

Elastic-Monitoring using Grafana

@



PlayStation™

Hello
my name is

Utkarsh
Bhatnagar

- Senior Software Engineer @ Sony Interactive Entertainment (PlayStation).
- An active contributor to **Grafana**.
- Project initiator for **wizzy** – a user friendly **CLI tool for GRAFANA**

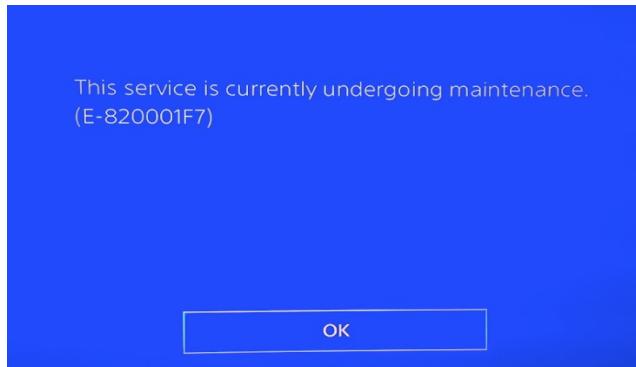
GitHub - <https://github.com/utkarshcmu>

Email – utkarsh.bhatnagar@sony.com

It's story
TIME

The graphic features the words "It's story" in a black, cursive font above the word "TIME". The letters of "TIME" are large and bold. The "T" is composed of two stylized children: one orange child on the left and one purple child next to it. The "I" is a yellow circle, the "M" is red, and the "E" is green. The children are positioned such that their heads form the top of the "I" and their bodies form the vertical strokes of the "T" and the horizontal stroke of the "E".

PlayStation Outage!



Problems at Playstation Network

Published: 10/09/2015 3:22 p.m. By: downdetector.com

Playstation Network is having issues since 3:22 PM EDT. Are you also affected? Leave a message in the comments.

Most reported problems:

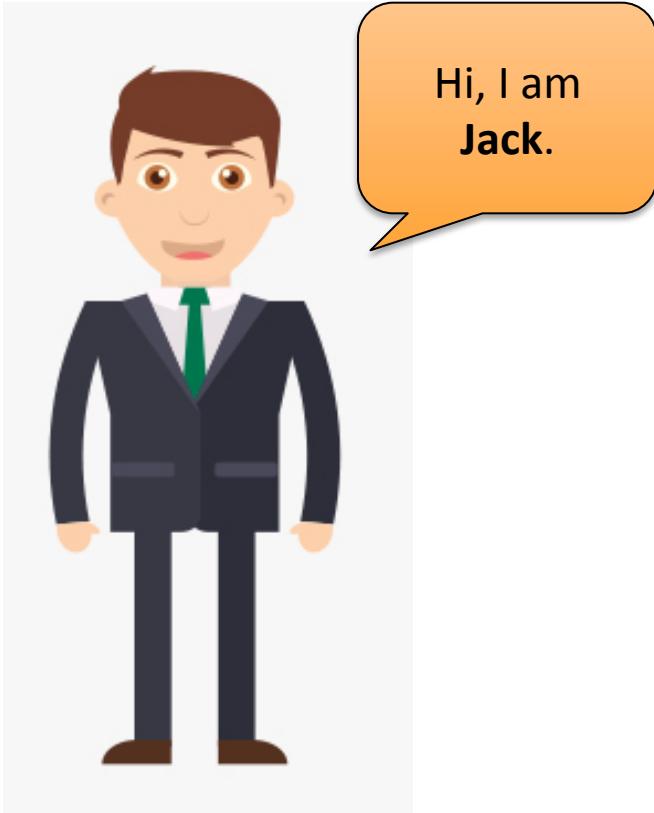
- Sign-in (67%)
- Game play (16%)
- Playstation Store (15%)

Oct. 9, 2015 Status overview



PLAYSTATION®Network

Sometime 2 years back...



POC on Monitoring



Requirements:

- 50,000 unique metrics from one source
- Data points every minute
- Roughly about **72 million data points per day**
- Data retention 60 days
- User friendly UI with possible customization

Choosing the technology!



POC

Design & Architecture



POC Completed!



Mission accomplished!

1 metrics source
50,000 unique metrics
72 million data points per day

Metrics Onboarding



Team 1 Requirements:

- 100,000 unique metrics
- About 200 million data points per day

Team 2 Requirements:

- 400,000 unique metrics
- About 600 million data points per day

Team 3 Requirements:

- 500,000 unique metrics
- About 2 billion data points per day

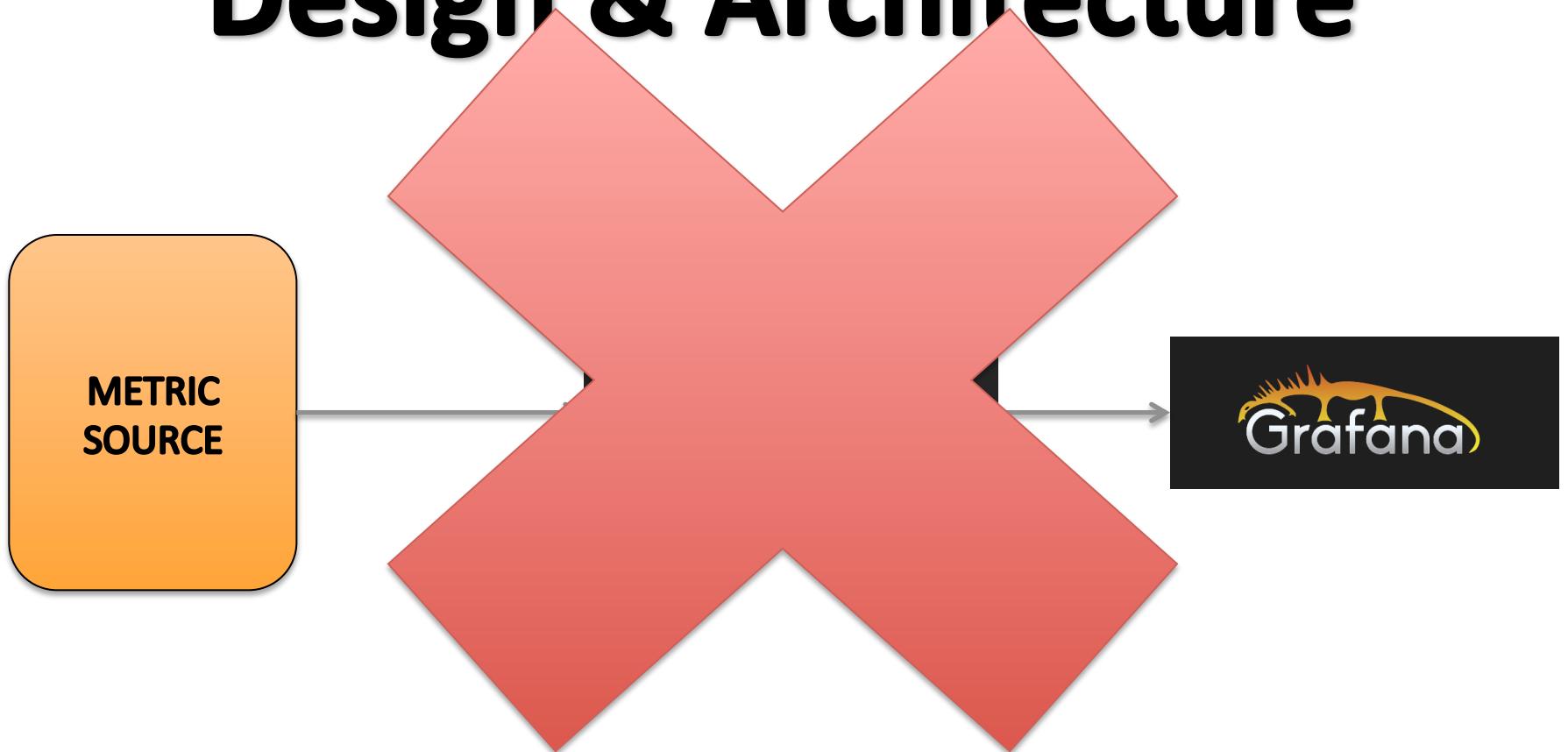
Team 4 Requirements:

