



# Observability and the Golden Signals for SRE in Microservices

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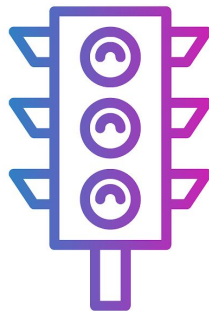
# What We'll Discuss Today

- The 4 Golden Signals of Site Reliability
- The Rise of Microservices
- Observability in Microservices
- Microservices & The 4 Golden Signals

# Golden Signals



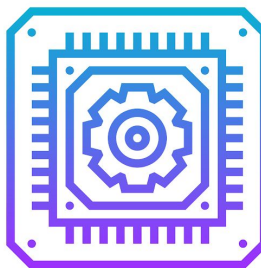
Latency



Traffic



Errors



Saturation



## Moving to Microservices

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# Business Modernization in the Cloud

The business world is transforming around cloud

**“Own less, build more”**  
means...



Get closer to  
your customers



Make static  
things smart



Make slow  
things fast

# But There's a Catch



Cloud service APIs are difficult to troubleshoot



Logic shifts from the code within a service to the calls between microservices



Thousands of containers, functions, and services with a wide variety of behaviors

# Old Tooling, New Architecture



**Traditional APM**  
sees within services,  
but not between  
services



**Infrastructure Monitoring**  
alerts DevOps to issues, but  
does not give Devs context to  
remediate



**Log Aggregators**  
hours of manually correlation that  
bottlenecks team knowledge in one  
SME



**Incomplete Data**  
due to sampling and lack of  
payload visibility

# Something is Still Missing

- How do we correlate between metrics and logs
- How do we correlate between data in different services

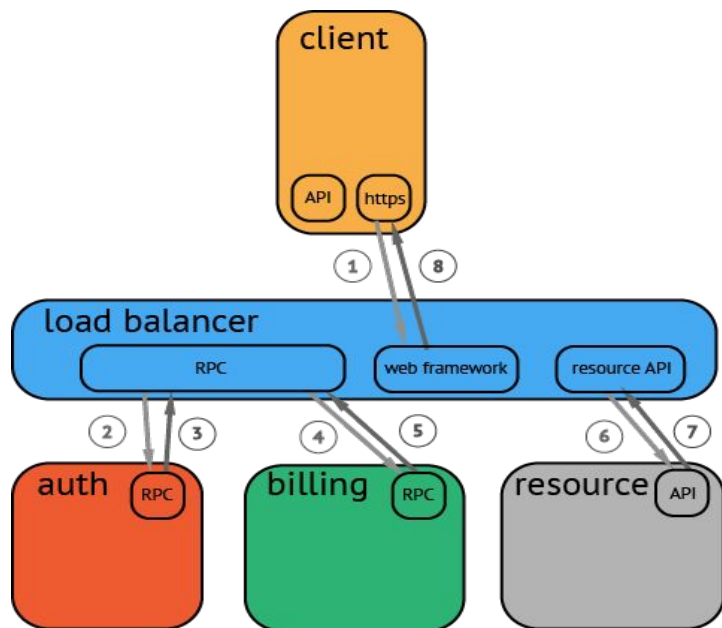




# Distributed Tracing

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# Distributed Tracing



A **trace** tells the story of a request or data as it propagates through the distributed system.

Since distributed tracing connects every request in a transaction, it allows you to know and see what's happening to every service component and app in production.

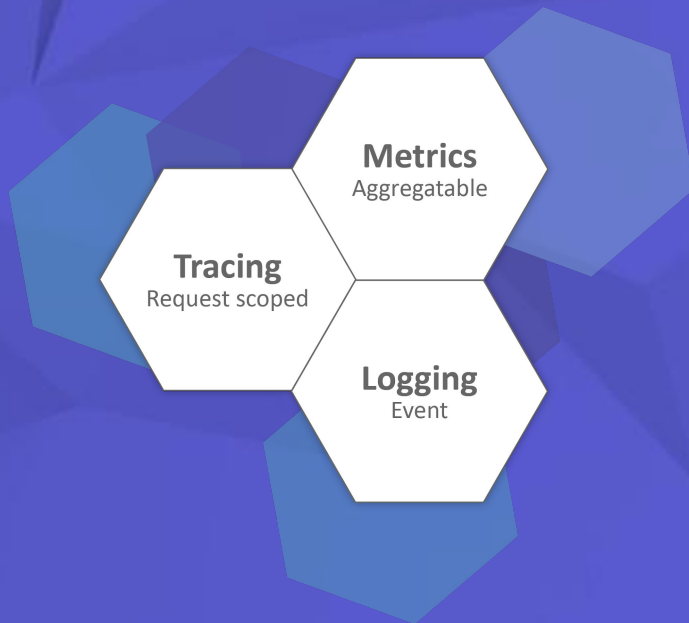
# Achieving Observability for Microservices

