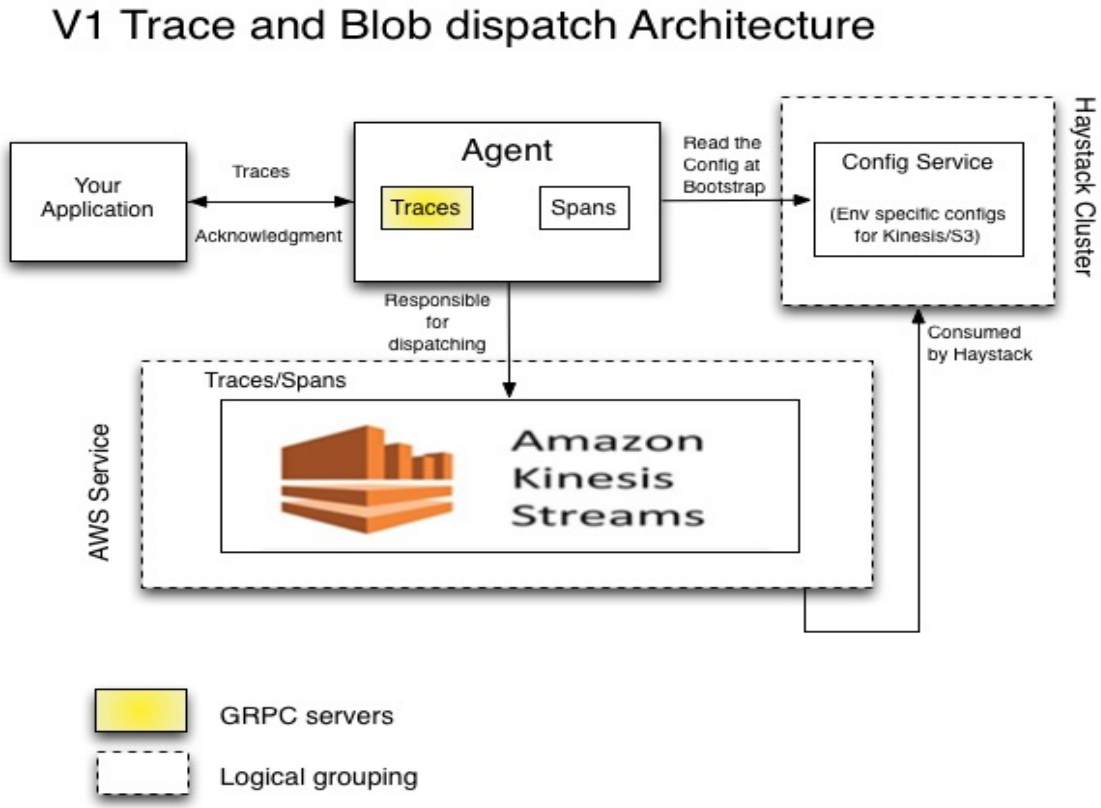
Alerts component



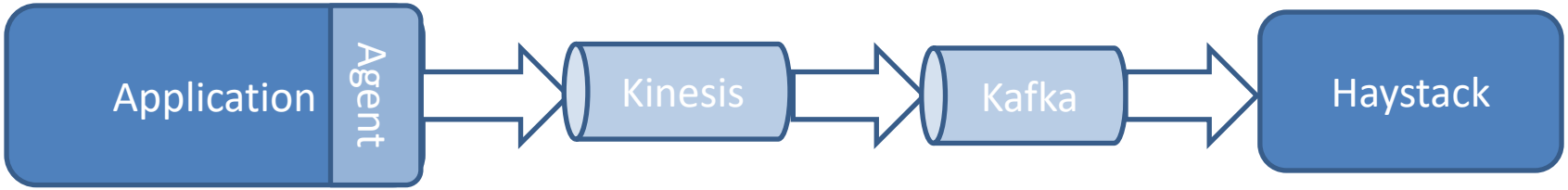
Pipes component



How to onboard / Integrate: Agent



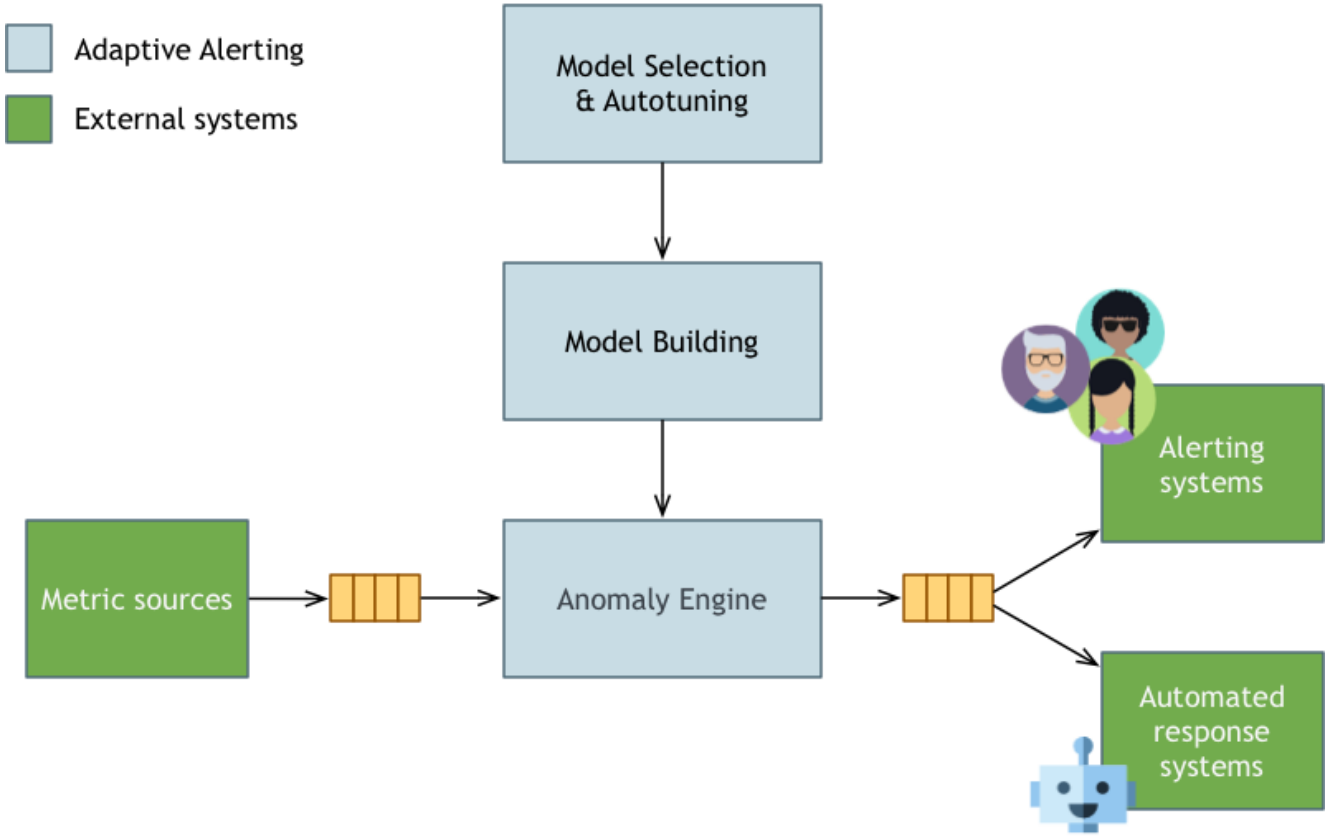
Haystack flow



Haystack @ Expedia Group

- **Multiple brands**
- **More than few hundred services**
- **210k/sec spans ingestion**
- **50 node c5.xlarge k8s cluster**
- **40 node Kafka cluster**
- **50 node c5.xlarge Cassandra**
- **Tens of ES node cluster**
- **Support OpenTracing clients in Java and NodeJS**

Next steps: Adaptive Alerting



References: Open Source Git repositories

https://github.com/ExpediaDotCom/haystack
https://github.com/ExpediaDotCom/haystack-idl
https://github.com/ExpediaDotCom/haystack-commons
https://github.com/ExpediaDotCom/haystack-traces
https://github.com/ExpediaDotCom/haystack-client-java
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https://github.com/ExpediaDotCom/haystack-service-graph

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