- 800,000 unique metrics
- About 5 billion data points per day

And more.....

POC

Design & Architecture



How to Scale?



Challenges:

- Multiple teams
- Millions of unique metrics
- Above 10 billion data points a day
- Process 3 million logs every minute and generate metrics
- Reprocessing of metrics and logs if needed
- **Provide real time monitoring for all of the above using GRAFANA!**

Should he continue with Graphite?
Should he ask to reduce metrics or datapoints?
How to dynamically scale Graphite?
Does Grafana support other datasources?
OpenTSDB / InfluxDB / KairosDB / Prometheus?
Support scaling Infrastructure to support variable load of metrics?

Strategy



Team 1 Requirements:

- 100,000 unique metrics
- **About 200 million data points per day**

Team 2 Requirements:

- 500,000 unique metrics
- **About 2 billion data points per day**

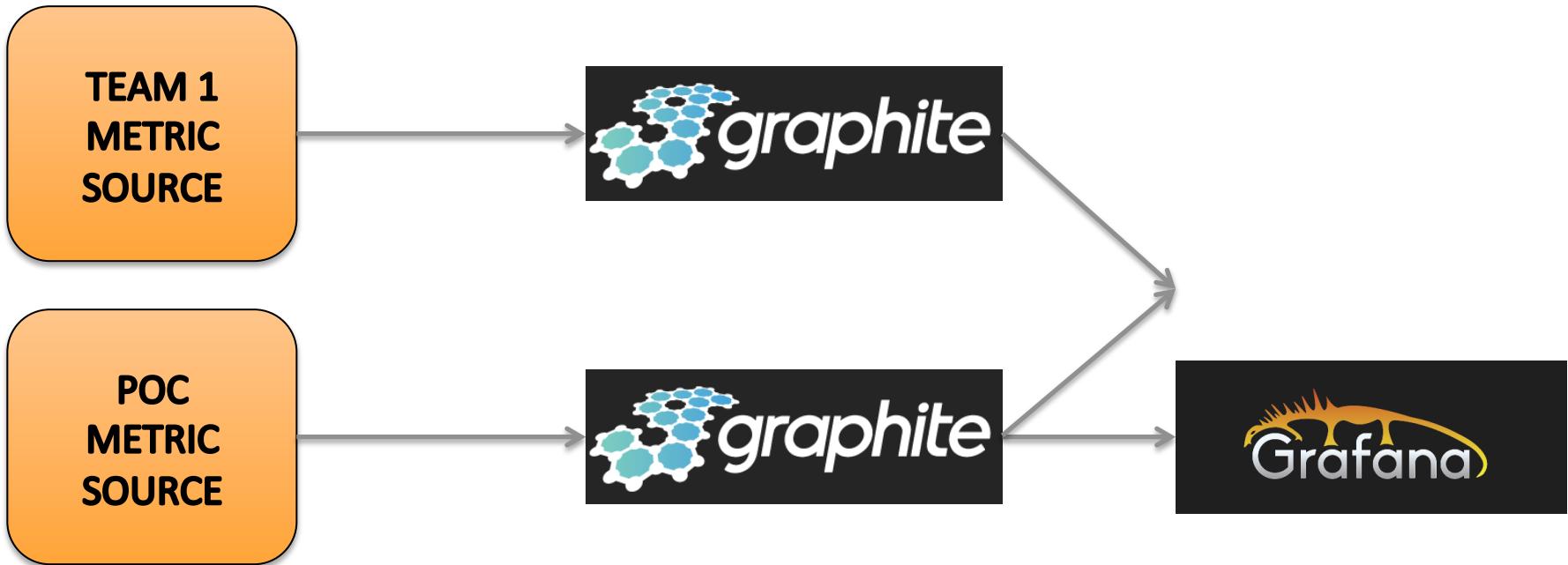
Team 3 Requirements:

- 3 million logs a minute
- **Generate metrics in real time**

And more.....

Divide & Conquer

Design & Architecture



POC works for: Team 1 requirements:

1 metrics source	1 metrics source
50,000 unique metrics	100,000 unique metrics
72 million data points per day	200 million data points per day

Team 1 Conquered!



This strategy works! Bring it on!

Strategy



Team 1 Requirements:

- 100,000 unique metrics
- About 200 million data points per day

Team 2 Requirements:

