cisco Live!
Let's go
#CiscoLive

The bridge to possible

Cross-M.E.L.T. Troubleshooting with Cisco FSO Platform and Cloud Native Application Observability

Gatha Sehgal - Product Manager | Cisco AppDynamics
David Butenhoff - Strategy & Planning Manager | Cisco AppDynamics

BRKAPP-2915

Cisco Webex App

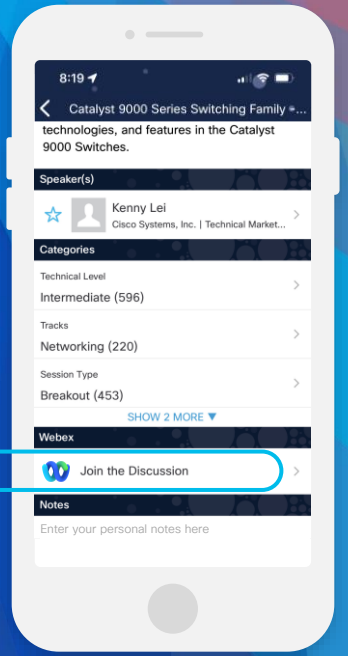
Questions?

Use Cisco Webex App to chat
with the speaker after the session

How

1. Find this session in the Cisco Live Mobile App
2. Click “Join the Discussion”
3. Install the Webex App or go directly to the Webex space
4. Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 9, 2023.



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Agenda

- Introduction
- Evolution of Monitoring
- Future of Observability
- Cisco FSO Platform Use Cases
- Demo
- Q&A

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*"… technology continuously advances. If your portfolio is standing still, **obsolescence** is just around the corner."*

Gartner | Observing and Optimizing the Adaptive Organization – Nov 2022

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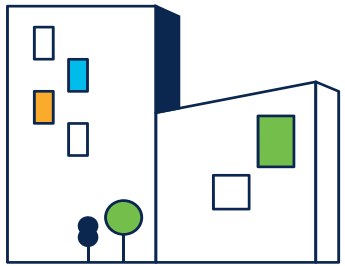
Where did we begin?



Brian, 20

Founder, SwagGolfAdvertising.com

Cares About: Metrics

Business

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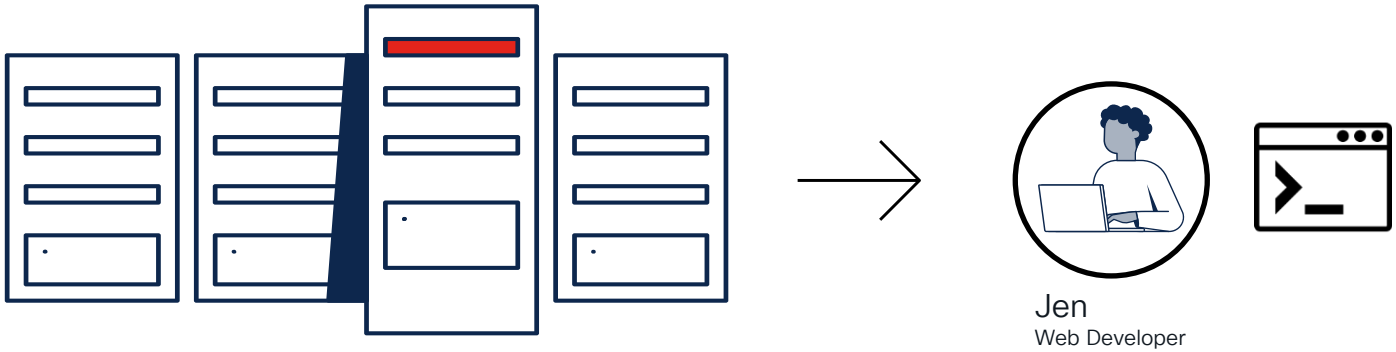
Where did we begin?



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Personas and focus in the age of the monolith

Ben
Server Admin

Events
Metrics
Logs

Jen
Developer

Logs
Metrics

Sameera
Network Admin

Metrics
Events
Traces
Logs

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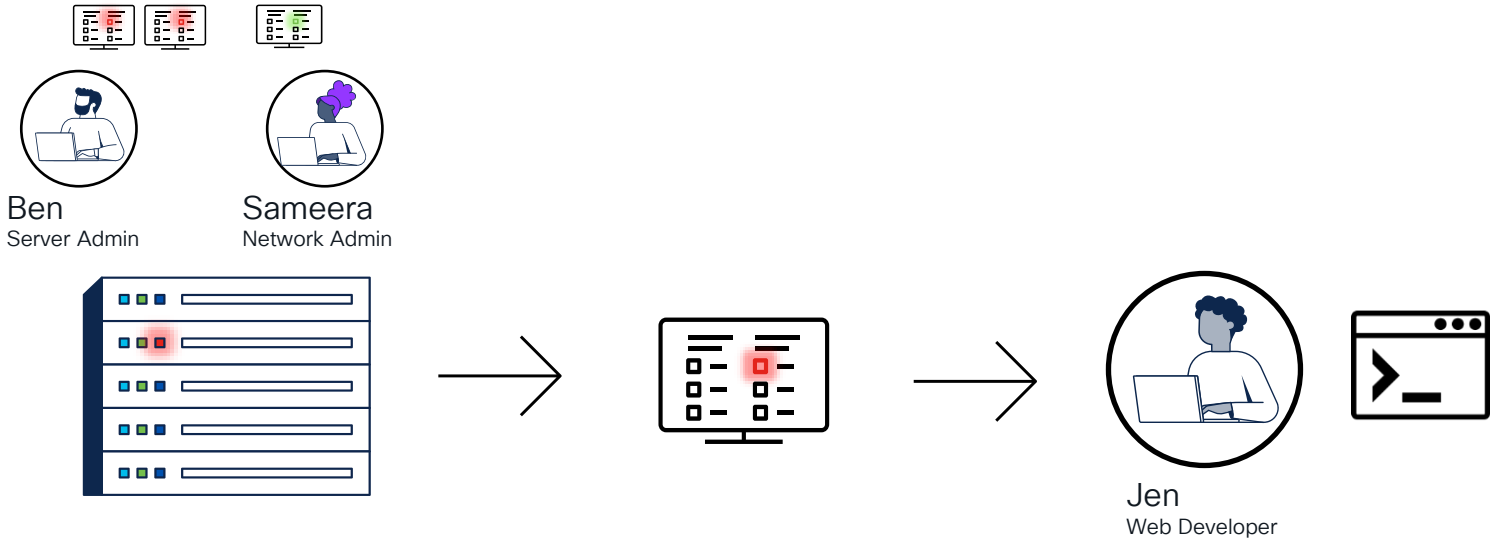
Modern monitoring made life better



Swag Golf Advertising becomes Swagga

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Visibility made us better

Ben
Server Admin

Events
Metrics
Logs

Jen
Developer

Traces
Events
Logs
Metrics

Sameera
Network Admin

Metrics
Events
Traces
Logs

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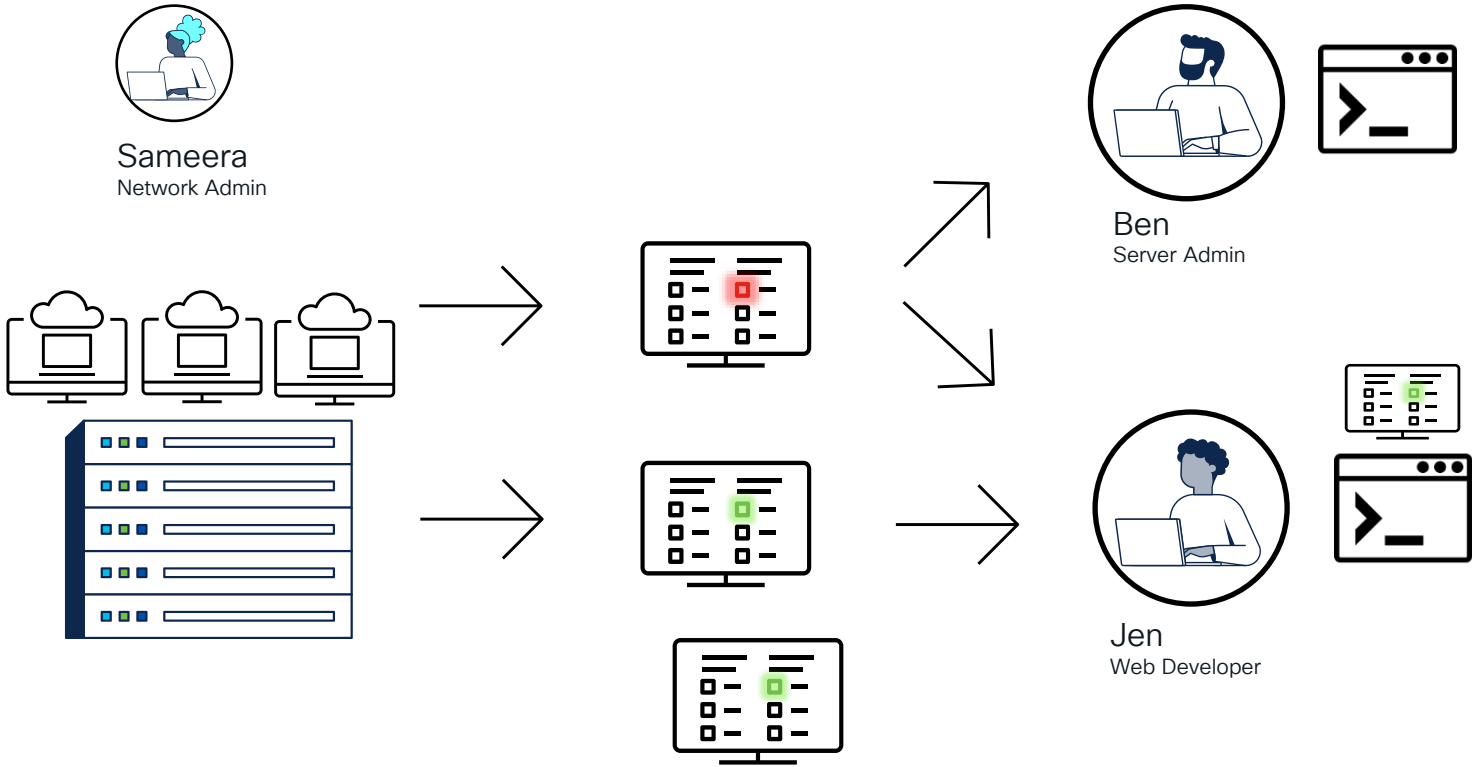
Technology and visibility expanded



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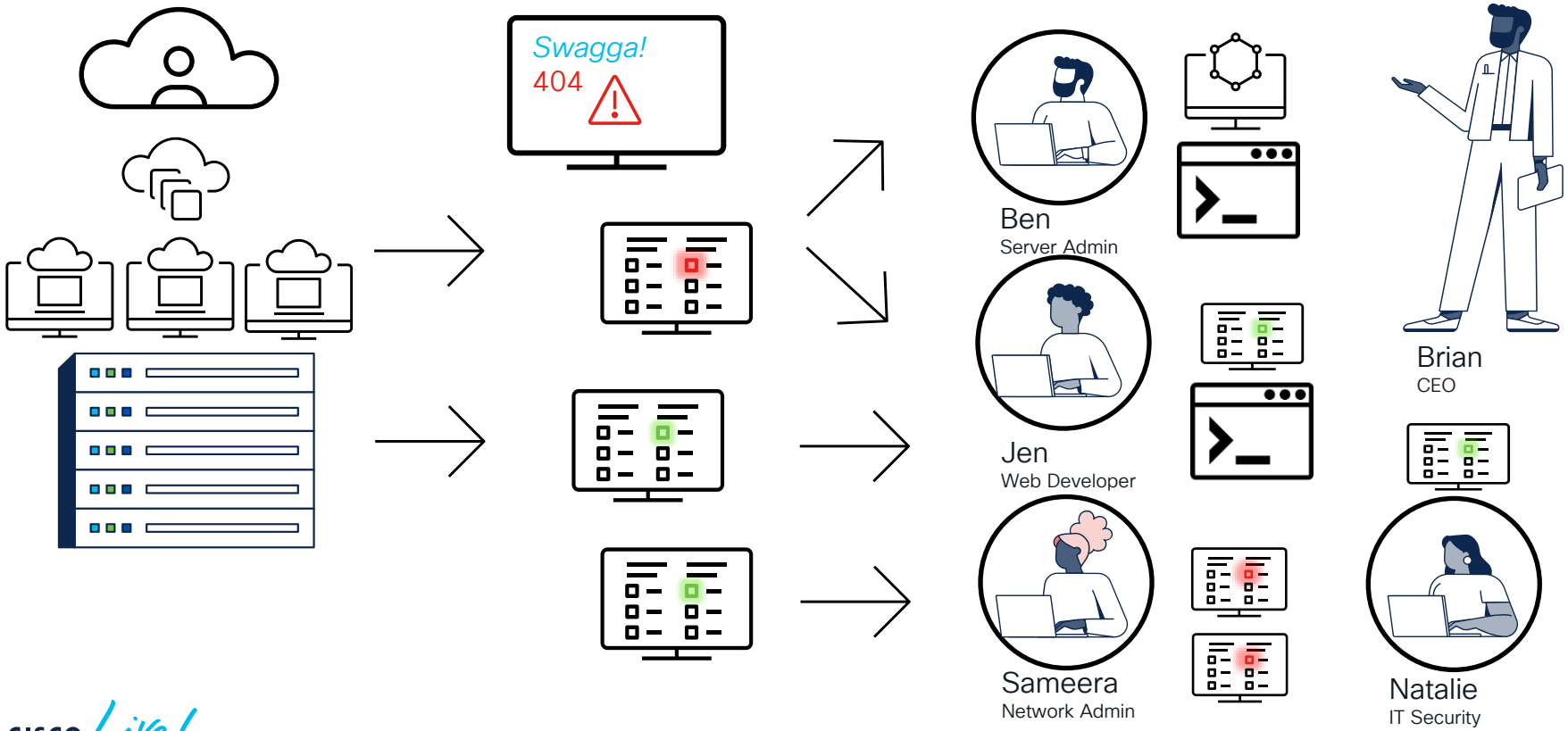
We went from supporting to driving the business



