

Monitor Your (Distributed)

JAVA APPLICATIONS

Logs, Metrics, Pings, and Traces

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@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

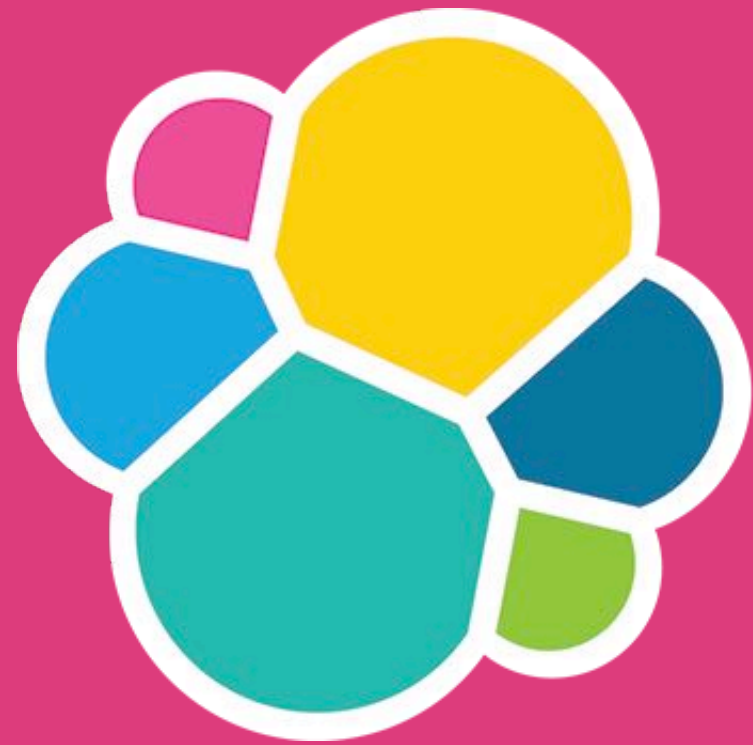
 2.3K





ALL THE THINGS!





elastic

Developer 🥑

Disclaimer

I build **highly** monitored Hello World
apps

Code

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

APPLICATION



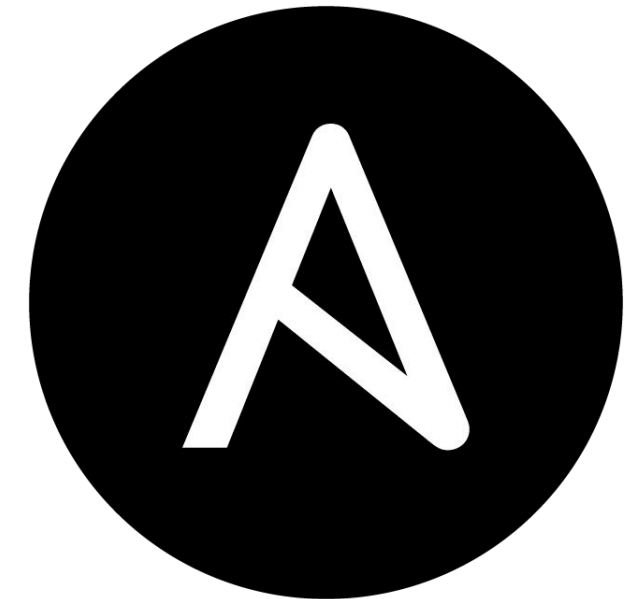
Simple

No discovery, load-balancing,...