- 500,000 unique metrics
- About 2 billion data points per day

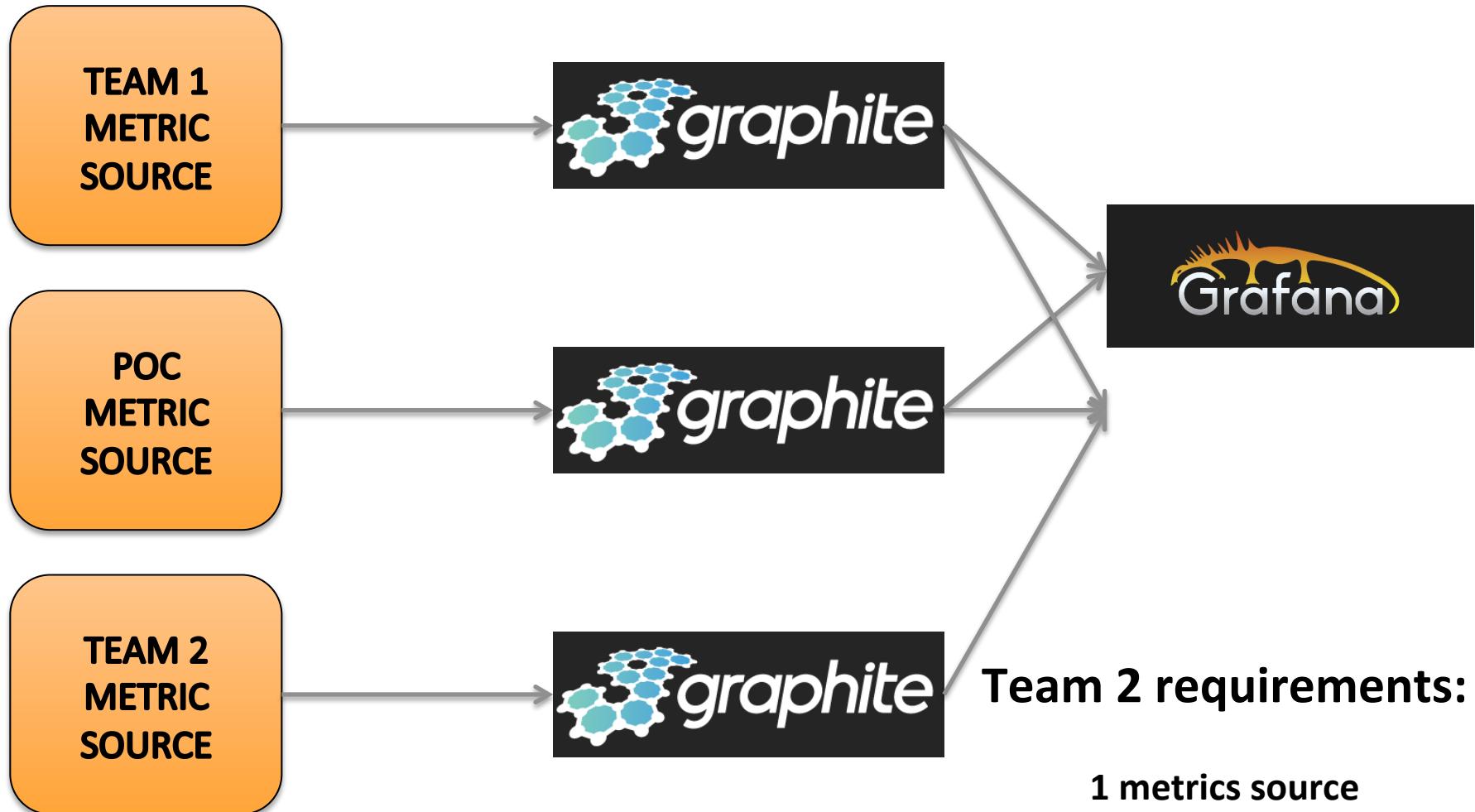
Team 3 Requirements:

- 3 million logs a minute
- Generate metrics in real time

And more.....

Divide & Conquer

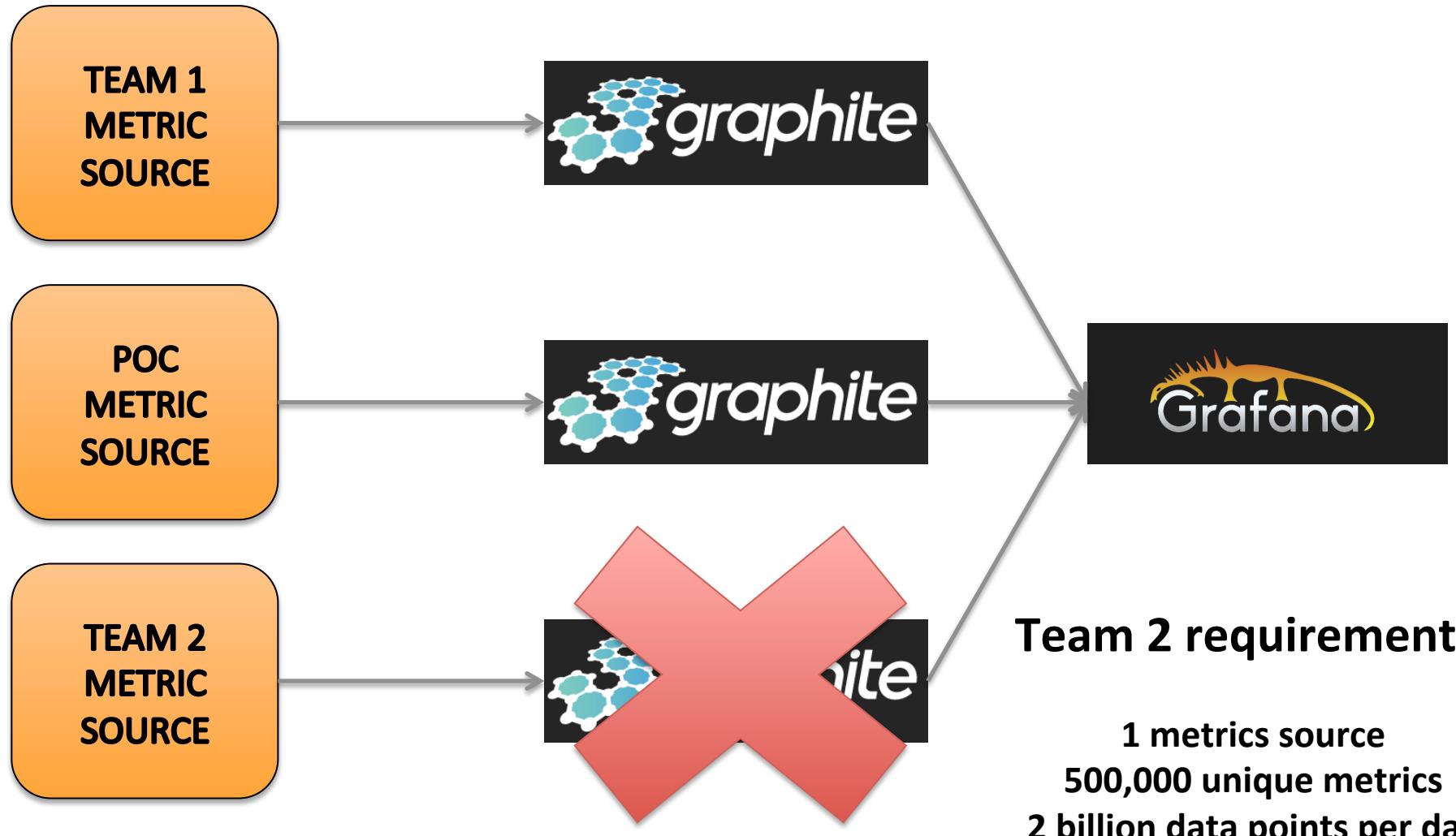
Design & Architecture

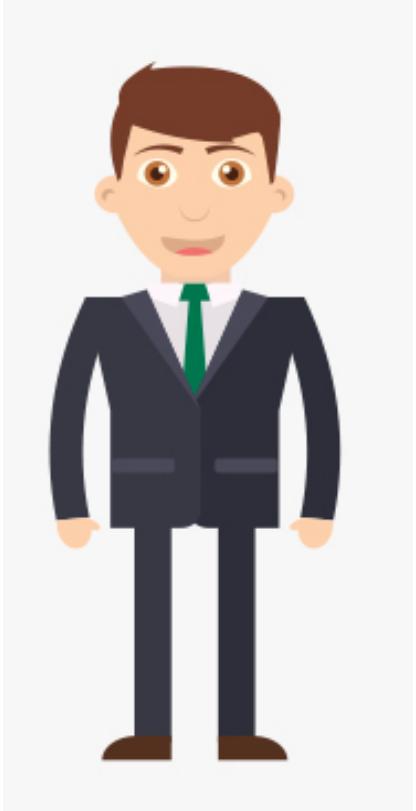


Team 2 Conquered!