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New titles, new ways of working together

Ben
CloudOps

Events
Metrics
Logs
Traces

Jen
DevOps

Traces
Events
Logs
Metrics

Sameera
NetOps

Metrics
Events
Traces
Logs

Natalie
IT Security

Logs
Events
Metrics
Traces

Brian
“The Business”

Metrics

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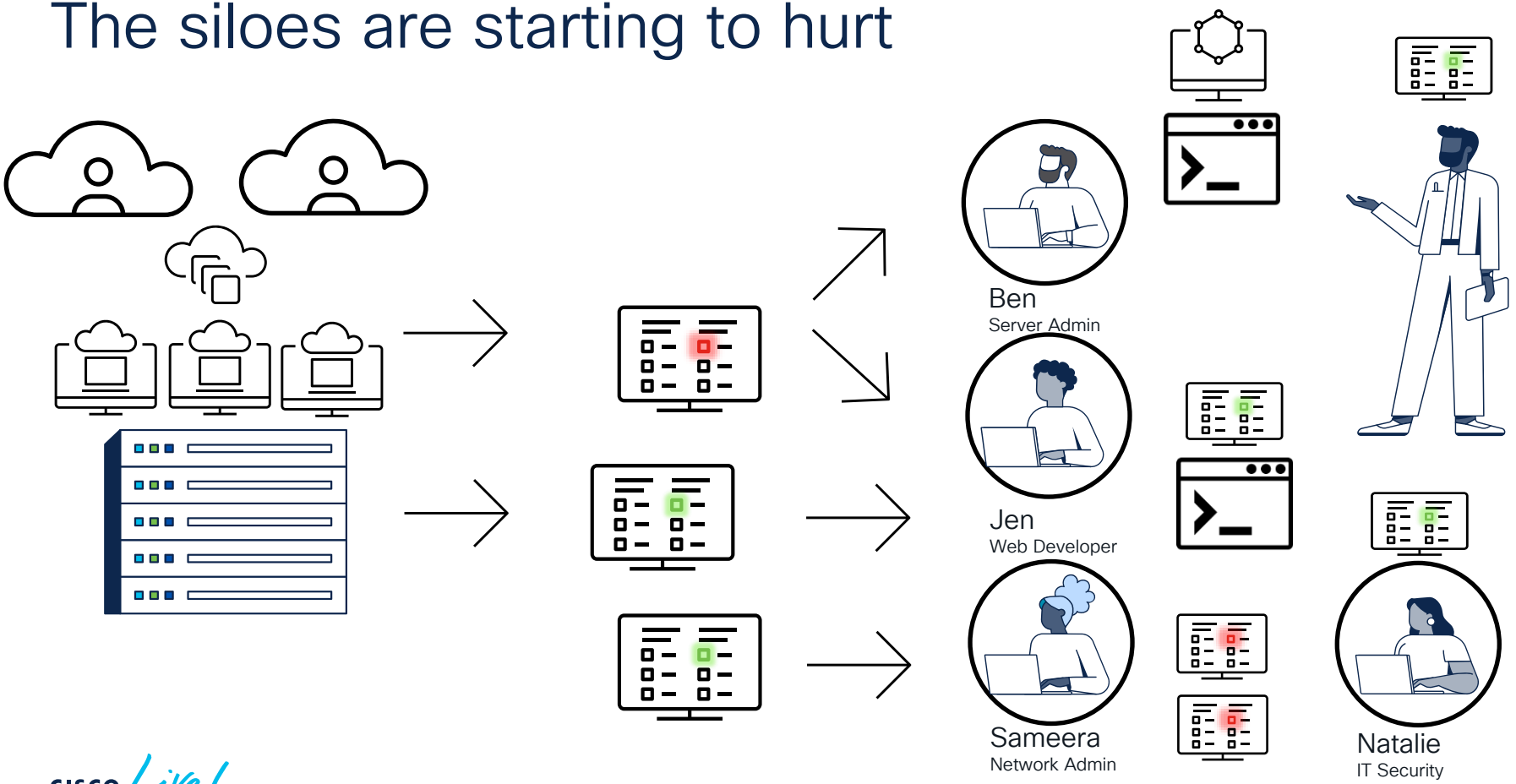
The siloes are starting to hurt



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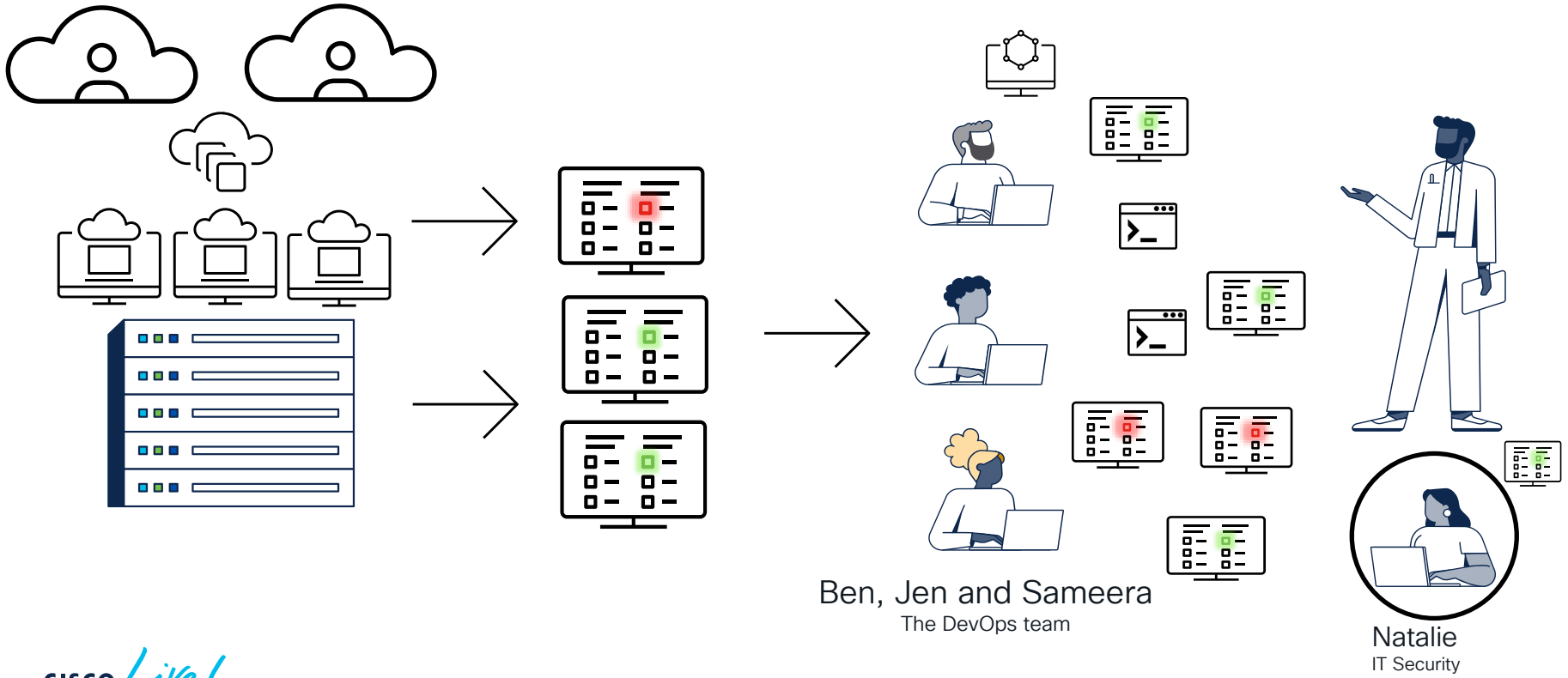
Context switching and overwhelming telemetry



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Where are the personas today?

The Team

DevSecOps

Metrics
Events
Logs
Traces

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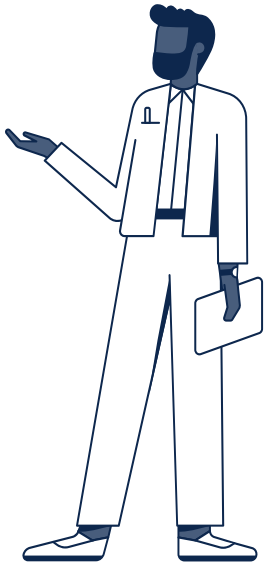
What do we need to solve together



- What's our average shopping cart value abandoned on Tuesdays?
- Where should we focus efforts on remediating vulnerabilities?
- Why is the AWS bill so high this month!?

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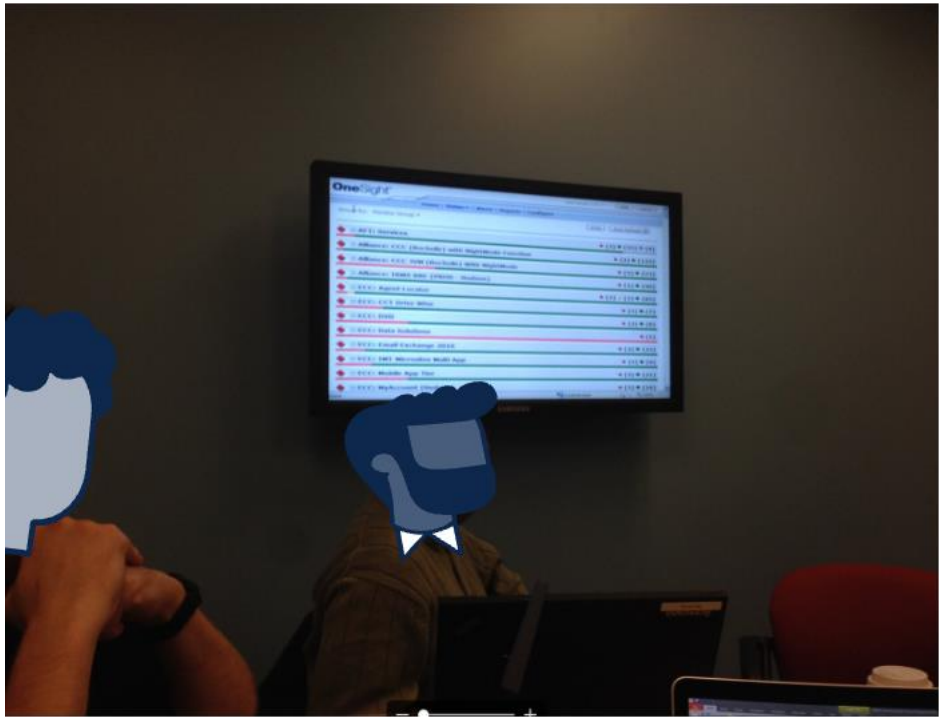
What $50k a minute looks like..



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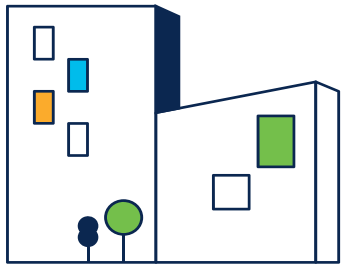
Where did we leave off?