Combining metrics, logs, and traces for observability is the only way to understand complex environments

**Metrics** tell us the “**what**”

**Logs** tell us the “**why**”

**Traces** tell us the “**where**”

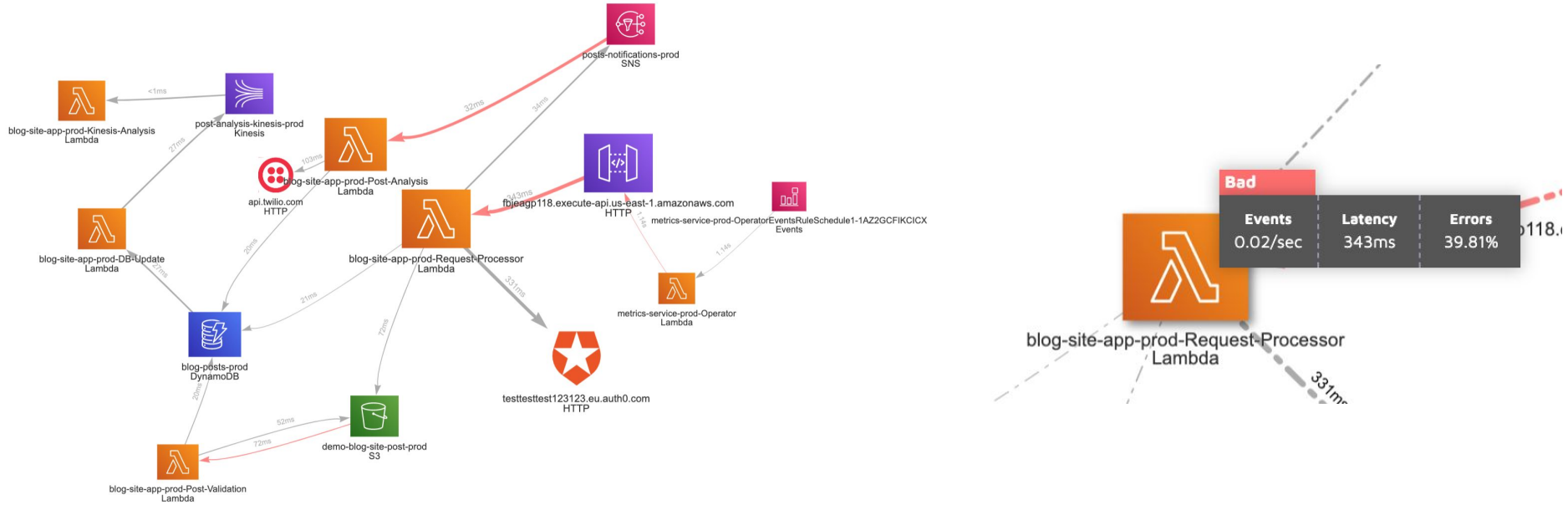