IF ALL YOUR APIS HAVE SHORT NAMES,

THEN YOU HAVE MICROSERVICES

CLOUD





cloud



OPEN SOURCE





Kibana



Elasticsearch




Logstash



Beats




eu-west-1a


 **AWS.DATA.HIGHIO.I3**
Instance #8 v6.4.1
2 GB RAM
data master eligible ingest

JVM memory pressure 49% of 2 GB
Disk usage 16.1 GB of 60 GB

Stop routing


 **AWS.KIBANA.R4**
Instance #4 v6.4.1
2 GB RAM

eu-west-1b

 **AWS.DATA.HIGHIO.I3**
Instance #9 v6.4.1
2 GB RAM
data master ingest

JVM memory pressure 45% of 2 GB
Disk usage 17.96 GB of 60 GB


Stop routing

 **AWS.ML.M5**
Instance #11 v6.4.1
1 GB RAM
ml

Disk usage 0 MB of 2 GB

Stop routing

eu-west-1c

 **AWS.MASTER.R4**
Tiebreaker #10 v6.4.1
1 GB RAM
master eligible

JVM memory pressure 55% of 1 GB
Disk usage 0 MB of 2 GB

Stop routing

A security camera is mounted on a ceiling in a dimly lit room. The camera is white and rectangular, with a lens visible. The ceiling has a grid pattern and fluorescent lights. The word "MONITORING" is written in large, pink, stylized letters across the bottom of the image.

MONITORING

Metricbeat: System

Packetbeat

<https://xeraa.wtf>

Metricbeat: nginx

Filebeat Modules

Filebeat + JSON

MDC, context, stack hash

A photograph of two dogs running on a sandy beach. The dog on the left is a brindle-colored dog, possibly a Weimaraner, running towards the right with its mouth open. The dog on the right is a black dog, possibly a Labrador Retriever, running towards the left. The background is a bright, slightly hazy sky and a distant shoreline. The word "Heartbeat" is overlaid in the center in a pink, sans-serif font.

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

APM

Application Performance Management / Monitoring

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

Alerts*

WHEN max() OF jolokia.metrics.memory.heap_usage.used GROUPED OVER top 3 'beatname' IS ABOVE 50000000 FOR THE LAST 5 minutes