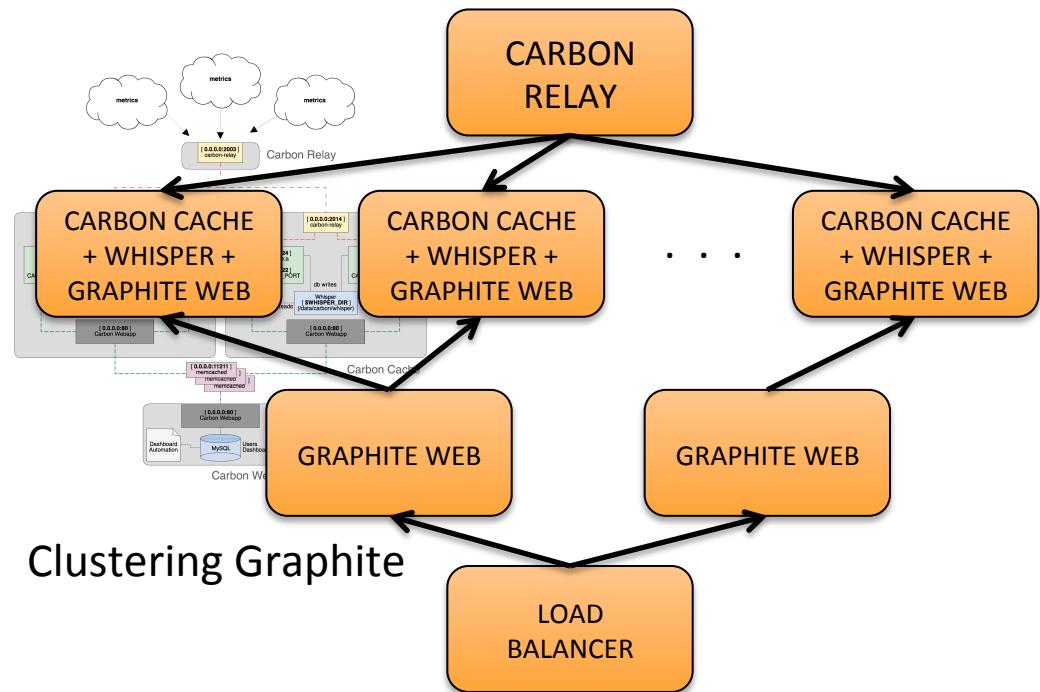


Design & Architecture

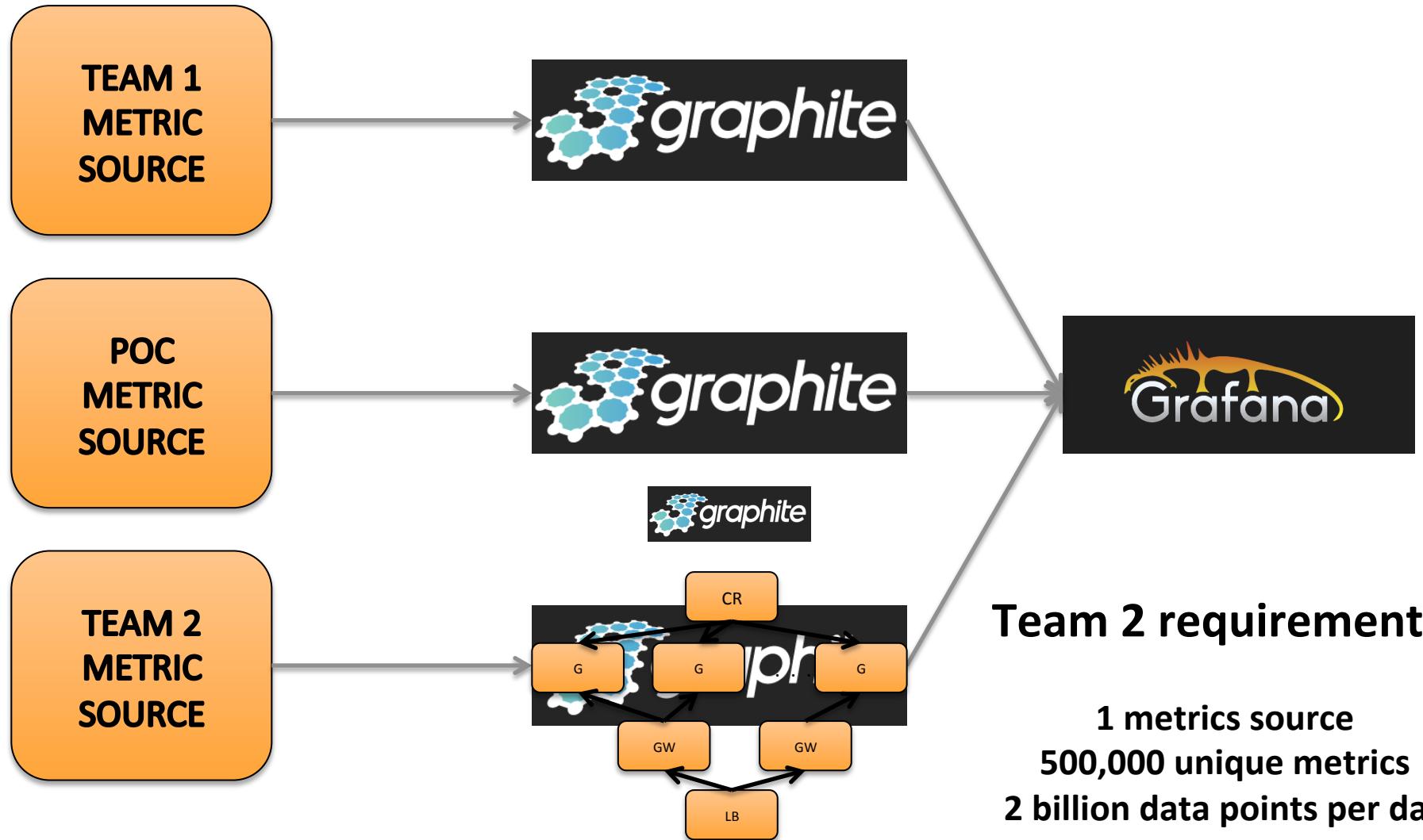




Scaling Graphite



Design & Architecture

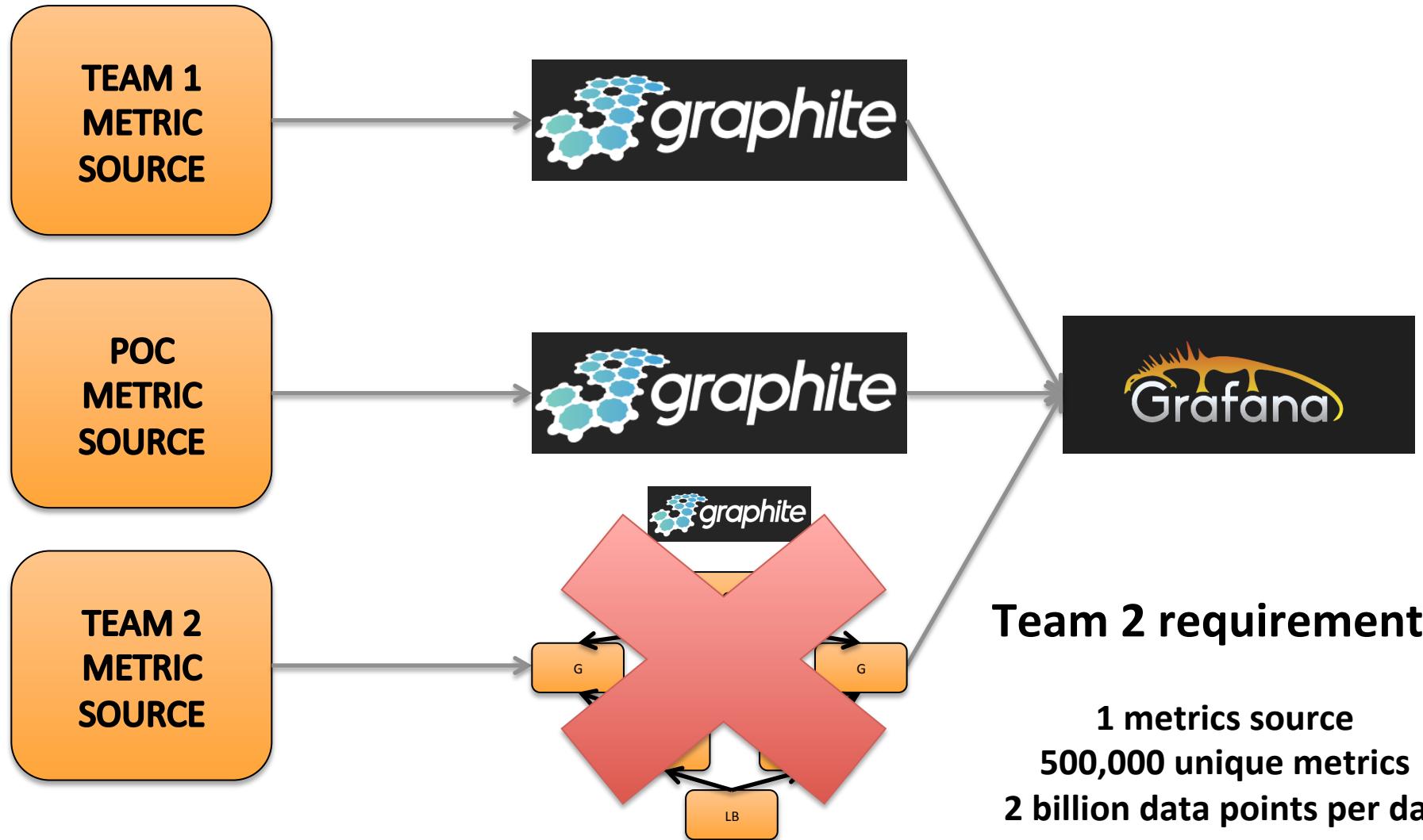


Team 2 Conquered!



But..... Happiness lasted only for a month 😞

Design & Architecture



Scalable Alternatives To Graphite

Update on InfluxDB Clustering, High-Availability and Monetization

Paul Dix – March 10, 2016



Update: Since I wrote this post we've delivered on the things I've promised.

- We have continued to improve our open source platform with [88 new features and 133 bug fixes](#) to InfluxDB. This includes performance enhancements and all new query functionality like Holt-Winters, moving averages, and killing long running queries.
