AWS re:Invent

CON215-S

Implementing Kubernetes on AWS with confidence

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Agenda

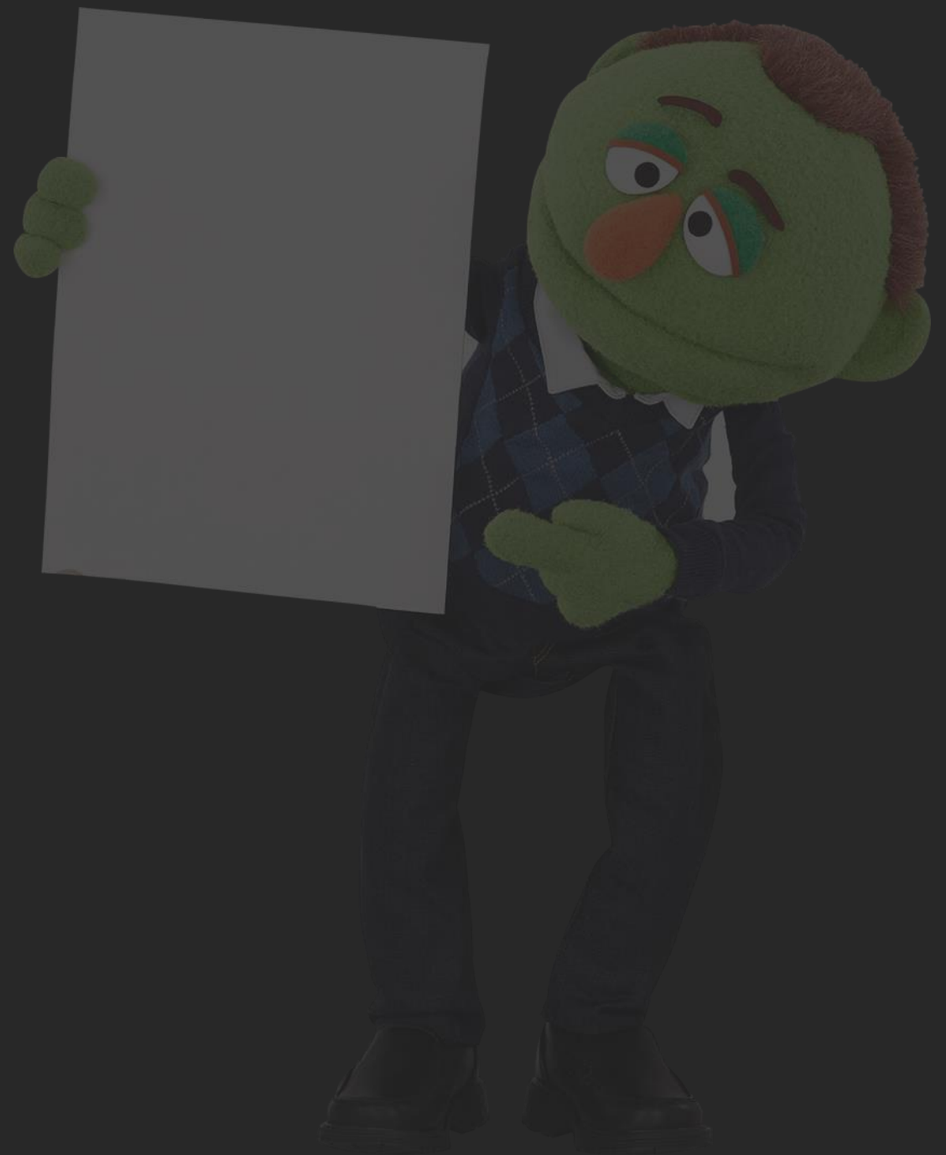
LendingTree’s reliability revolution

The choice to migrate

Making a team of Kubernetes engineers

A single vision of reliability

Where we ended up and what’s next



LendingTree's reliability revolution

Our reliability revolution

- One very bad week, the creation of the first SRE
- Tech-centric alerting
- A little Sumo Logic goes a long way
- Redundant alerting
  - Sumo Logic, New Relic, Zabbix, Adobe Analytics
- Relationships with revenue-centric units (Sales and Marketing)
- Open source in our monitoring and concern for bad commits

