Observability and the Golden Signals for SRE in Microservices

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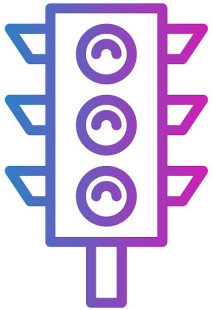
What We'll Discuss Today

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

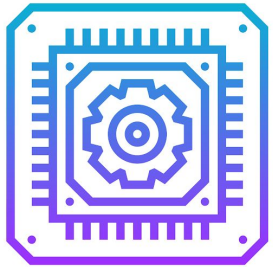
Golden Signals

Latency



Traffic

Errors



Saturation

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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

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But There's a Catch

Cloud service APIs are difficult to troubleshoot

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

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

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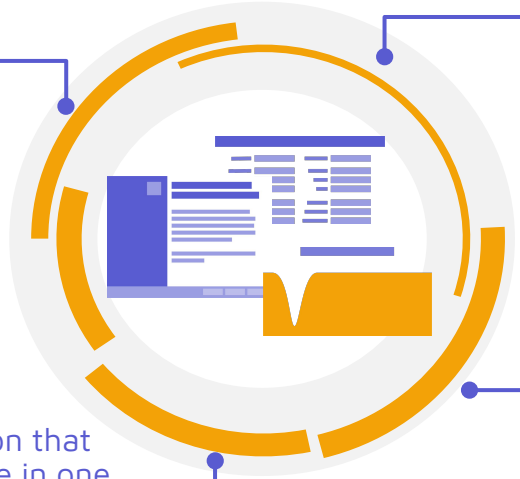
Old Tooling, New Architecture



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

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Something is Still Missing

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

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Distributed Tracing

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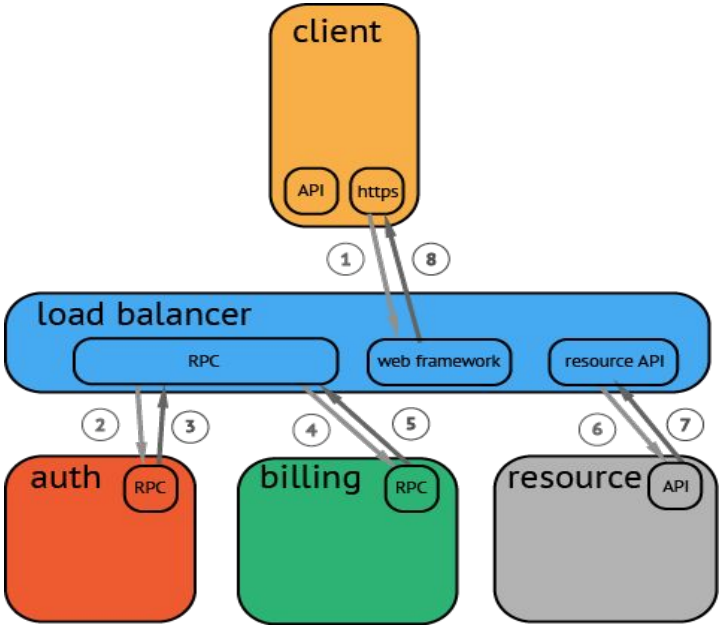
Distributed Tracing



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.

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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"**

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Tracing, Observability & the Golden Signals