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



* Gold license and Elastic Cloud

Name

Heap

Select an Index

metricbeat-* ✕

Broad searches can be done by adding * to your query

Select a time field

@timestamp

Run this water

1

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



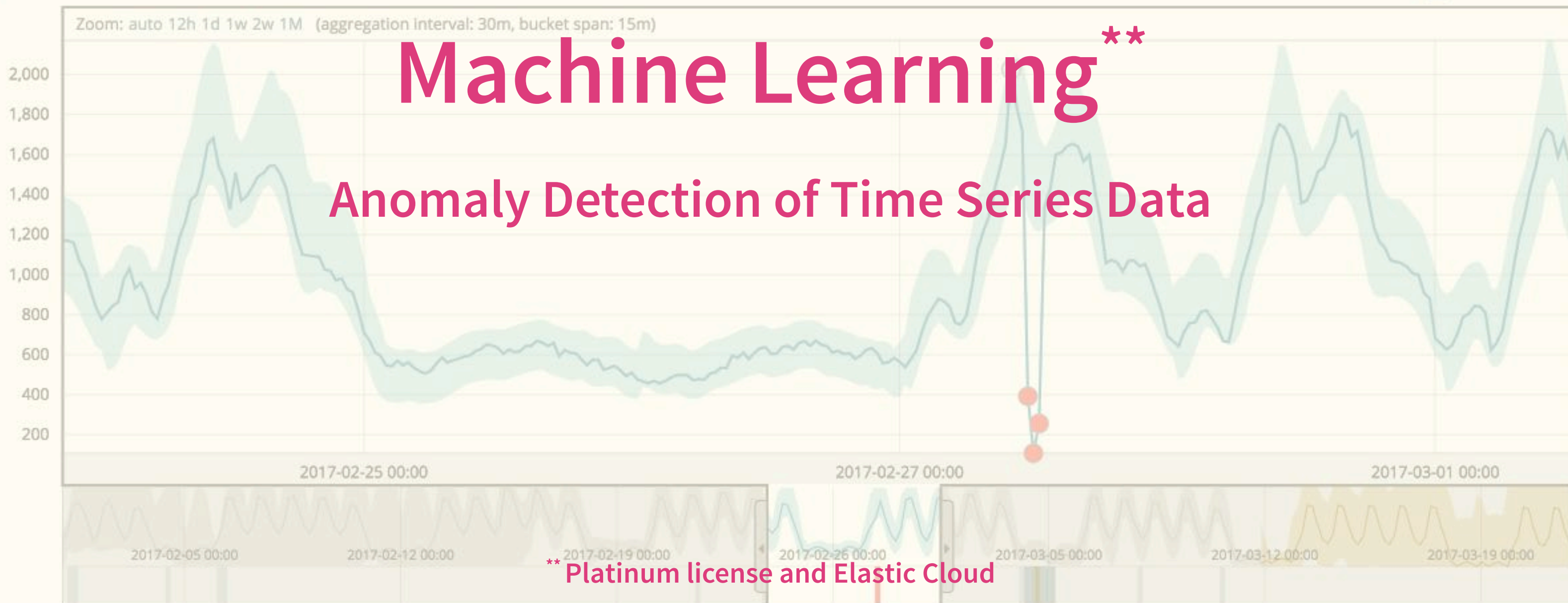
Job nginx-single

Detector: distinct_count (nginx.access.remote_ip)

Forecast

Single time series analysis of cardinality nginx.access.remote_ip

show model bounds



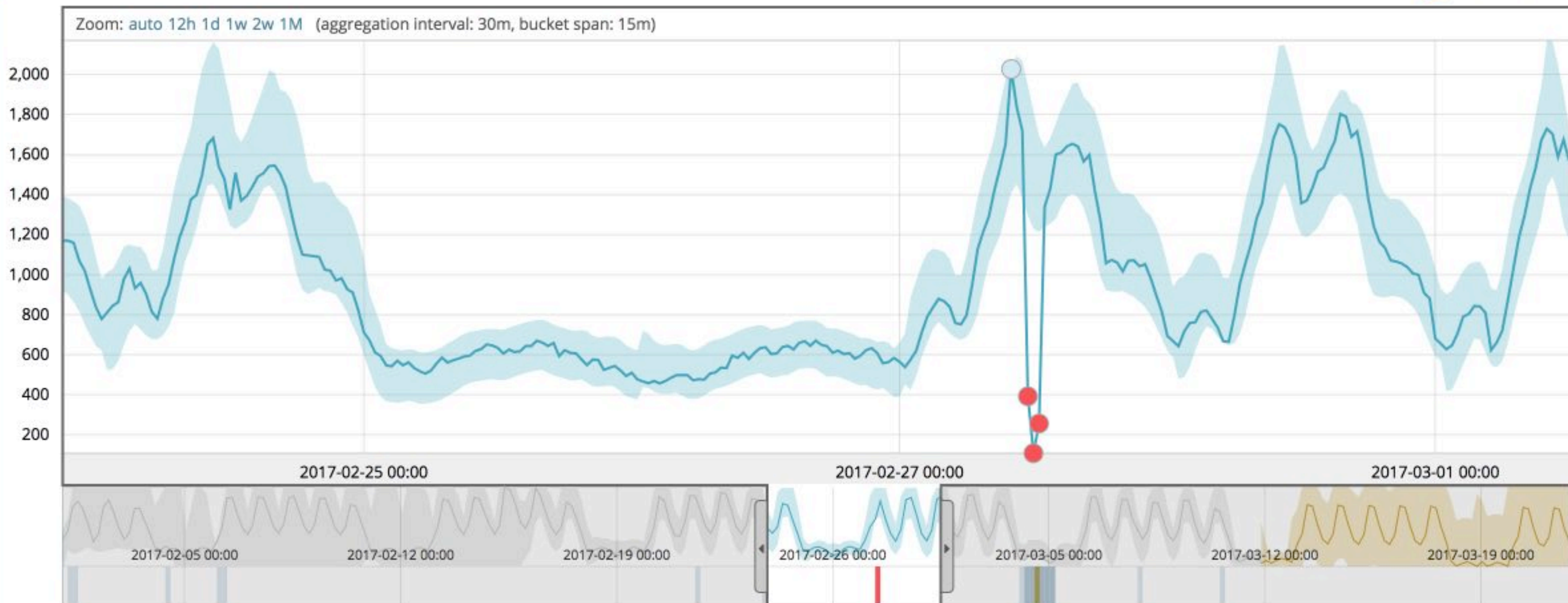
Job nginx-single

Detector: distinct_count (nginx.access.remote_ip)