A choice to migrate

The invisible deliverable

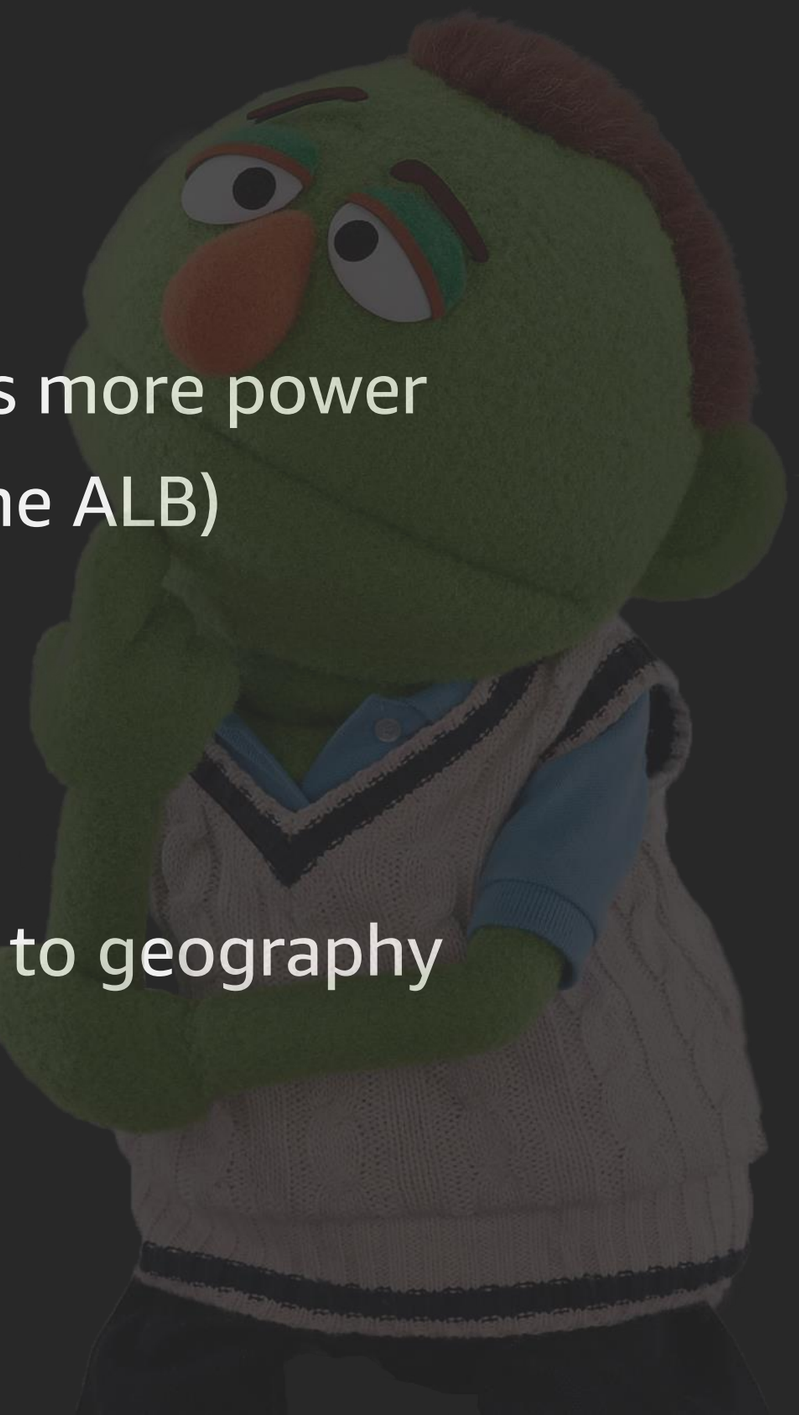
Perception

A way of regarding,
understanding,
or interpreting something

A mental impression

Why Kubernetes?

- Enhanced security
- Management of our own control plane provides more power
- Speed of routing internal to clusters (remove the ALB)
- Simple multi-region routing and reliability
- Better resource load balancing
- Production that is tested and proven
- Service discovery and the benefits when added to geography



Making a team of Kubernetes engineers

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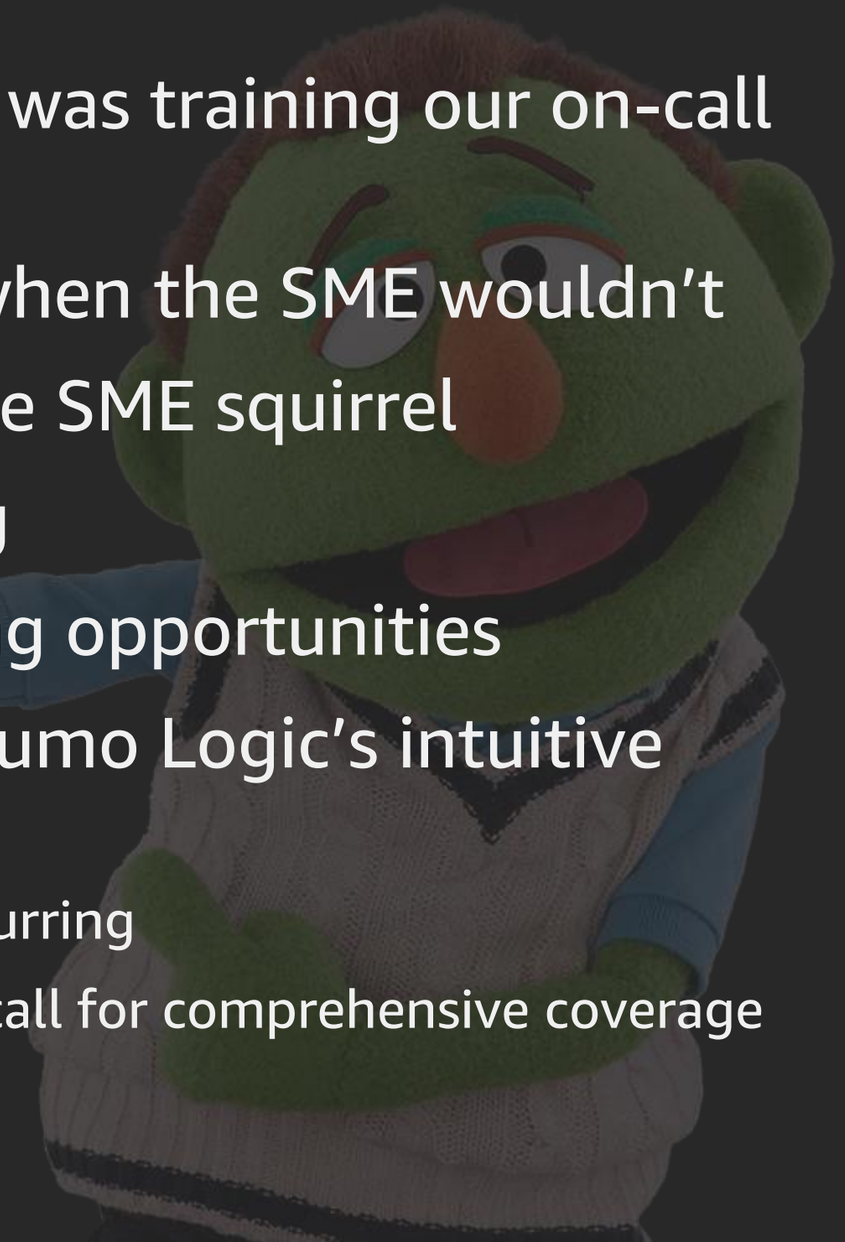
Our struggles of an SME and training

