

The background features a vibrant, abstract design with a color gradient from dark blue on the left to bright yellow and white on the right. The design consists of overlapping, wavy horizontal bands and a series of radiating lines that create a sense of motion and energy, resembling a stylized sunburst or a dynamic wave pattern.

CISCO *Live!*

Let's go



The bridge to possible

# Full-Stack Observability: The HOW!

Subtitle goes here

Carlos Pereira, Fellow & Chief Architect  
@capereir



BRKAPP-2759

# Agenda

- Full-stack observability (FSO):
  - How we got here
  - What is FSO and why now
  - What we mean by “full”
- Cisco FSO deliverables
  - Scope and Approach
  - Use-cases and integrations
  - Cisco FSO Platform
    - Architecture and Extensibility detailed
- Demos:
  - Cisco & Partners solutions / modules

# Evolution to Full-Stack Observability

From per-domain Monitoring to Cross-Functional teams' insights

## Monitoring



Alerts and events  
Dashboards and Views  
Passive & Sampling

Main KPI: Availability  
Per-operations domain

# Evolution to Full-Stack Observability

From per-domain Monitoring to Cross-Functional teams' insights

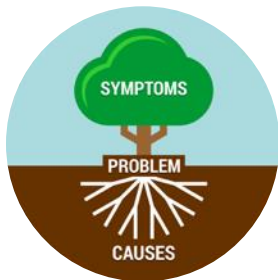
## Monitoring



Alerts and events  
Dashboards and Views  
Passive & Sampling

Main KPI: Availability  
Per-operations domain

## Visibility / Observability



Root Cause Identification  
Tools sprawl  
Active & telemetry (M.E.L)

Main KPI: Performance  
Per-operations domain



*M.E.L = Metrics, Events, Logs*

# Evolution to Full-Stack Observability

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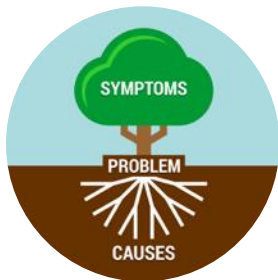
## Monitoring



Alerts and events  
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## Visibility / Observability



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Active & telemetry (M.E.L)

Main KPI: Performance  
Per-operations domain

## Full-Stack Observability



Business Context & Impact  
DevSecOps and SRE  
“M.E.L.T” + Security

Main KPI: Experience  
Cross-operations domains

# What is Cisco Full-Stack Observability

## Full Stack Observability (FSO)

is emerging as a preferred way for businesses to deliver the most **optimal and secure experience** to users and applications.

Cisco Full-Stack Observability brings together data from multiple operations domains and derive **real-time insights** helping to:



**Focus on what matters most:** revenue, user experience, risk, costs



**Reduce time to resolution** of incidents and performance issues;



**Minimize tool sprawl;** and **break down silos** by reducing friction among teams



**Proactive and predictive** approach to issues and incidents, even before they happen

# Why Full-Stack Observability and Why Now

## Market Timing



## Pervasive Availability

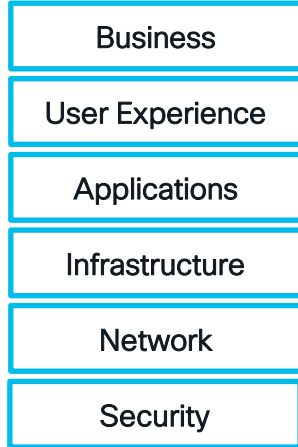


## Technology Capability

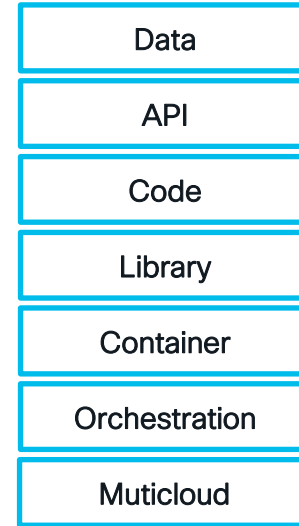
- Digitization (of businesses)
  - Process
  - People interaction
- User “attributes”
  - Experience Expectations
  - Patience / tolerance
- Accelerators
  - Previous: Pandemic
  - Current: GenAI
- Mobile & multi-access
  - user & devices
- Cloud / Multi-cloud
- Open Source
- Flexible consumption models
- Distributed Tracing
- Streaming telemetry
- OpenTelemetry “standardization”
- High Cardinality with time-series
  - Big datasets
  - Lower storage and compute cost
- Predictive and GenAI
- Business Contextualization

# What one may consider as "full-stack" ?

The teams / persona perspective

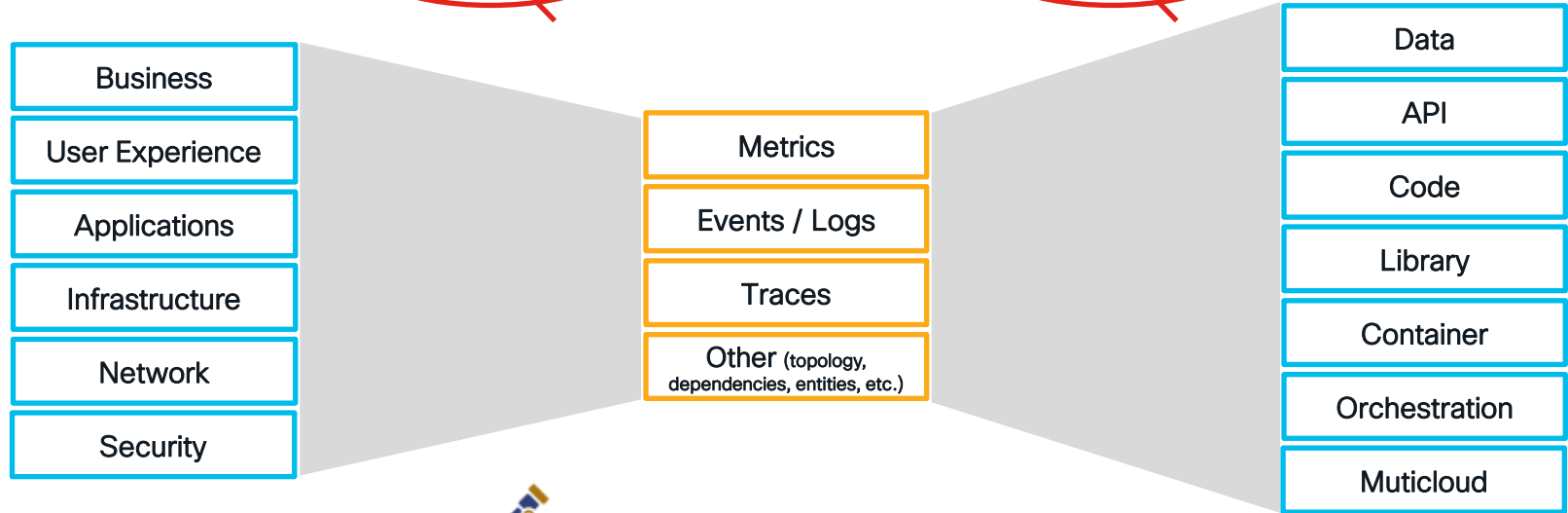


The application / dev / technology perspective



# What is required to enable “full-stack observability”?

The “teams / persona” stack + The “telemetry data” stack + The “application stack”