Forecast

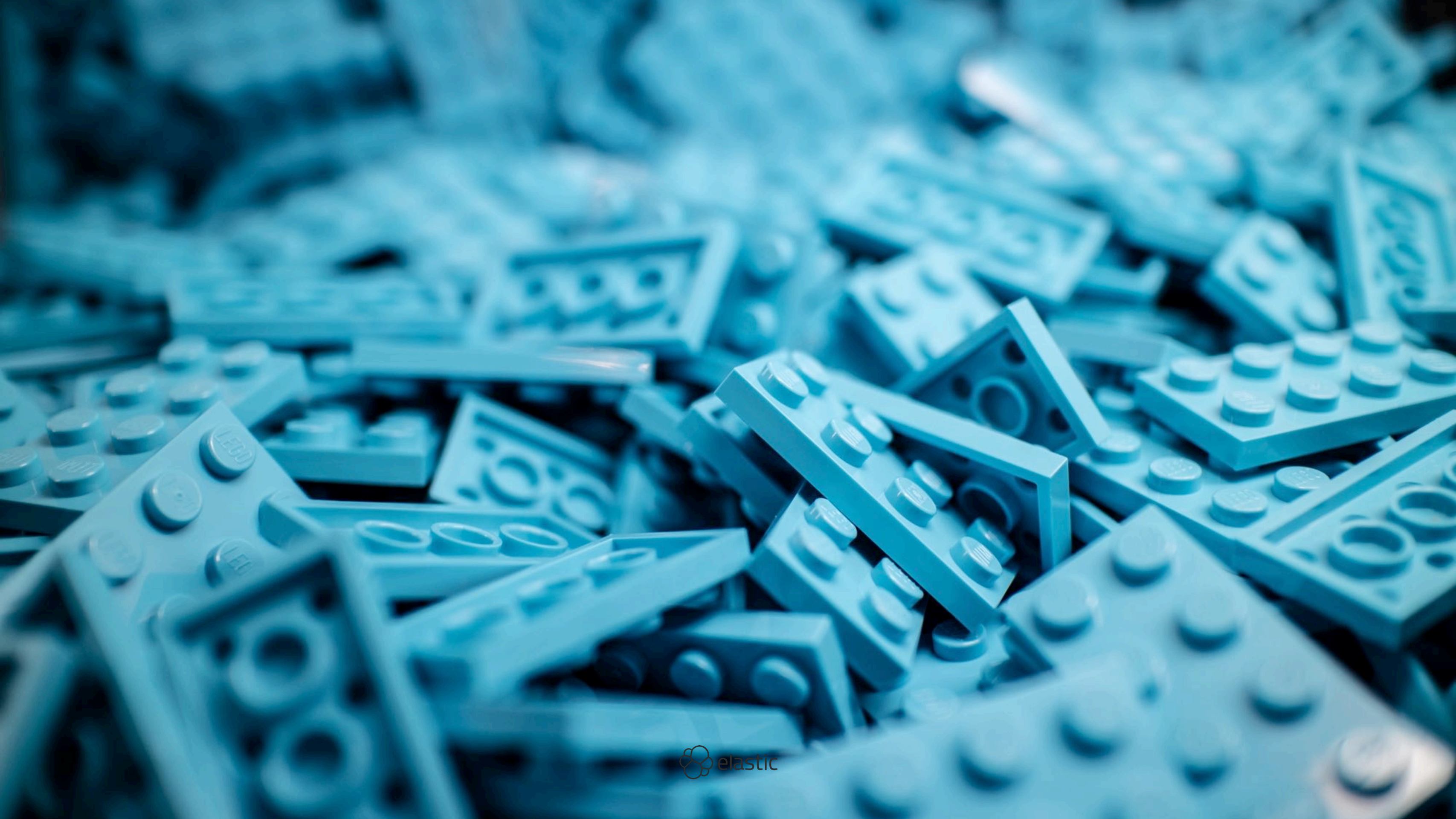
Single time series analysis of cardinality nginx.access.remote_ip

show model bounds





CONCLUSION



System metrics & network
Filebeat modules & Auditbeat
Application logs

Uptime
Application metrics
Request tracing

Next

<https://dashboard.xeraa.wtf>

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

QUESTIONS?

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PS: Sticker