- Our single biggest struggle for going to prod was training our on-call staff to support it
- Ultimately, I scheduled Kubernetes training when the SME wouldn’t
- “They also have this, but we don’t use it” – the SME squirrel
- One-on-one training – better, but still lacking
- Self-study options provided strongest learning opportunities
- Reliance on the SME has been mitigated by Sumo Logic’s intuitive Kubernetes system views
  - On-call technicians can easily see where problems are occurring
  - Directed monitoring can support product owners and on-call for comprehensive coverage



“I have never let my schooling interfere with my education.”

—Mark Twain

In other words…

Nothing replaces the passion and fire
of engineers who discover for themselves

A single vision of reliability

The reliability of well-intentioned people

People are unreliable

Monitoring and alerting coupled with knowledgeable staff in an on-call rotation equals reliability

Monitoring from multiple applications increases monitoring reliability!

What LendingTree uses to monitor

Systems hardware:

New Relic, Sumo Logic, and Zabbix

Log aggregation: Sumo Logic

Cluster/system view: Sumo Logic

APM: New Relic

Sumo Logic

All your data. All your insights. Together.

- Operations analytics
- Security analytics
- Business analytics

Your data

Apps

Micro-services

Cloud systems & infrastructure

SaaS service

Mobile devices

3rd-party systems & feeds

Our analytics

Multi-tenant

Scalable & elastic

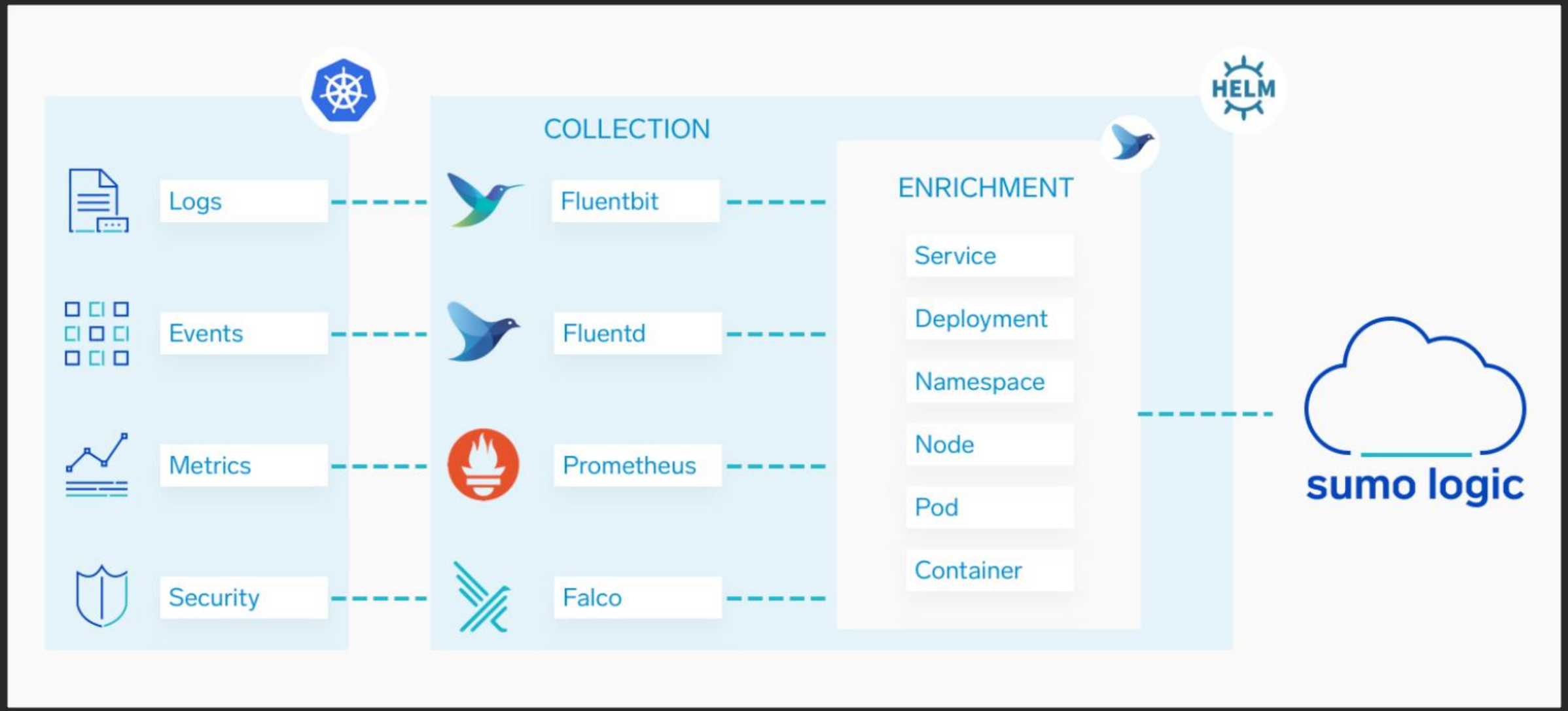
Machine learning

API

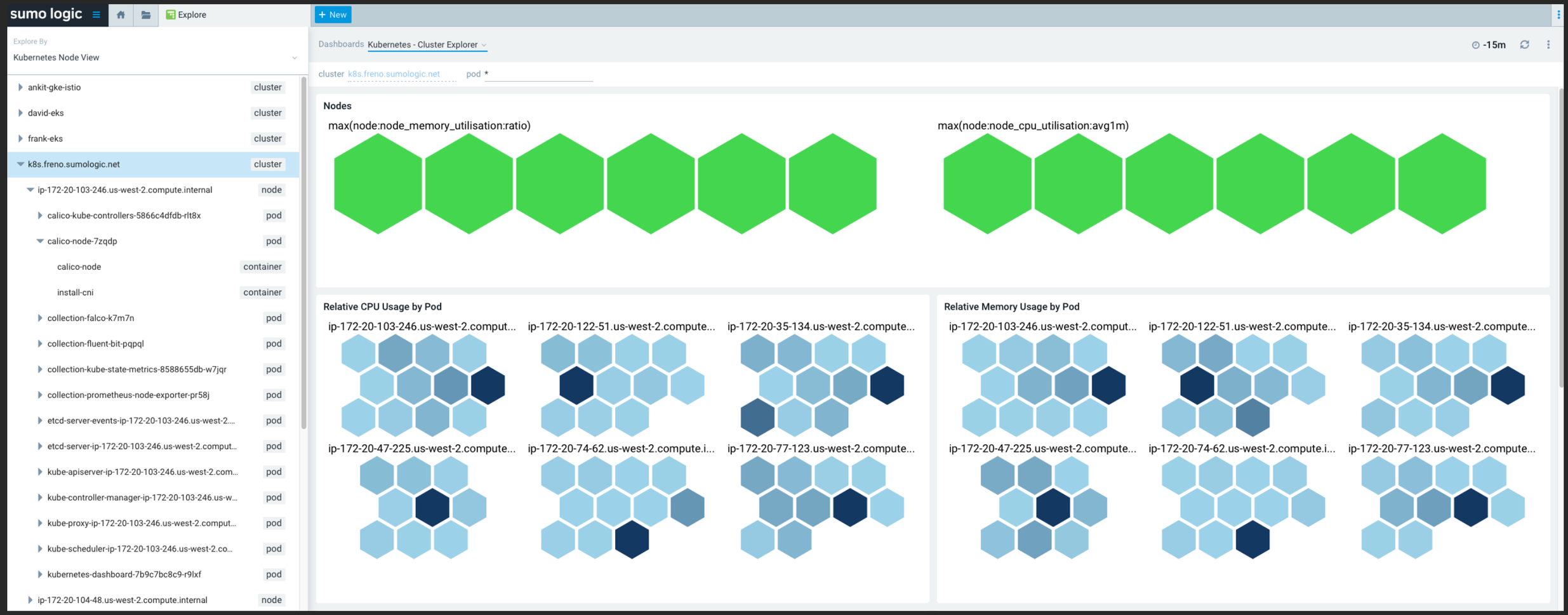
Advanced analytics

OOB security

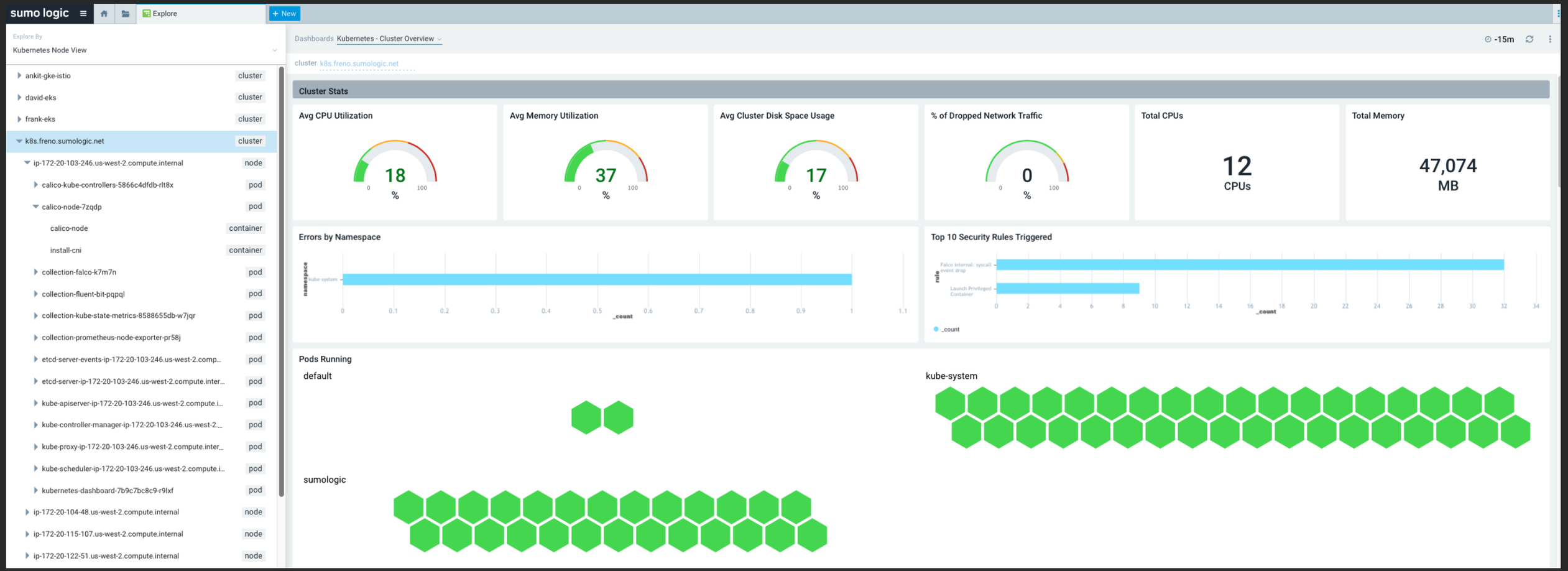
Comprehensive cloud-native data collection



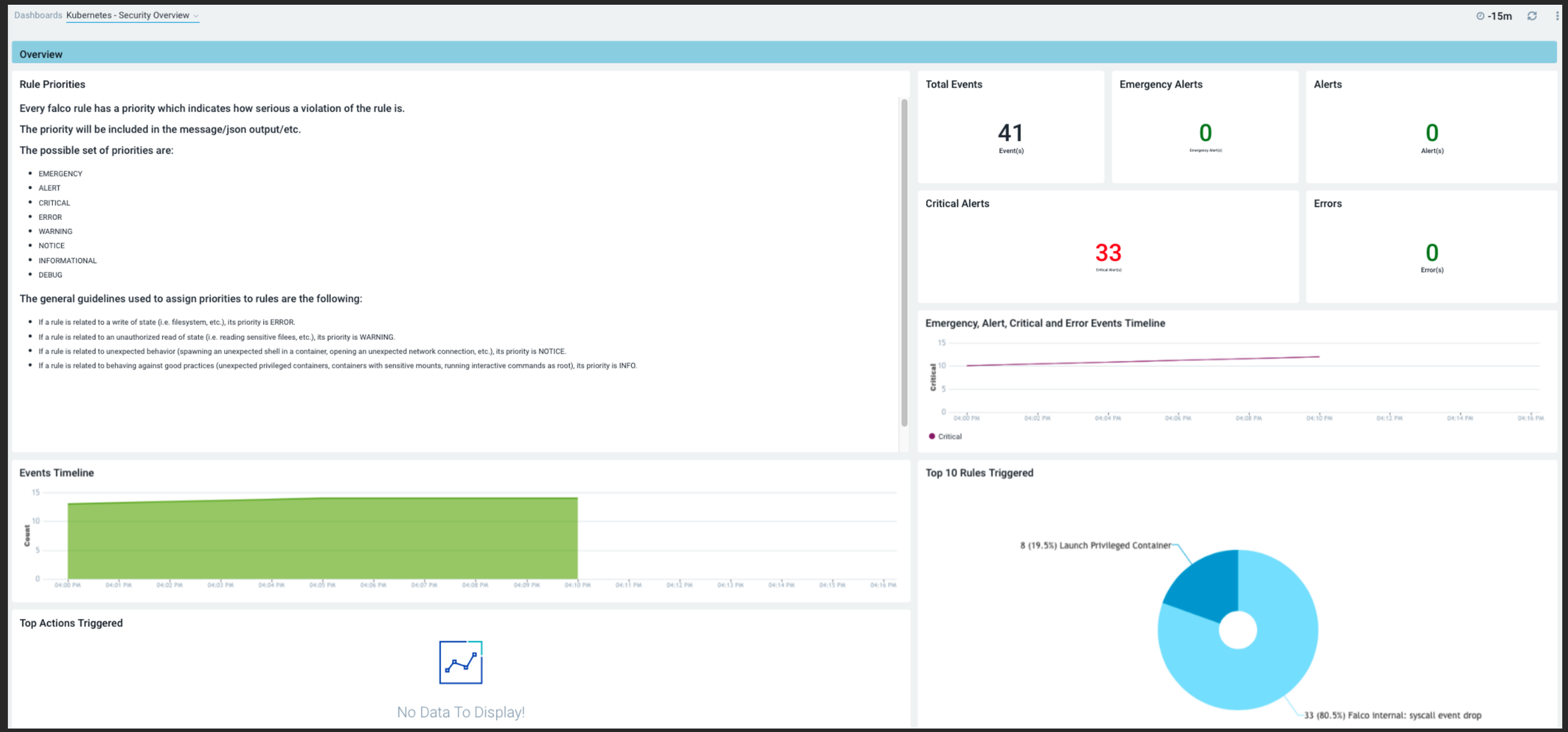
Single pane for Kubernetes where it runs