- We created [influx-relay](#) as a pure open source option for high-availability setups.
- We released managed clusters of InfluxDB on [InfluxCloud](#) on [April 19th](#).
- On September 8th we made an affordable [on-premise InfluxEnterprise](#) offering at the promised price of \$399/month.

"How does InfluxData make money?" That's a question I've been asked many times over the course of the last year or so. I've tried to answer it in a few different ways, but I think I've finally found a good way to do it.

TSDB

Recent Posts

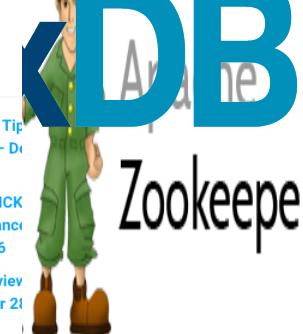
[TL;DR InfluxDB Tech Tip](#)
December 01, 2016 – December 01, 2016

[How to spin up the TICK](#)
in a Kubernetes instance
November 30th, 2016

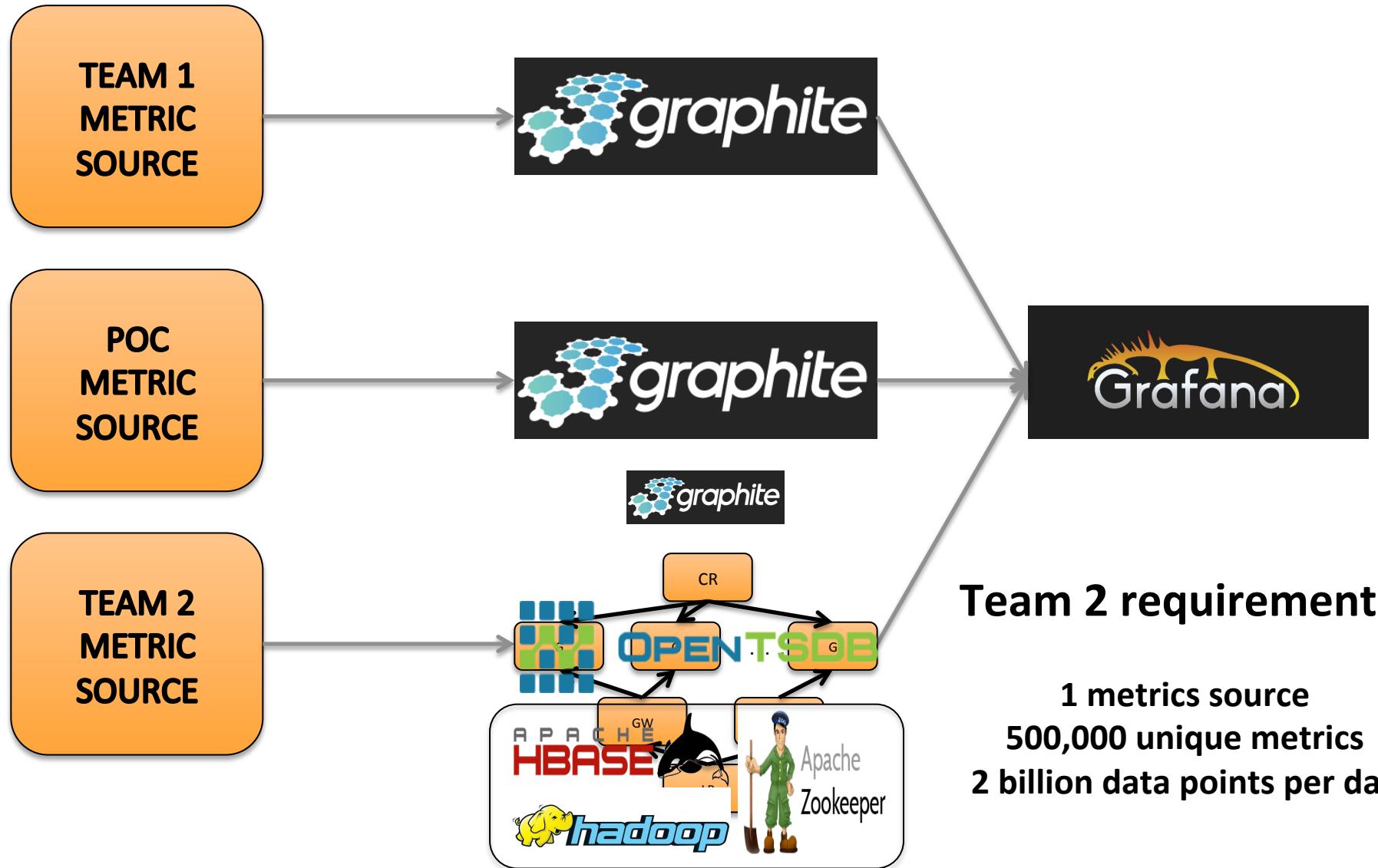
[InfluxDB Week in Review](#)
28, 2016 – November 21, 2016

