

MONITOR YOUR MICROSERVICES LOGS, METRICS, PINGS, AND TRACES

Philipp Krenn

@xeraa



Honest Status Page

@honest_update

 Follow



We replaced our monolith with micro services so that every outage could be more like a murder mystery.

RETWEETS

2,882

LIKES

2,256



4:10 PM - 7 Oct 2015



18



2.9K



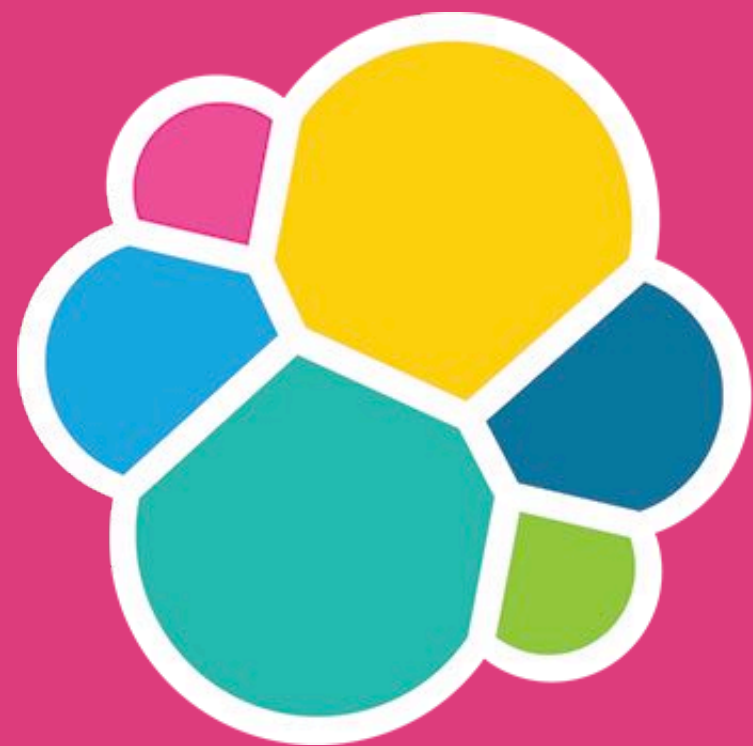
2.3K





ALL THE THINGS!





elastic

Developer 🥑

Disclaimer

I build **highly** monitored Hello World
apps

Code

<https://github.com/xeraa/microservice-monitoring>

APPLICATION



Simple

No discovery, load-balancing,...

IF ALL YOUR APIS HAVE SHORT NAMES,

THEN YOU HAVE MICROSERVICES

CLOUD





cloud



OPEN SOURCE





Kibana



Elasticsearch



Logstash



Beats



WORKSHOP

SSH: `ssh workshop@workshop-<number>.xeraa.wtf`
`workshop / secret`

Elasticsearch: `http://localhost:9200`
`admin / secret`

Kibana: `http://workshop-<number>.xeraa.wtf:5601`
`admin / secret`

Application: `http://workshop-<number>.xeraa.wtf`

A low-angle, upward-looking shot of a white security camera mounted on a ceiling. The ceiling features a grid of fluorescent light fixtures, with one light glowing brightly. The camera is positioned in the center-left of the frame, pointing towards the right. The overall lighting is dim, with the primary light source being the overhead fluorescent light.

MONITORING

Metricbeat: System

Packetbeat

Metricbeat: nginx

Filebeat Modules

Filebeat + JSON

MDC, context, stack hash

Heartbeat

Metricbeat: HTTP

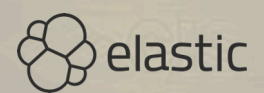
ID	Description	Sensitive Default
<code>actuator</code>	Provides a hypermedia-based “discovery page” for the other endpoints. Requires Spring HATEOAS to be on the classpath.	true
<code>autoconfig</code>	Displays an auto-configuration report showing all auto-configuration candidates and the reason why they ‘were’ or ‘were not’ applied.	true
<code>beans</code>	Displays a complete list of all the Spring beans in your application.	true
<code>configprops</code>	Displays a collated list of all <code>@ConfigurationProperties</code> .	true
<code>dump</code>	Performs a thread dump.	true
<code>env</code>	Exposes properties from Spring’s <code>ConfigurableEnvironment</code> .	true
<code>flyway</code>	Shows any Flyway database migrations that have been applied.	true
<code>health</code>	Shows application health information (when the application is secure, a simple ‘status’ when accessed over an unauthenticated connection or full message details when authenticated).	false
<code>info</code>	Displays arbitrary application info.	false
<code>liquibase</code>	Shows any Liquibase database migrations that have been applied.	true
<code>metrics</code>	Shows ‘metrics’ information for the current application.	true
<code>mappings</code>	Displays a collated list of all <code>@RequestMapping</code> paths.	true
<code>shutdown</code>	Allows the application to be gracefully shutdown (not enabled by default).	true
<code>trace</code>	Displays trace information (by default the last few HTTP requests).	true

