

# Getting REAL with Big Data for IT Ops

TOM YATES  
MARKETING



# The Problem Space

# IT Operations is a REAL Big Data Problem

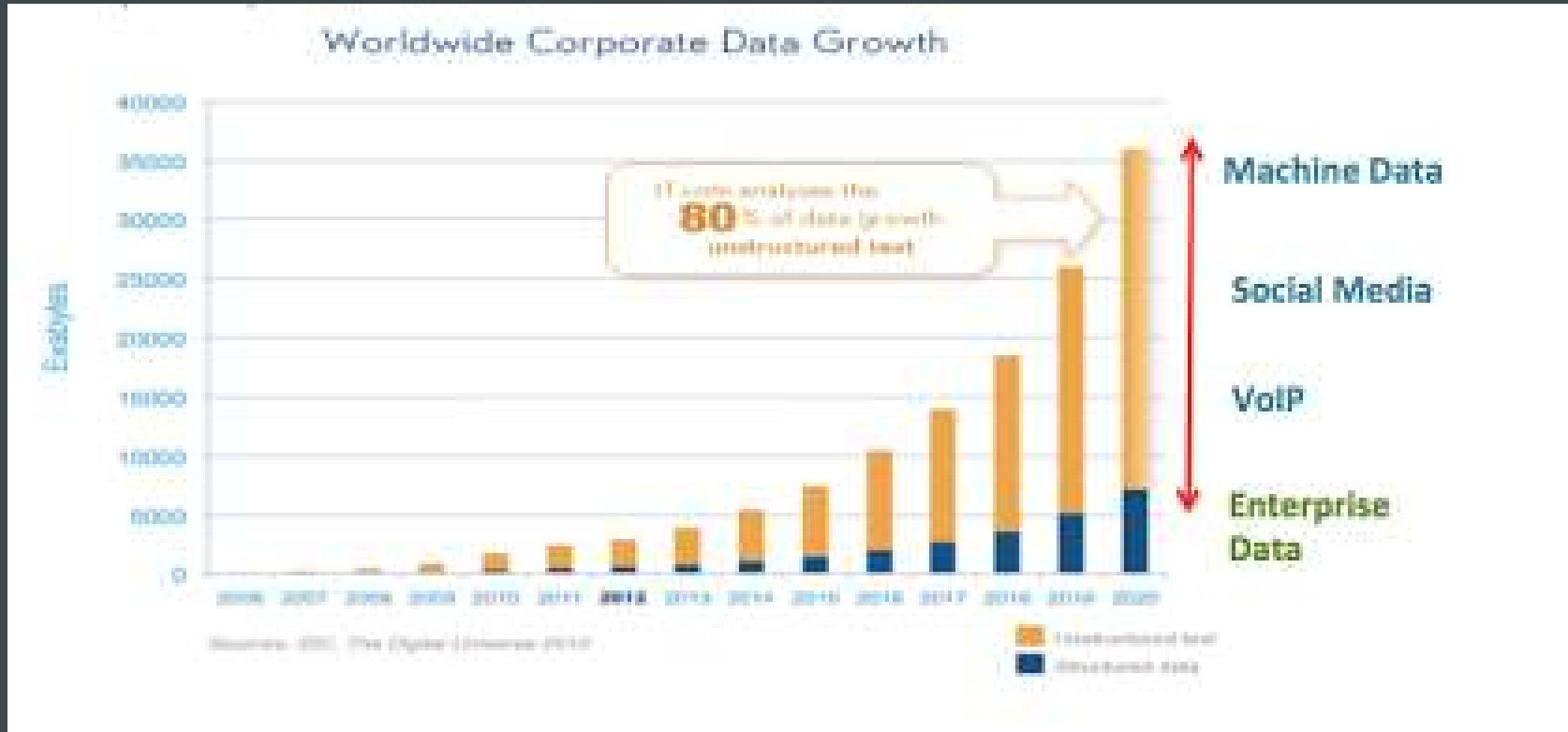
- One big, usually blue box
- Constant supervision
- All workloads pre-planned

- Many single-purpose servers
- Fixed resource allocations
- Static workloads

- Tons of servers: IaaS, PaaS, containers
- Dynamic & elastic resource allocations
- Multiple, constantly changing workloads



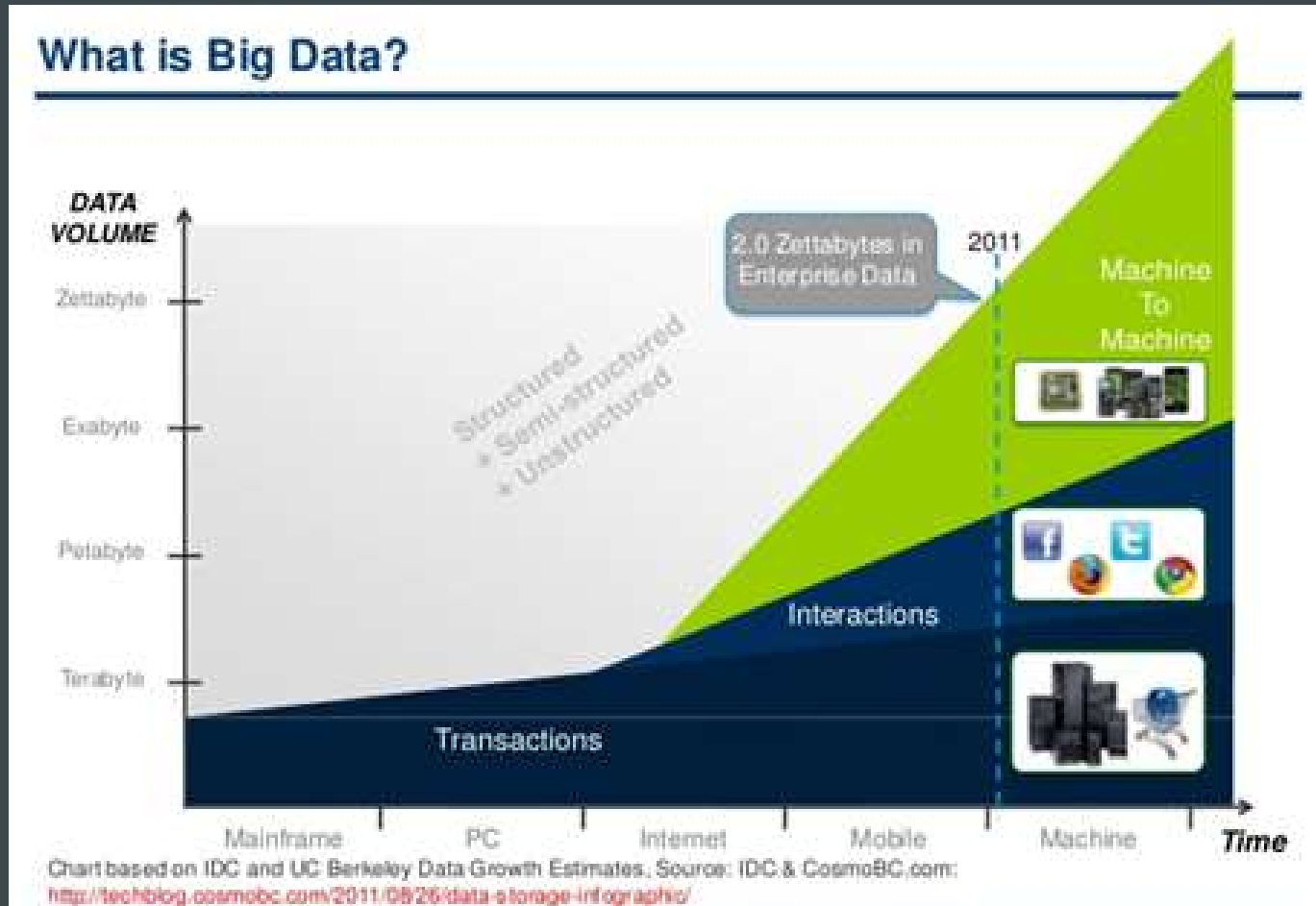
# Survey after Survey Shows Massive Data Growth



IT.COM

**20x Growth**  
2010 - 2020

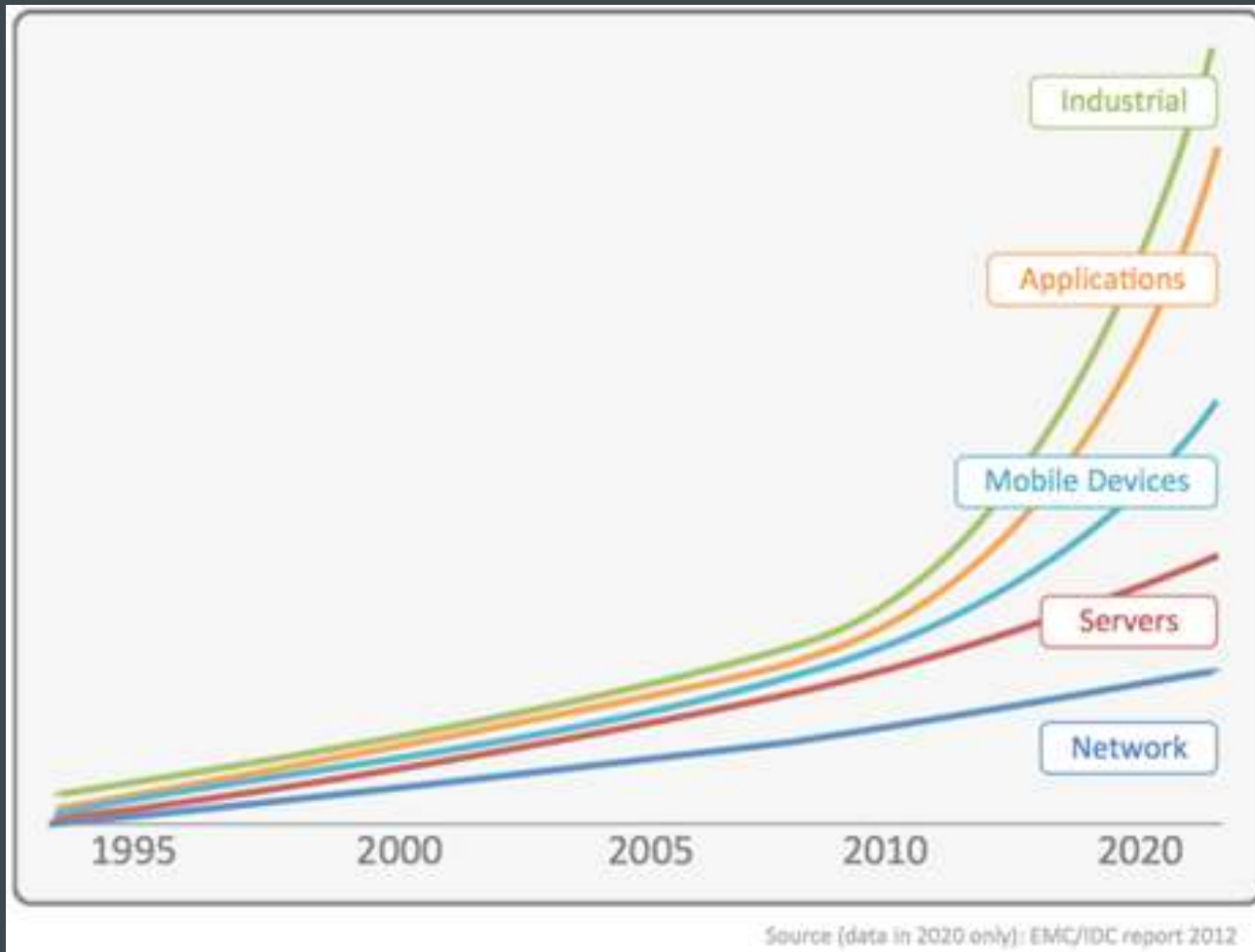
# Survey after Survey Shows Massive Data Growth