Brian, 43

Founder, Swag Brands

Cares About: Metrics

Business

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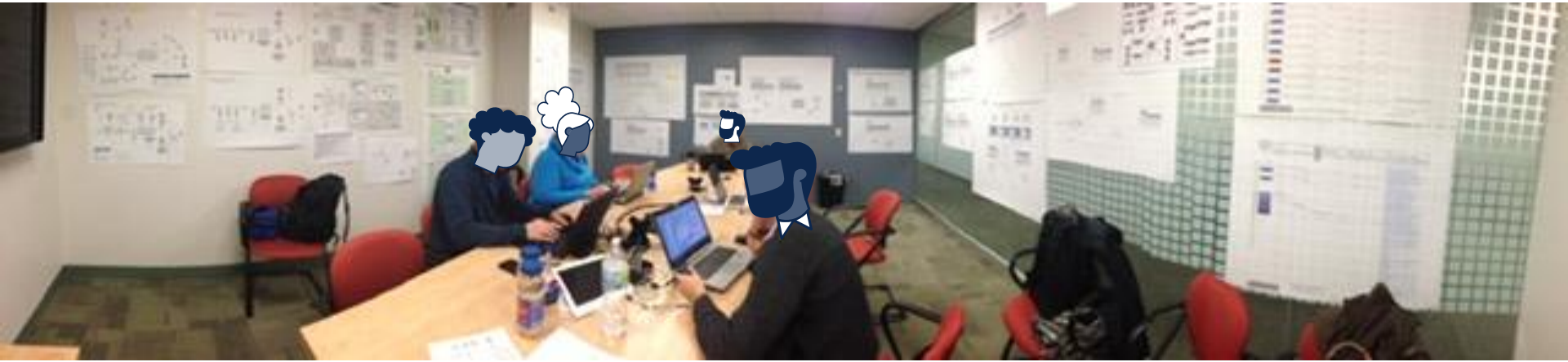
Observability requires a platform



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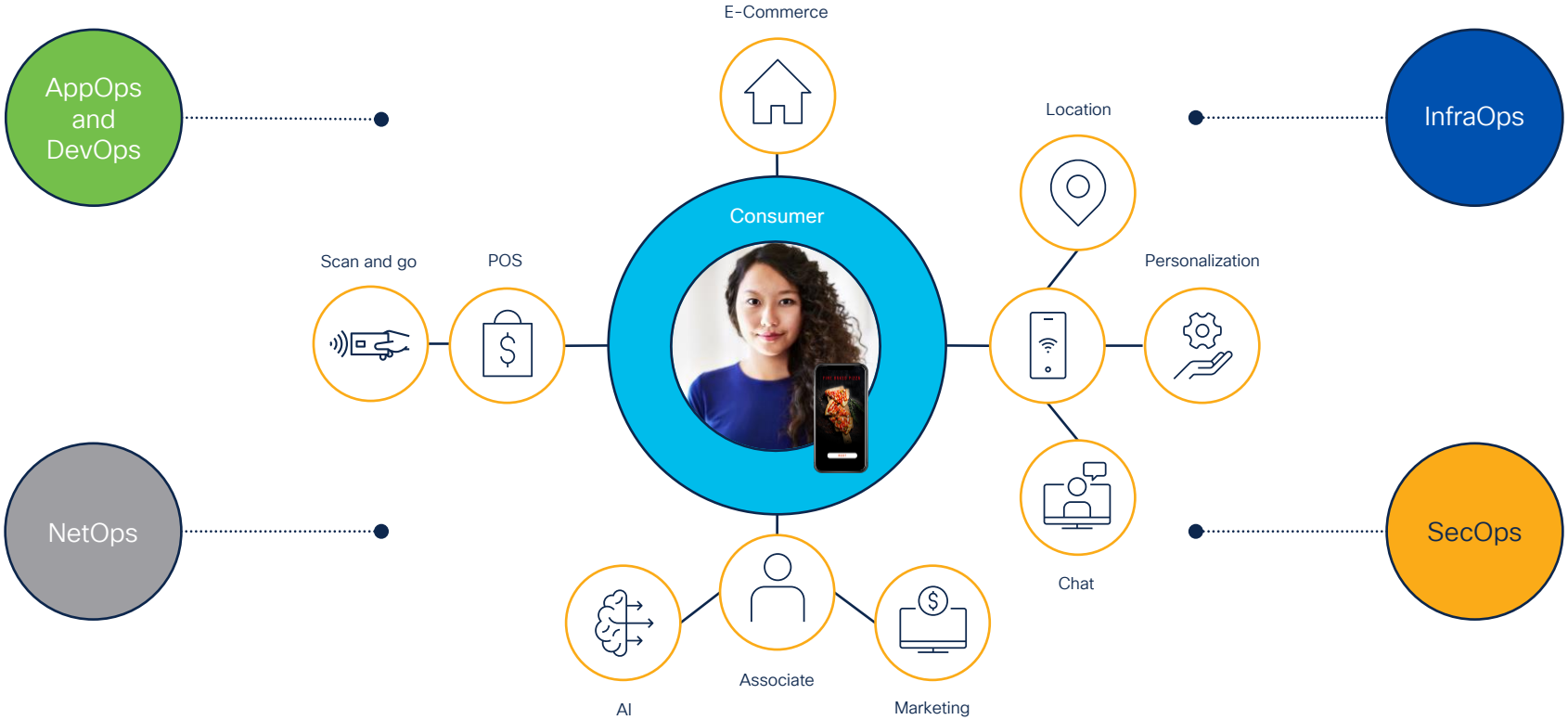
Future of Observability

What do teams need today?

Shared Context across the Digital Experience



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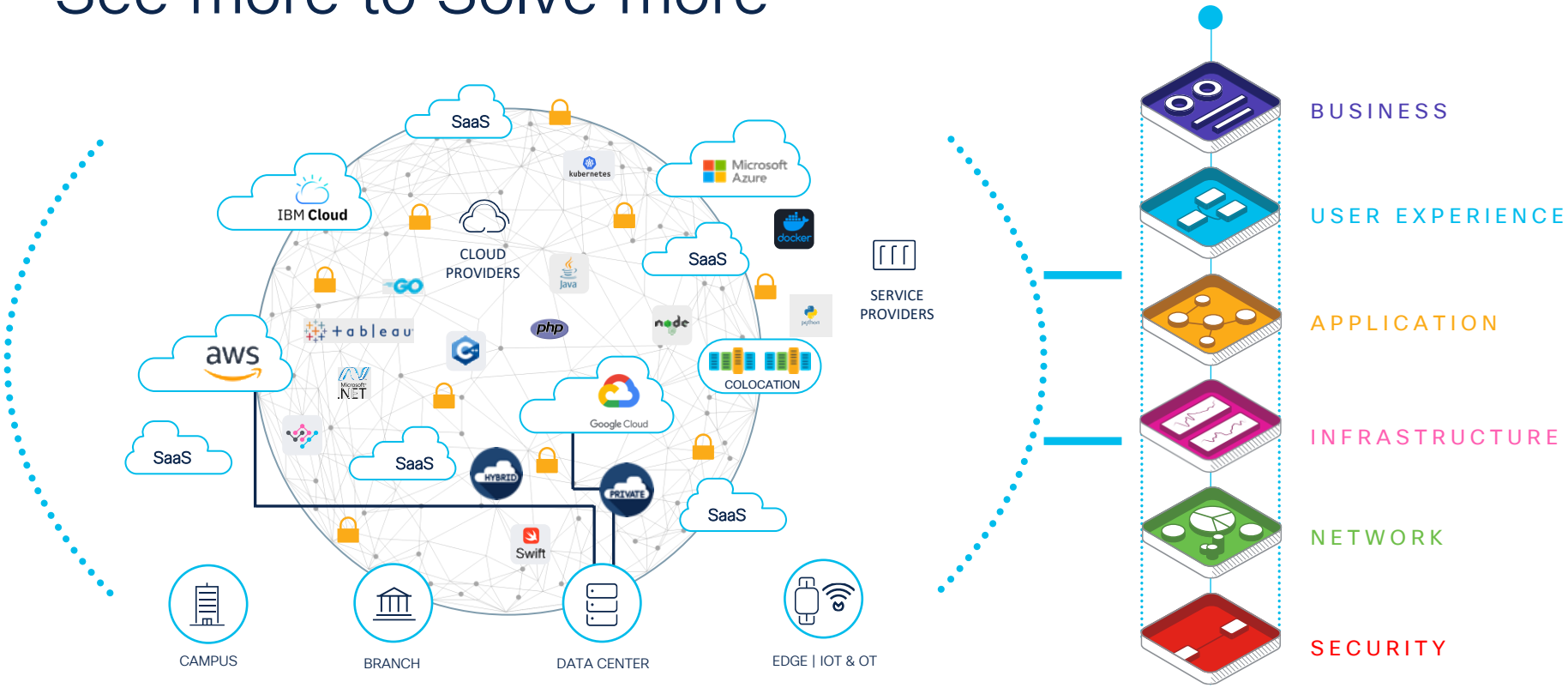
See more to Solve more



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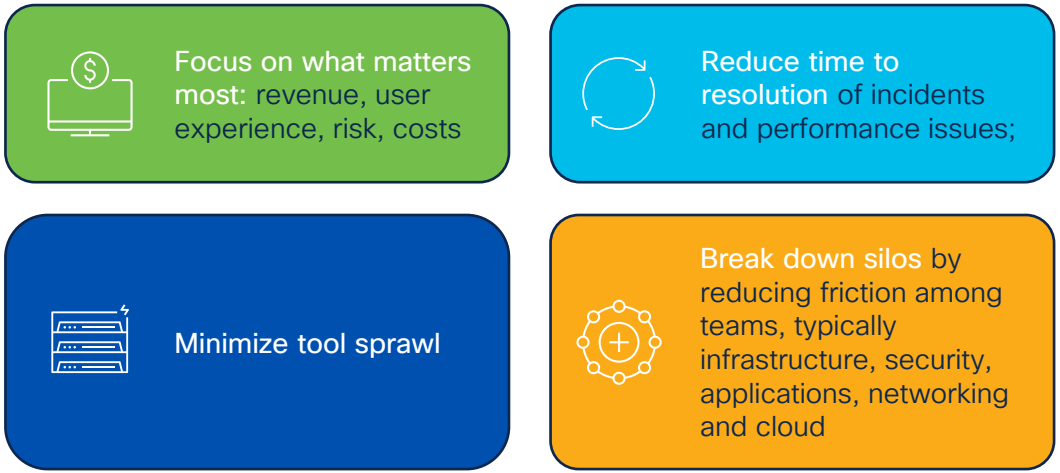
65%
say they want a programmable and extensible observability solution that can be used for use cases specific to their business and environment

Cisco Full-Stack Observability

Full Stack Observability (FSO) is a requirement for business to deliver the most **optimal and secure experience** to users and applications.

Cisco Full-Stack Observability brings together data from multiple operations domains to provide **unified visibility**, derive **real-time insights** and recommend **actions** helping to:



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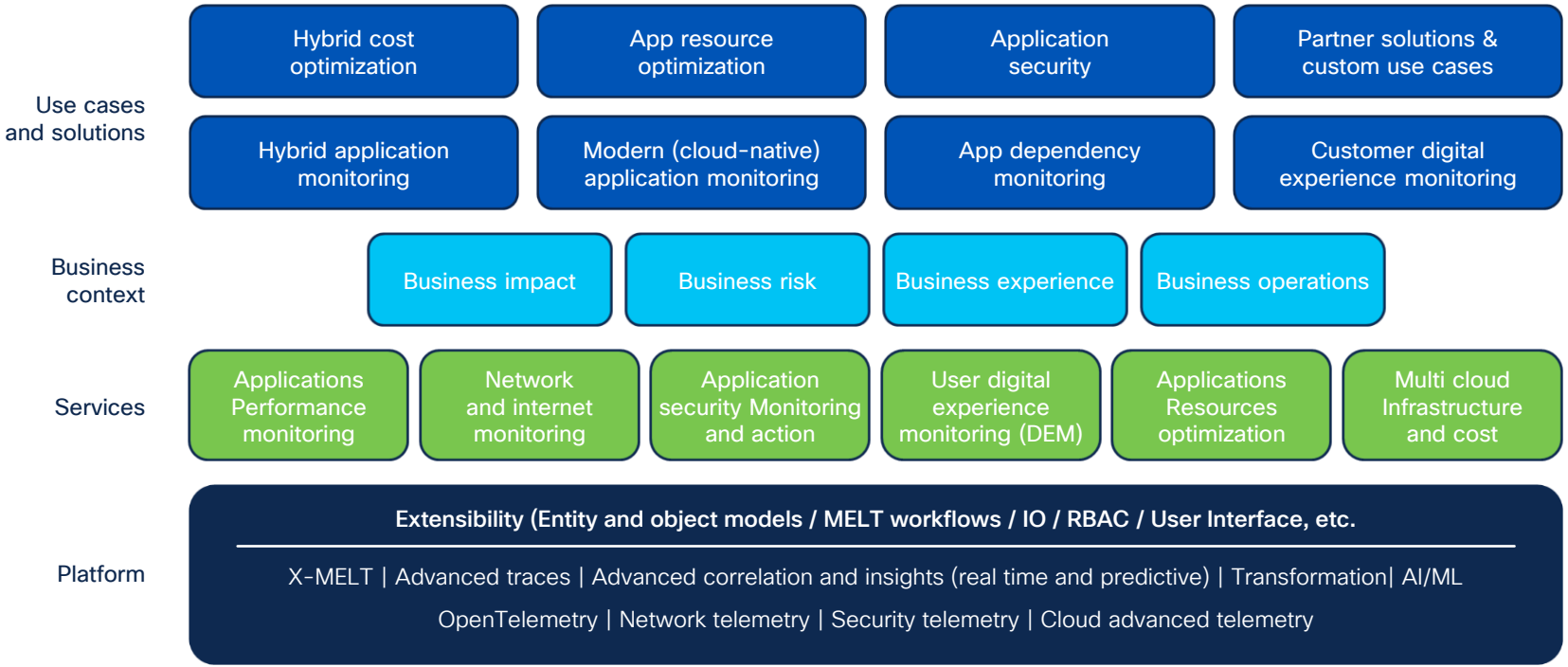
Cisco Full-Stack Observability Architecture Foundation