Metricbeat: Jolokia

Time Series Visual Builder & Annotations



Auditbeat



Sleuth


```
2017-03-29 08:08:35.090 INFO
[frontend,69a851ed700bf1fa,69a851ed700bf1fa,true]
23575 --- [p-nio-80-exec-2]
n.x.MicroserviceMonitoringApplication :
Calling home
2017-03-29 08:08:36.149 INFO
[frontend,69a851ed700bf1fa,10b1f0a0e2de1253,true]
23575 --- [p-nio-80-exec-3]
n.x.MicroserviceMonitoringApplication :
You called home
```


Application: frontend

Trace ID: 69a851ed700bf1fa

Span ID: 10b1f0a0e2de1253

Send to Zipkin: true

Zipkin

Zipkin Chrome Extension

<https://github.com/openzipkin/zipkin-browser-extension>

MORE



Name

Heap

Select an Index

metricbeat-*

Select a time field

@timestamp

Run this water

1

Broad searches can be done by adding * to your query

Matching the following condition

WHEN max() OF jolokia.metrics.memory.heap_usage.used GROUPED OVER 5 'beat.name' IS ABOVE 50000000 FOR THE LAST 5 minutes

beat.name (1 of 3): frontend.xeraa.wtf



*X-Pack and part of the Elastic Cloud

Alerts*

Name

Heap

Select an Index

metricbeat-*

Select a time field

@timestamp

Run this water

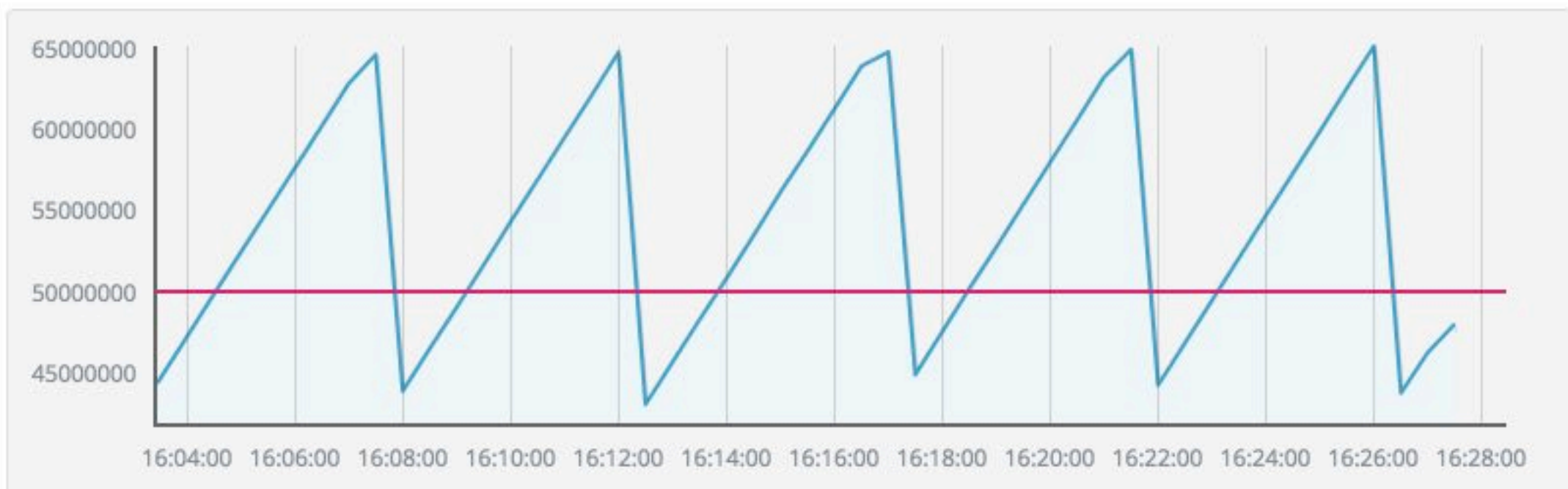
1

Broad searches can be done by adding * to your query

Matching the following condition

WHEN max() OF jolokia.metrics.memory.heap_usage.used GROUPED OVER top 5 'beat.name' IS ABOVE 50000000 FOR THE LAST 5 minutes