IDC

Explosive Growth in  
Machine-to-Machine  
Data

# Survey after Survey Shows Massive Data Growth



## IDC

Another IDC report with “Hockey Stick” Inflection point occurring now

# Get R.E.A.L. Big Data for IT Ops

# Framework for Evaluating R.E.A.L. Big Data

Reliable

# Framework for Evaluating R.E.A.L. Big Data

Reliable

Extensible

# Framework for Evaluating R.E.A.L. Big Data

Reliable

Extensible

Analytics

# Framework for Evaluating R.E.A.L. Big Data

Reliable

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Analytics

Limitless

# Framework for Evaluating R.E.A.L. Big Data

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THE TRUTH ABOUT

**REAL**

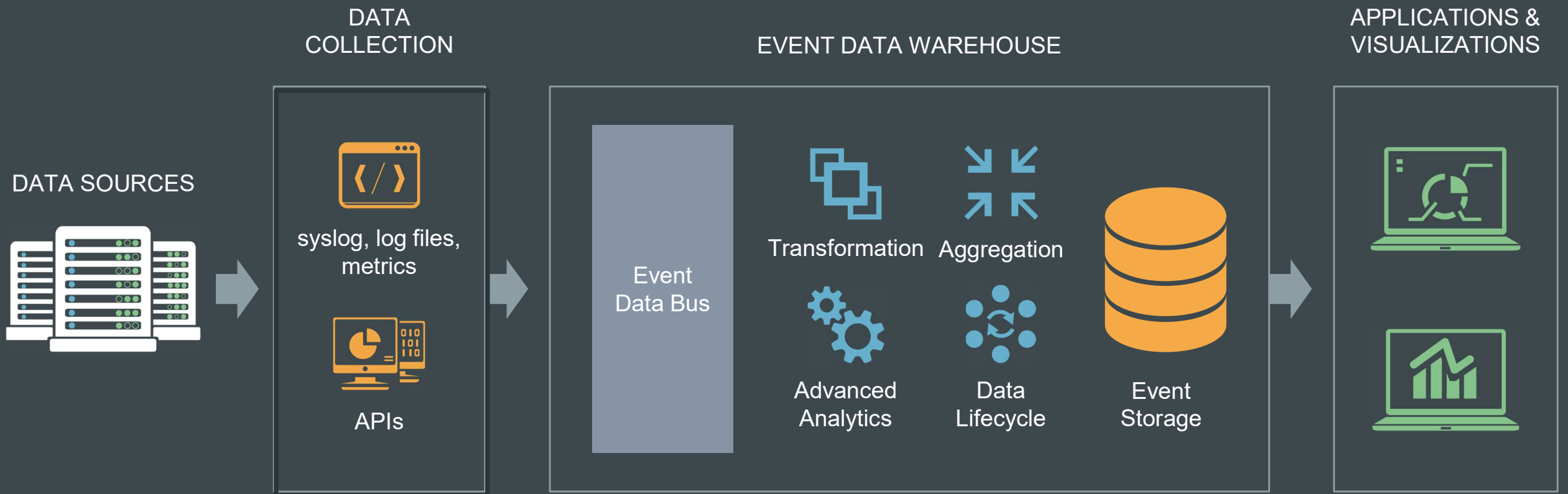
**BIG DATA**

---

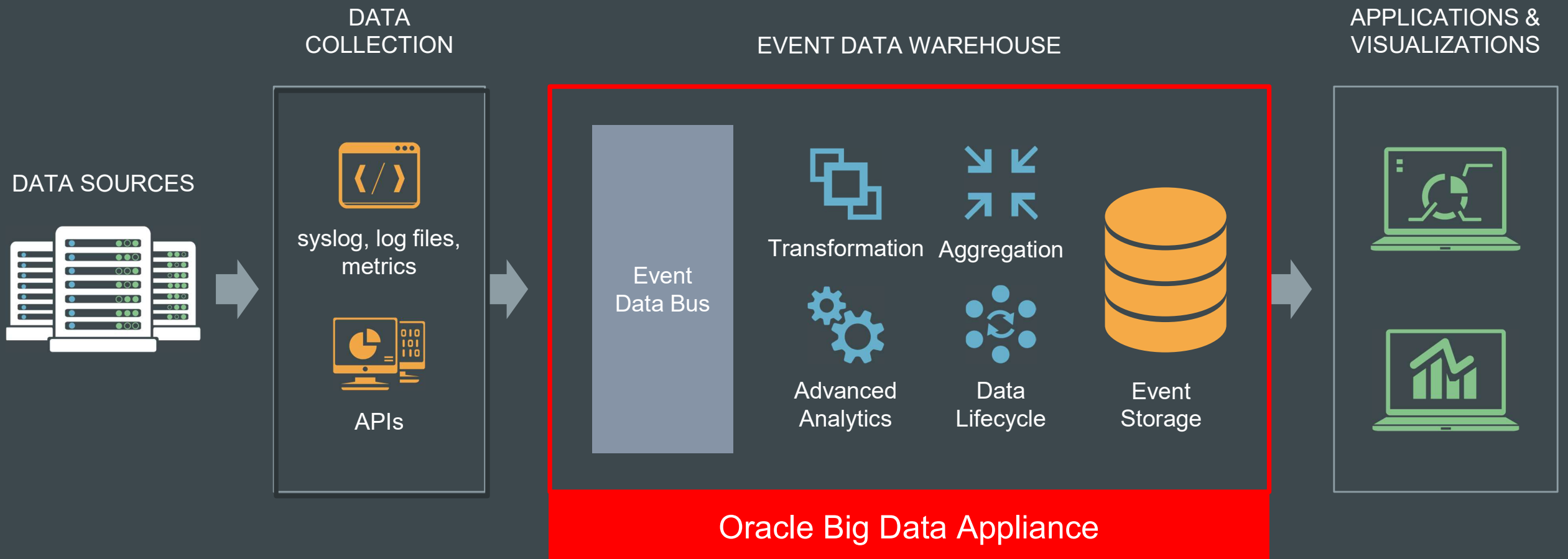
<http://blog.rocana.com/the-truth-about-real-big-data>