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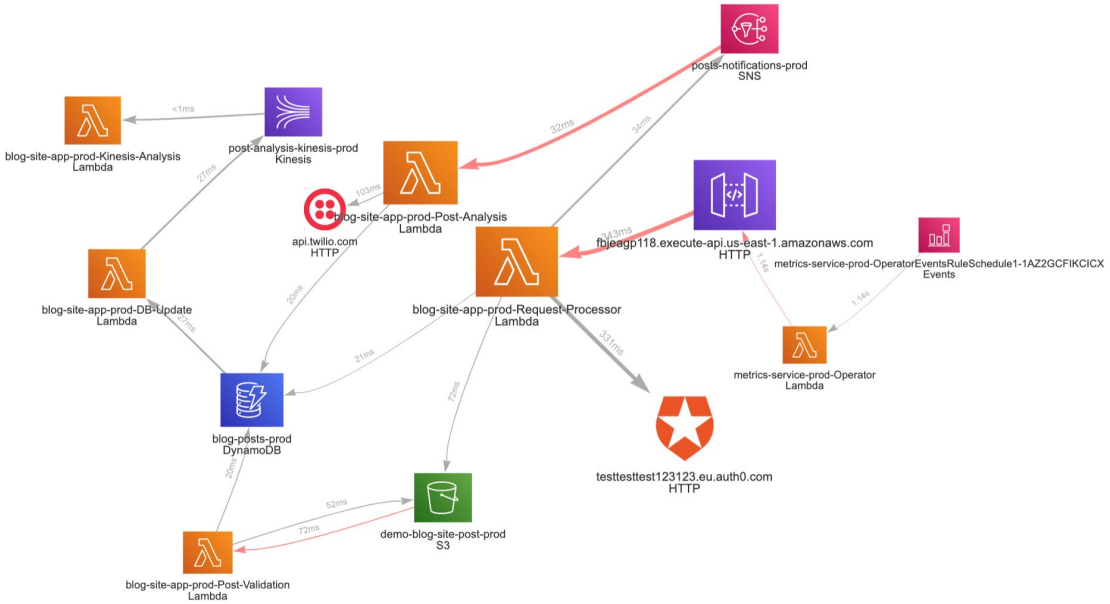
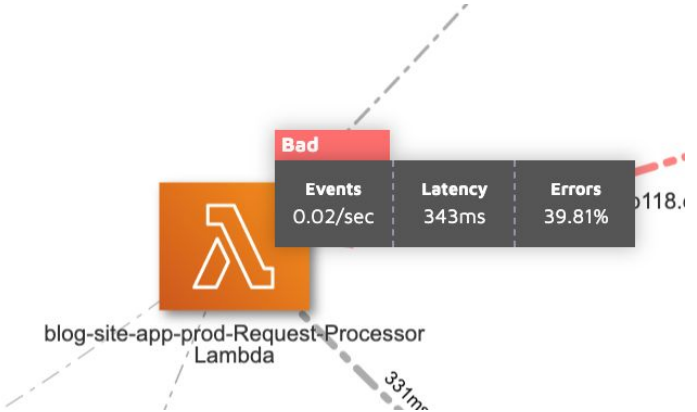
Distributed Tracing: Application Level





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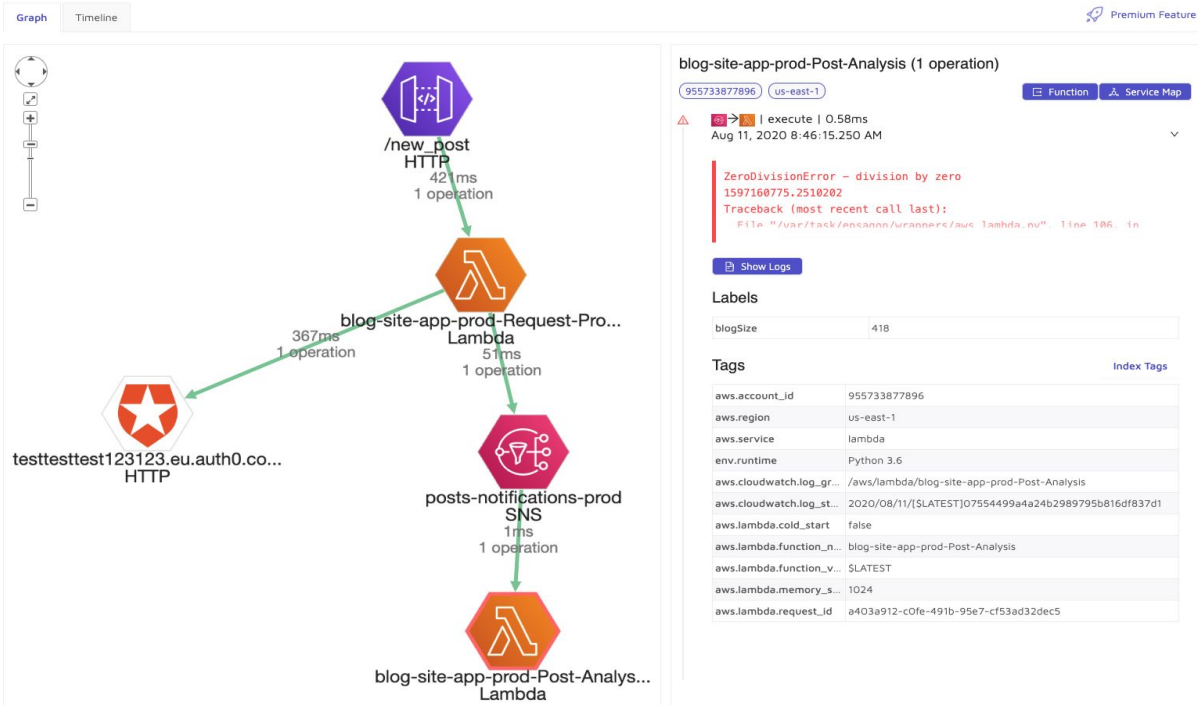
Distributed Tracing: Transaction Level