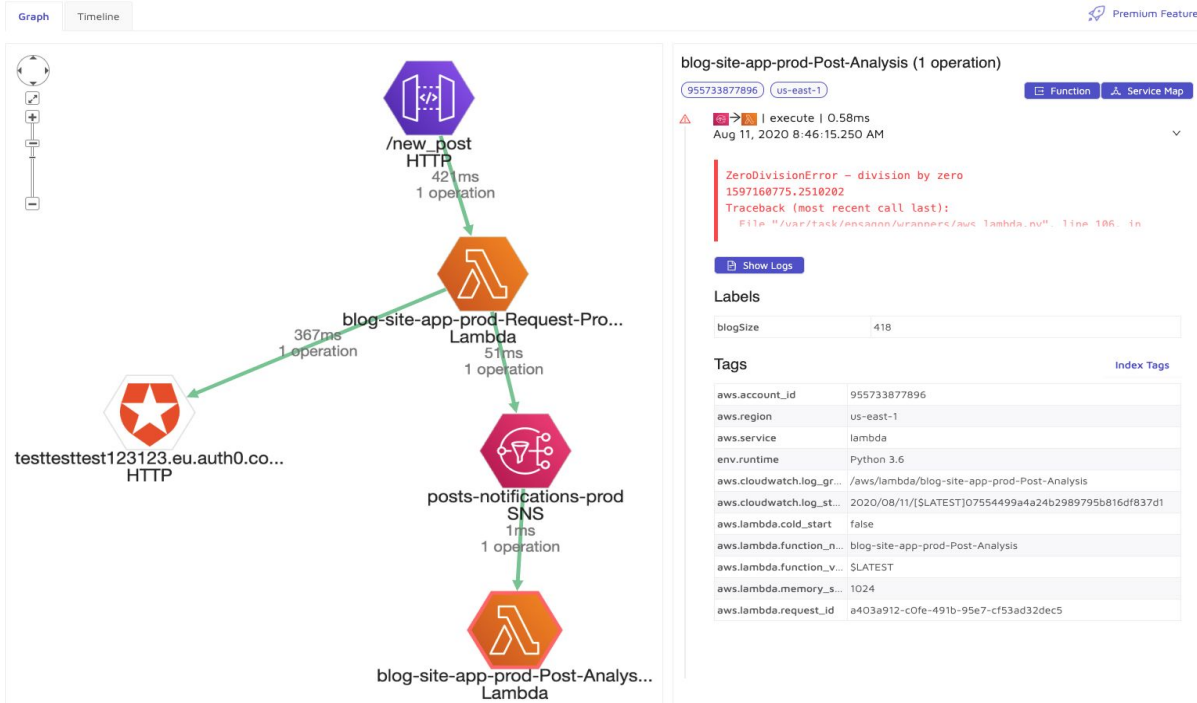
## Tracing, Observability & the Golden Signals

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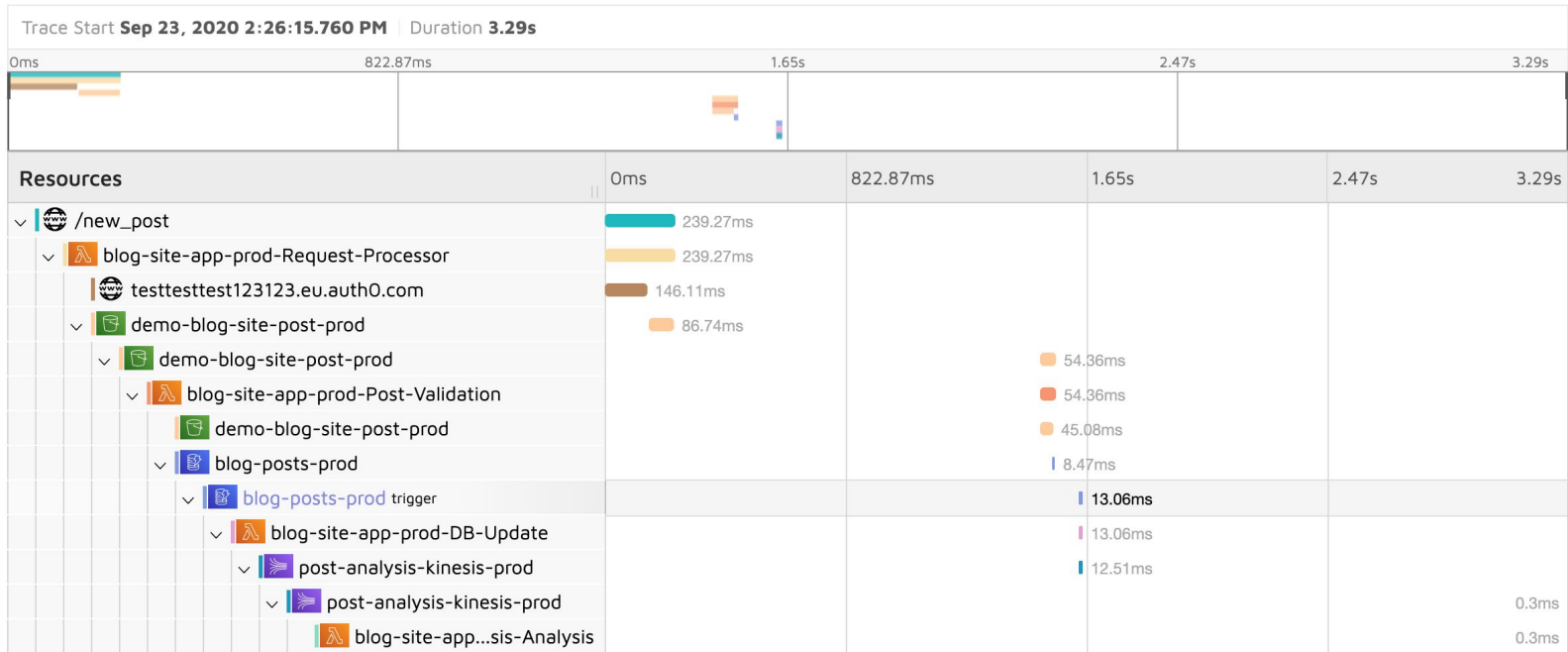
# Distributed Tracing: Application Level