# A R.E.A.L. Architecture for IT Ops

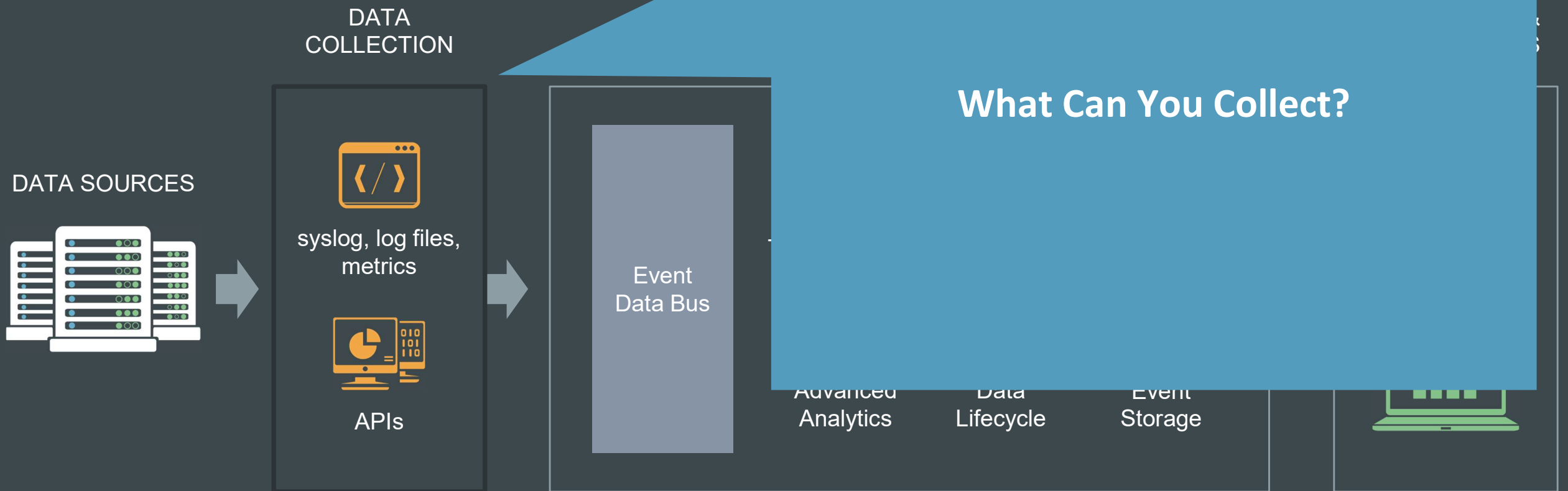
# Rocana Ops Architecture



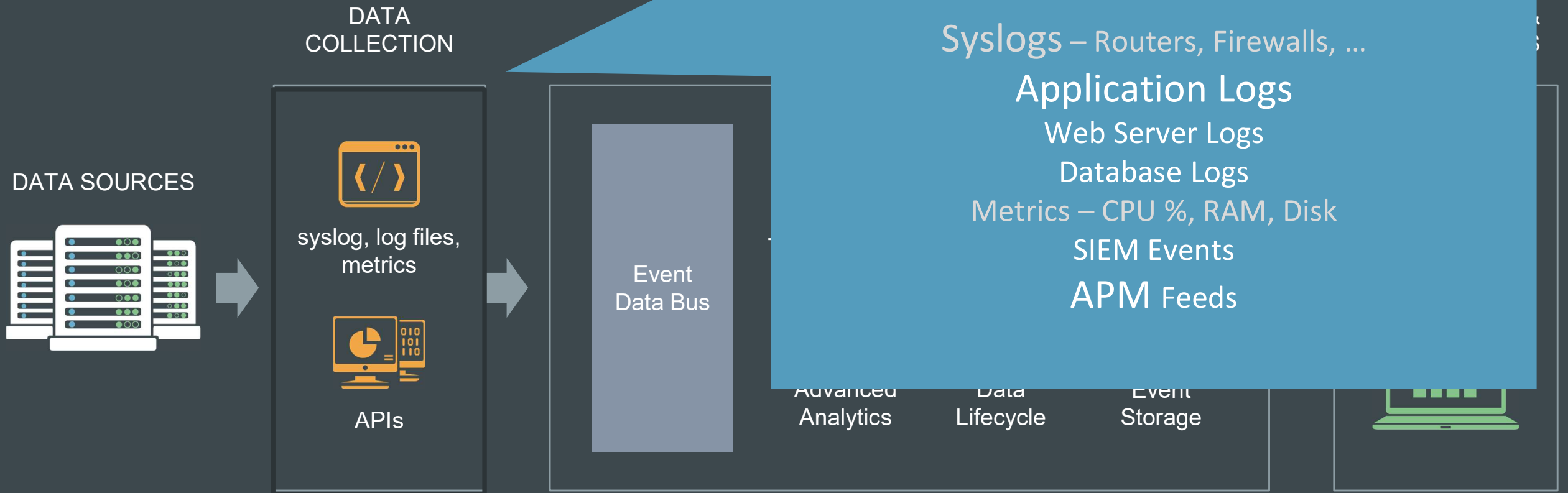
# Rocana Ops Architecture



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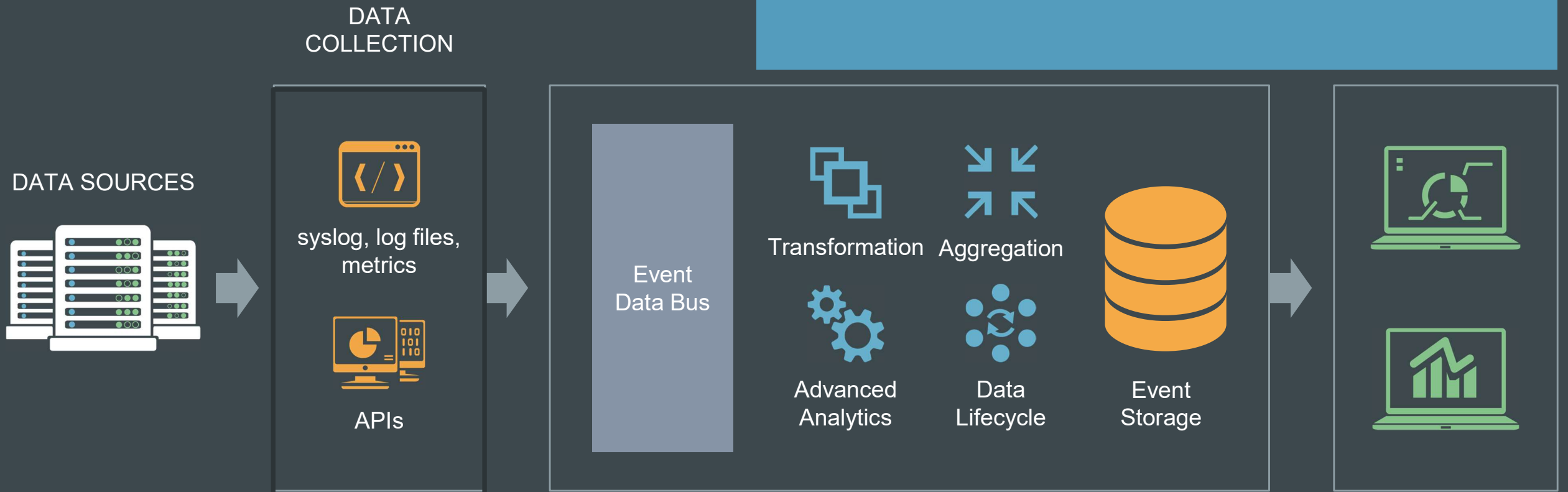


# Rocana Ops Architecture



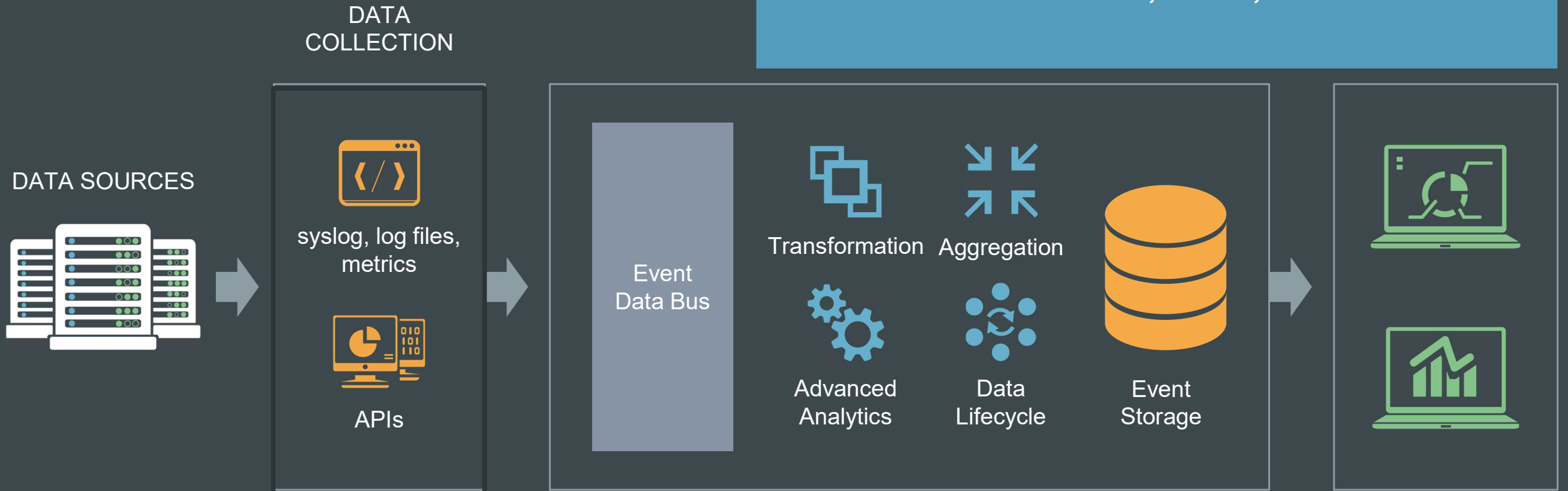
# Rocana Ops Architecture

You Didn't Say <XYZ> Data?!

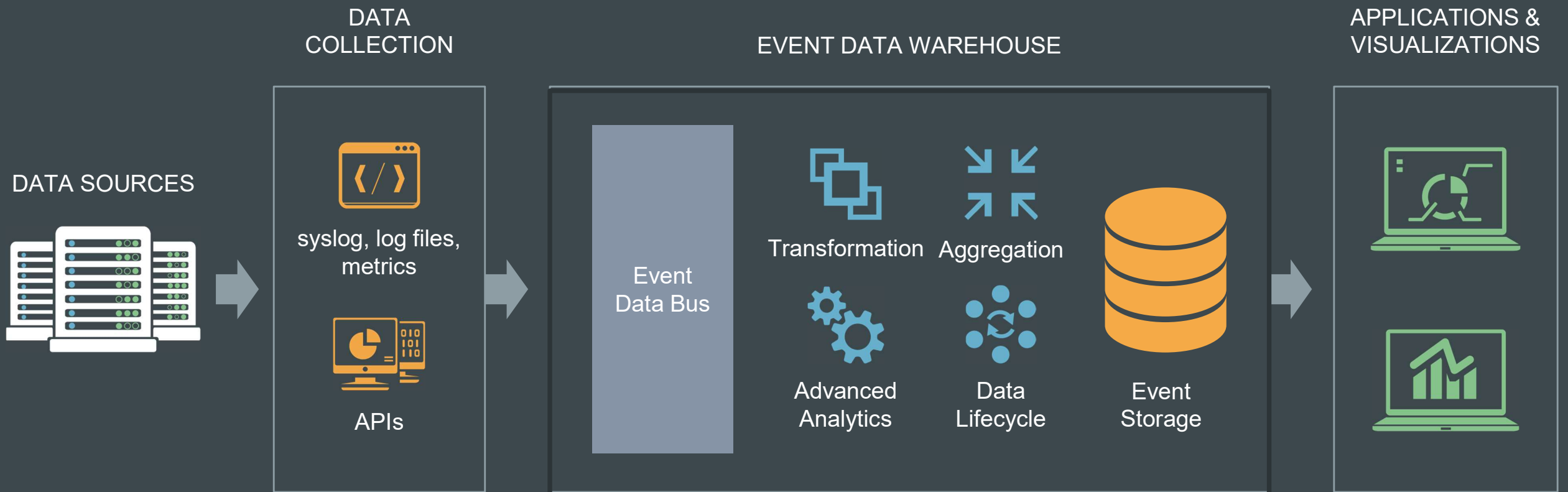


# Rocana Ops Architecture

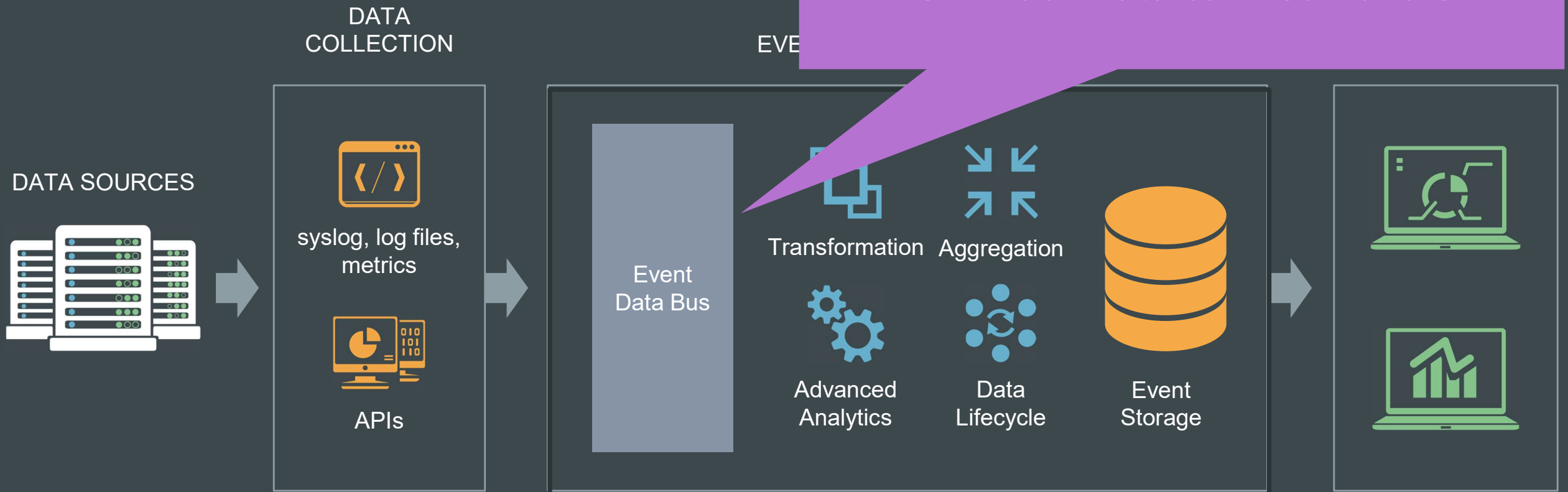
That's what the Open APIs are for:  
Native Java, REST, Avro