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Benefits of the Cisco FSO Platform

Multiple sources → Single entity

MELT from multiple collectors are combined for a single entity view for multi-dimensional visibility

Cross-MELT troubleshooting

Anomaly detection and root cause analysis services across metrics, events, logs, and traces

Create value-added solutions

Built your own applications and/or extend Cisco Cloud-Native Application Observability with modules, dashboards, custom experiences

Empower solution developers

Giving third-party developers the tools to build new applications and modules

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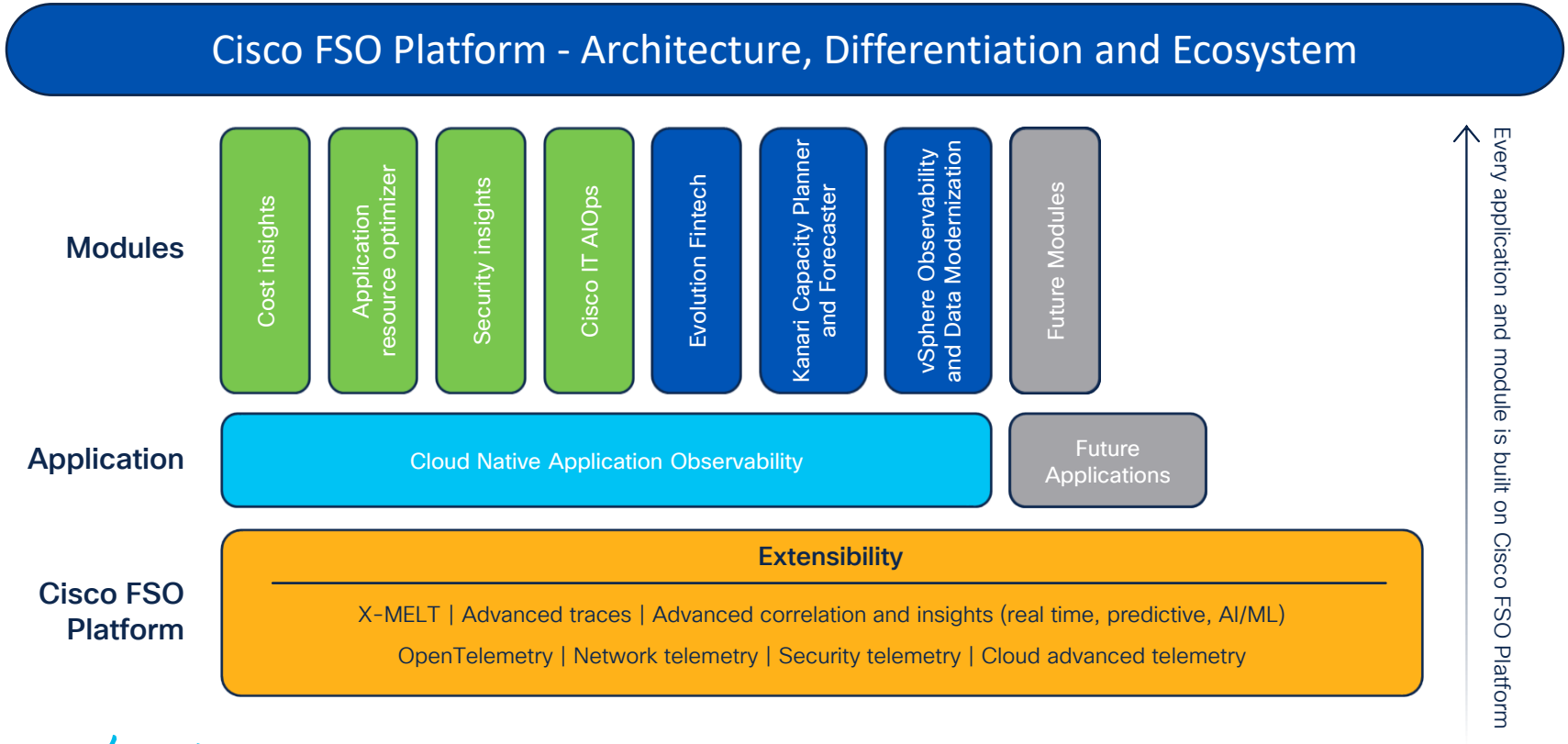
Extend



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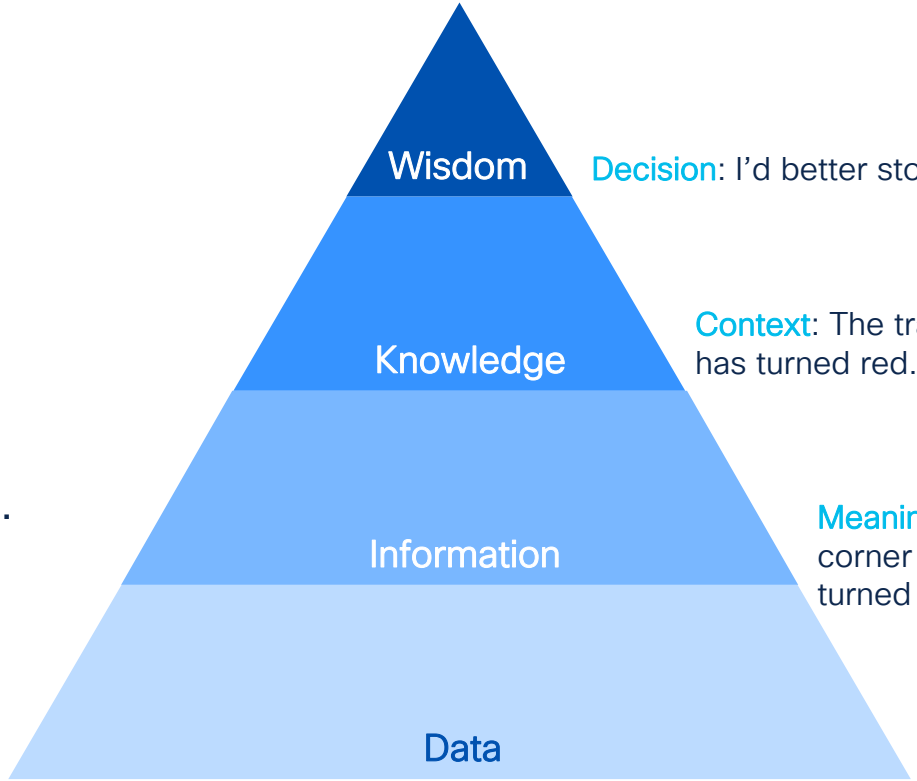
Make the Complex Simple

DIKW Framework

Each Step up
the pyramid
answers
questions and
adds value
to the initial data.



Decision: I'd better stop the car.

Context: The traffic light I am driving towards has turned red.

Meaning: East Facing traffic light on corner of Dana and Castro streets has turned red.

Raw: Red

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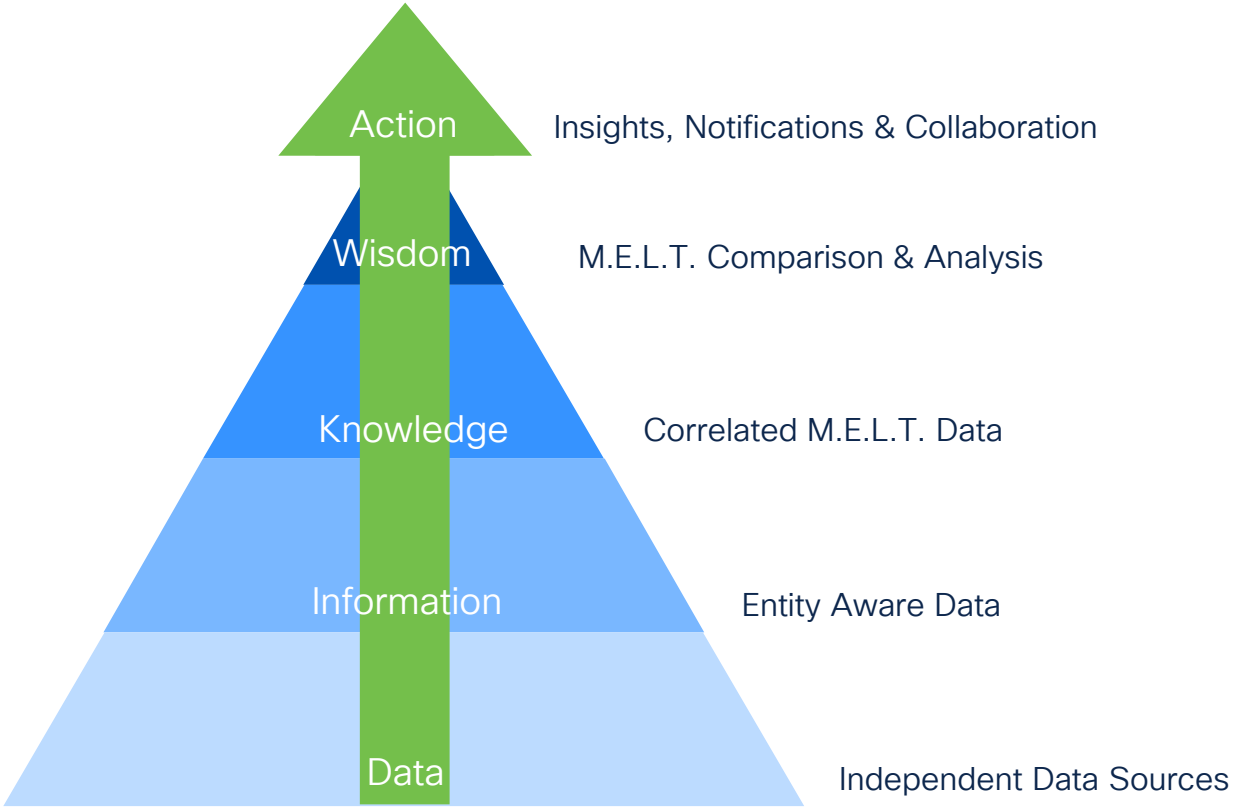
XMELT Framework



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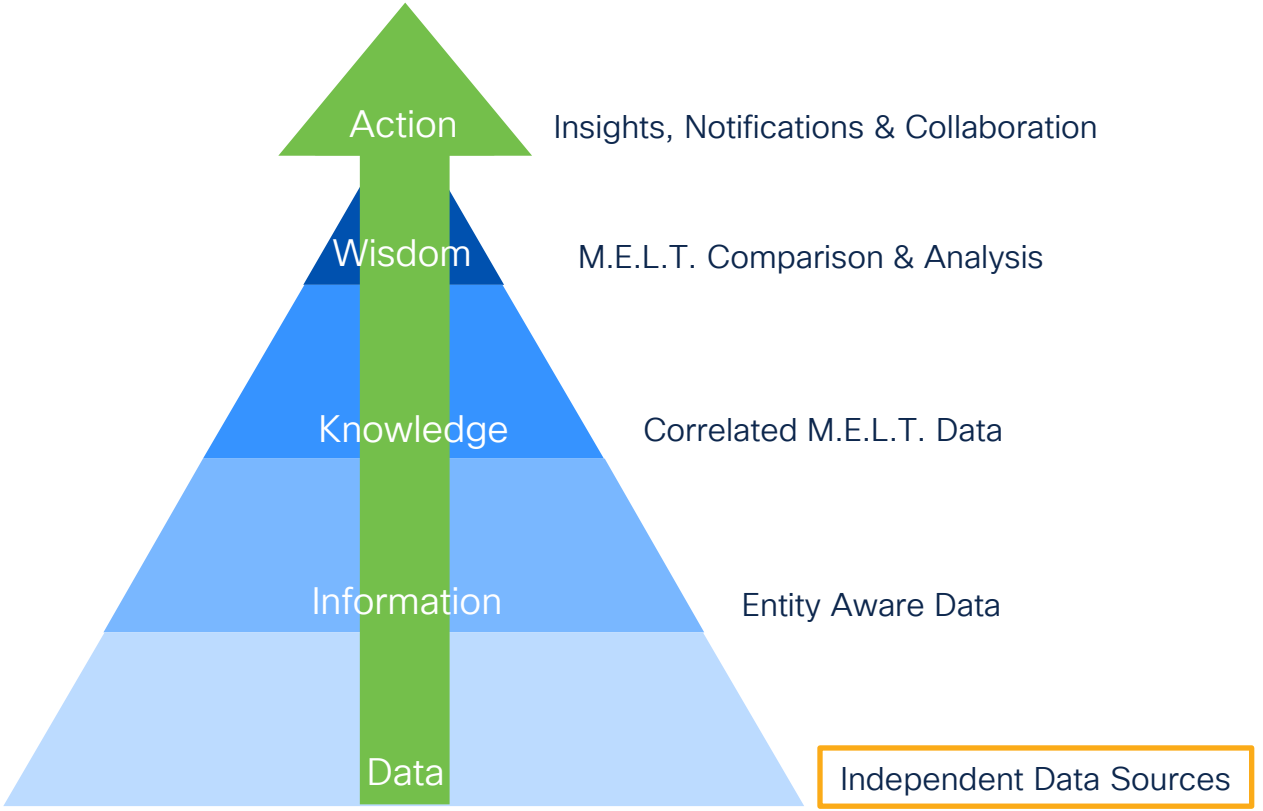
XMELT Framework



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OpenTelemetry based Platform

Data Model

Data model is built on native OpenTelemetry standards.