M.E.L.T = Metrics, Events, Logs, Traces

# M.E.L.T. “stack”

**METRICS**: aggregated set of measurements grouped or collected at regular intervals or a given time span, therefore not discrete

| Timestamp              | Count | Metric Name   | Total   | Average |
|------------------------|-------|---------------|---------|---------|
| 05/Jun/2023 – 11:00:35 | 5     | PurchaseValue | \$27.50 | \$5.50  |

This is 1 min aggregate, so some details are lost (per-purchase specifics such as individual values, time, etc.). It helps save storage but requires proper pre-planning on what metrics to consider.

---

**EVENTS**: a discrete action happening at a moment in time. The more metadata associated with an Event, the better.

| Timestamp              | Event Type    | Item Purchased | Value  |
|------------------------|---------------|----------------|--------|
| 05/Jun/2023 – 11:00:35 | PurchaseEvent | PizzaSlice     | \$5.50 |

Helpful to confirm that a particular action occurred at a particular time. Event collection frequency versus real time computational (for queries) plus storage cost is a concern

# M.E.L.T. “stack” (continued)

**LOGS**: strings of text with a discrete timestamp associated with them. Either unstructured or structured (e.g.: JSON)

```
Mar  4 11:00:35 10.91.25.254 141121: *Apr 14 17:17:10.249: %SYS-5-CONFIG_I: Configured from console by vty4 (l
Mar  4 11:00:35 10.91.25.254 141122: *Apr 14 17:17:11.457: %LINK-5-CHANGED: Interface GigabitEthernet0/9, chan
Mar  4 11:02:39 10.91.25.254 141123: *Apr 14 17:19:14.669: %SYS-5-CONFIG_I: Configured from console by vty5 (l
Mar  4 11:38:34 10.91.25.254 141124: UK-LAB-SW-01: *Apr 14 17:55:09.073: %SYS-5-CONFIG_I: Configured from cons
Mar  4 11:43:51 10.91.1.4 254: UK-LAB-FW-01: *Sep 19 23:25:17.468: %SYS-5-CONFIG_I: Configured from console by
Mar  4 11:43:52 10.91.1.4 255: UK-LAB-FW-01: *Sep 19 23:25:18.468: %SYS-6-LOGGINGHOST STARTSTOP: Logging to ho
```

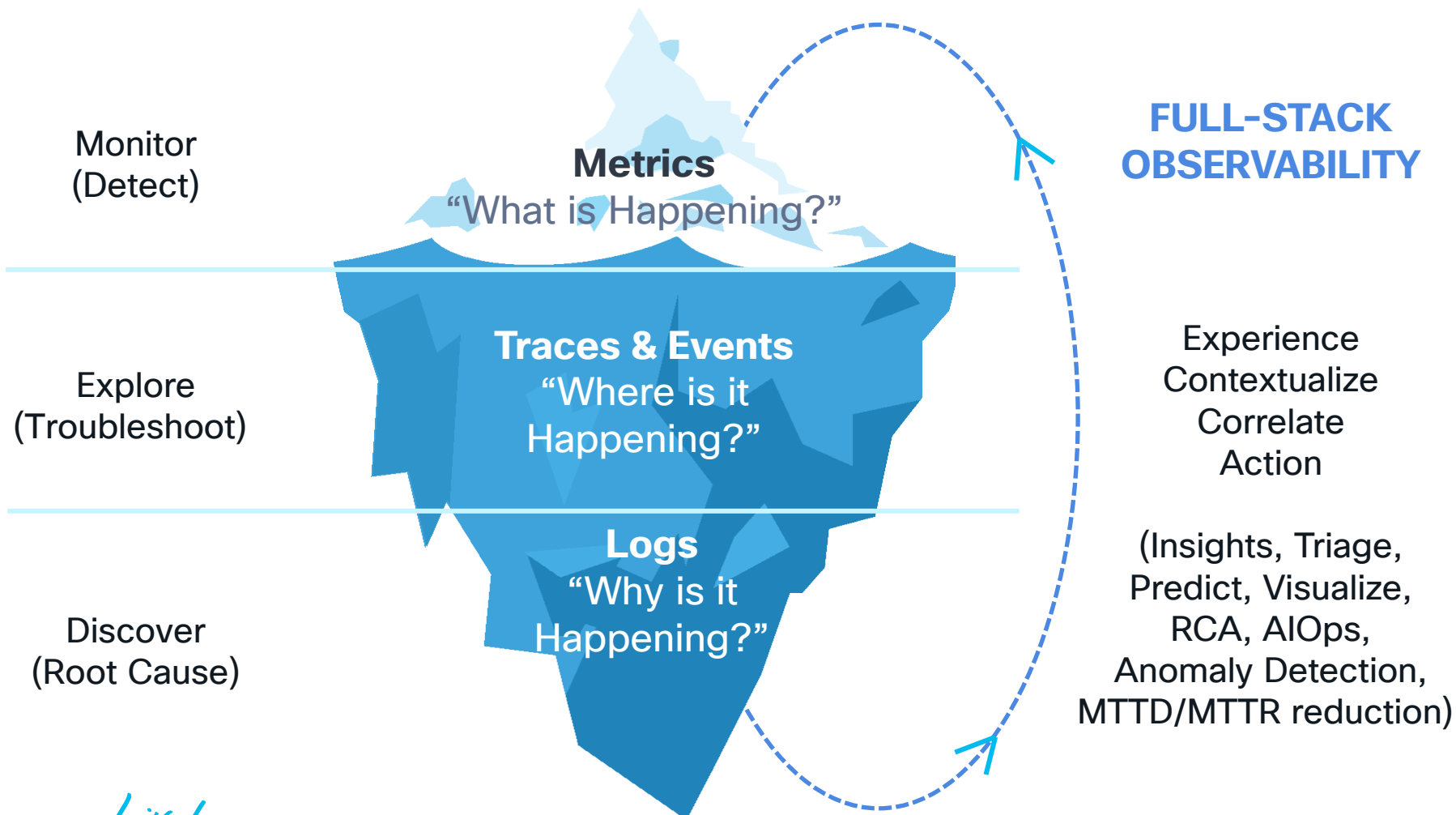
Versatile and empowers many use cases. The most is for getting a detailed, play-by-play record of what happened at a particular time. Most software systems can emit log data.