[TL;DR InfluxDB Tech Tip](#)

KDB



Design & Architecture



Team 2 Conquered!



Finally!

Strategy



Team 1 Requirements:

- 100,000 unique metrics
- About 200 million data points per day

Team 2 Requirements:

- 500,000 unique metrics
- About 2 billion data points per day

Team 3 Requirements:

- 3 million logs a minute
- Generate metrics in real time

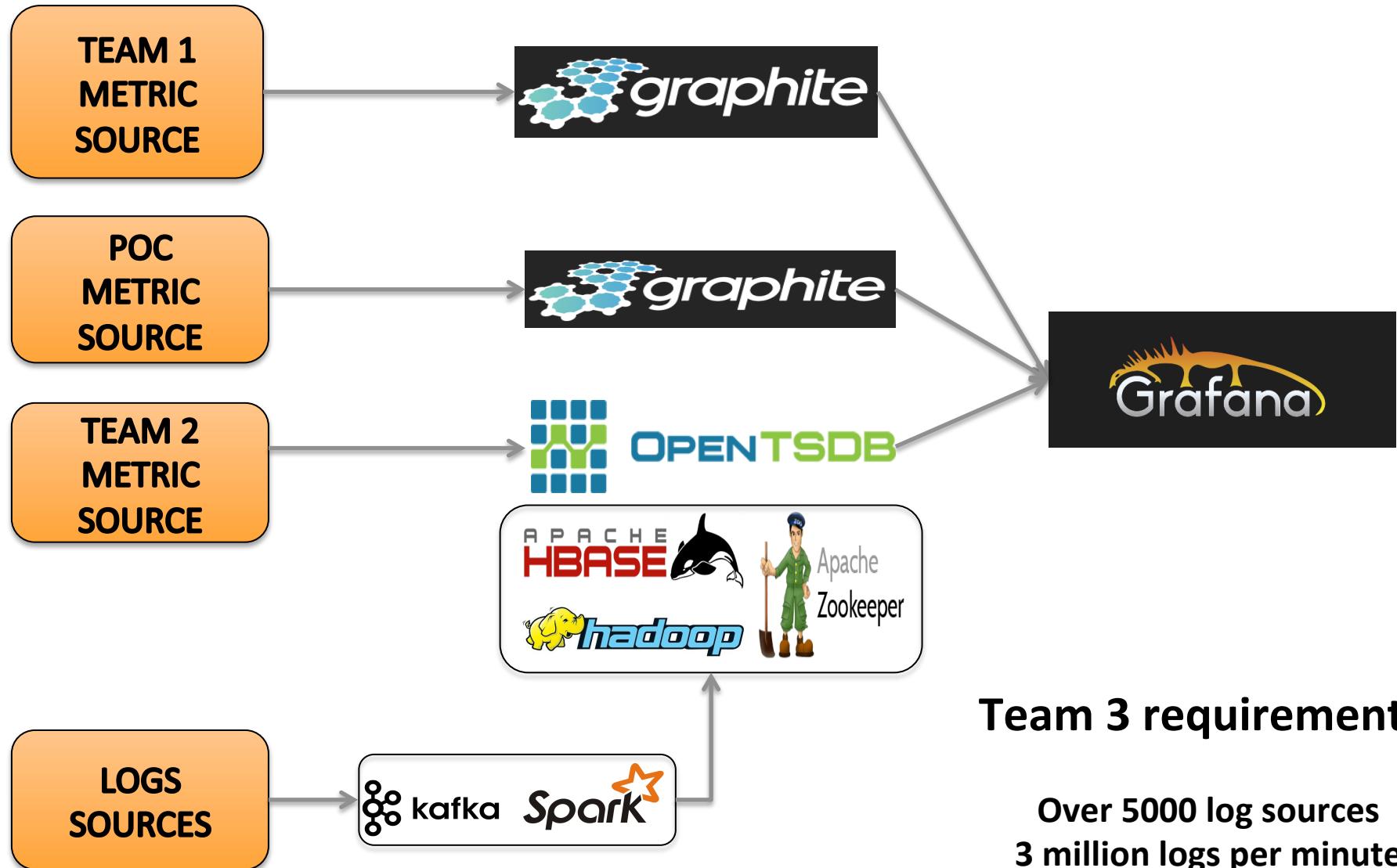
And more.....

Divide & Conquer

How to process logs at scale?