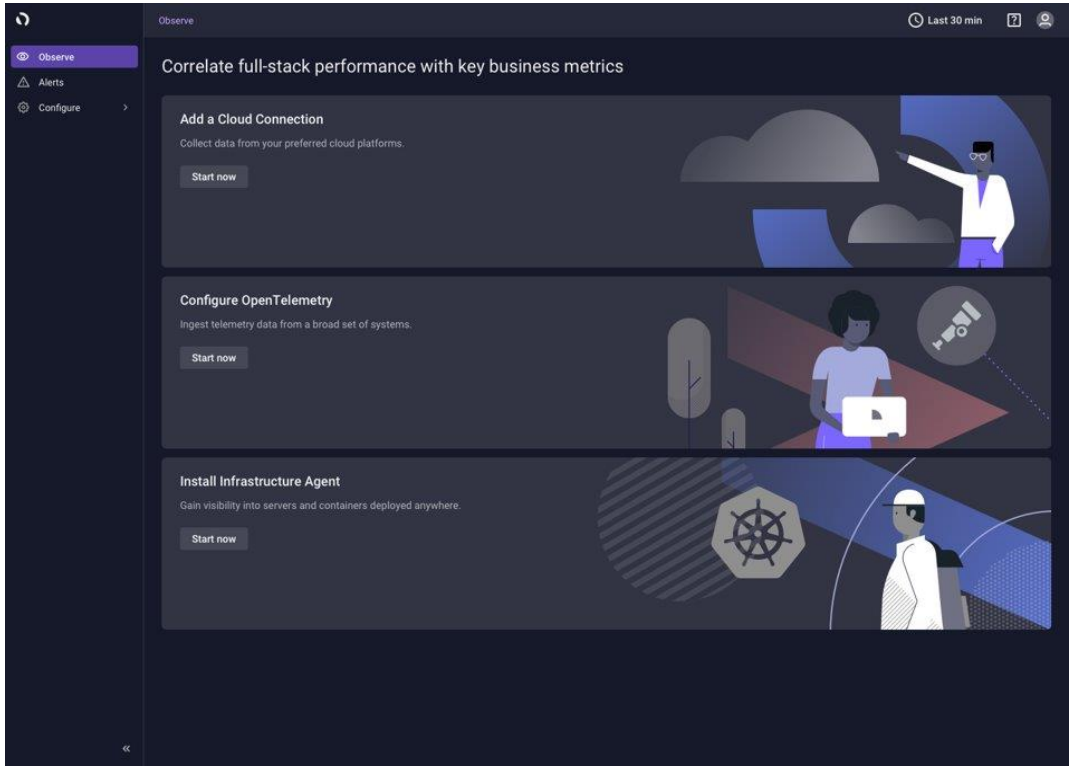
Enhanced Agents

Agents are equipped to publish telemetry data to OTel Collectors.

Active Participant in OTel*

- 16 active members, 8 approvers & 1 maintainer
- 889 code contributions across 36 engineers

*Accurate as of May 26, 2023



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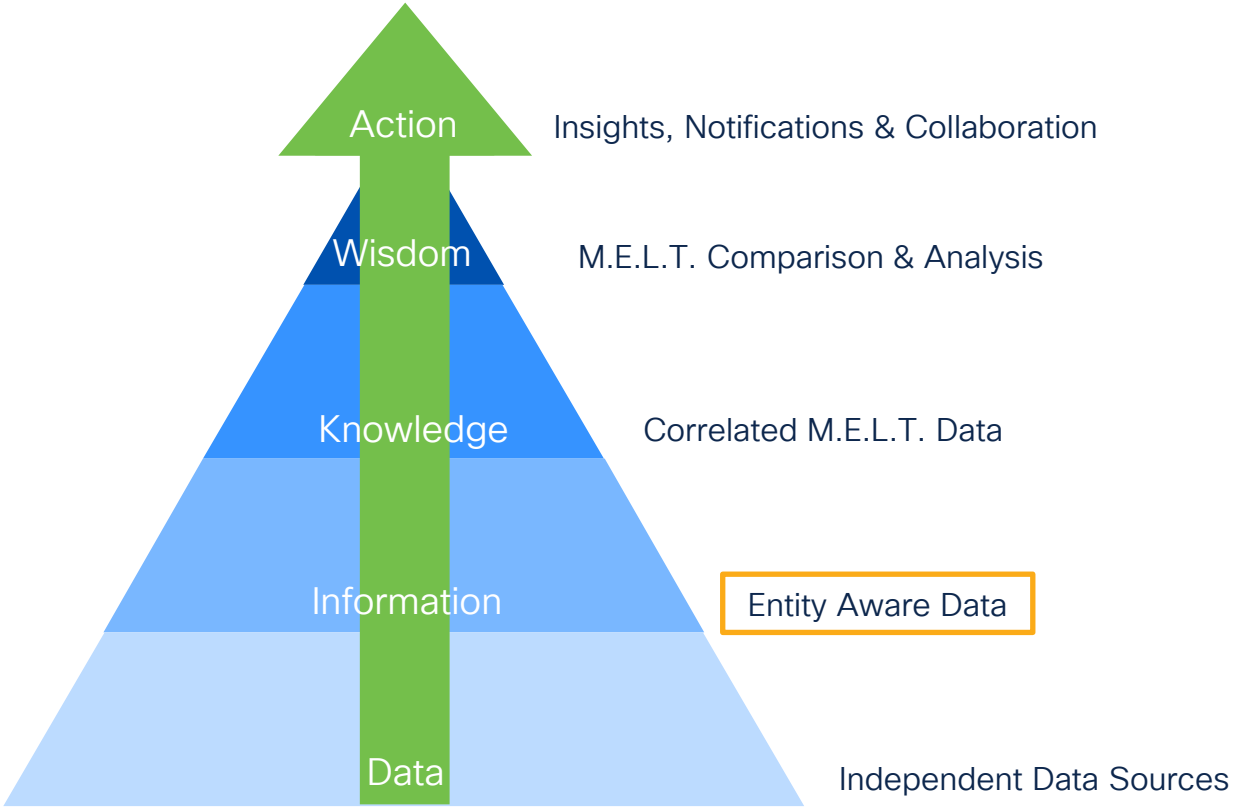
XMELT Framework



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Entity-Centric Relationship Model

Correlated Entities

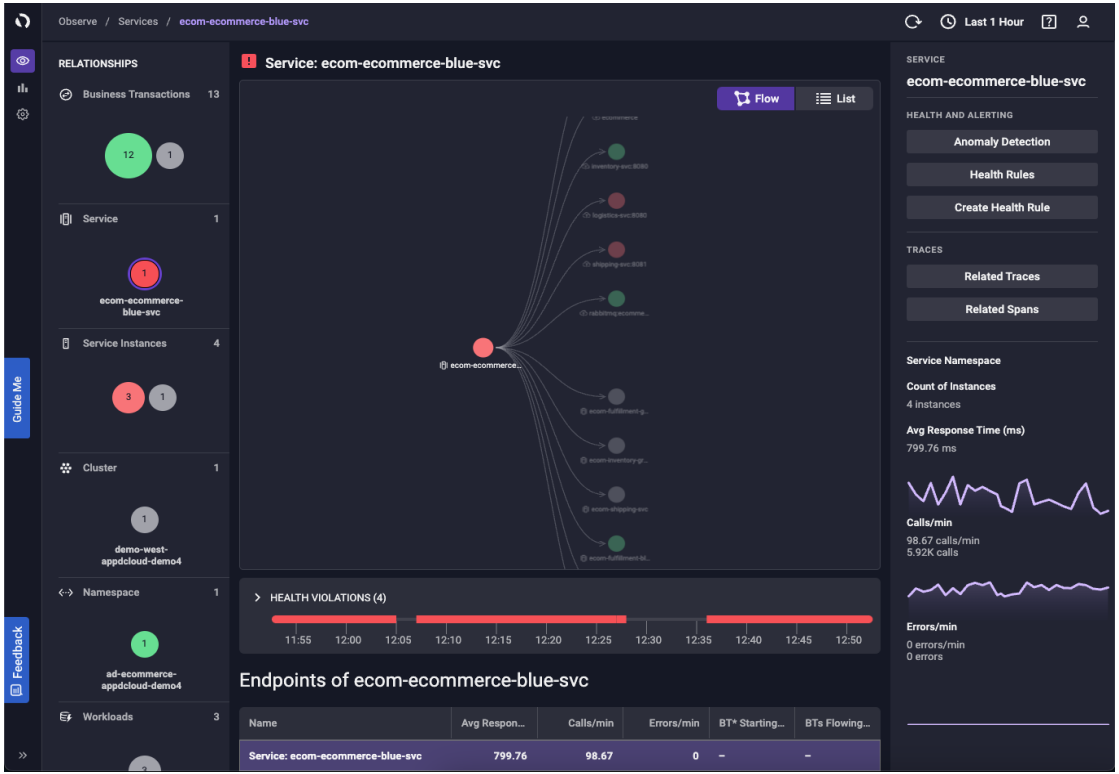
Entities are automatically correlated across domains.

Use Relationships

You can use relationships to view how entities are connected.

Single View

Dynamic view showing updates resulting in fewer clicks without losing frame of reference.



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Model the Universe of Possible

Get to know your Schema

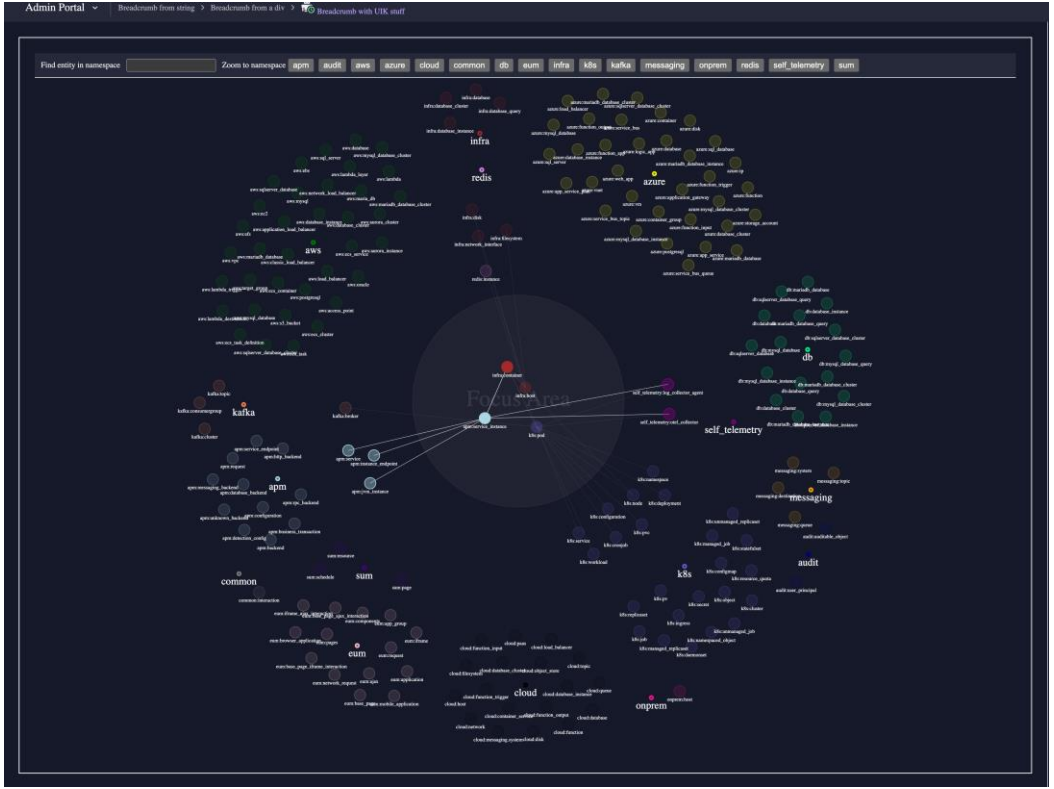
Know your product, Understand the connections, Trust the UI