---

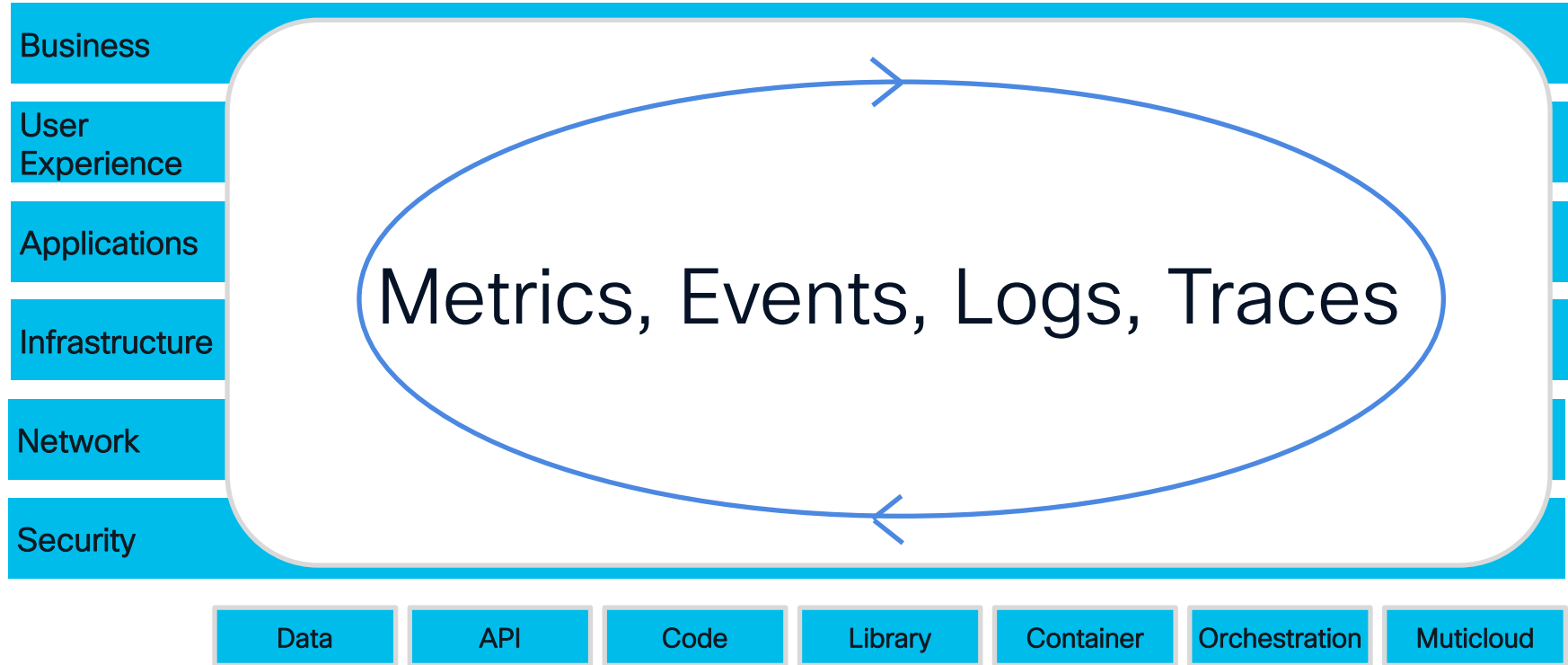
**TRACES**: chains of events (or transactions) between different components in an application. Traces are discrete and irregular in occurrence.

| Timestamp              | Event Type              | Duration   |
|------------------------|-------------------------|------------|
| 05/Jun/2023 – 11:00:35 | CreditCardPurchaseEvent | 37 seconds |

Item was purchased via credit card at a particular time, and it took 37 seconds to complete the transaction. All causal chain details and dependencies are part of the distributed traces.