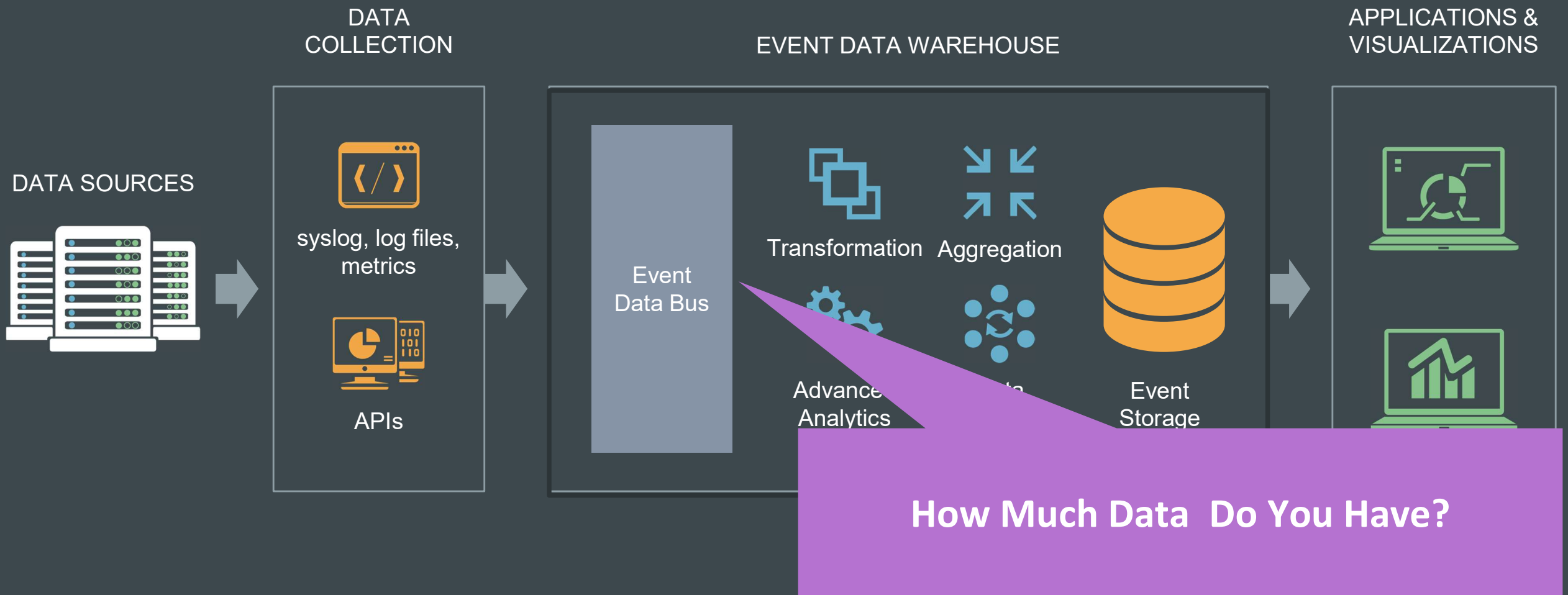
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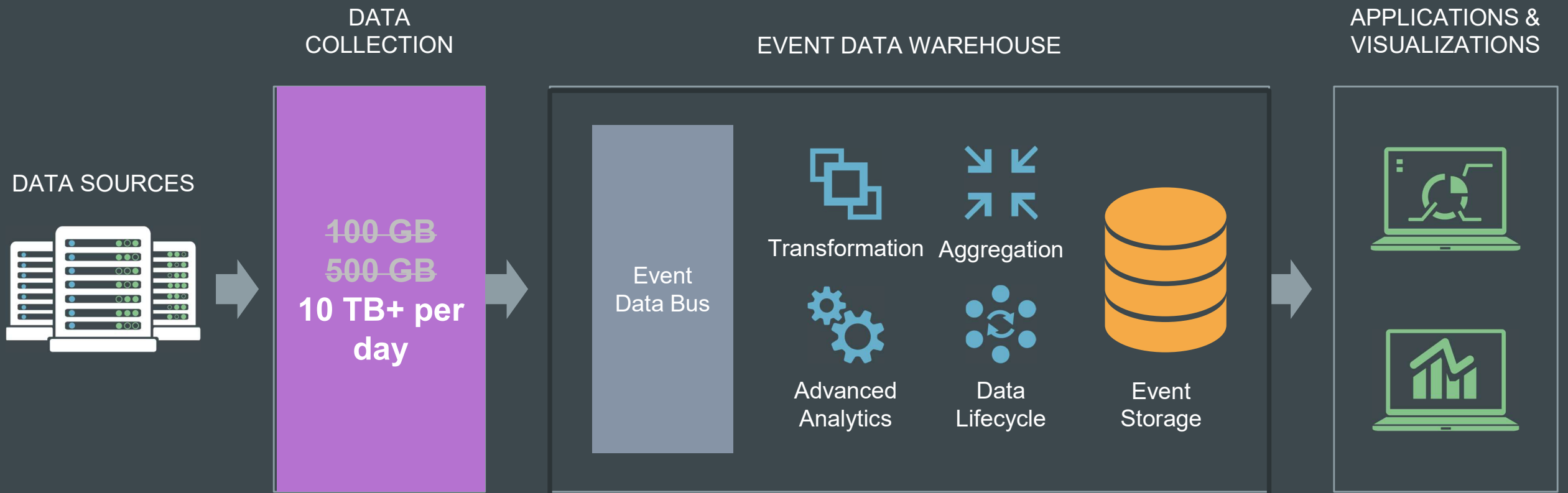
# Rocana Ops Architecture



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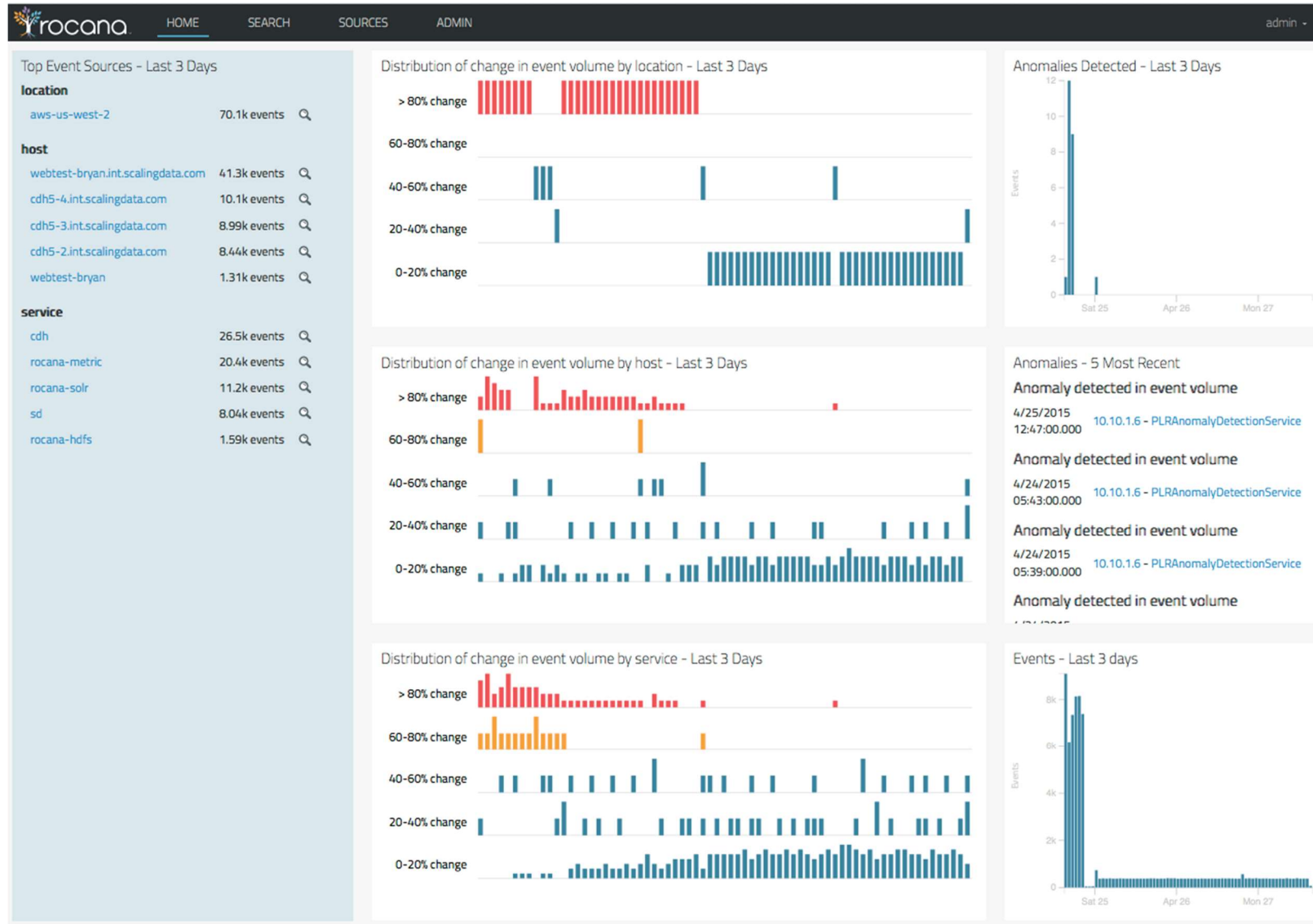