Own your Schema

Edit, Remove, Create any entity/metrics/event type/associations

Query without knowing the Query Language

Use query editor, Work with selected data and leverage query builder



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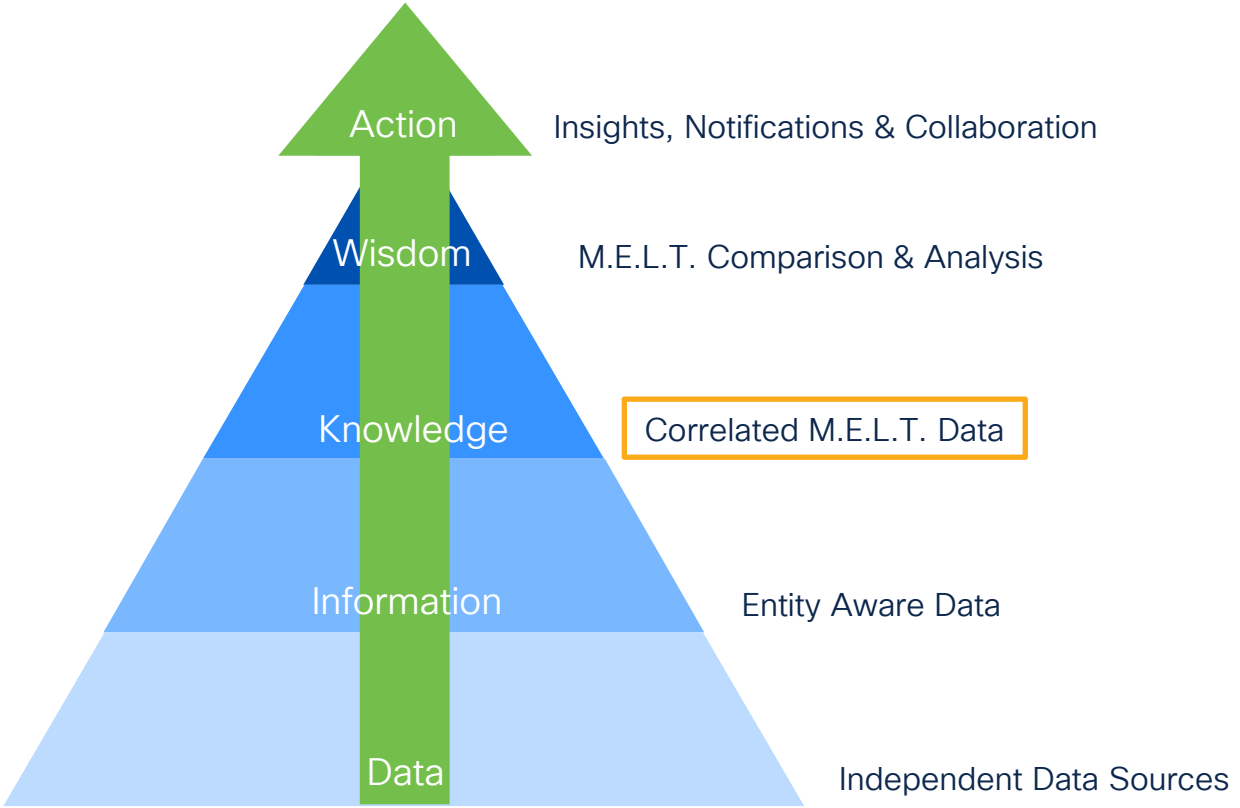
XMELT Framework



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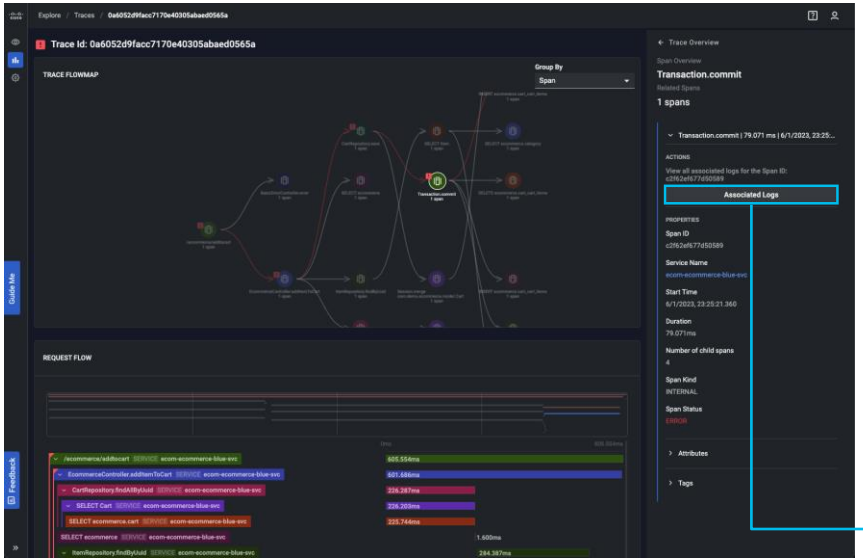
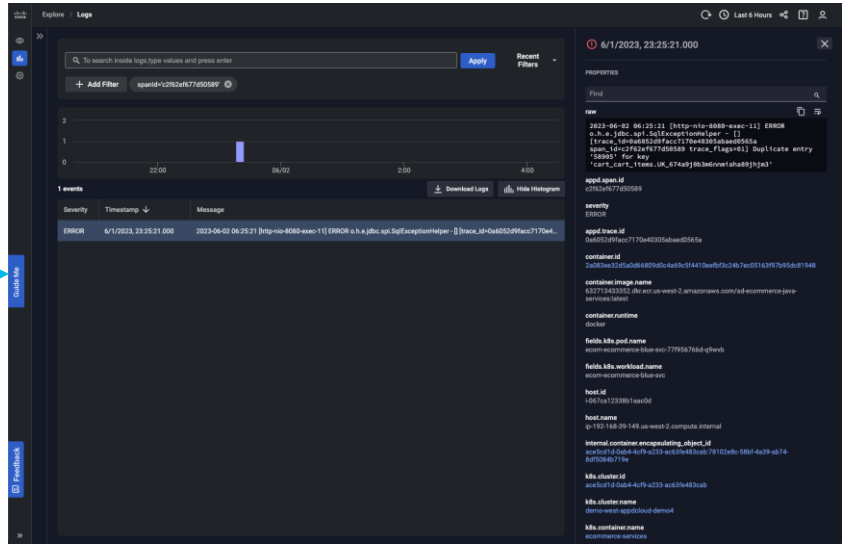
Trace – Log Troubleshooting



Get to Root Cause Faster

Quickly get to the root cause by viewing associated logs for trace with one click.



Keep the Context

Maintain the troubleshooting context by ability to move between Logs and Traces.

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Metrics, Events and Logs in One place

Time Comparison

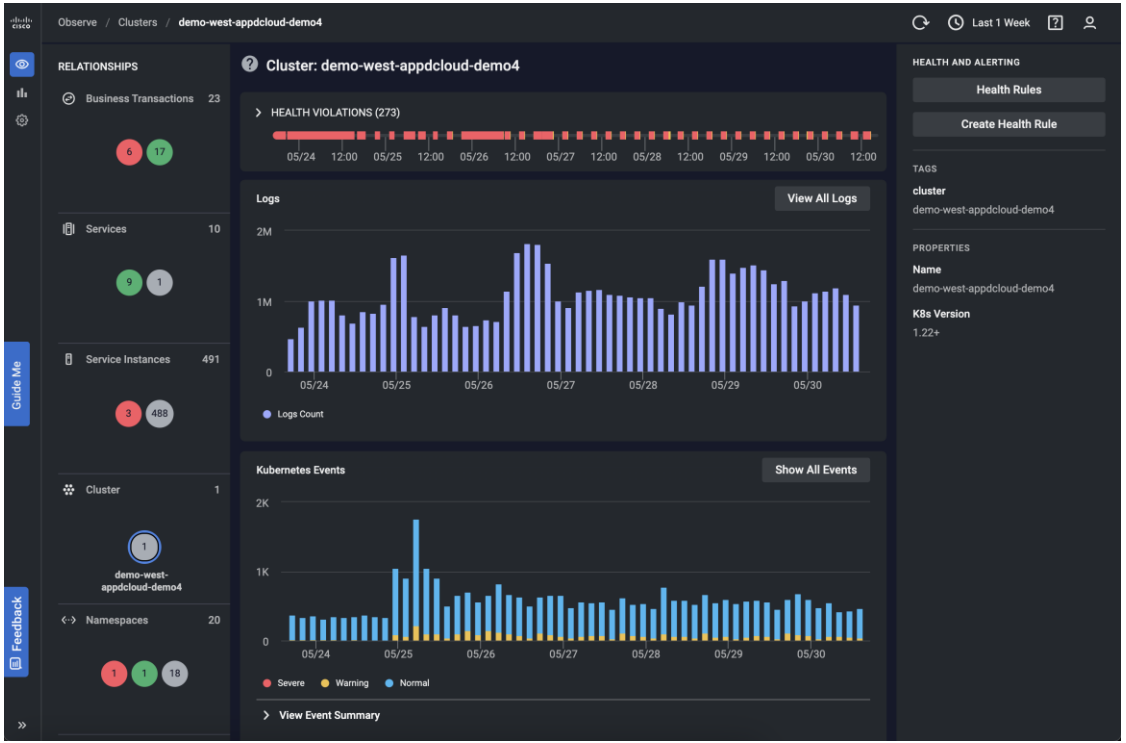
Compare logs and events that have been collected over time.

Single Pane

View Logs and Events in one place keeping the context of the entity.

Correlated Logs and Events

See correlated events and logs in the same context.



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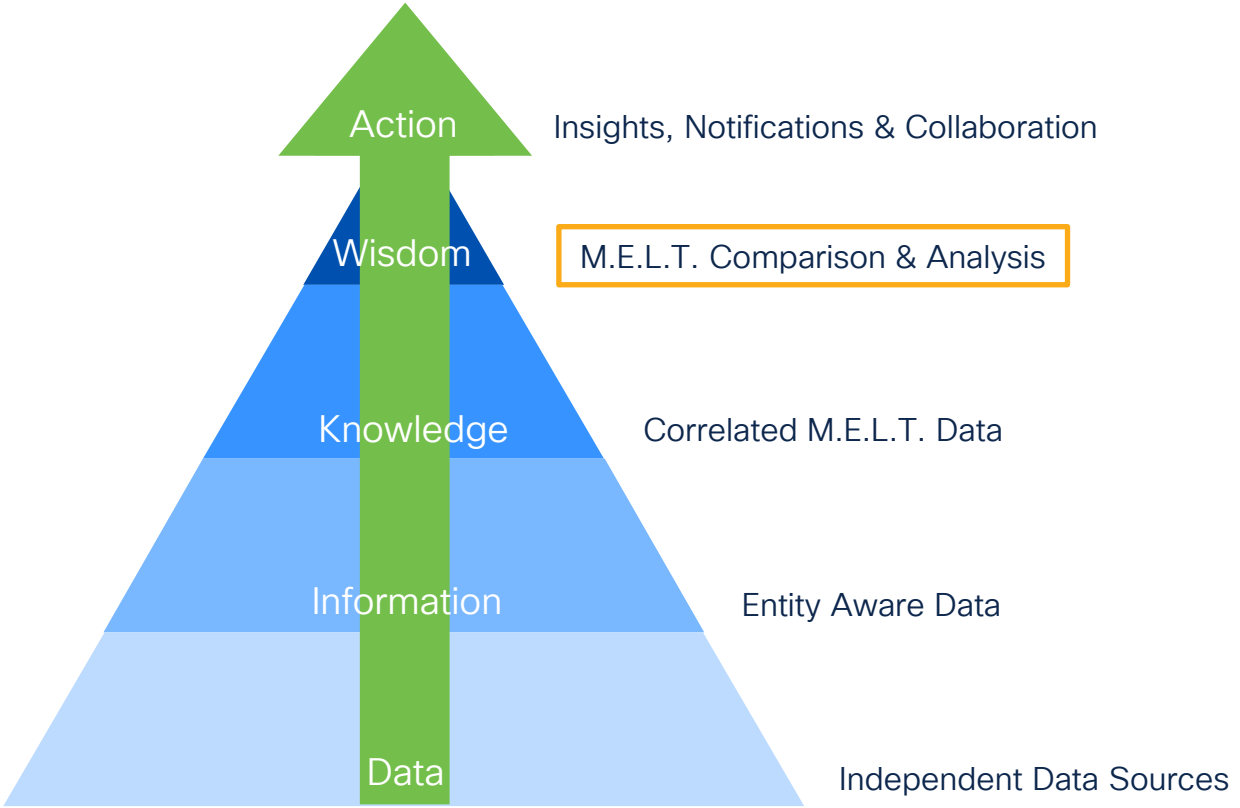
XMELT Framework



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Explore M.E.L.T with a Simple Experience

Explore Logs, Traces and Spans

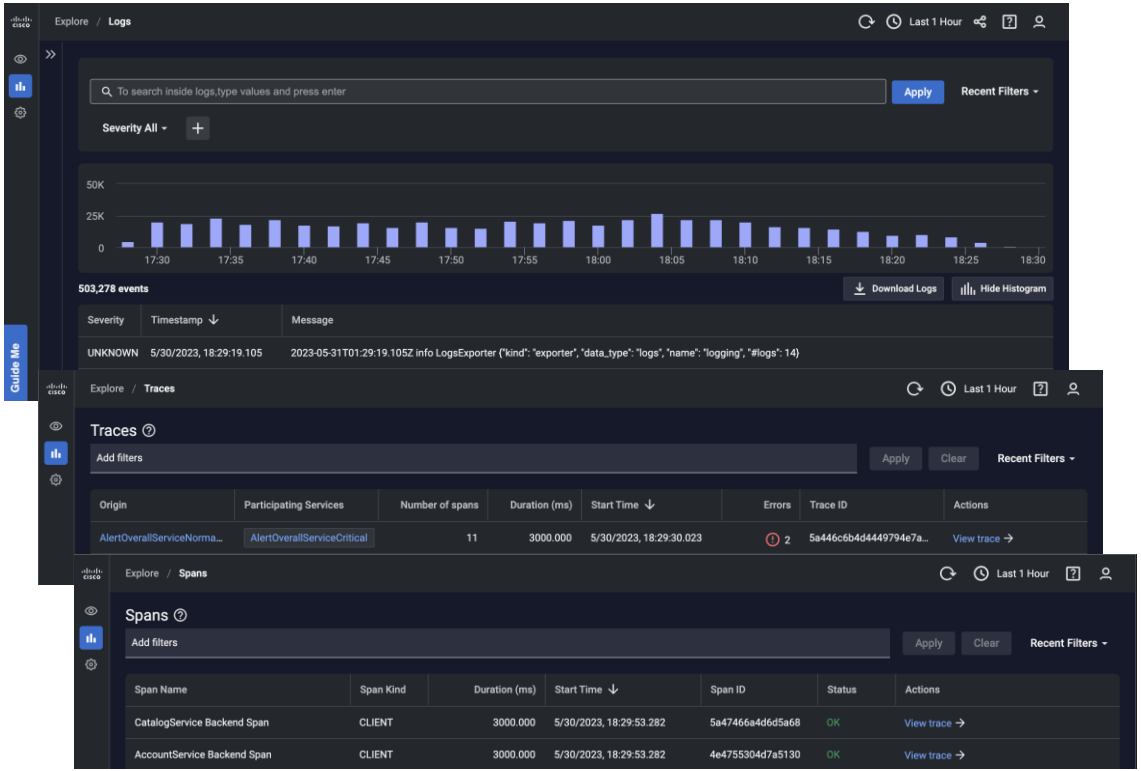
Through a simple search and filter options with one click experiences.