# What is required to enable “full-stack observability”?

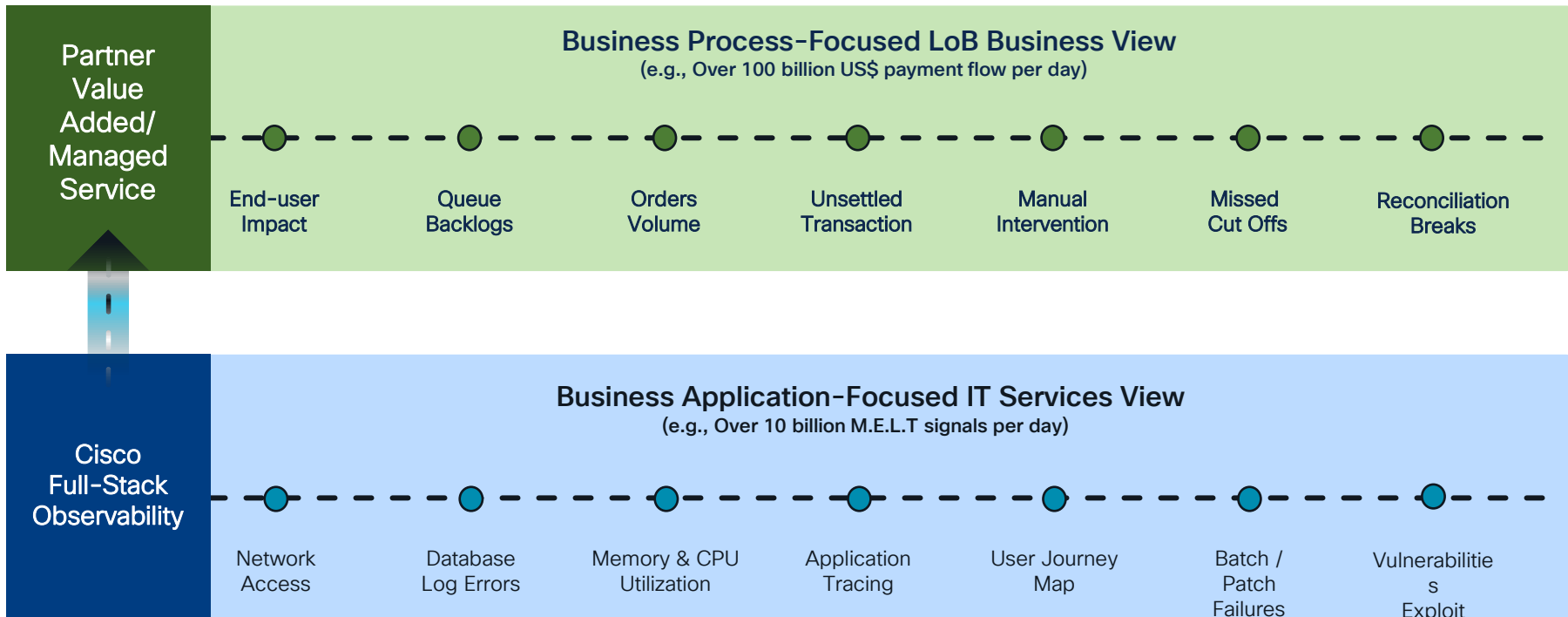


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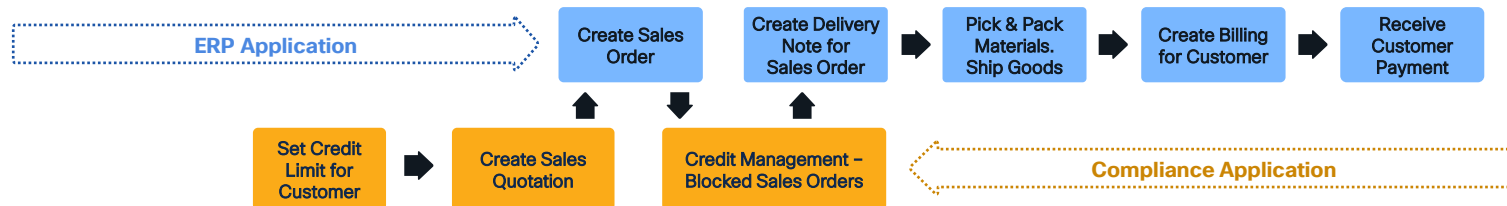
# Cisco FSO deliverables: scope and approach

# Ex.1: Cisco FSO & Payment Business Process

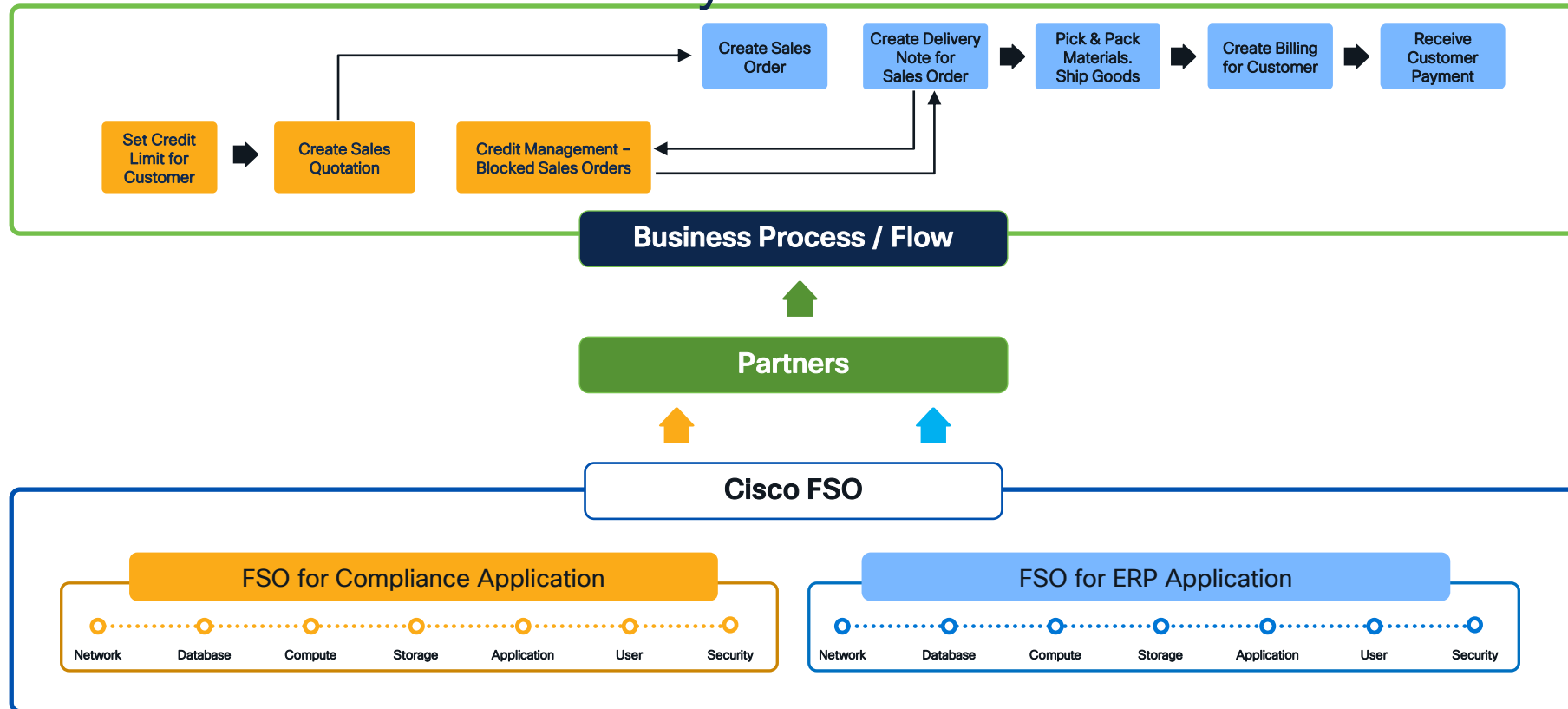


# Ex.2: Cisco FSO & Payment Business Process

## Business Process: Sales Order Fulfillment & Shipping

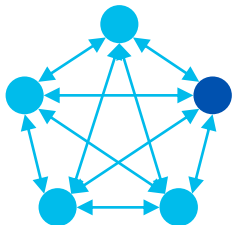


## Ex.2: Cisco FSO & Payment Business Process



# Cisco FSO deliverables approach: Integrations and Platform

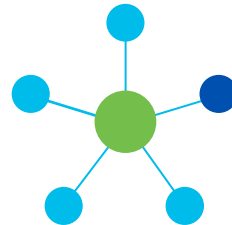
Some business need this



## Tools based integration

- Pre-defined scope (associated with teams and tools).
- Doesn't scale as more tools / domains are considered.
- May imply telemetry data redundancy – no common data set
- Matches current paradigm for operations teams / silos.
- Faster and easier to adopt if / when tools are in place.