# Rocana Ops Architecture

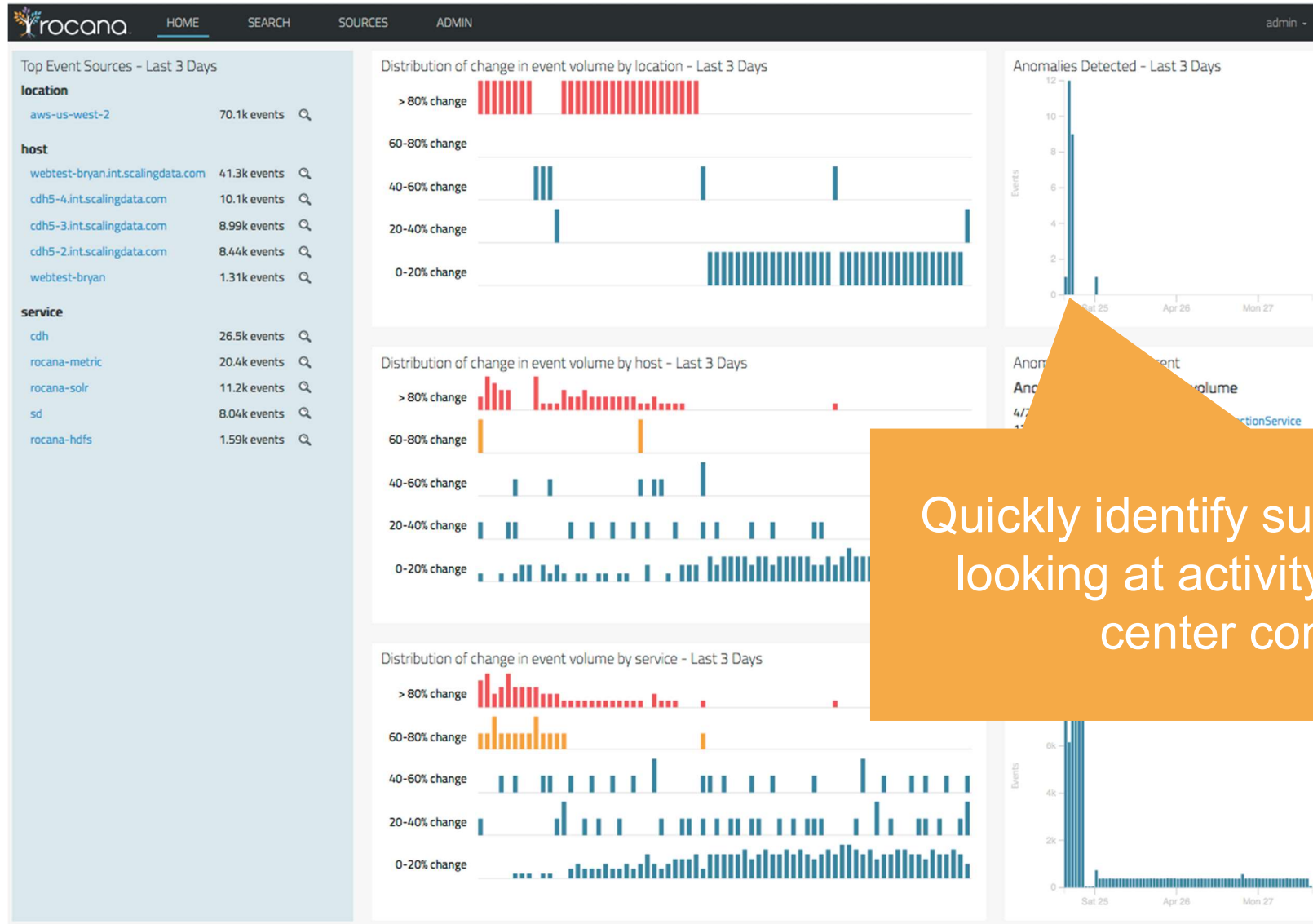


# Rocana Ops - R.E.A.L. Big Data for IT

# Rocana Ops

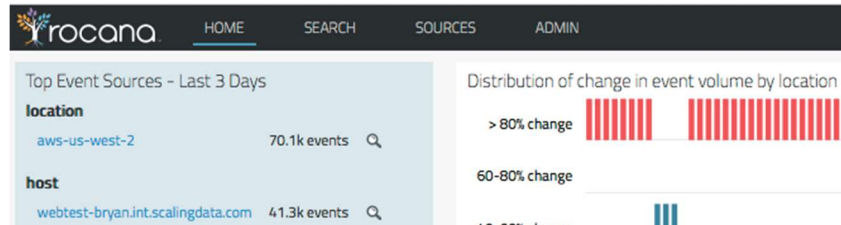


# Rocana Ops



Quickly identify suspect problems by looking at activity across the data center components.

# Holistic View

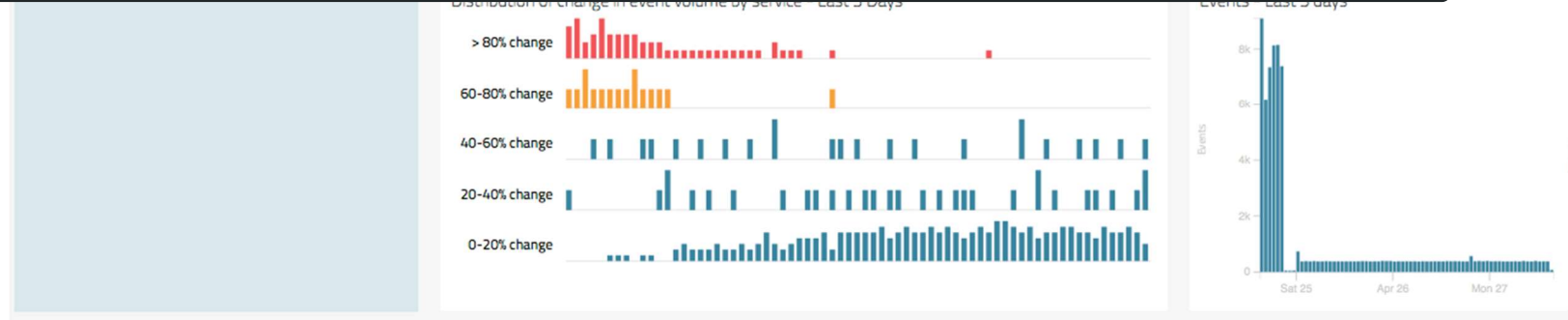


**Zoom In on an Anomaly**  
HTTP Latency is nearly 7 secs when 3.5 is considered normal!

### Anomalies - 5 Most Recent

2015-08-05 07:23:00.000 -07:00

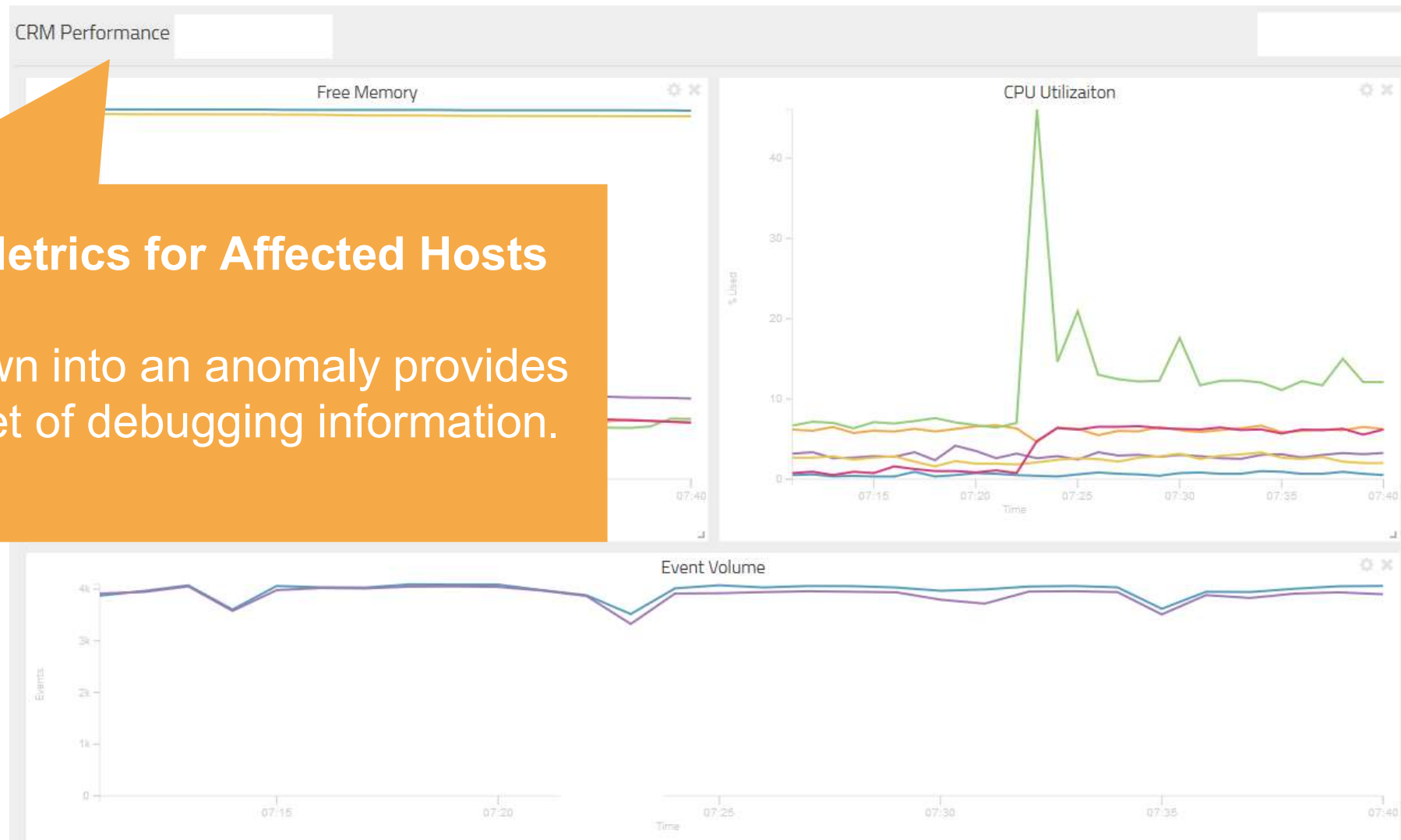
Anomaly detected in metric `crm.httpd.request.latency` for service: `httpd`, location: `us/west/2a` and host: `web-02.int.rocana.com`. Expected value was 3585.29 where the observed value was 6912.45 during the 1 minute window.



# Performance Dashboard

## Review Metrics for Affected Hosts

Drilling down into an anomaly provides a useful set of debugging information.



# Detailed view of CPU Utilization

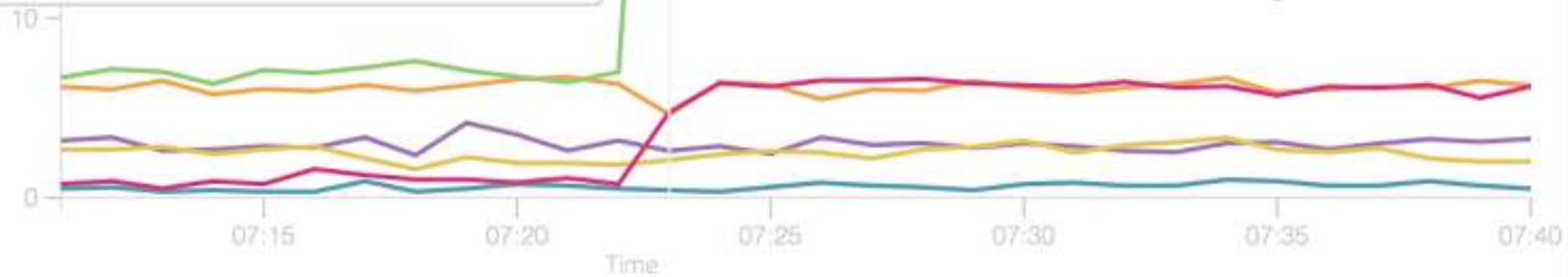
CPU Utilization

## Mouse-over Chart for Details

Hovering shows the data for each object and that point in time.