Download/Share Filtered Logs

Share filtered logs with your teams during WAR room scenarios.

Recent Filters

Reuse recent filter queries to narrow down to specific context quickly.



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Understand the Connections

Get to know your Topology

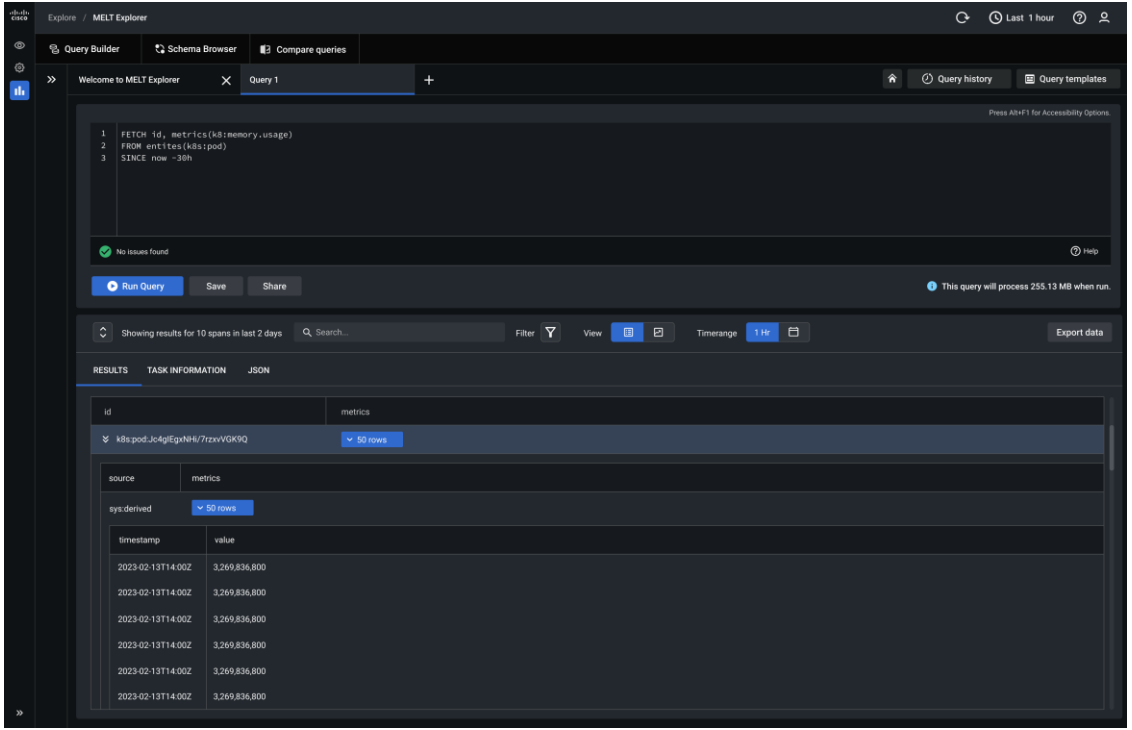
Know your product, Trust the UI, Understand the connections.

Troubleshoot Freely under your Control

Drill down, Filter and write queries to narrow down the scope.

Compare & Correlate

M.E.L.T. correlation, Time Comparison, Put Data in context, Dashboarding



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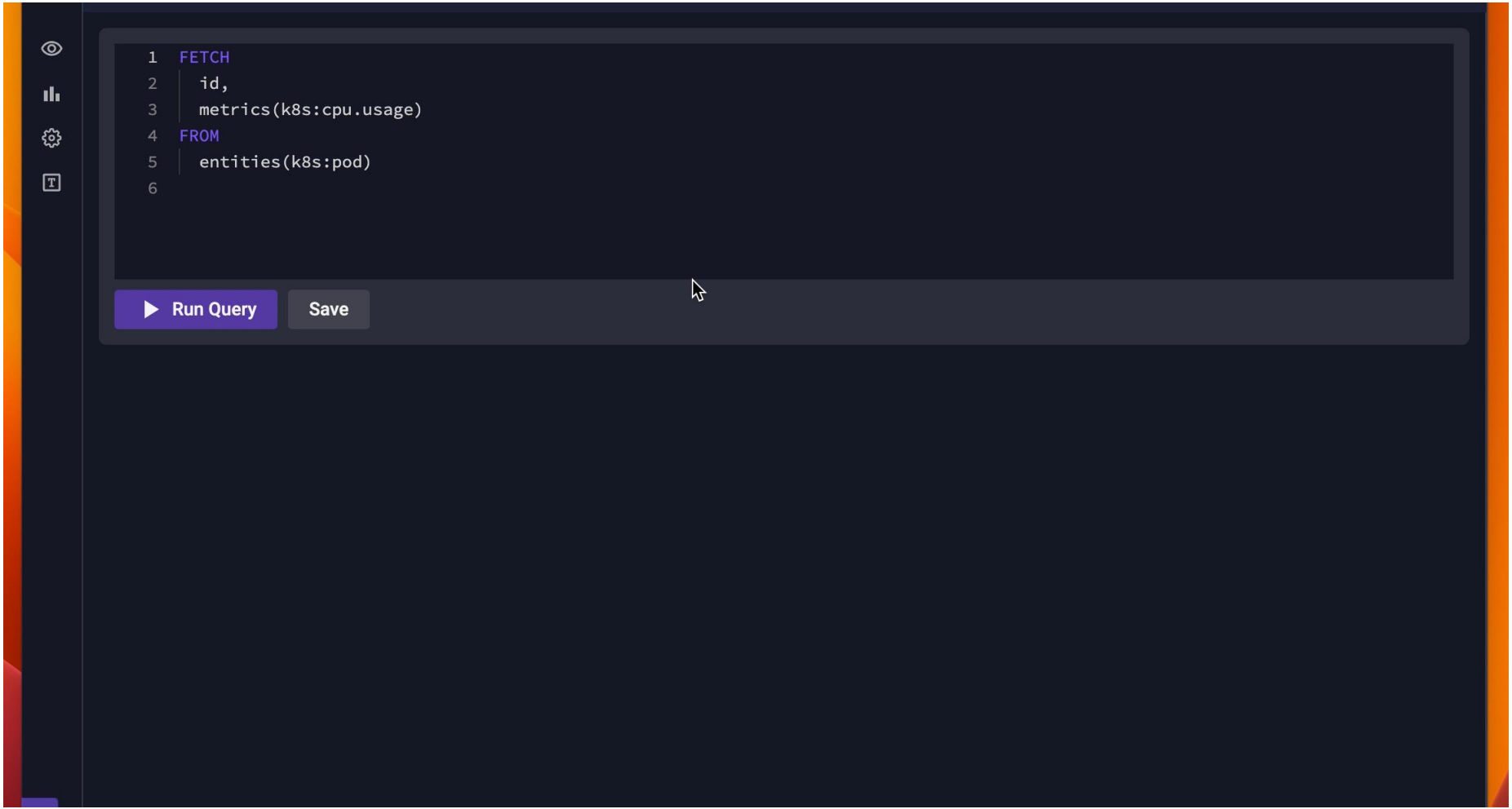

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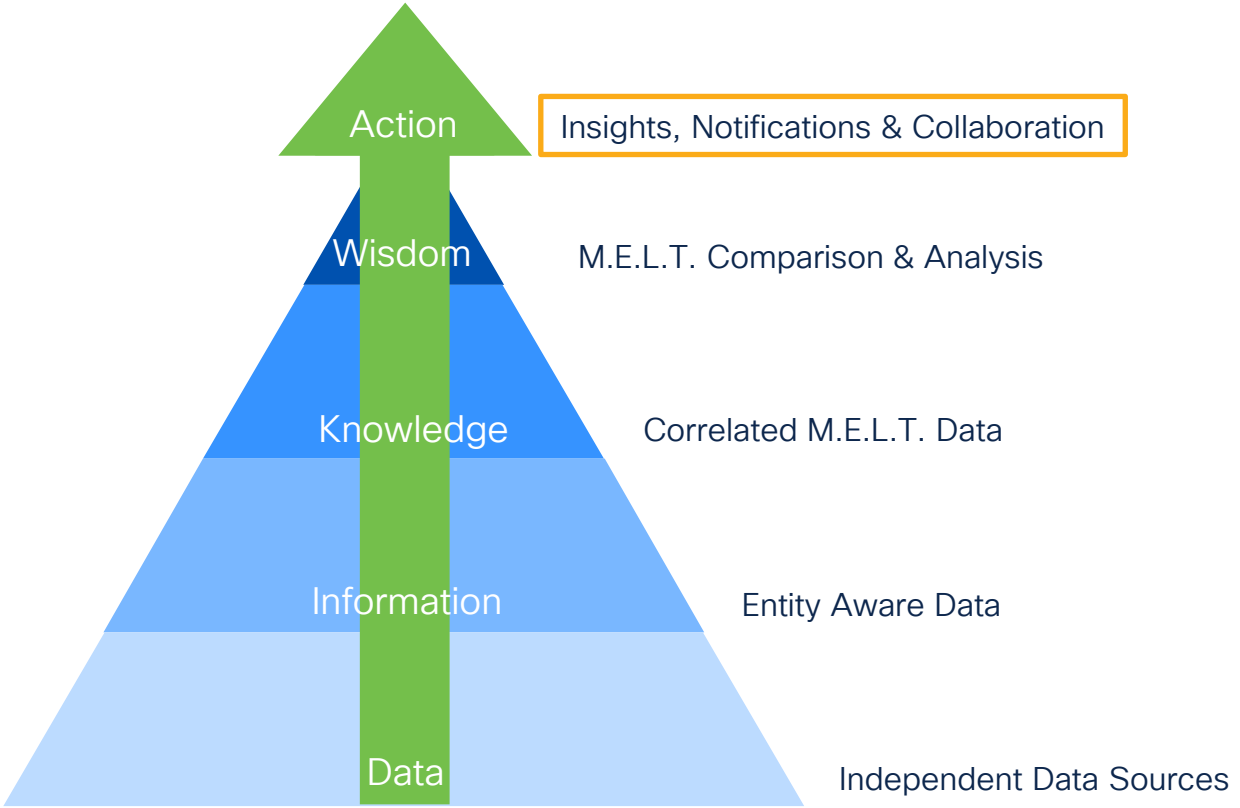
XMELT Framework



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Actionable Insights aligned to Business Objective

Detect Cross-Domain Anomalies

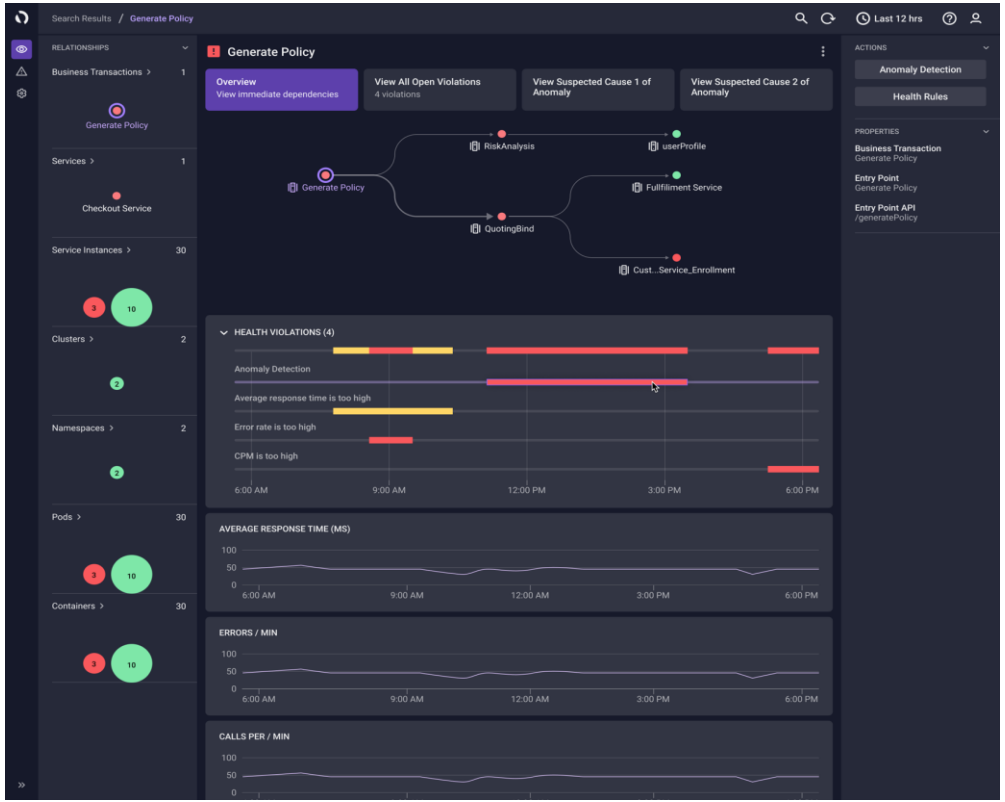
Alert across K8s, services and cloud metrics.