Businesses are fast moving here



## Horizontal Platform for Full-stack Observability

- Ingestion based on MELT signals (Open Telemetry), not tools.
- New use-cases creation (extensibility)
- Collaboration among all operations domains;
- Enables AI / ML across common data set;
- Cost / resources optimization (helps reduce tools sprawl)

Many customers will have both models for some time

# Cisco Full-Stack Observability Architecture foundation

## USE CASES & SOLUTIONS

Hybrid Cost Optimization

Customer Digital Experience Monitoring

Application Security

Partner Solutions & Custom use-cases

Hybrid Application Monitoring

Cloud Native Application Observability

App Dependency Monitoring

App Resource Optimization

## BUSINESS CONTEXT

Business Impact

Business Risk

Business Experience

Business Operations

## SERVICES

Applications Performance Monitoring

Network and Internet Monitoring

Application Security Monitoring and Action

User Digital Experience Monitoring (DEM)

Applications Resources Optimization

Multi Cloud Infrastructure and Cost

## PLATFORM



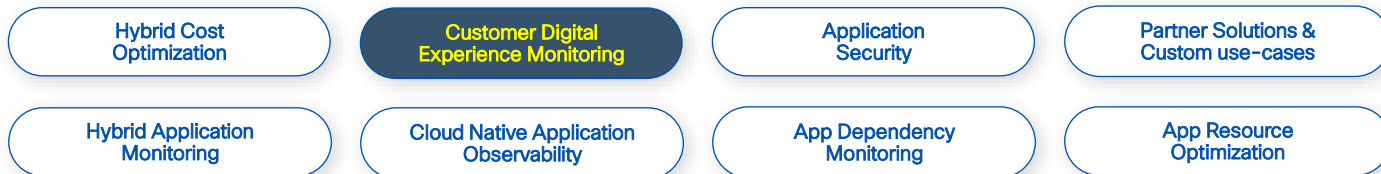
### Extensibility

X - MELT | Advanced Traces | Advanced Correlation and Insights (Real Time and Predictive) | Transformation | AI/ML  
OpenTelemetry | Network Telemetry | Security Telemetry | Cloud Advanced Telemetry