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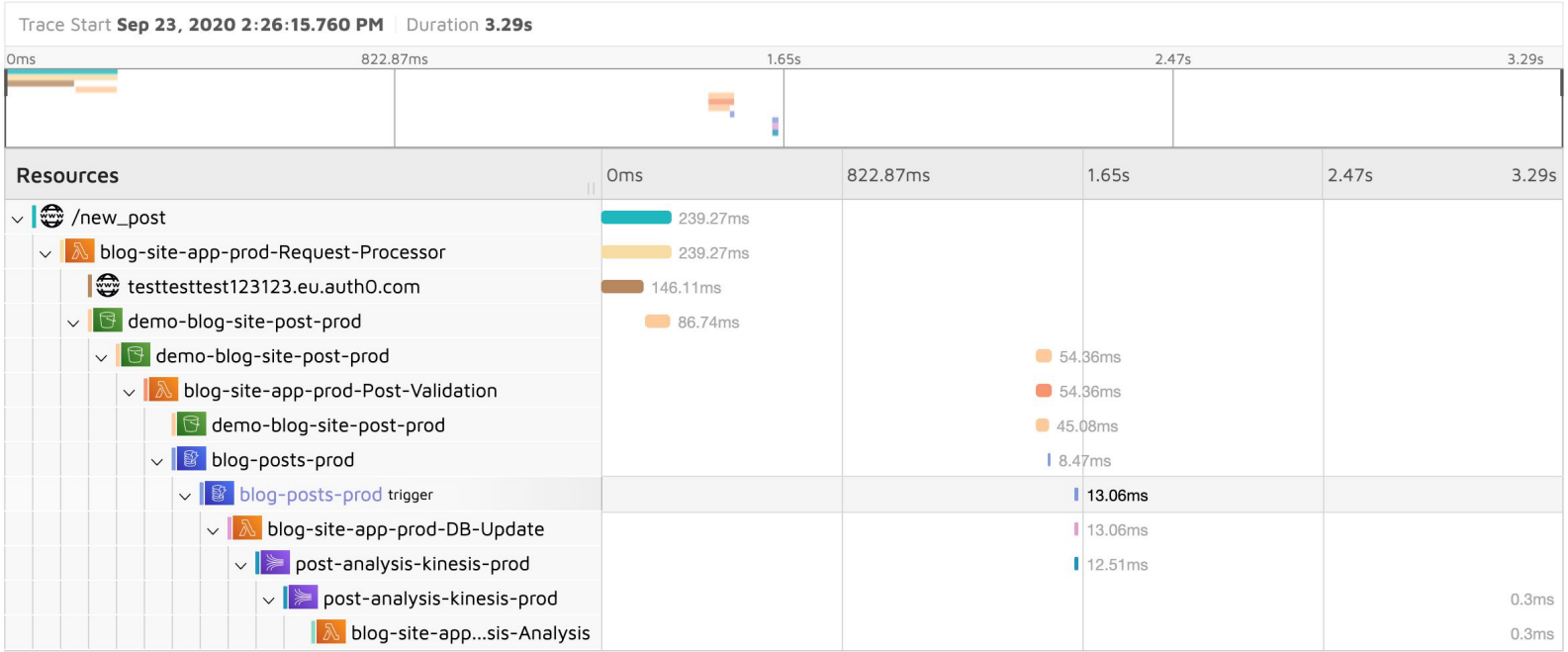
Latency: Where is Time Spent?



