

Elastic{ON} - 2017



Satish Varma Dandu

Software Manager

Data Engineering & Data Science

Niranjan Nataraja

Lead Data Scientist



AGENDA

- Kratos Data Platform as-a-Service
- Multi-Tenancy
 - GeForce Now Cloud Gaming
- Use Cases
 - Quality of Experience
 - Operations
 - Business
- Kratos Visual Logging

Kratos Data Platform as-a-Service

Scale

- Handles 1M events/sec
- Auto-scales the cluster automatically

Security

- Data Platform security has been implemented with VPCs in AWS
- Dashboard access using NVIDIA LDAP



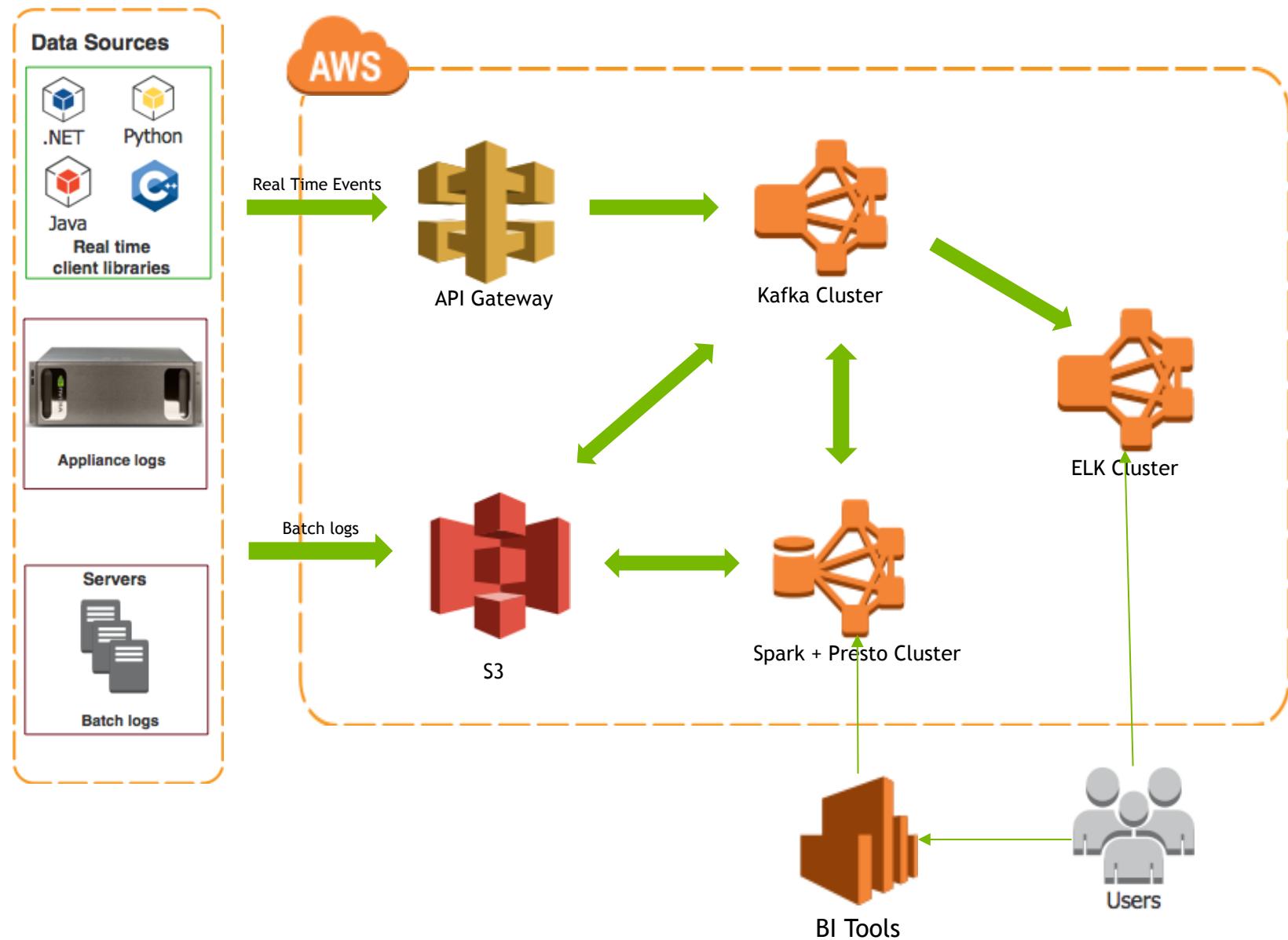
High Availability

- Offers HA with no data-loss
- Always On Architecture
- Data replication

Self Service

- Log-to-Analytics
- Kibana, JDBC access
- Accessing data using BI tools

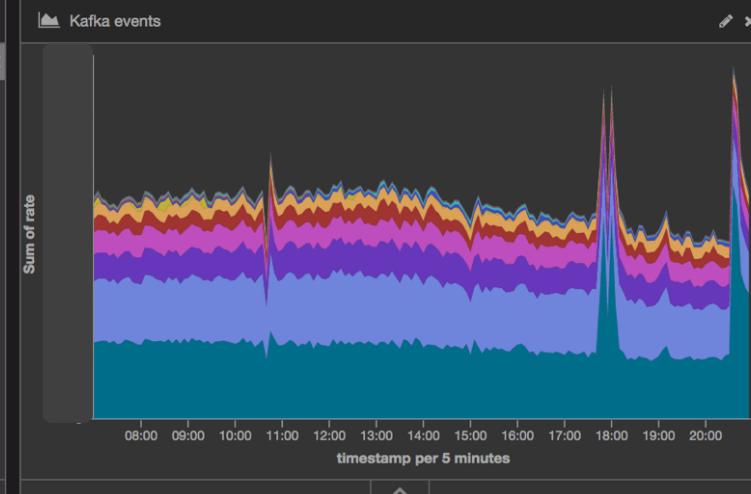
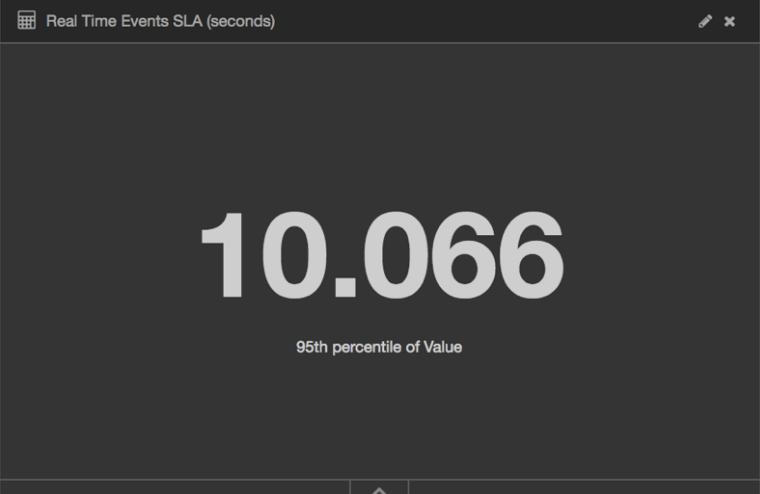
ARCHITECTURE 10K FEET