# Cisco FSO use-cases and integrations

# Cisco Digital Experience Monitoring

## USE CASES & SOLUTIONS



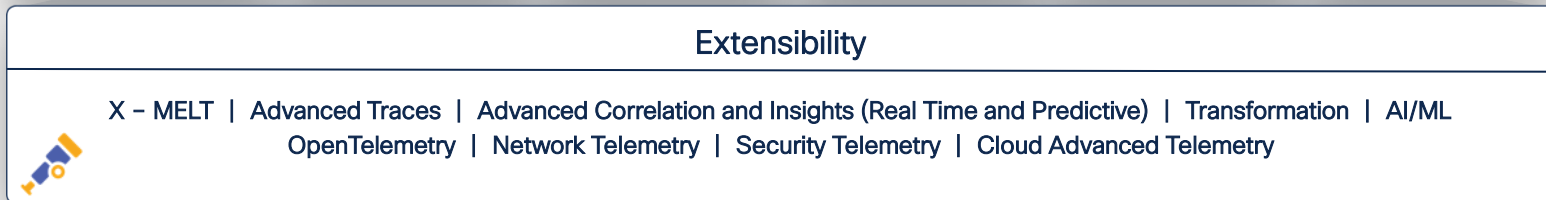
## BUSINESS CONTEXT



## SERVICES



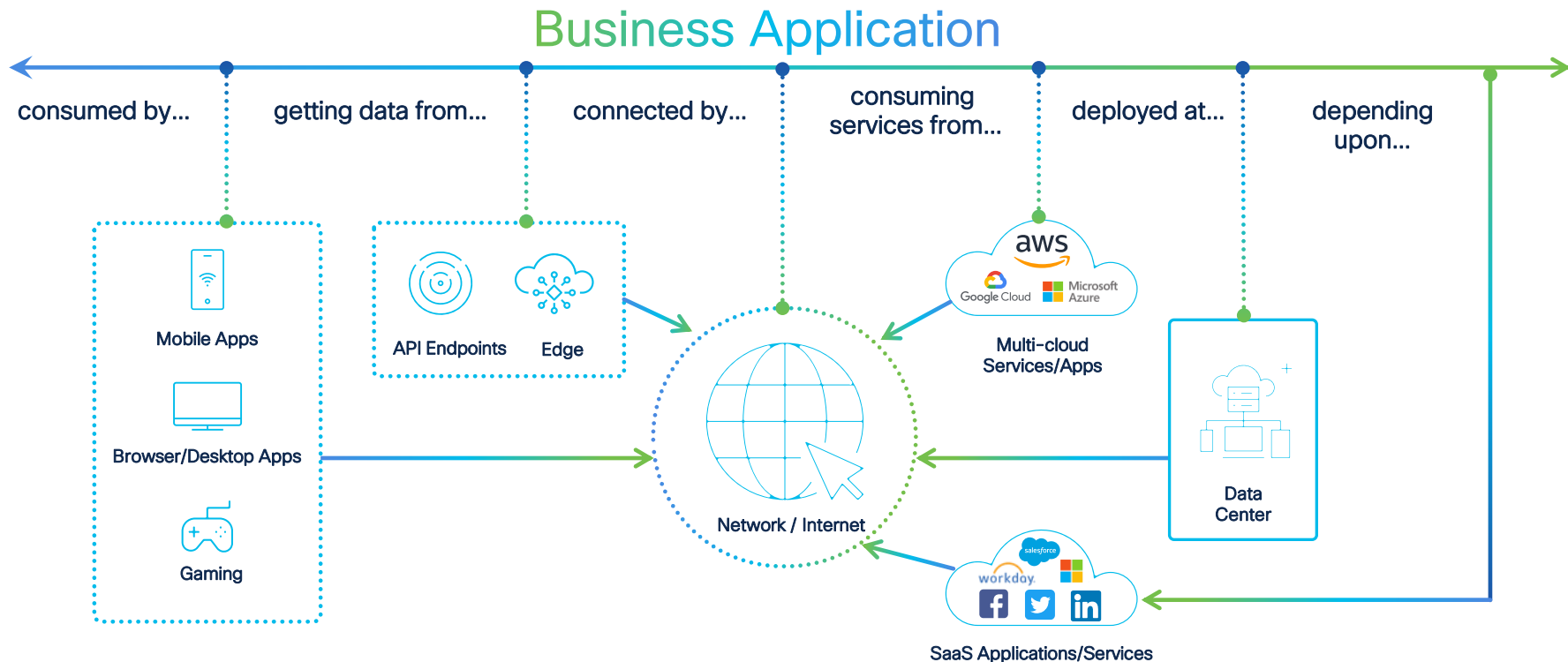
## PLATFORM



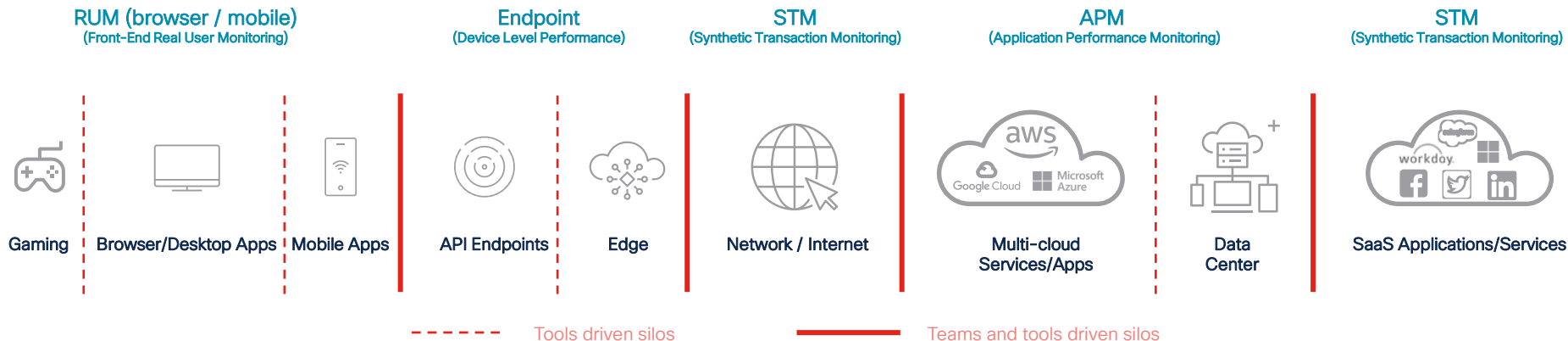
# Why Digital Experience Monitoring (DEM)

- *Customer satisfaction and user experience remains a priority today*
- *Digital experience has a direct impact on revenue, retention and brand reputation*
- *APIs are very commonly used by developers, but they add security risk, impact performance and affect user-experience, so monitoring APIs performance is now critical*
- *Digitization has made environments complex today, while customers are fully geographically distributed. Because of that, DEM has expanded to gain deep visibility into how access control as well as private networks and public internet impacts business.*

# Customer Digital Experience journey

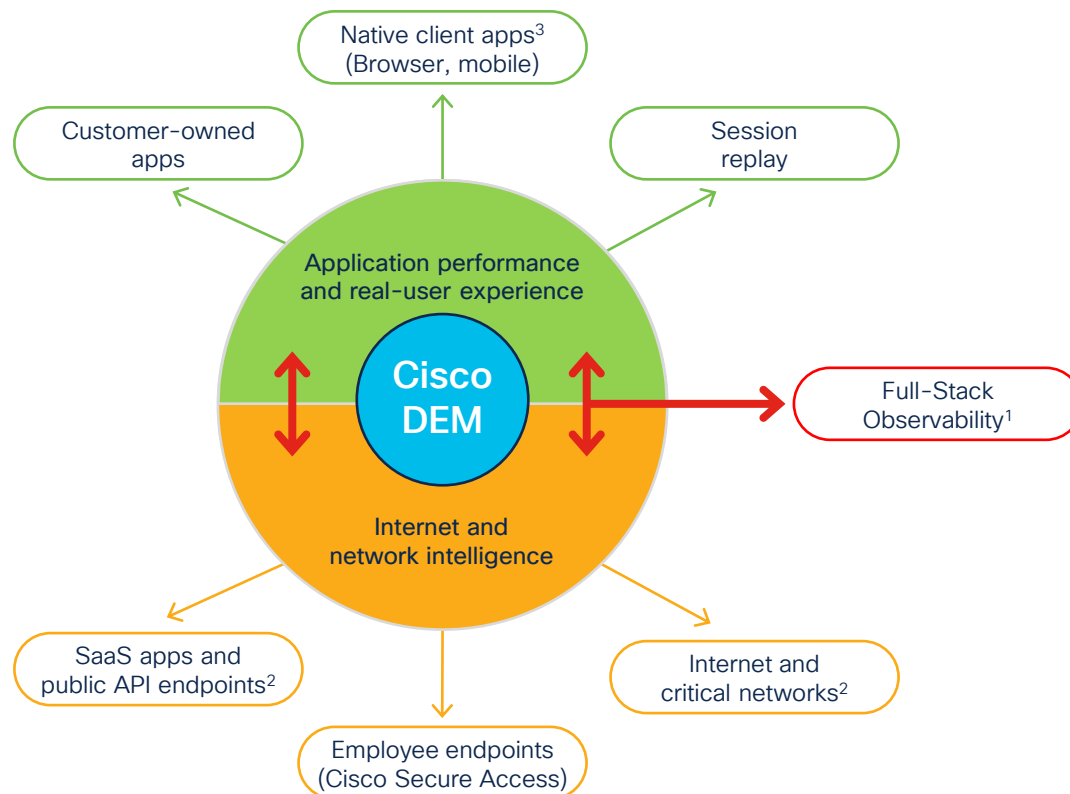


# Customer Digital Experience Monitoring Challenge



~5 hours to triage and recover from an end-user experience incident !