Design & Architecture

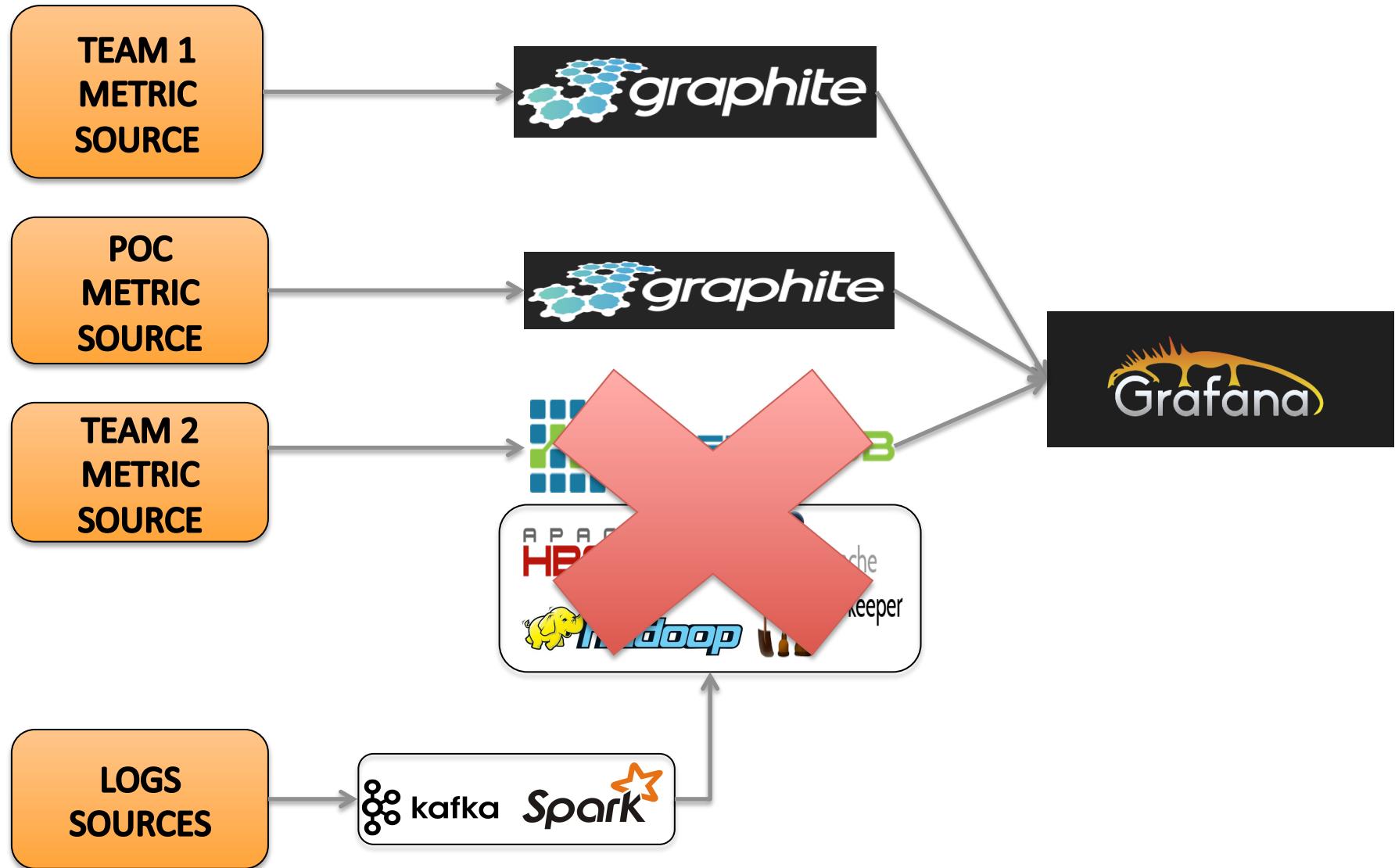


Team 3 Conquered!

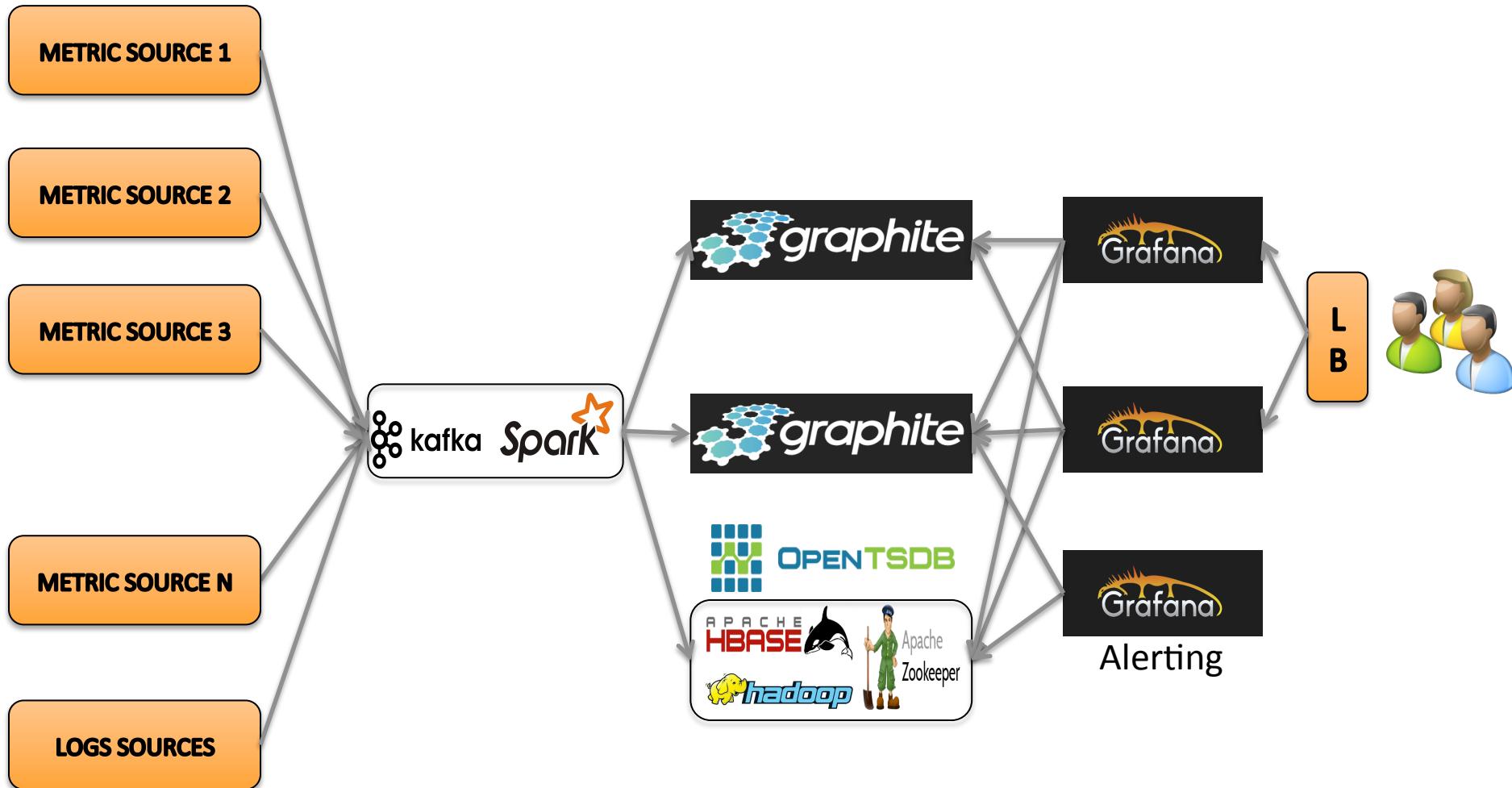


But One day..

Design & Architecture



Design & Architecture



Metrics & Logs Sources



Application Metrics

- Apps using a stats library written by [Alexander Filipchik](#)
(Principal Engineer @ PlayStation)

Custom metrics

- From other sources

Some numbers

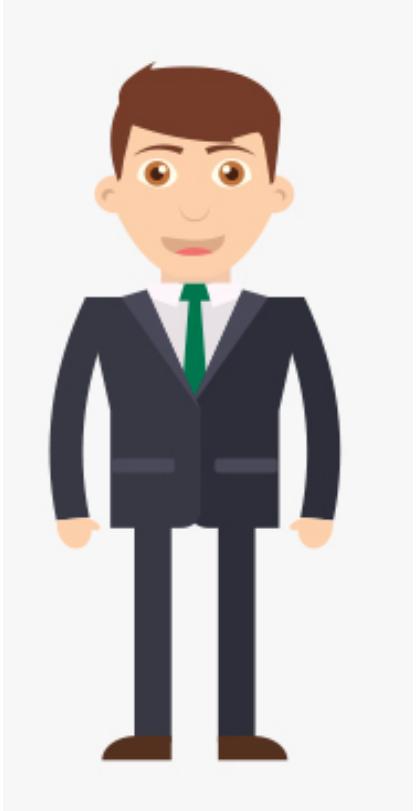
- More than 4 million unique metrics supported
 - creation and deletion happens all the time
- More than 11 billion data points written per day
 - across all TSDBs
- Processing about 40 billion events per day
 - logs and metrics events in near real time (within 30 seconds)
- More than 3000 requests per minute to Grafana dashboards
 - around 7000 in during outages

Lessons Learned

Strategy



Divide & Conquer



Look for alternatives!