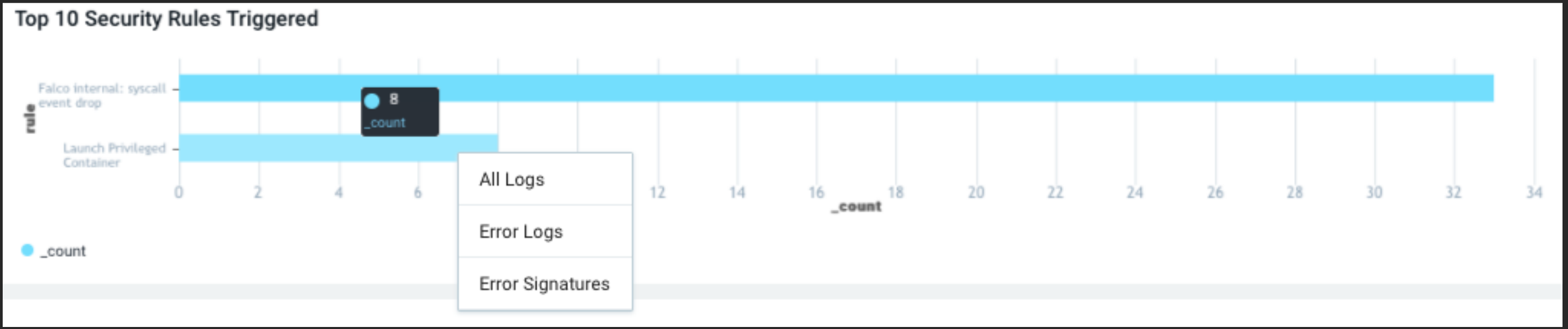
Cloud-native DevSecOps platform



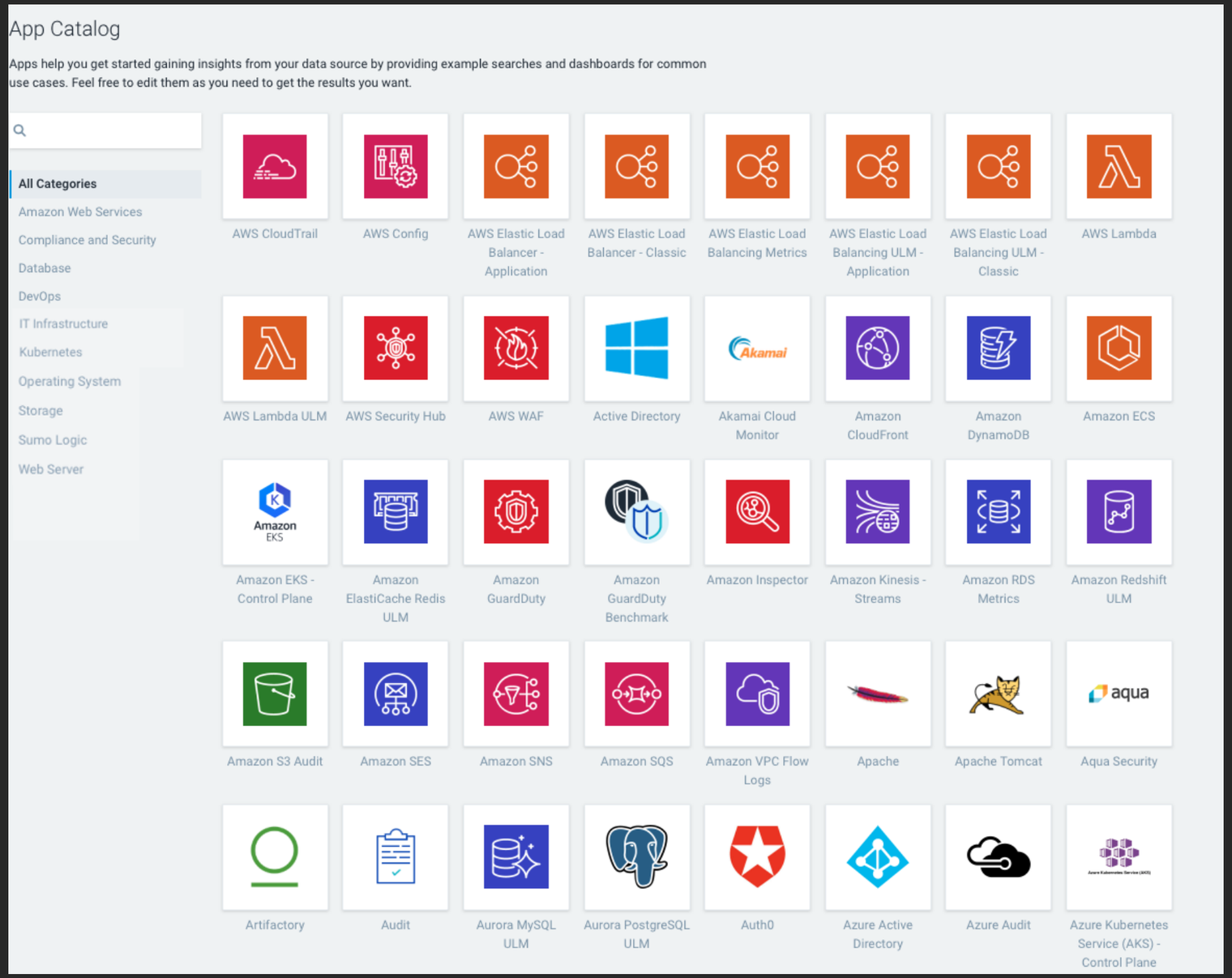
Security insights built in



Seamlessly pivot between signals



Sumo Logic app catalog

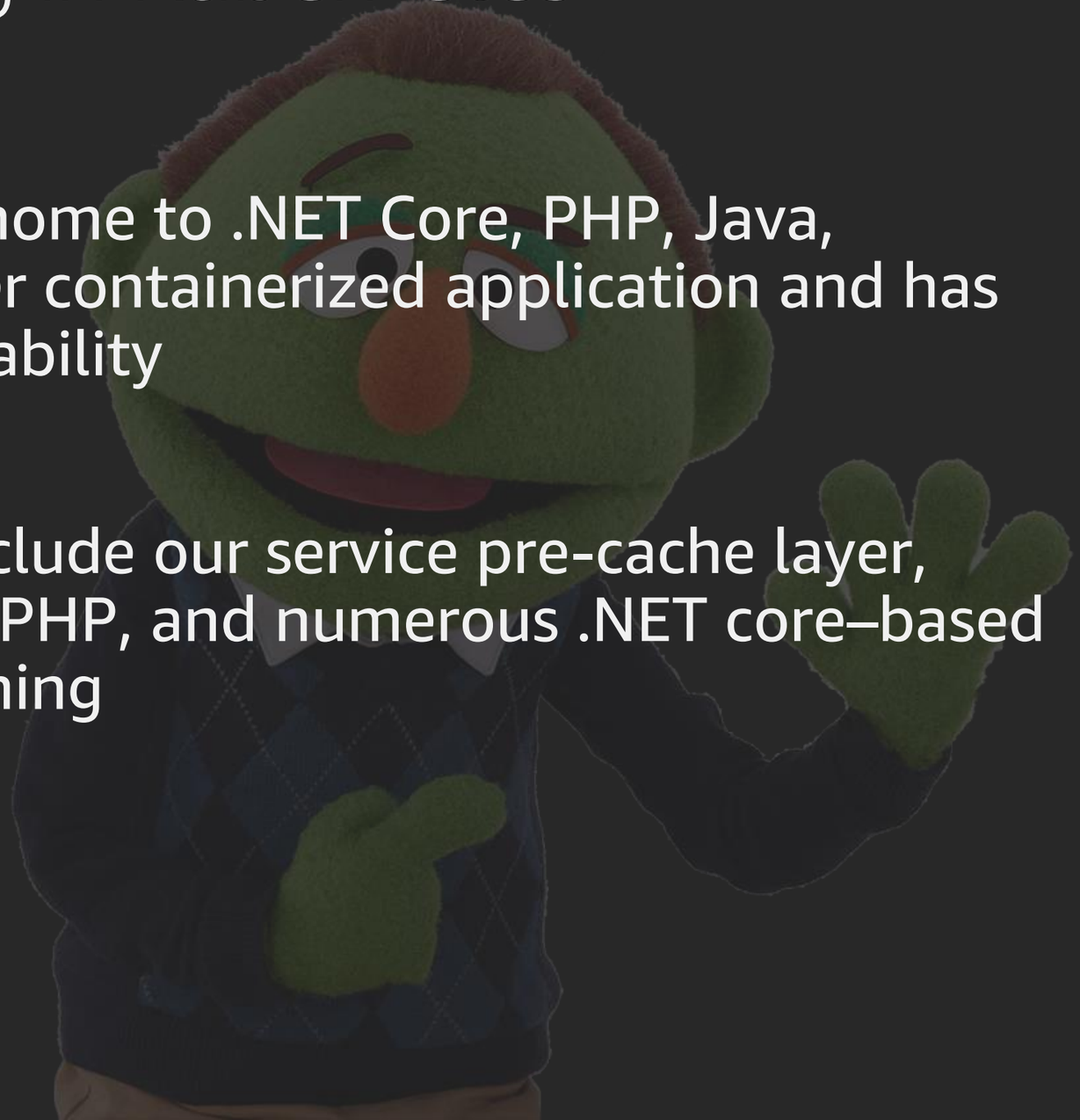


Where we ended up and what's next

What we ended up running in Kubernetes

Our Kubernetes cluster has become home to .NET Core, PHP, Java, NGINX, Apache, and a myriad of other containerized application and has solved unique needs and provided stability

Our production workloads to date include our service pre-cache layer, WordPress, semi-static web content, PHP, and numerous .NET core–based web services, but it’s far from everything



Data storage distribution – it's what's next!