beat.name (1 of 3): frontend.xeraa.wtf

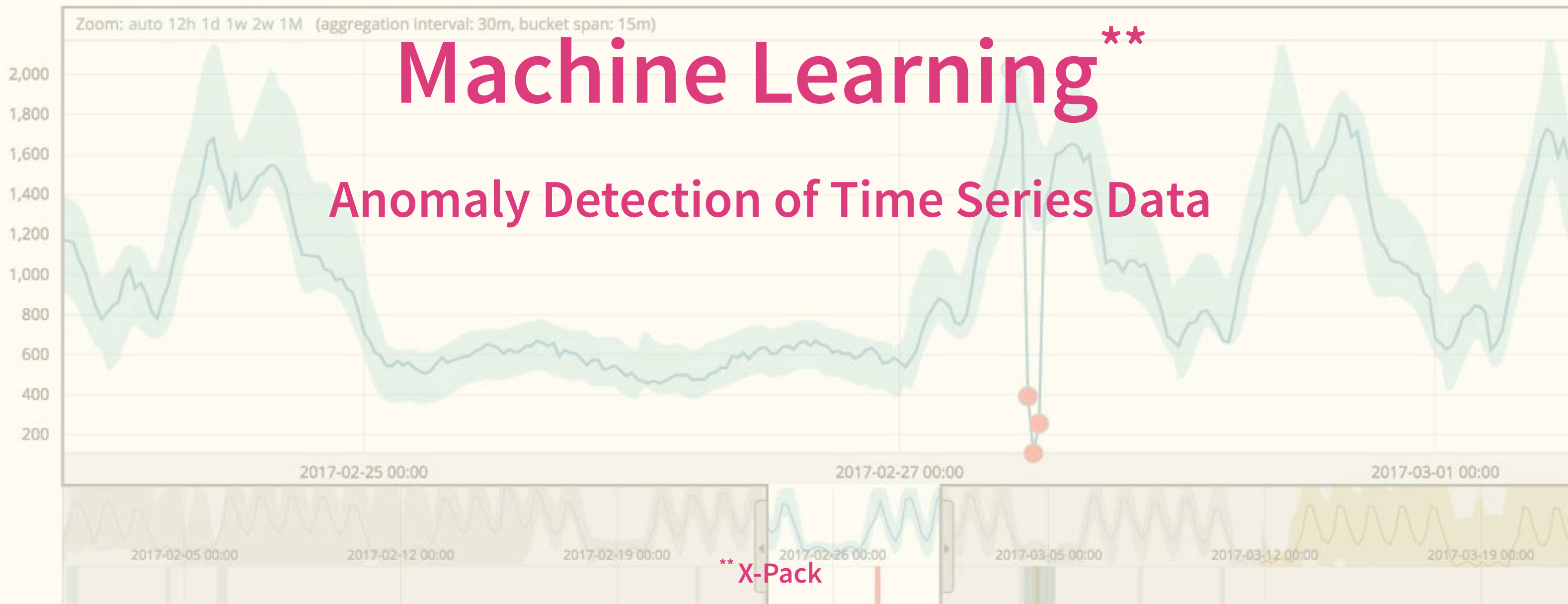


Job nginx-single

Detector: distinct_count (nginx.access.remote_ip)