Kratos - Data Platform Stats

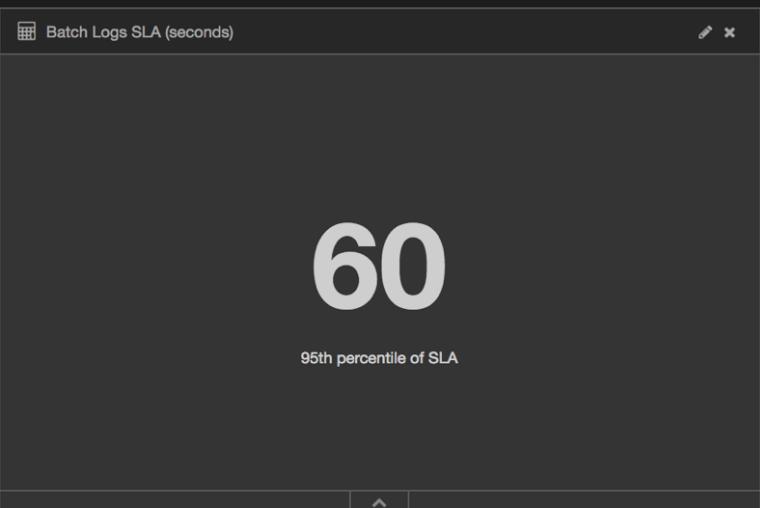
10.066

95th percentile of Value



60

95th percentile of SLA



GEFORCE NOW



GEFORCE NOW™
THE NEW WAY TO GAME.

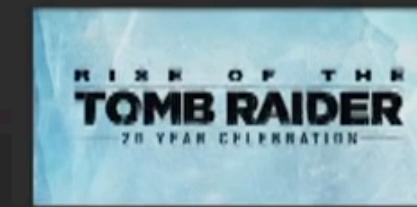


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Search

GAMES

Zoom | VRW



? St. Youhei
has added you to his or her
Friends List

? Junes
has added you to his or her
Friends List

? Sjwelt
has added you to his or her
Friends List

+ ADD A GAME...

GEFORCE NOW

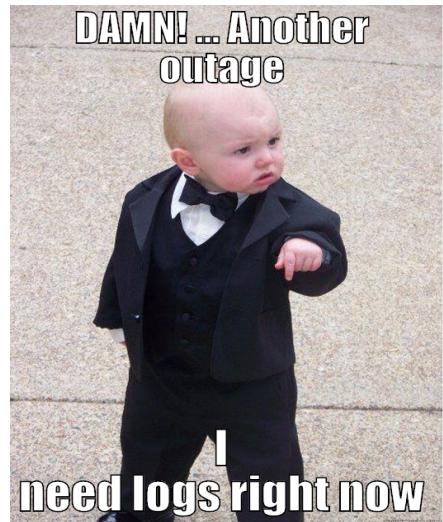
Now you can transform your Mac or PC into a powerful NVIDIA® GeForce® GTX 1080 gaming machine with easy access to the latest PC games. Connect to top digital stores like Steam, Uplay, GOG, Battle.net, and Origin to play your games. It's that easy.

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SUPERCHARGE YOUR MAC OR PC

Want to play new PC games but have a macOS- or Windows-based machine that isn't up to the task? NVIDIA GeForce NOW™ gives you instant access to GeForce GTX 1080 gaming in the cloud to play the latest games in high-definition at maximum settings and smooth framerates.