Kubernetes has brought to light our need to have more distribution of data across geography

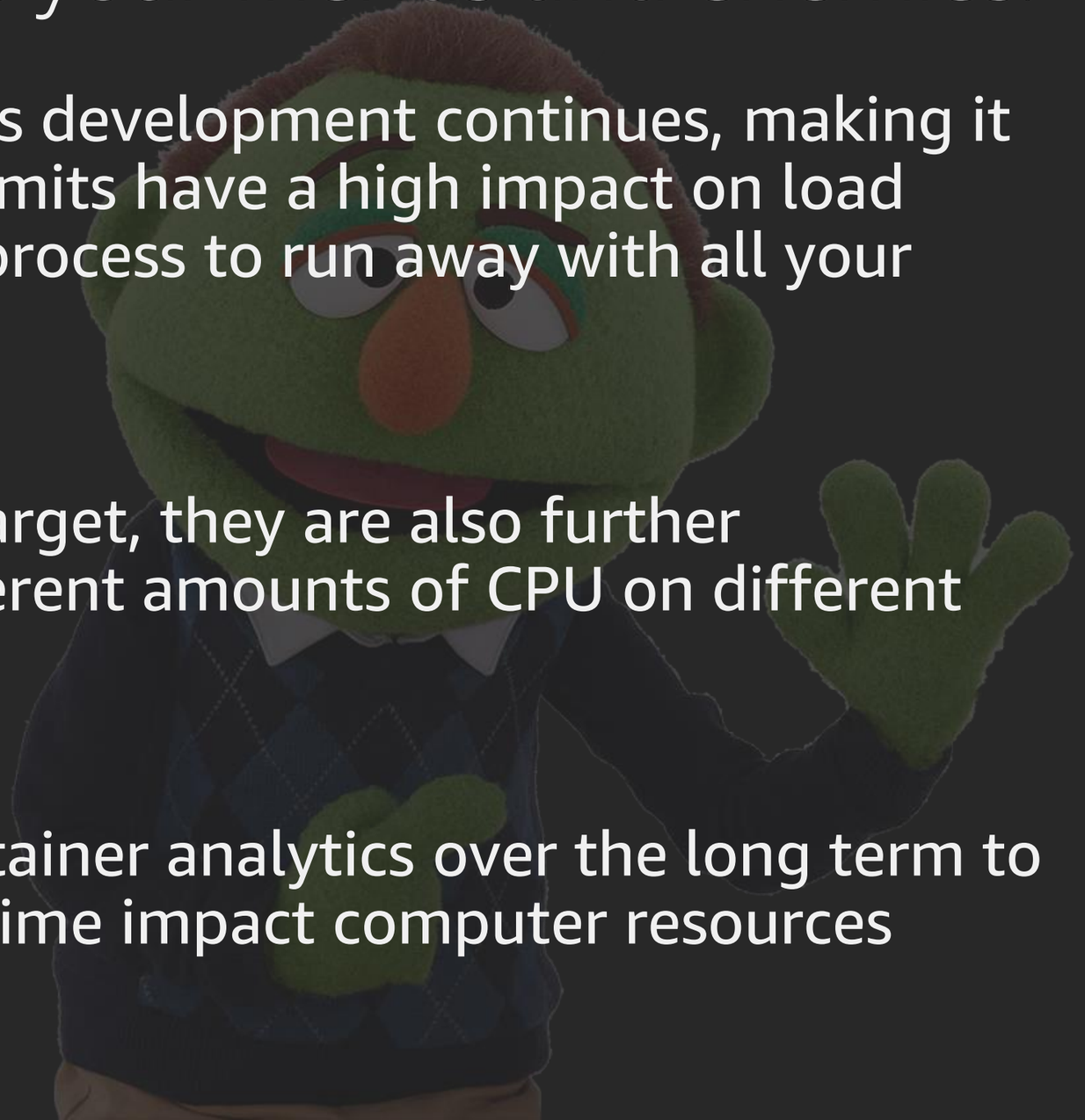
Our next phase for Kubernetes is more about data than compute

Memory and CPU limits are your friends and enemies!

Memory limits are always changing as development continues, making it a moving target, and poor memory limits have a high impact on load balancing, while no impact allows a process to run away with all your memory

While CPU limits are also a moving target, they are also further complicated by values, meaning different amounts of CPU on different instance types

We are looking to start compare container analytics over the long term to analyze how software changes over time impact computer resources



Thank you!

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