Forecast

Single time series analysis of cardinality nginx.access.remote_ip

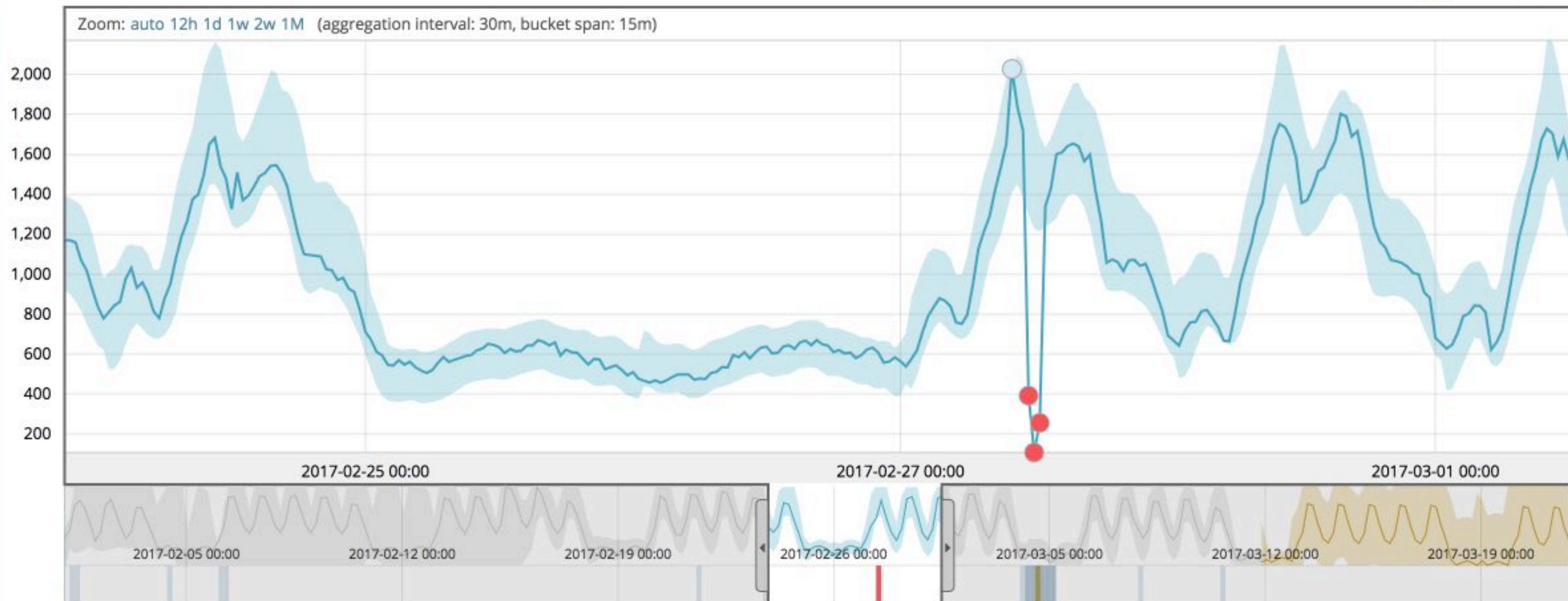
☒ show model bounds

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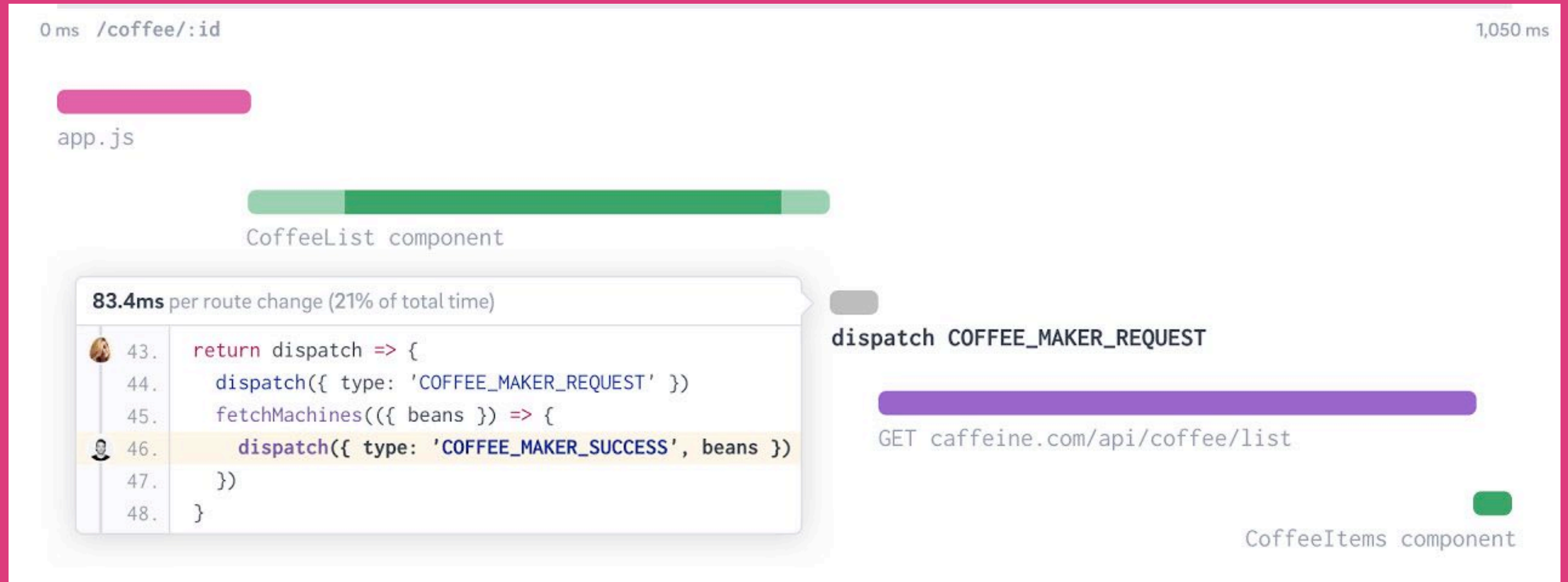
☒ show model bounds