Kratos Visual Logging



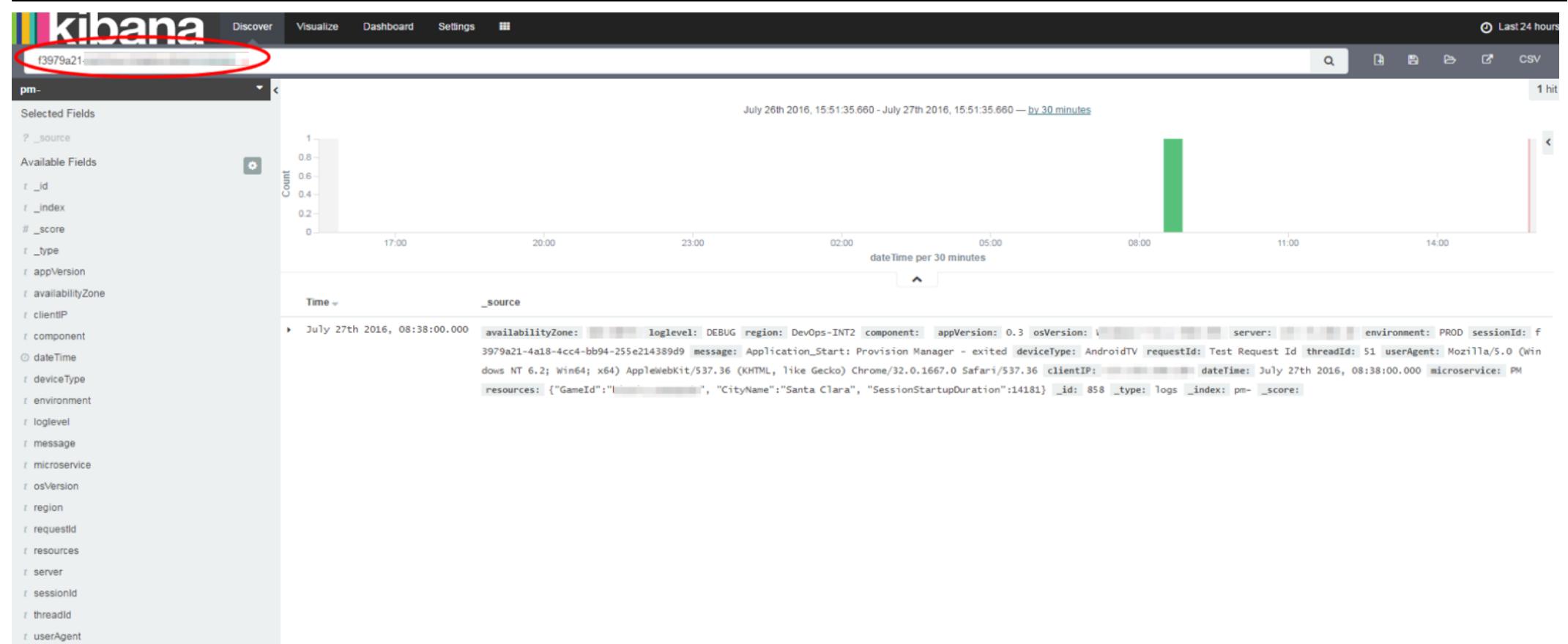
Kratos Visual Logging

- Visual Logging is an extension & backward compatible to existing logging frameworks like log4j, log4net, pylog
- Provides default meta-data out-of-the-box