# Distributed Tracing: Transaction Level



# Latency: Where is Time Spent?



# Traffic Insights

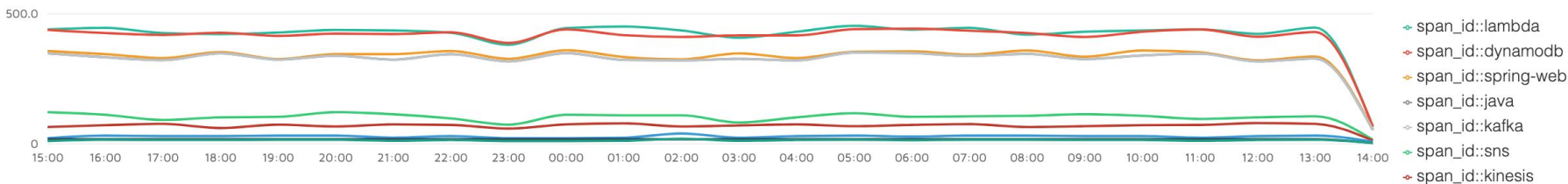
## Count of span\_id by application

[Add Chart to Custom Dashboard](#)



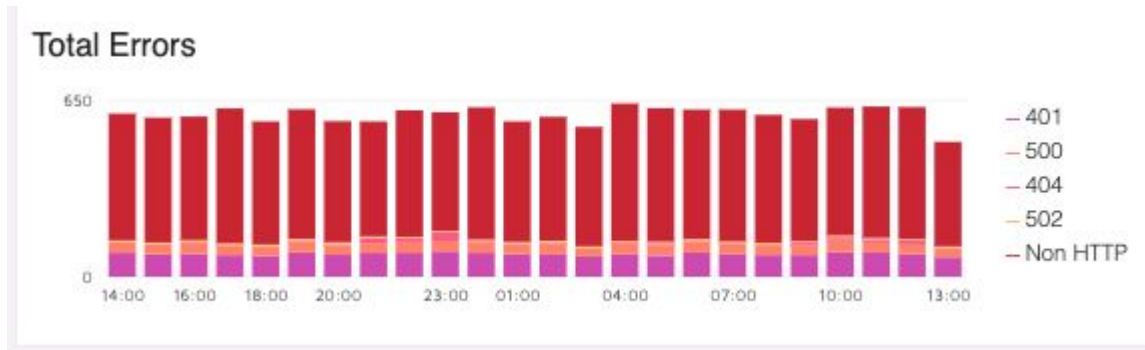
## Count of span\_id by resource\_type

[Add Chart to Custom Dashboard](#)