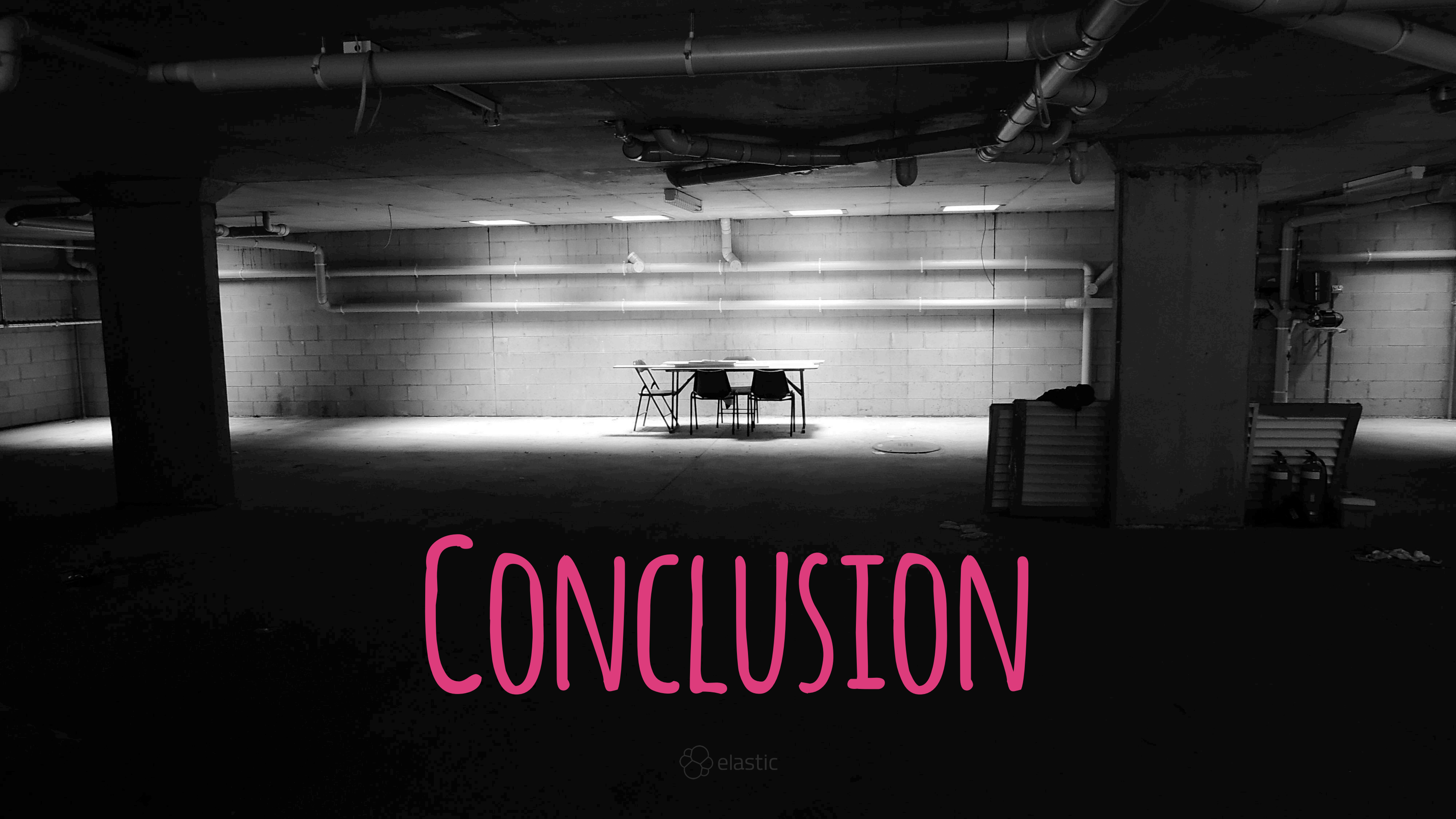


WORK HARDER

FUTURE

APM





CONCLUSION



System metrics & network

Filebeat modules & Auditbeat

Application logs

Uptime
Application metrics
Request tracing

Next

<https://github.com/xeraa/microservice-monitoring>

QUESTIONS?

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PS: Sticker