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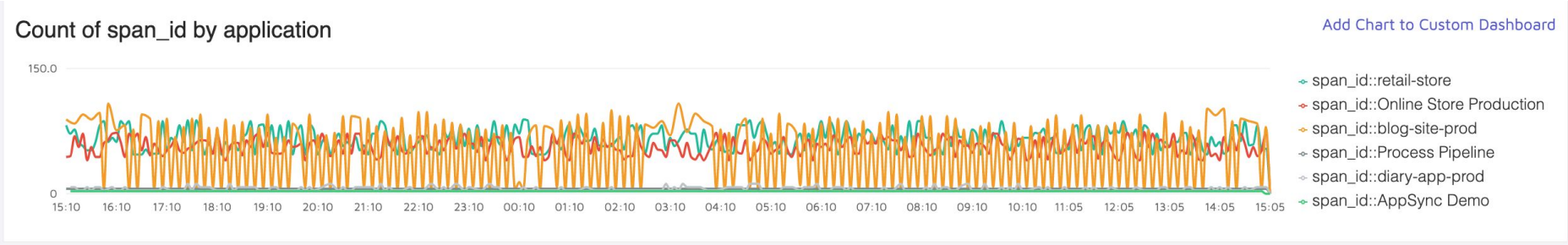
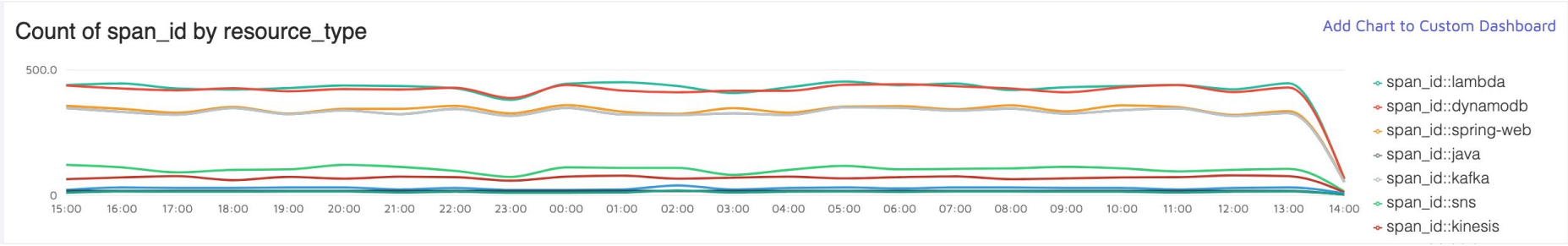
Traffic Insights





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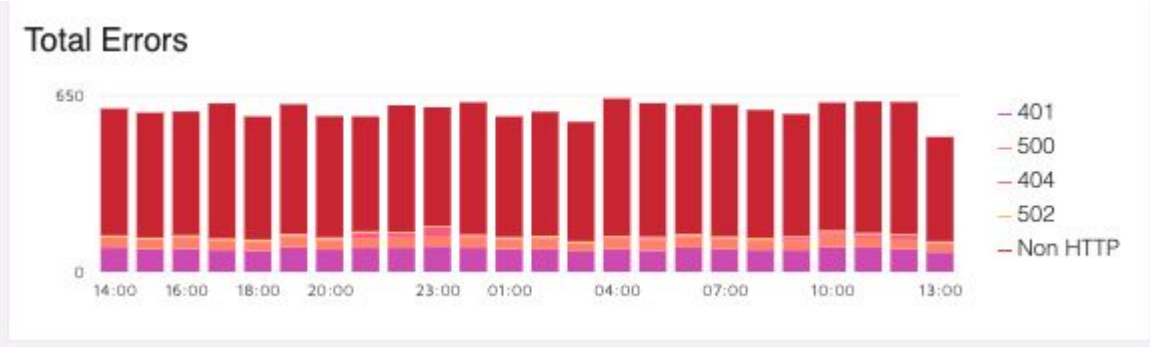
Errors Visualized, Categorized