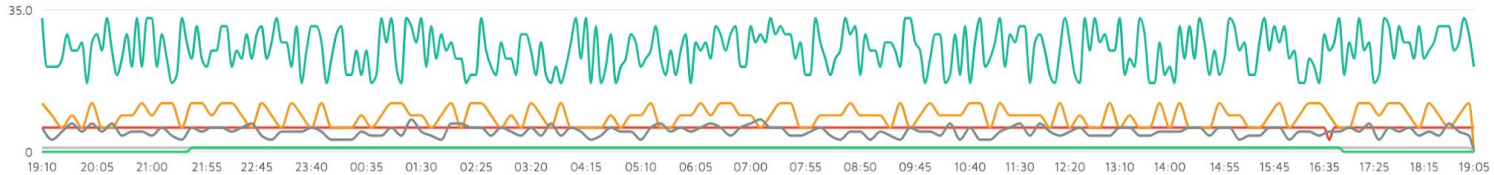




# Errors Visualized, Categorized



Count of error by exception.type



[Add Chart to Custom Dashboard](#)

- error::ConnectTimeoutException
- error::ConditionalCheckFailedException
- error::ZeroDivisionError
- error::TypeError
- error::JSONDecodeError
- error::ReadTimeoutError

# Resource Saturation (Kubernetes)

## Pods (1/22)

[How to get started](#) | [Watch video](#)

Q python

Last day

1h

Actions

Clusters

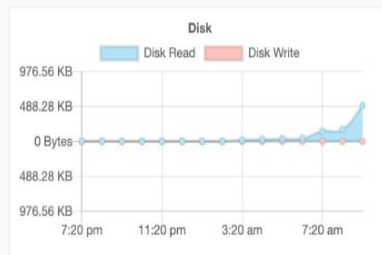
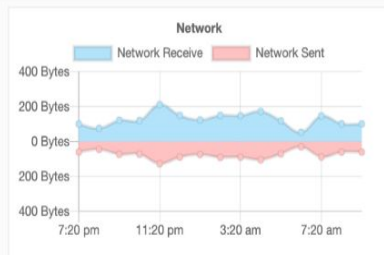
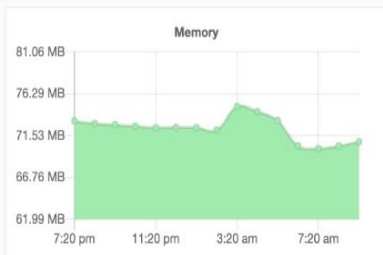
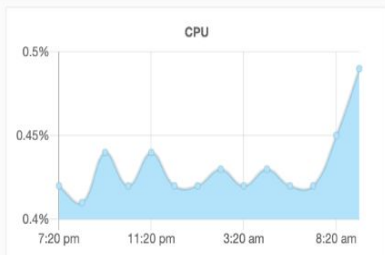
Nodes

**Pods**

Containers

Deployments

Pod Name	Cluster	Namespace	Deployment	CPU	Memory	Disk	Network	State
hello-python-848465cf6f-h8bcp	epsagon-demo	hello	<a href="#">hello-python</a>	0.48%	70.84 MB	R: 476.6 KB W: 0 Bytes	Rx: 99.87 Bytes Tx: 61.34 Bytes	Running