2015-08-05 07:23:00 -07:00

db-01.int.rocana.com - rocana.host.cpu.all.perc_idle:	0.42 %
app-01.int.rocana.com - rocana.host.cpu.all.perc_idle:	4.64 %
web-01.int.rocana.com - rocana.host.cpu.all.perc_idle:	2.61 %
web-02.int.rocana.com - rocana.host.cpu.all.perc_idle:	2.09
app-02.int.rocana.com - rocana.host.cpu.all.perc_idle:	46.07
db-02.int.rocana.com - rocana.host.cpu.all.perc_idle:	4.75

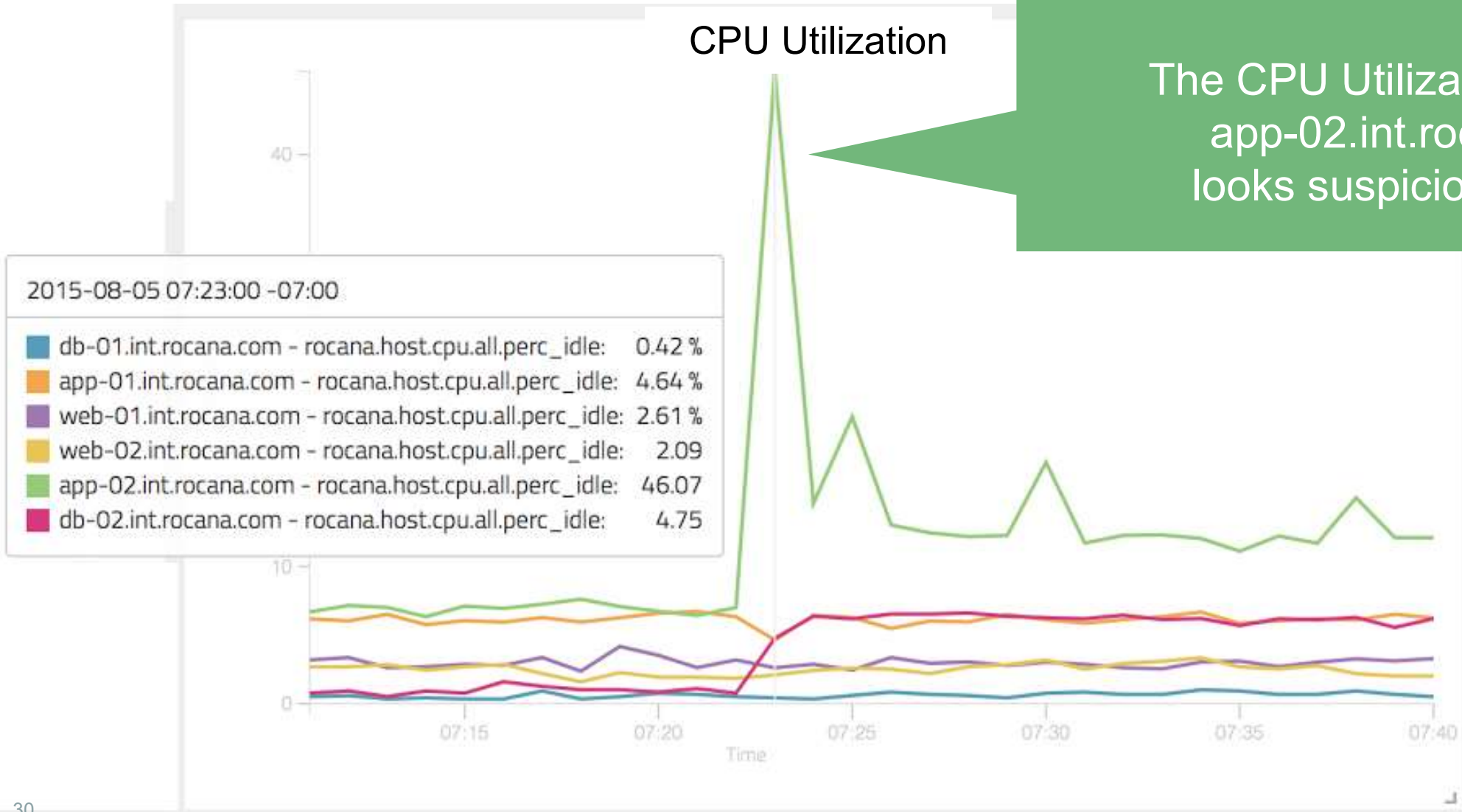


# Visualizations Guide You thru the Data

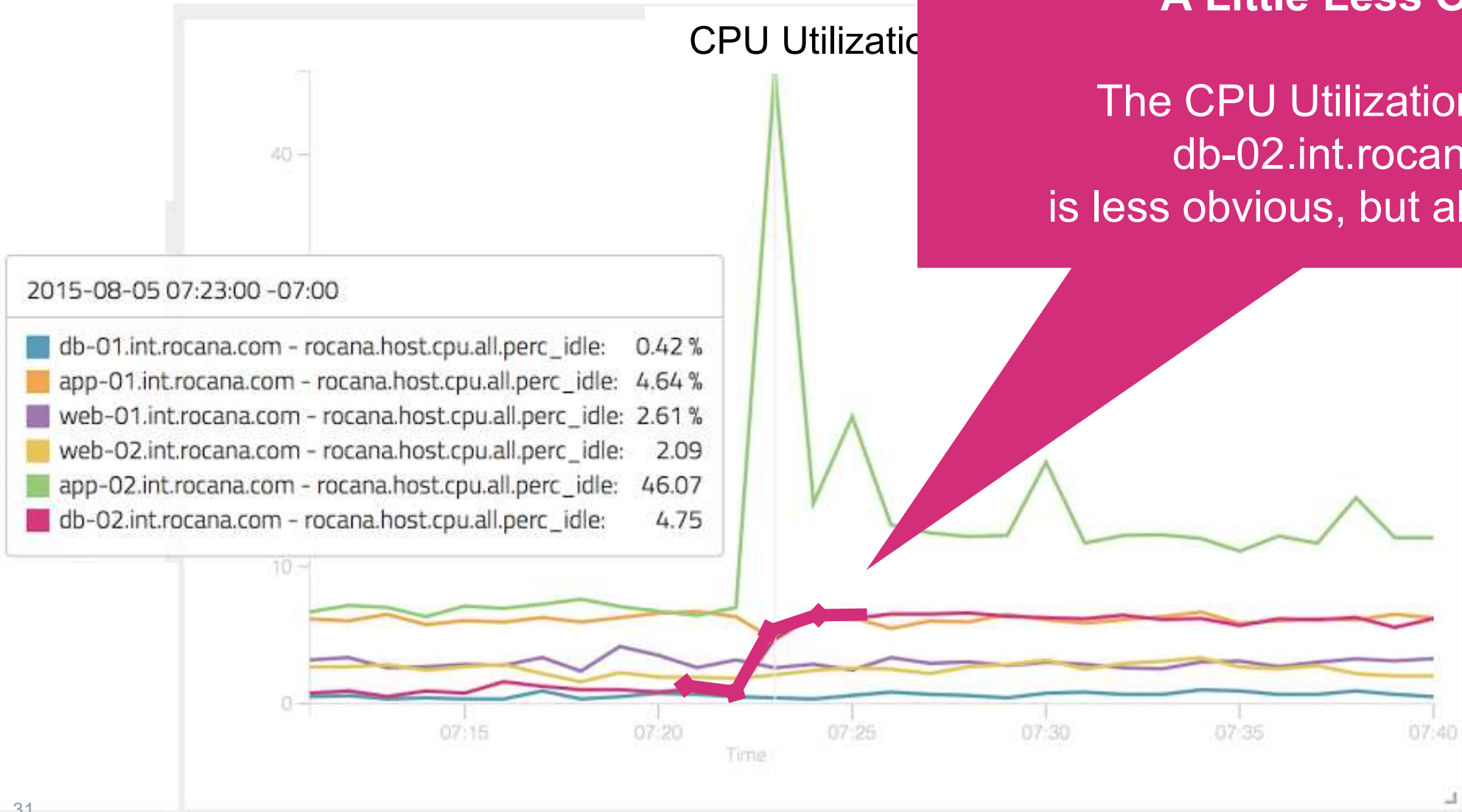
This One May Be a Little Obvious

The CPU Utilization spike for app-02.int.rocana.com looks suspicious to me...

CPU Utilization



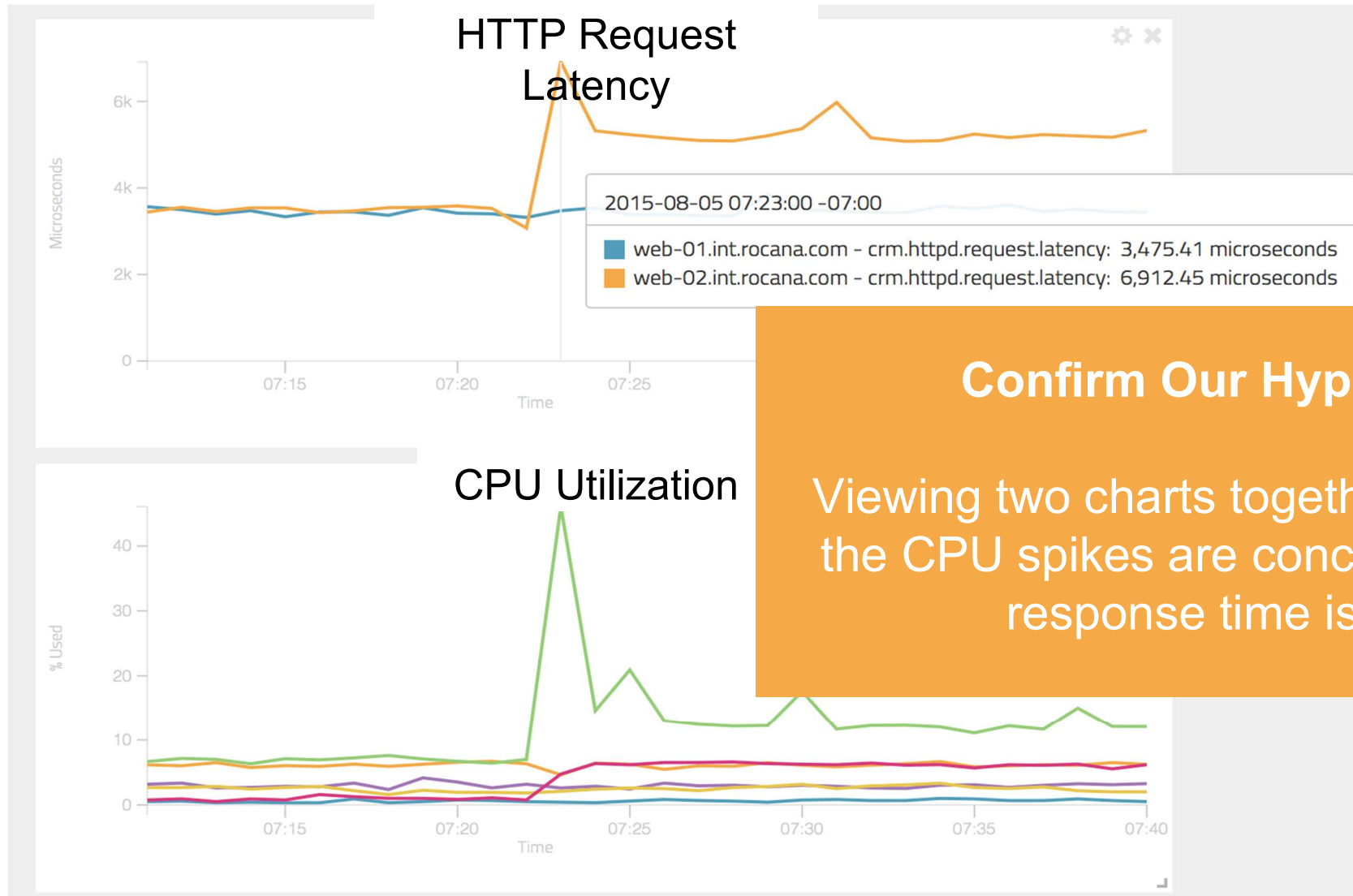
# Visualizations Guide You thru the Data



## A Little Less Obvious

The CPU Utilization curve for db-02.int.rocana.com is less obvious, but also curious...