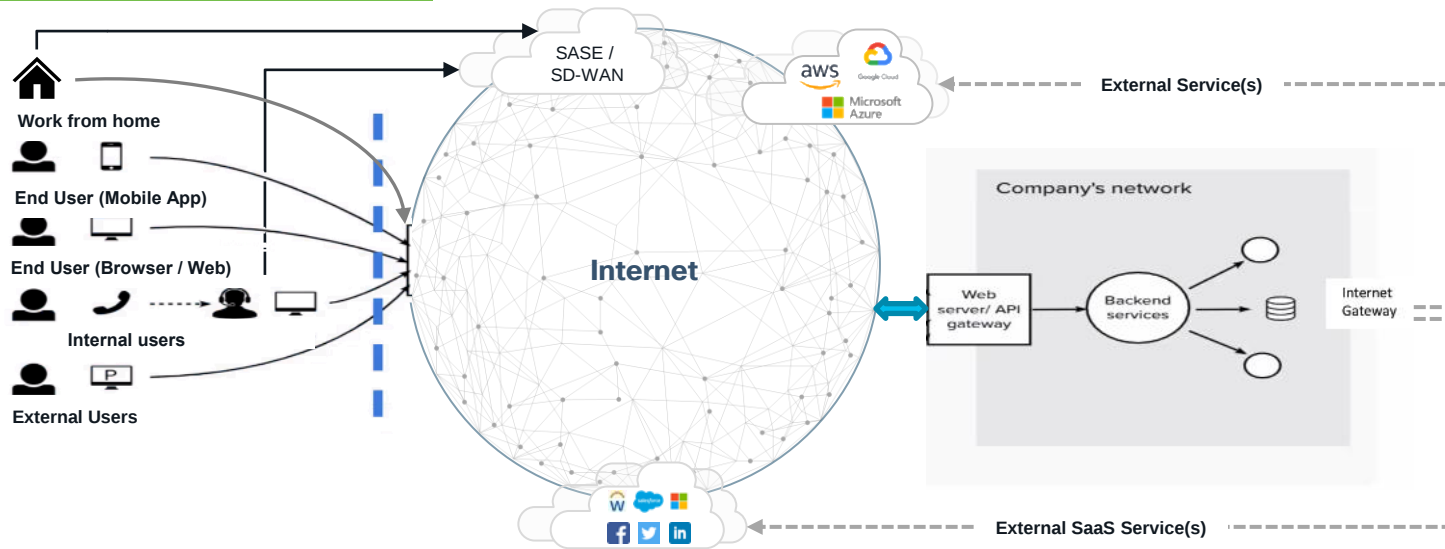
# Cisco Digital Experience Monitoring solution



# Cisco Digital Experience Monitoring: detailed

Front-end Application (mobile / browser): RUM + Session Replay

Back-end Application + Internet: APM + Network insights



Client (laptop / cell phone): Security Access + Local Network

Internet + SaaS applications: Synthetics + Network

< 15 min to triage and recover from the same incident !

# Cisco Digital Experience Monitoring

Correlated user experience and modern application observability



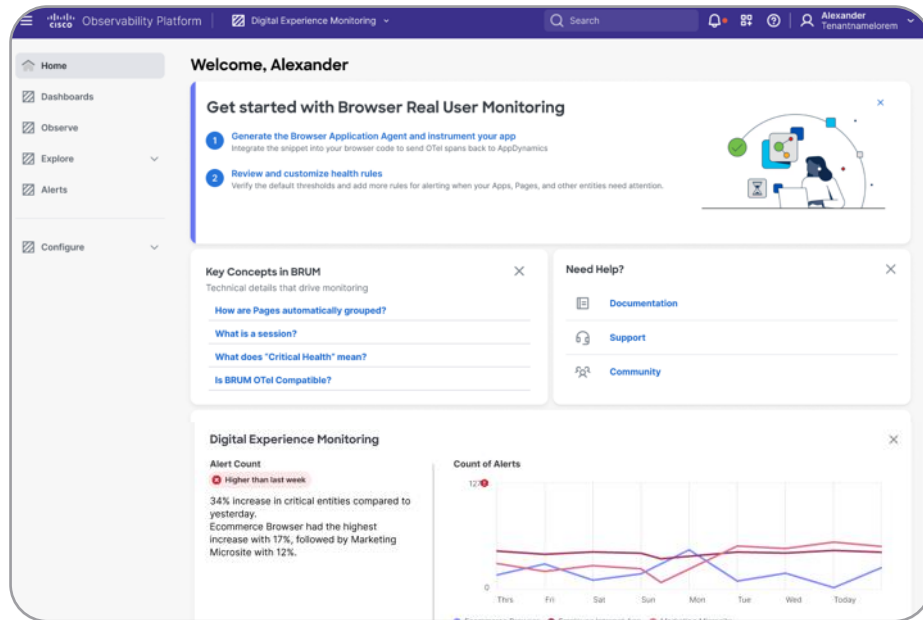
Empowers IT organizations with a holistic view of user experiences, facilitating precise troubleshooting and a proactive approach to performance optimization



Troubleshoot poor user experience with detailed analysis to quickly identify root cause and correlate with backend and network performance



Utilize Core Web Vitals and Android Vitals to evaluate health based on granular benchmarks, and monitor baseline and standard deviation for proactive issue identification



# Observability and Network Intelligence coming together

Data-driven bi-directional integration

 AppDynamics  
Cisco Observability Platform

ThousandEyes

 AppDynamics  
Cisco Observability Platform



Users  
and devices

Browser, mobile  
(iOS and Android)



←.....Network telemetry.....→

.....App dependency map.....→



Internet

Latency, jitter,  
packet loss



.....Network telemetry.....→

←.....App dependency map.....→



Applications  
and services

Application backend  
and external  
dependencies  
(IaaS/SaaS)

last 4 hours

## API Monitoring

Details

Add App

Actions

View Options

Sync with ThousandEyes

Showing 14 of 14

| Name                                                                                                                        | Requests ↓ | Domains Covered by TE | Requests per Minute | Errors | Error Rate | Response Time (ms) | Synthetic Availability | Synthetic Response Time (ms) | Monitoring Enabled |
|-----------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|---------------------|--------|------------|--------------------|------------------------|------------------------------|--------------------|
| ECommerce-Sales-Web  SH-AAB-AAE-RPW        | 1,165      | 2                     | 10                  | 0      | -          | 675                | -                      | 773                          | Enabled            |
| ThousandEyesWebapps - TEST  SH-AAB-AAE-RYR | 473        | 2                     | 3                   | 64     | 13.5%      | 5,935              | -                      | -                            | Enabled            |
| sanity test app  SH-AAB-AAE-SJV            | 0          | 1                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| sanity app QE  SH-AAB-AAE-SMN              | 0          | 4                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| New App  SH-AAB-AAE-SJE                    | 0          | 1                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| Puppetmaster-WEB  SH-AAB-AAE-RPY           | 0          | 5                     | -                   | 0      | -          | -                  | -                      | 496                          | Enabled            |
| TestBRUM  SH-AAB-AAE-RVN                   | 0          | 4                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| Sreekanth_23.4.0_Web  SH-AAB-AAE-RRC       | 0          | 2                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| Testing App 19Apr  SH-AAB-AAE-SJJ          | 0          | 2                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| PSA_docker  SH-AAB-AAE-RRB                 | 0          | 1                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| SynthRestUITests  SH-AAB-AAE-SBA           | 0          | 4                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |
| Appdynamics Solutions  SH-AAB-AAE-SAG      | 0          | 1                     | -                   | 0      | -          | -                  | 66.207%                | 5,466                        | Enabled            |
| Ignite-test  SH-AAB-AAE-RXD                | 0          | 4                     | -                   | 0      | -          | -                  | 98.533%                | 8,047                        | Enabled            |
| OnlyViewApp  SH-AAB-AAE-RYT                | 0          | 2                     | -                   | 0      | -          | -                  | -                      | -                            | Enabled            |