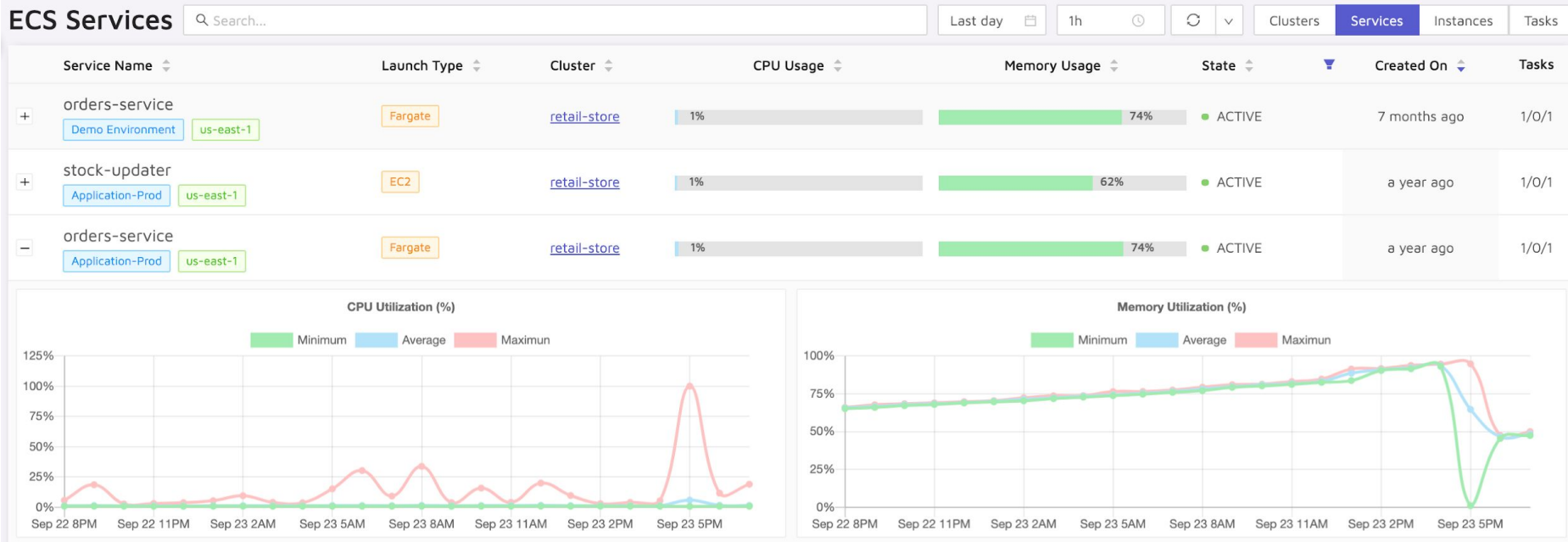


### Pod Information

Show Traces

IP Address	100.96.139.6	Host	172.20.39.88	Containers	epsagon/hello-python <span>latest</span> <span>running</span>	Date Created	16 hours ago
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# Resource Saturation (ECS)





# Moving Forward

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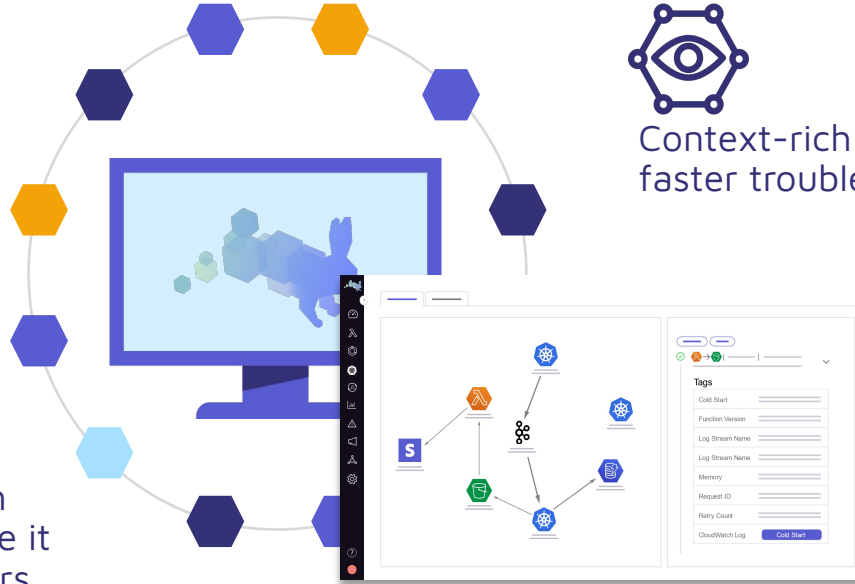
# A Good Observability Solution:



Intuitive visualizations of Container and Serverless applications



Streamlined Solution with low-code setup that make it easy to onboard new users



Context-rich analysis for faster troubleshooting



# Thank You!

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Questions? Feel free to DM at [chris@epsagon.com](mailto:chris@epsagon.com)

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