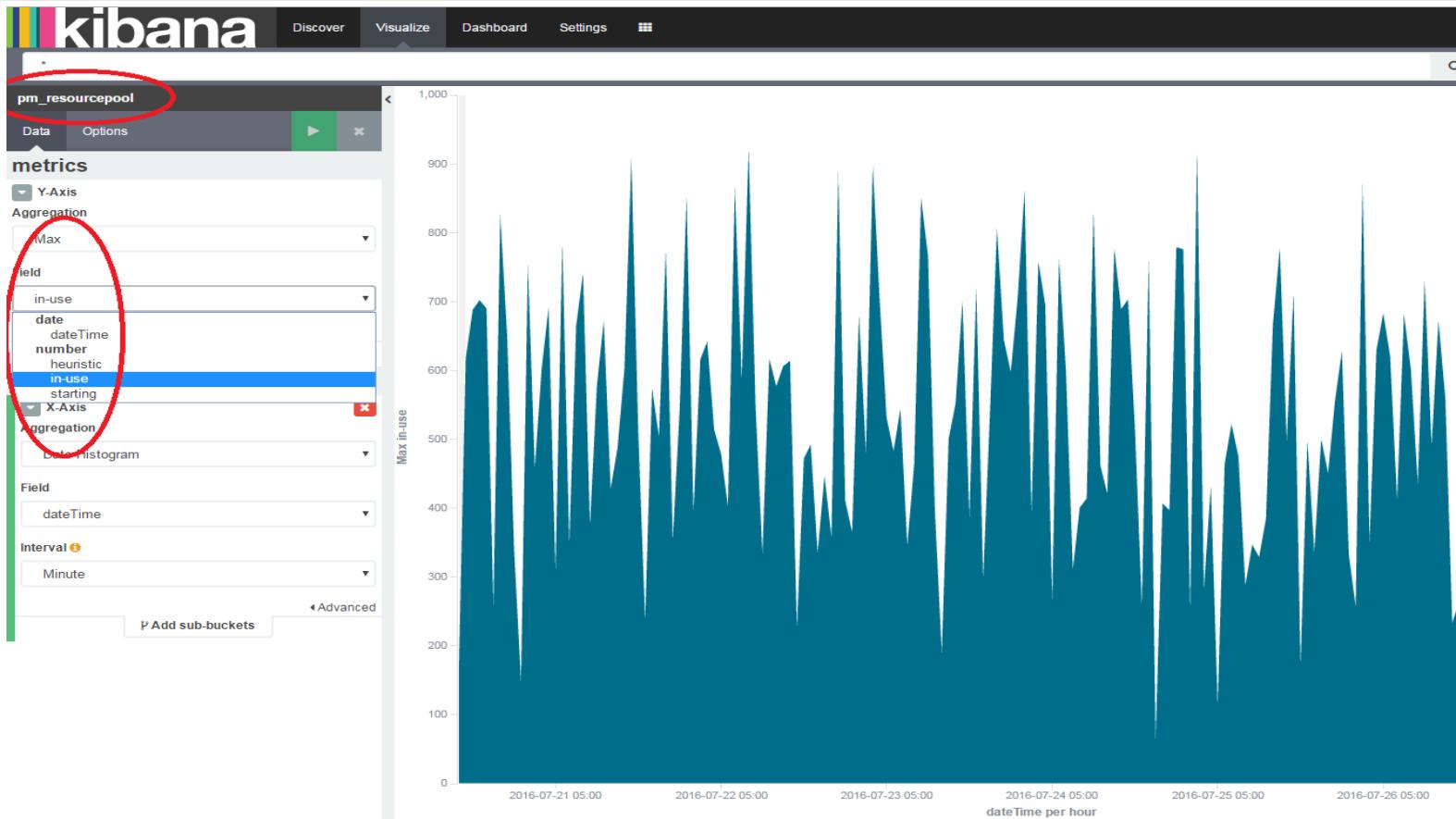
Use case #1: Dev-to-Search

```
logger.info(NGNLogger.getInstance(component).Log(trackingId, requestId, resources, message );  
Ex: logger.info(NGNLogger.getInstance("").Log("f3979a21 [REDACTED]", null, null, "Sent a request to server for retrieving games");
```



Use case #2: Zero-Engineering Visualizations/Charts

```
var resources = JsonConvert.SerializeObject(new Dictionary<object,object>() {"VM" = "ami-1234", "in-use" = 96, "starting" = 12, "heuristic" = 123});  
logger.Debug(NGNLogger.getInstance("resourcepool").Log(sessionId, null, resources, "ResourcePool metrics" ));
```



Use case #3: Zero-Engineering Dashboards

- Devs can log in a particular format and we can build some automated dashboards for yield, duration, error codes etc.