# Customize Your View of Data



# Different Visualizations To Compare Peers



## Swim Lanes to Compare Peers

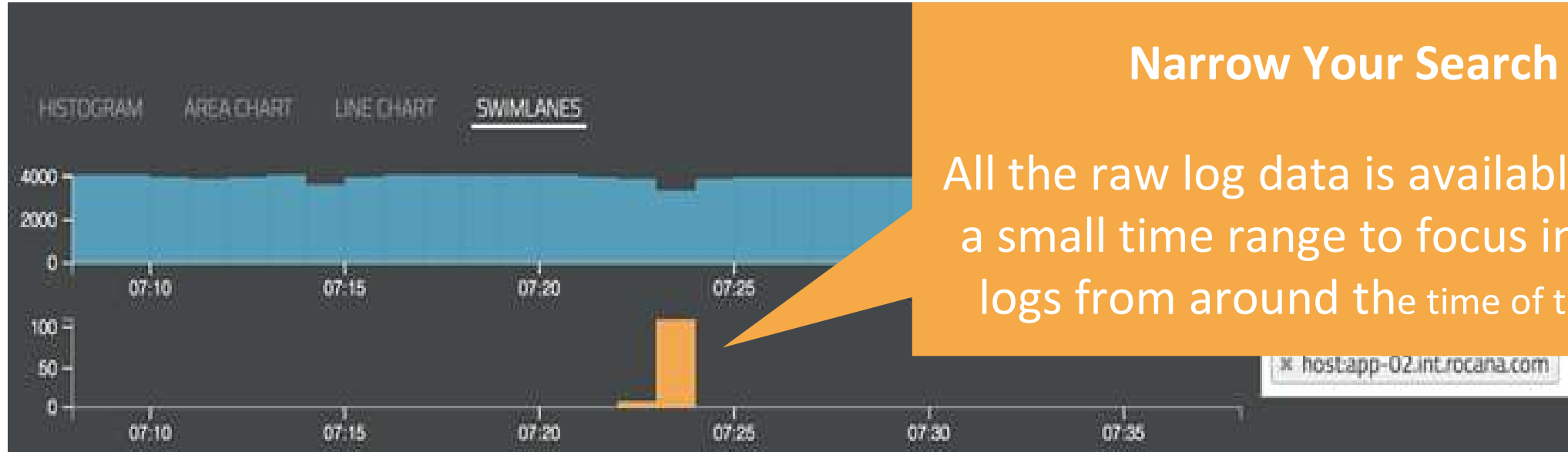
The web server isn't showing a spike in events, but the app server is. Definitely something to investigate!

# Access to the Raw Data



2015-08-05 07:23:22.503 -07:00	2015-08-05 14:23:22.503 INFO 14989 --- [io-8080-exec-39] com.rocana.example.app.Application : CRM Server environment: java.home=/usr/java/jdk1.8.0_51/jre
	<b>Location:</b> <a href="#">us/west/2a</a> <b>Hostname:</b> <a href="#">app-02.int.rocana.com</a> <b>Service:</b> tomcat
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# Out-of-the-Box Functionality to Guide Users

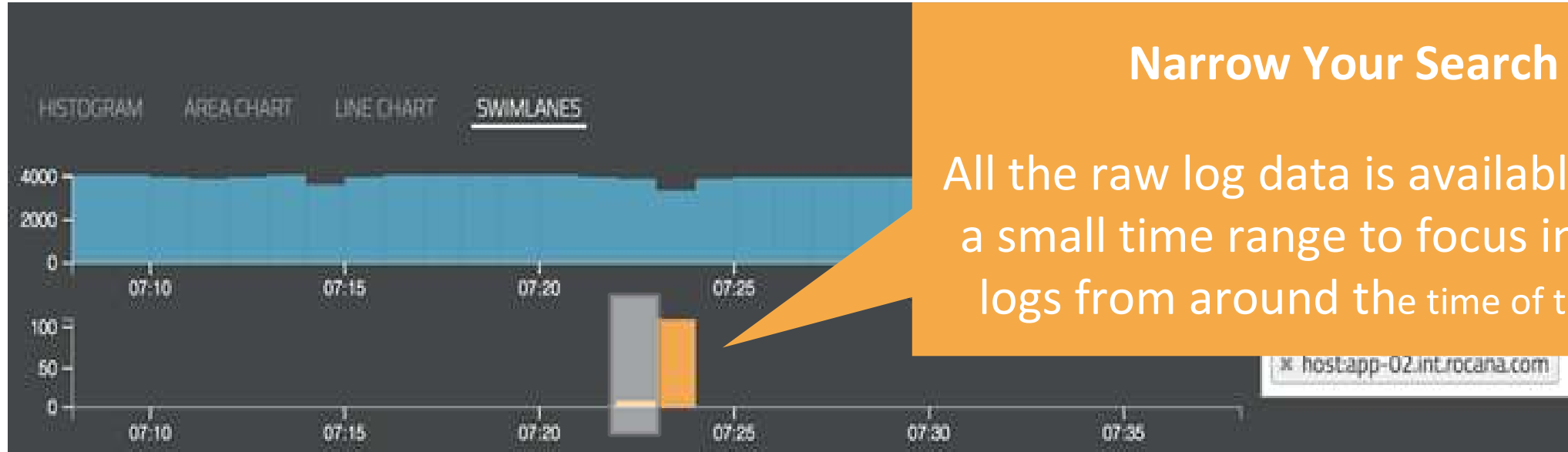


## Narrow Your Search

All the raw log data is available. Select a small time range to focus in on the logs from around the time of the issue.

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# Visually Search through Raw Data

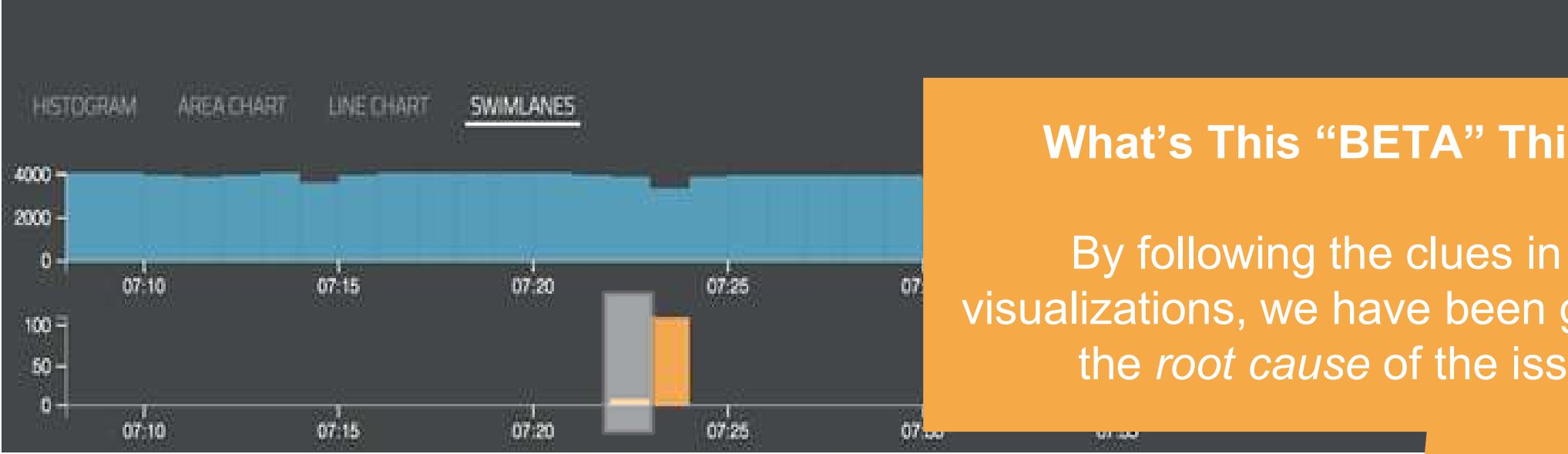


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# Identify the Root Cause



**What's This "BETA" Thing?!**

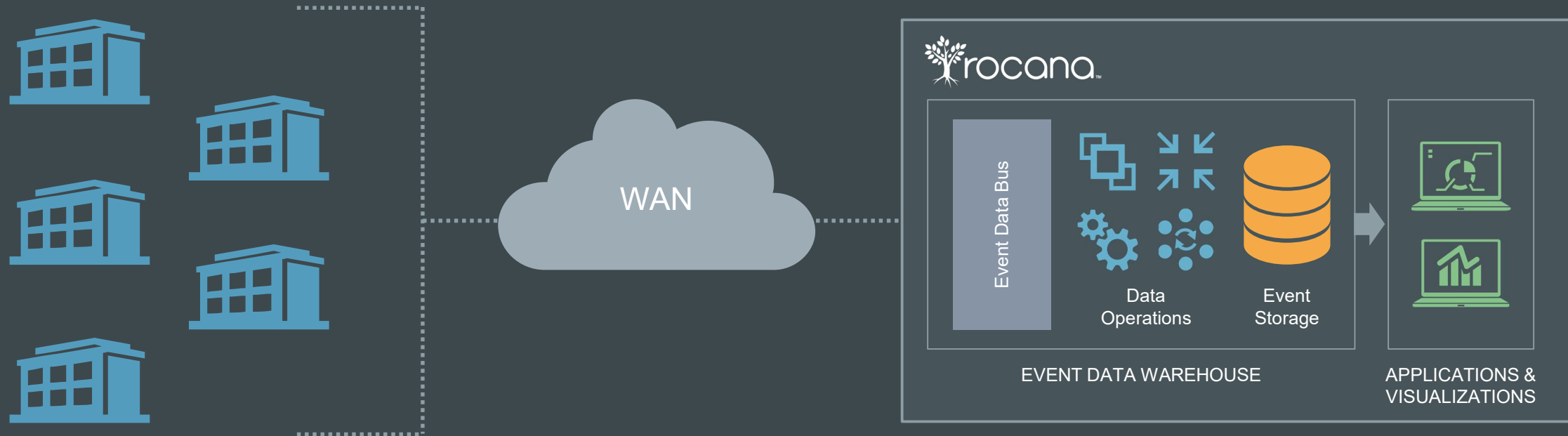
By following the clues in the visualizations, we have been guided to the *root cause* of the issue!

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# Rocana Ops – REAL Customers!