Anomaly Detection for BTs

Identify issues aligned to Business objects.

Cross-Domain RCA

Extend root cause analysis from service layer to infrastructure layer.



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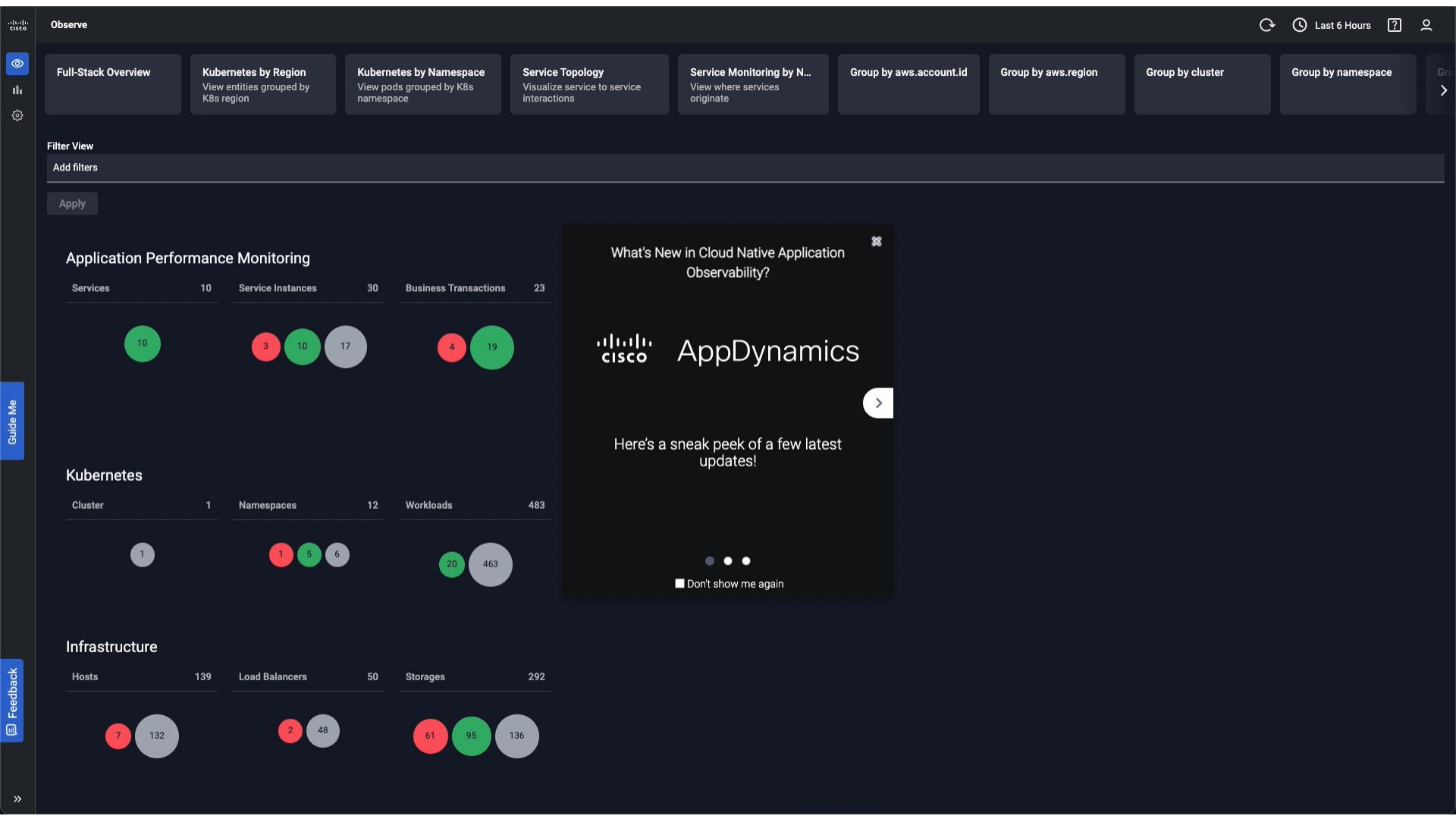
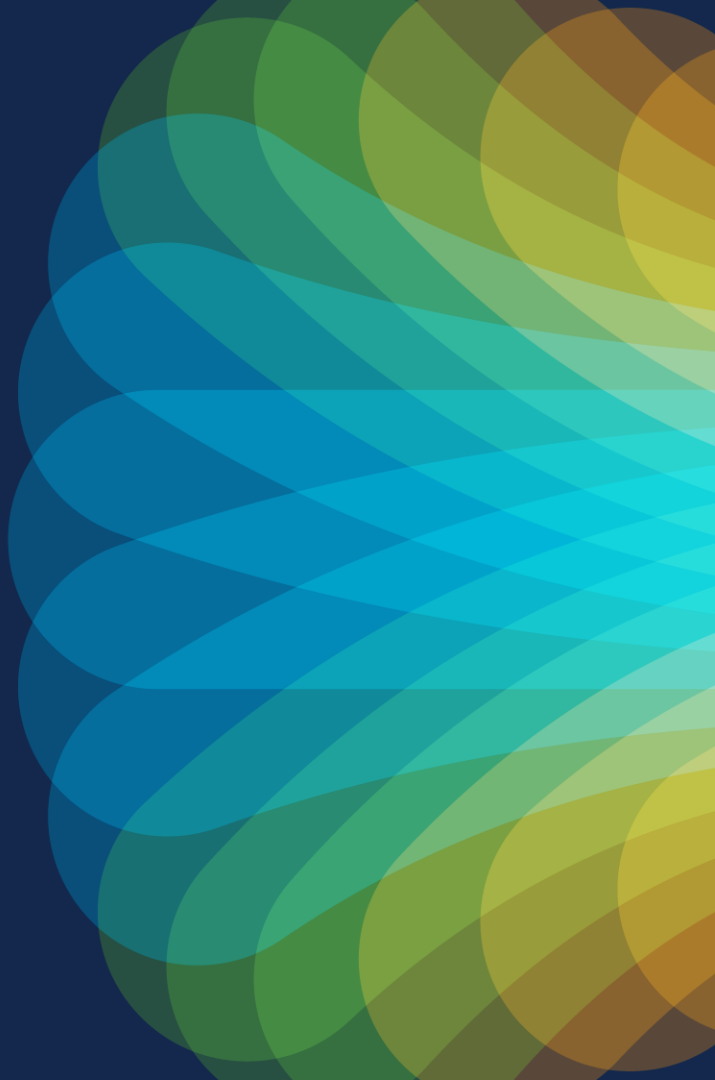
Demo


Observe
Last 6 Hours
Full-Stack Overview
Kubernetes by Region
View entities grouped by K8s region
Kubernetes by Namespace
View pods grouped by K8s namespace
Service Topology
Visualize service to service interactions
Service Monitoring by N...
View where services originate
Group by aws.account.id
Group by aws.region
Group by cluster
Group by namespace
Filter View
Add filters
Apply
Application Performance Monitoring
Services 10
Service Instances 30
Business Transactions 23
10
3 10 17
4 19
Kubernetes
Cluster 1
Namespaces 12
Workloads 483
1
1 5 6
20 463
Infrastructure
Hosts 139
Load Balancers 50
Storages 292
7 132
2 48
61 95 136
What's New in Cloud Native Application Observability?
cisco AppDynamics
Here's a sneak peek of a few latest updates!
Don't show me again
Guide Me
Feedback

Q&A



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Watch my session

Allie Brenner, Bruno Franca, & Sergei Pakhomov

Full Stack Observability – Monitoring and troubleshooting a sample application

LABCLD-1011

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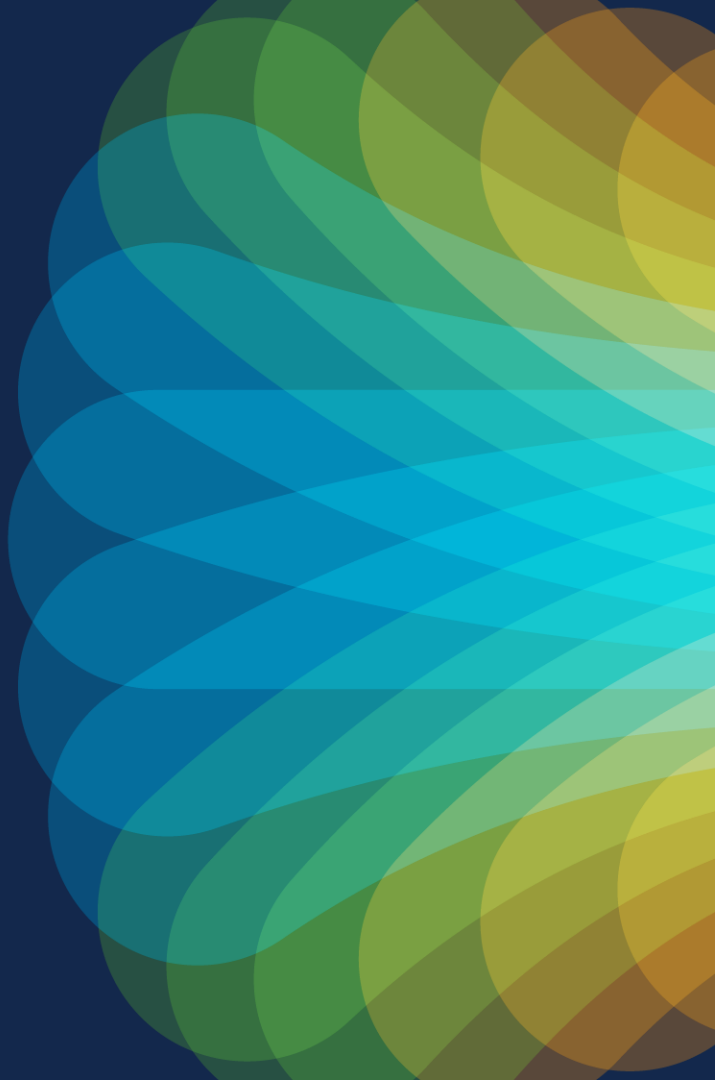
The bridge to possible

Thank you



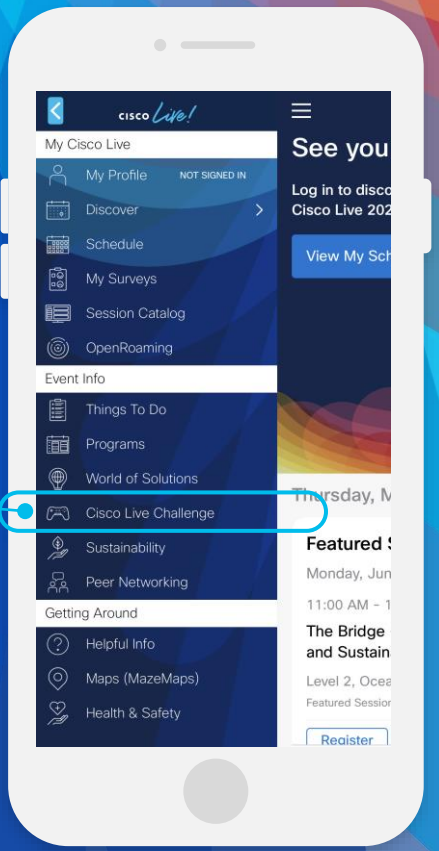
Cisco Live
Challenge

Gamify your Cisco Live experience!

Get points for attending this session!

How:

1. Open the Cisco Events App.
2. Click on 'Cisco Live Challenge' in the side menu.
3. Click on View Your Badges at the top.
4. Click the + at the bottom of the screen and scan the QR code:



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Let's go
#CiscoLive