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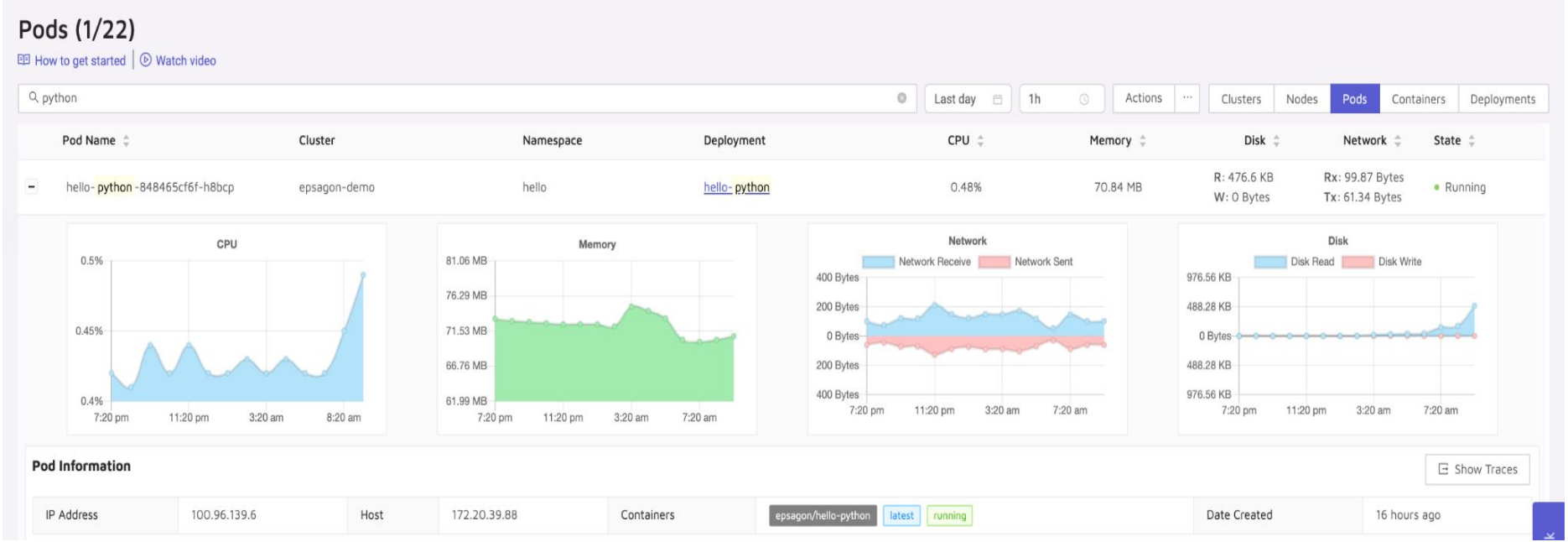
Resource Saturation (Kubernetes)