success

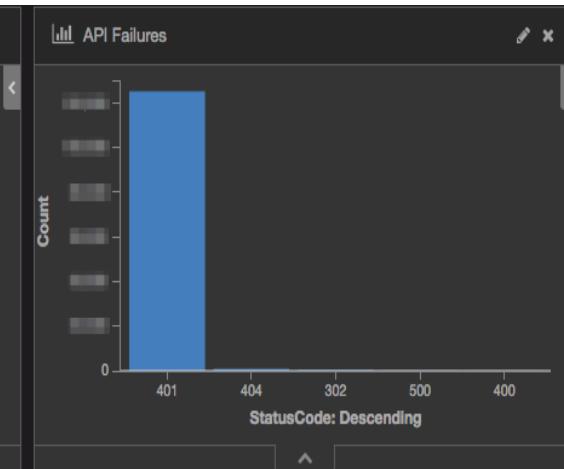
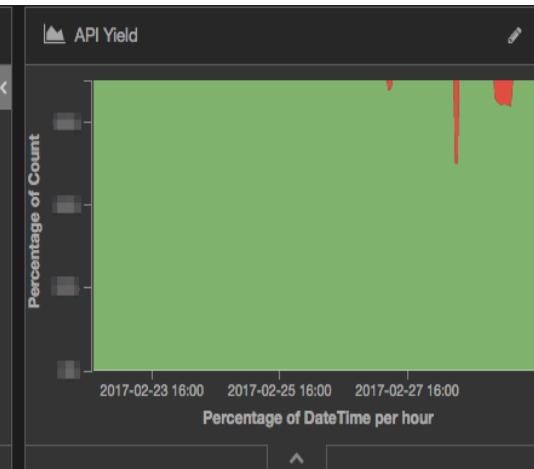
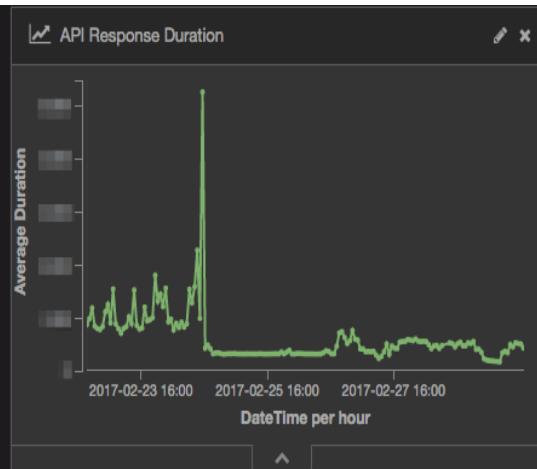
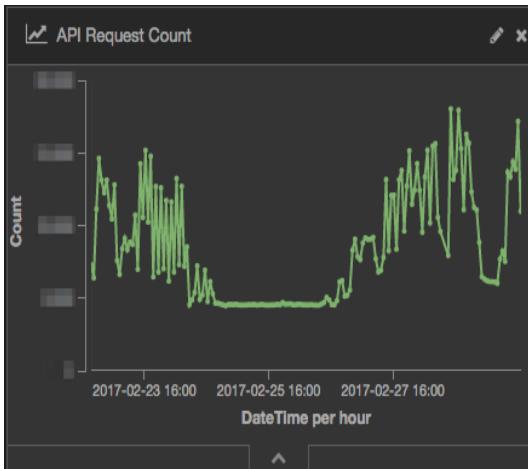
▼ Collapse source

```
var resources = JsonConvert.SerializeObject(new Dictionary<object,object>() {"Tag":NGNLogger.YIELD, "ExitCode":"PASS"});  
logger.Debug(NGNLogger.getInstance("rest").Log(jobId, null, resources, "Game started successfully" ));
```

Failure

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```
var resources = JsonConvert.SerializeObject(new Dictionary<object,object>() {"Tag":NGNLogger.YIELD, "ExitCode":"FAIL", 'ErrorCode': '401', 'ErrorMessage': 'Auth Error'});  
logger.Debug(NGNLogger.getInstance("rest").Log(jobId, null, resources, "Auth error" ));
```



Use case #4: Zero-Engineering BI

- Kratos Visual logging offers JDBC support. So BI tools like Tableau, AWS Quick Sight can be used to query data directly
- Engineers & Analysts can write sql queries to make data decisions from the log data directly

```
1 select datetime, requestid, uuid  
2 [REDACTED]  
3 order by datetime desc  
4 limit 50  
5 ;
```

new table name

Results Query History Preview for saturn_jobs Preview for saturn_v_jobs



datetime	requestid	uuid
2017-02-28 23:57:31.316	141875	141875
2017-02-28 23:57:29.306	141875	141875
2017-02-28 23:57:25.398	141875	141875
2017-02-28 23:57:21.185	141875	141875
2017-02-28 23:56:33.396	141874	141874
2017-02-28 23:56:29.398	141874	141874
2017-02-28 23:56:17.057	141874	141874
2017-02-28 23:55:57.266	141873	141873
2017-02-28 23:55:51.391	141873	141873
2017-02-28 23:52:25.311	141873	141873

NVIDIA Kratos Team

- Jarod Maupin
- Nixs Nataraja
- Rohan Somvanshi
- Ed Clune
- Rohit Kulkarni
- Satish Dandu

- Contact : ElasticOn2017@Nvidia.com, sdandu@nvidia.com



Thanks
Q&A