Choose scalable components!

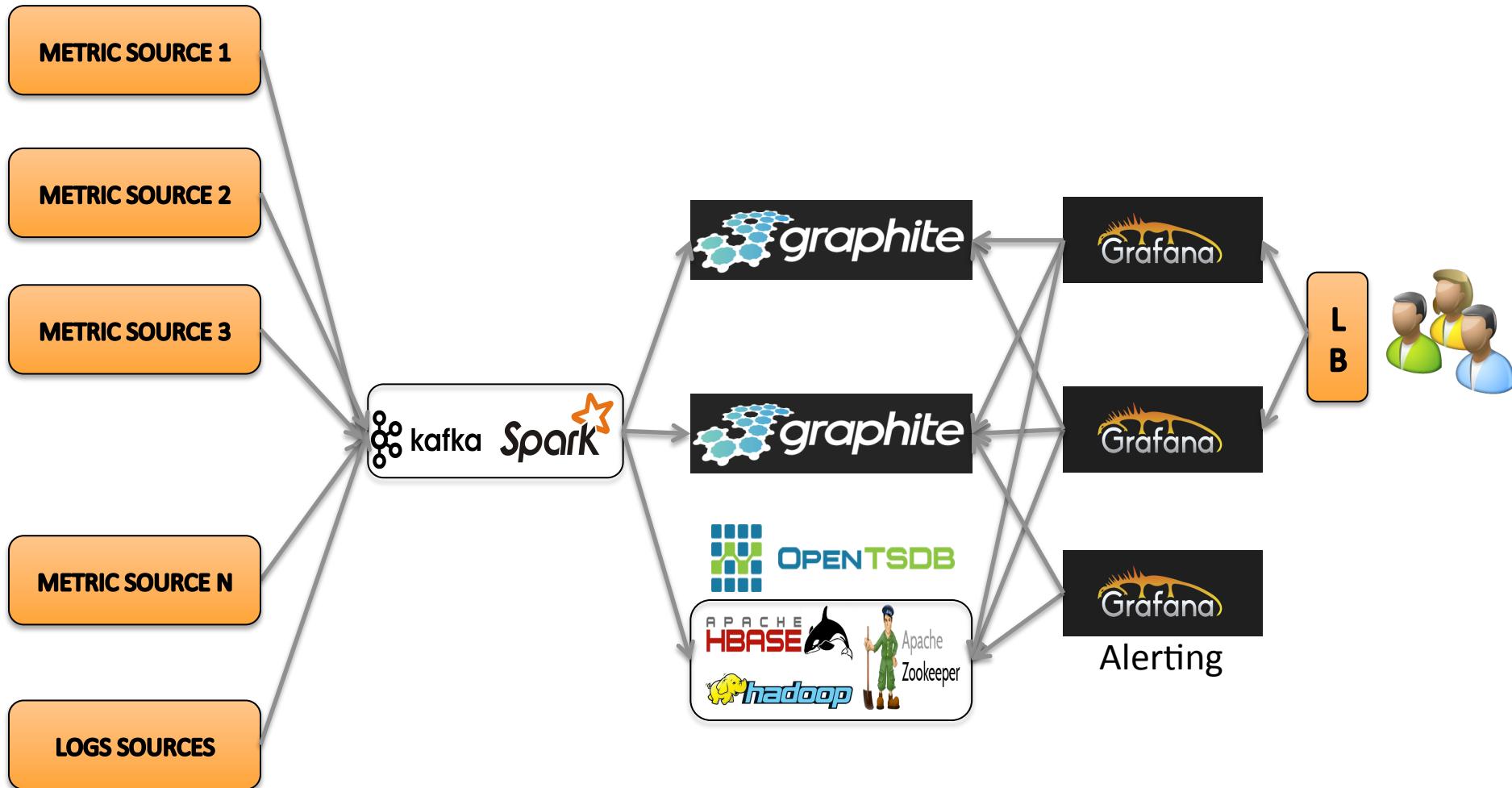


(Subject to effort and time)

Automation



Design & Architecture



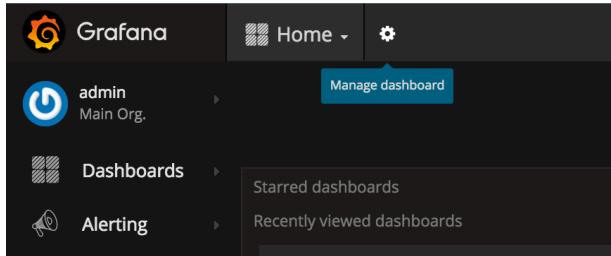


What's Next for Jack?



**I FEEL THE TIME IS
RIGHT FOR ME TO MOVE
ON TO ANOTHER
CHALLENGE.**

Power of Open-Source



Sep, 21st 2015

A screenshot of the Grafana Alerting configuration page. It shows a sidebar with 'Alerting' selected. The main area is titled 'Alert notification' and contains fields for 'Name' (PagerDuty Test), 'Type' (pagerduty), and 'Send on all alerts'. Below that is a 'Pagerduty settings' section with an 'Integration Key' field containing placeholder text 'some_text_not_to_be_shown' and an 'Auto resolve incidents' checkbox. At the bottom are 'Save' and 'Send Test' buttons.

Nov, 17th 2016

Grafana Pull Requests:

- Total - 144
- Accepted – 128
- Declined – 14
- Open - 2

**Contribute
More!**



Manage Grafana entities with easy wizzy

```
JS80E650113D86:wizzy-trial ubhatnagar$ wizzy summarize dashboard app-overview
Output:
{
  "title": "App Overview",
  "rowCount": 2,
  "rows": [
    {
      "title": "Row_Mera",
      "panelCount": 5,
      "panelTitles": "Memory Utilization, Memory Free, CPU Utilization, Load Average (Short Term), Disk Usage (root)"
    },
    {
      "title": "New row",
      "panelCount": 3,
      "panelTitles": "Apache Connections, Network in, Network out"
    }
  ],
  "templateVariableCount": 3,
  "templateVariableNames": "env, app, az",
  "time": {
    "from": "now-3h",
    "to": "now",
    "timezone": "browser"
  }
}
✓ Showed dashboard app-overview summary successfully.
JS80E650113D86:wizzy-trial ubhatnagar$ █
```

<https://utkarshcmu.github.io/wizzy/>

Use Cases

- Prod , Stage and Dev installations of Grafana
- Move/Copy rows, panels from one dashboard to another
- Version control your dashboards
- Manage Grafana entities like orgs, etc via CLI

DEMO TIME



**LET'S HOPE THE DEMO-GODS ARE
SMILING!**

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