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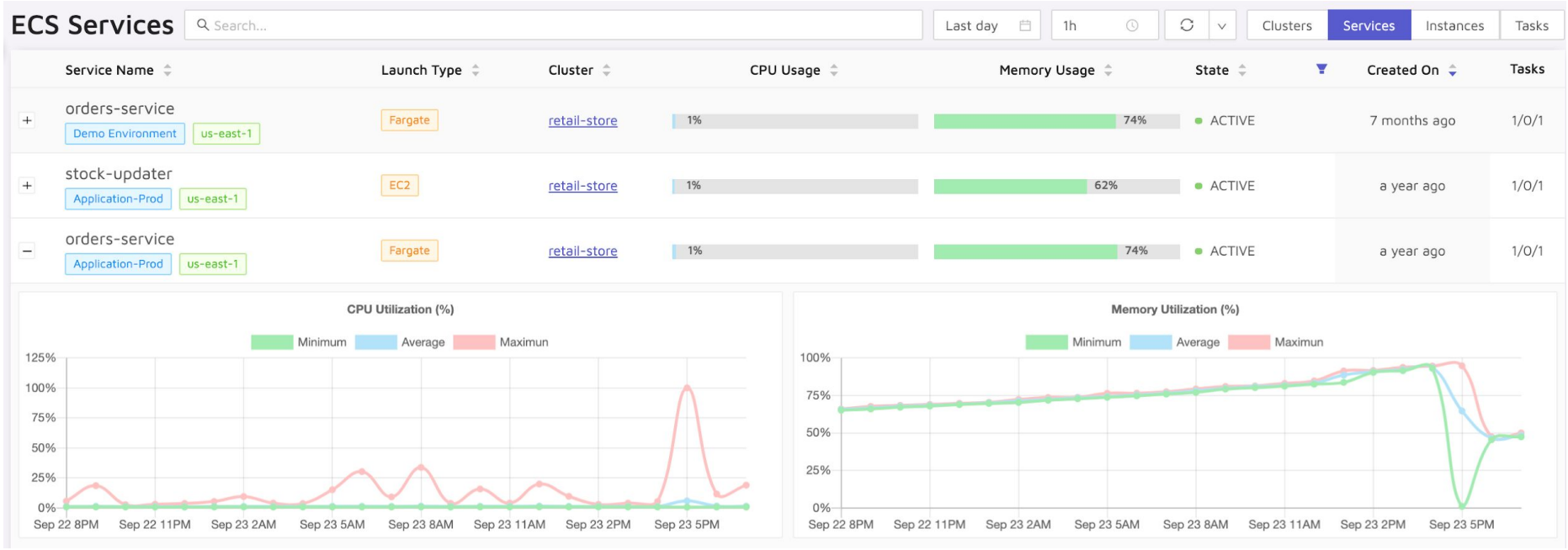
Resource Saturation (ECS)



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Moving Forward

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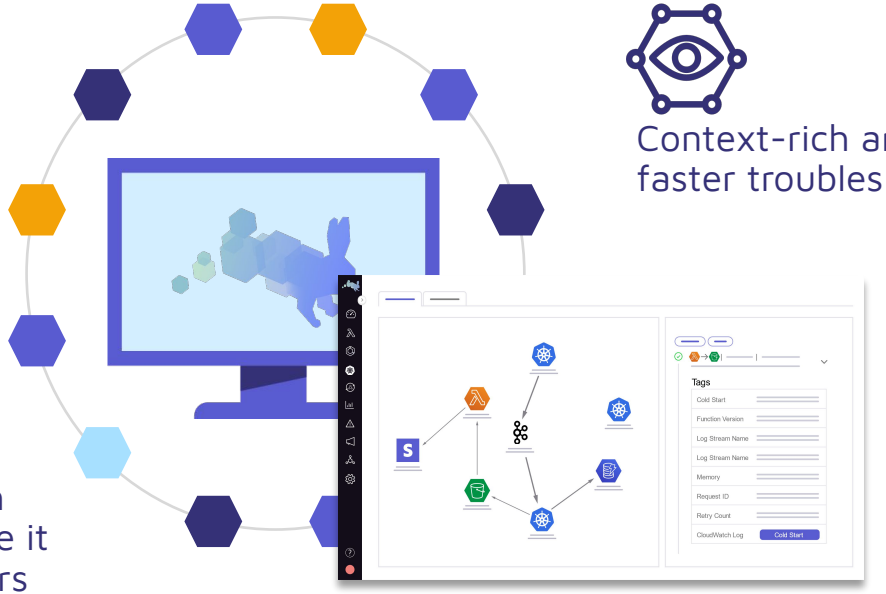
A Good Observability Solution:

Intuitive visualizations of Container and Serverless applications



Context-rich analysis for faster troubleshooting

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

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Thank You!

Questions? Feel free to DM at chris@epsagon.com

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