# Case Study: Financial Services Company

Grow the top-line and address churn by improving performance of web properties



## REQUIREMENTS

- Aggregate logs from many different systems
- Reliable collection from geographically remote sites

## RESULTS

- Single source of truth for IT Operations
- Reduce MTTR
- Better customer experience on web properties

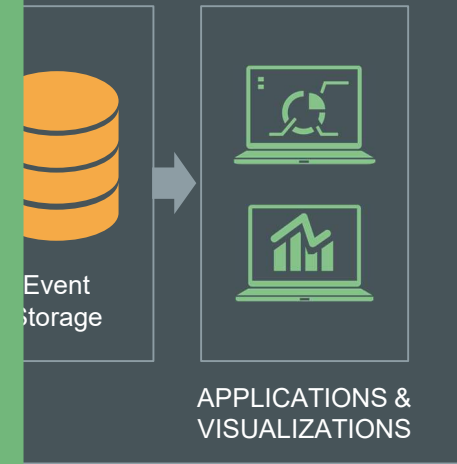
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## Consolidating Multiple IT Operations Monitoring Solutions

> 1 TB / Day

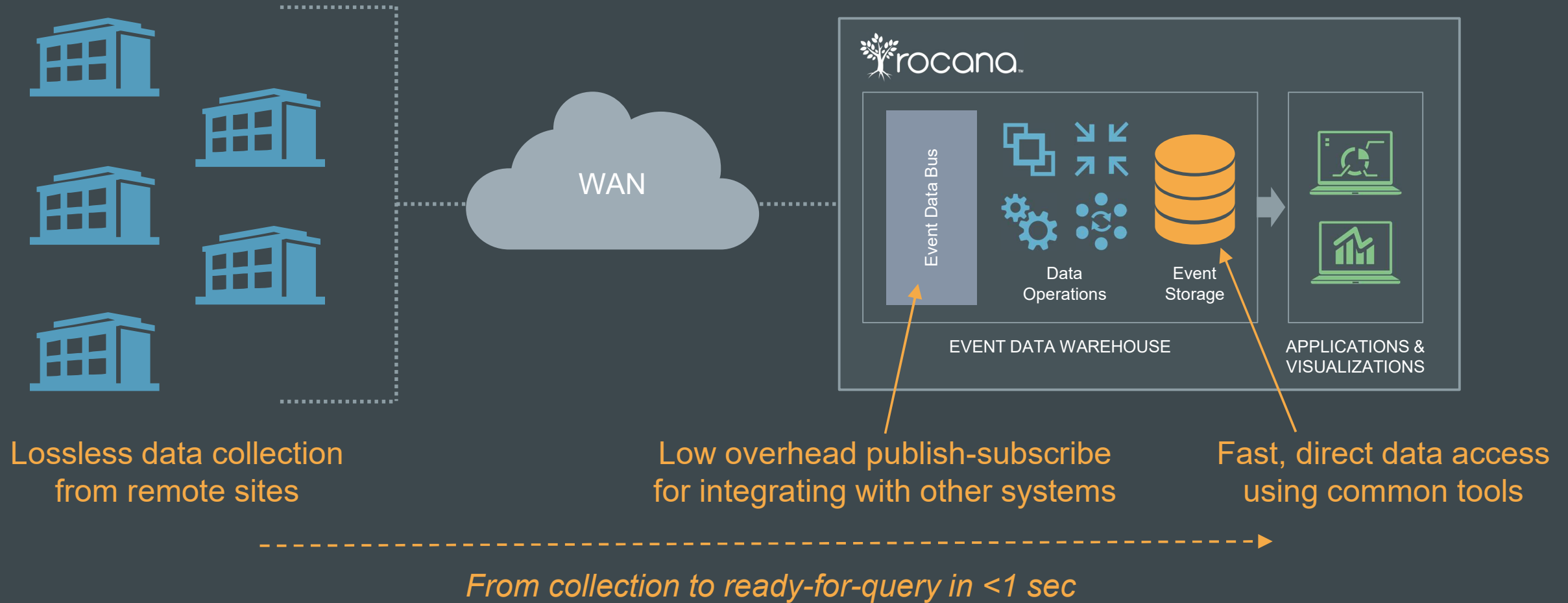


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# Case Study: Big Box Retailer

Improve security posture with a modern, scalable solution



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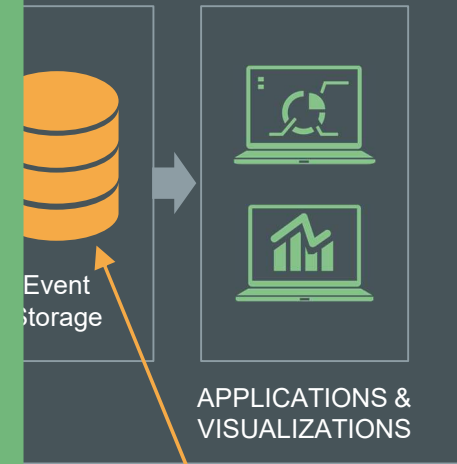
Improve security posture with a modern, scalable solution



Lossless data transfer  
from remote sites

for integrating with other systems

Ingest 3.5 TBs / Day  
Retention > 1PB / Year  
**ALL IMMEDIATELY ACCESSIBLE**



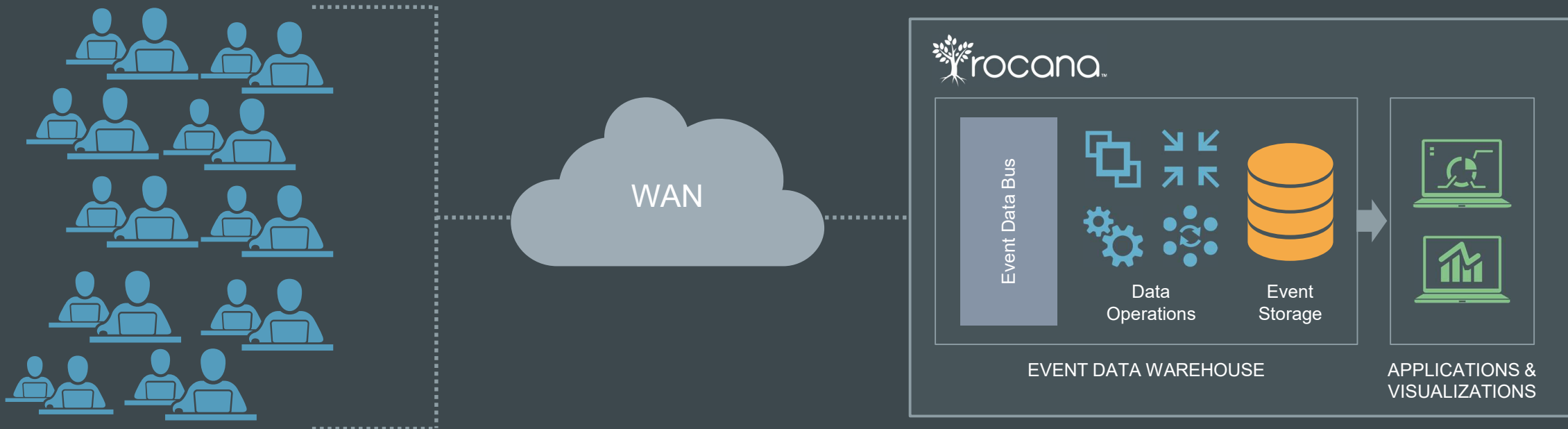
Fast, direct data access  
using common tools



*From collection to ready-for-query in <1 sec*

# Case Study: International Gaming Company

Improve customer experience by analyzing network traffic



## REQUIREMENTS

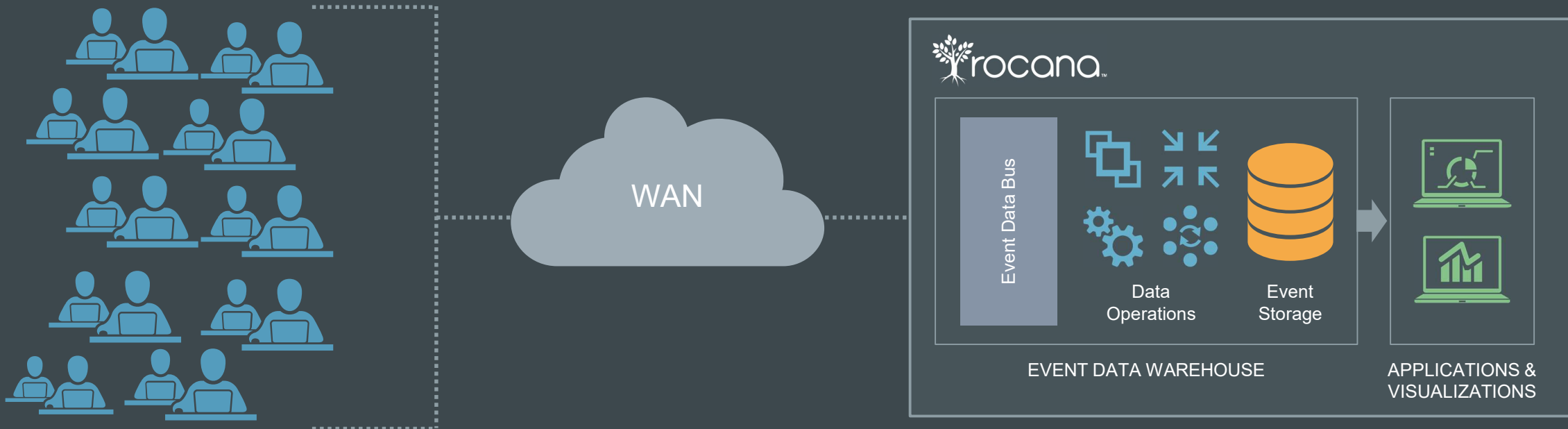
- Scale to millions of users
- Lossless data collection
- Data available for analysis in near real-time

## RESULTS

- Improved game play
- Enhanced revenue
- Improved security & hacking prediction

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Improve customer experience by analyzing network traffic



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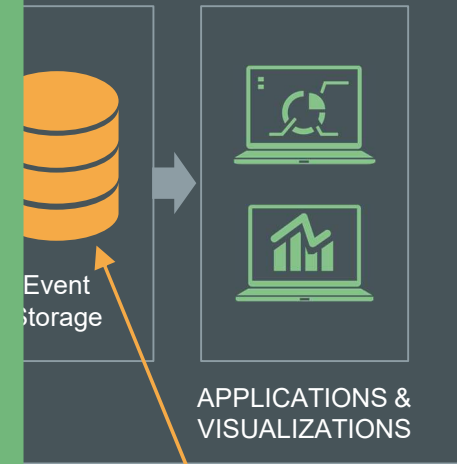
Improve security posture with a modern, scalable solution



Lossless data transfer  
from remote sites

for integrating with other systems

**Ingest 30+ TBs / Day**  
**Retention > 1PB / Year**  
**ALL IMMEDIATELY ACCESSIBLE**



Fast, direct data access  
using common tools



*From collection to ready-for-query in <1 sec*

# Getting REAL with Big Data for IT Ops

*See a demo in the Oracle Big Data Showcase*

[www.rocana.com](http://www.rocana.com)