# FSO for Critical Networks

Measuring "critical networks" where milliseconds and microsecond accuracy is required



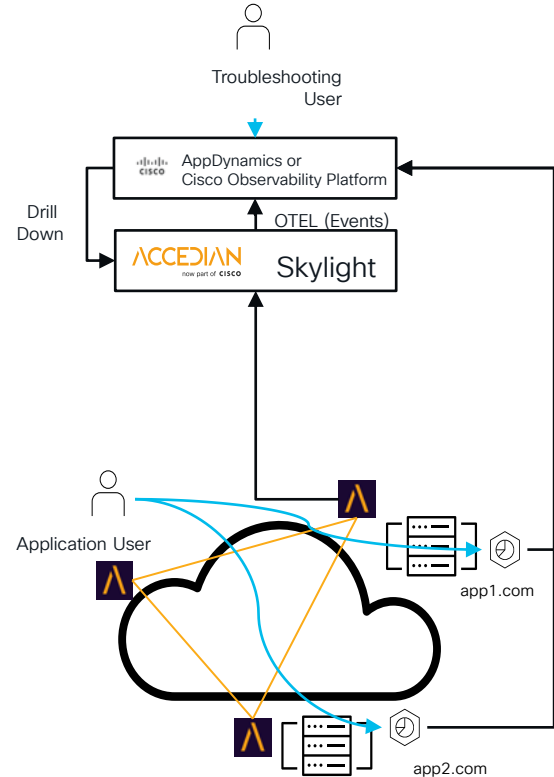
Integration of Accedian metrics and events into Cisco AppDynamics and Cisco Observability Platform



Network probes can measure KPIs (like latency) on private enterprise networks and service provider connectivity services



Observability for applications that are extremely sensitive to latency



# FSO for Critical Networks

 Observability Platform

 Cisco Cloud Observability ▾

Observe / Critical Networks

Overview

Dashboards

Observe

Explore >

Configure >

Tools >

Critical Networks 3

1 2

Critical Connections 3

1 2

Hosts 3

1 2

Cluster 1

AWS-fso-clou...

Namespaces 3

3

Services 2

2

## Critical Networks (3)

Filter View

EntityStatus = 'active'

Apply

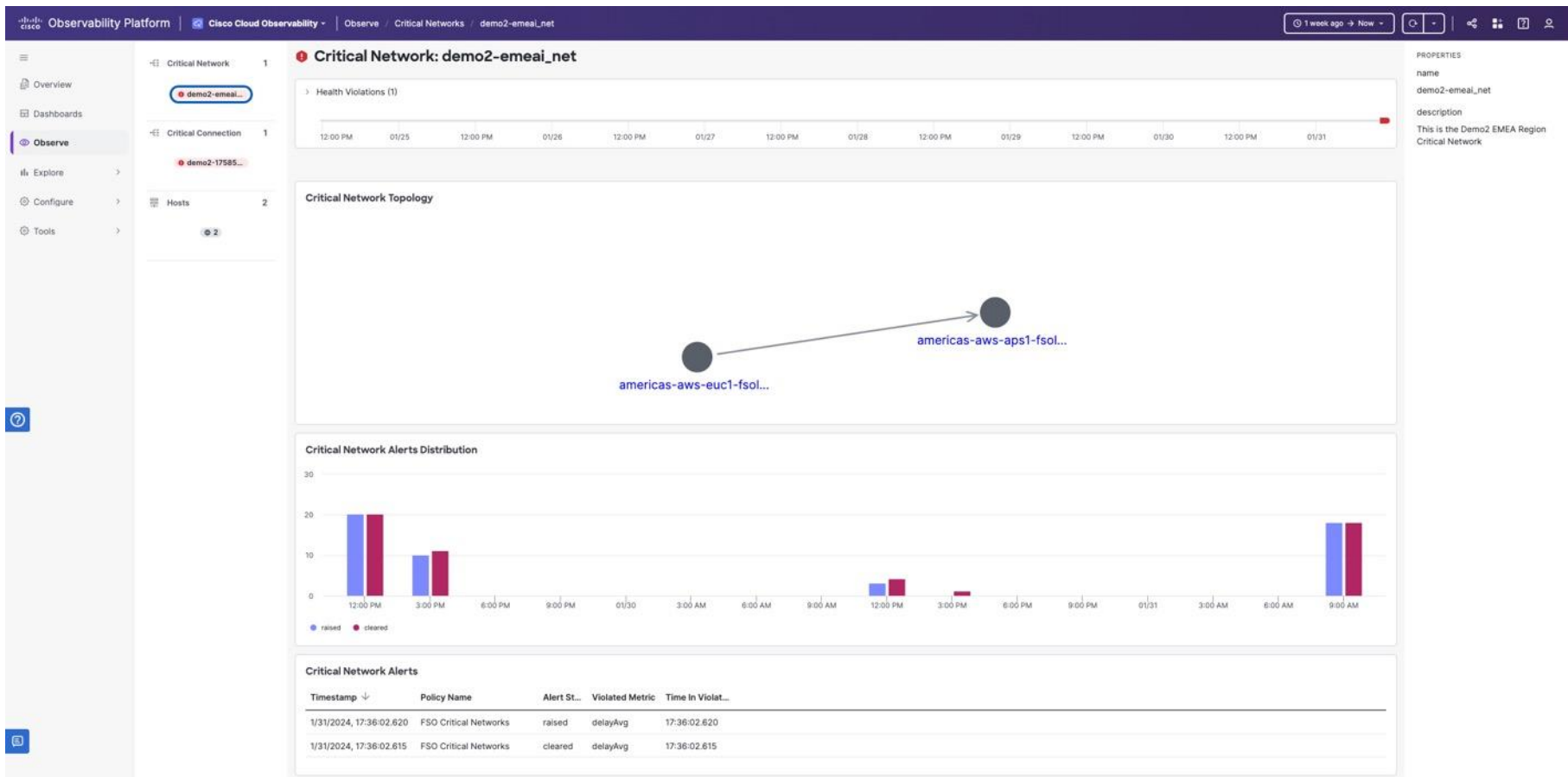
Group View (up to 2 levels of tags)

Add Group

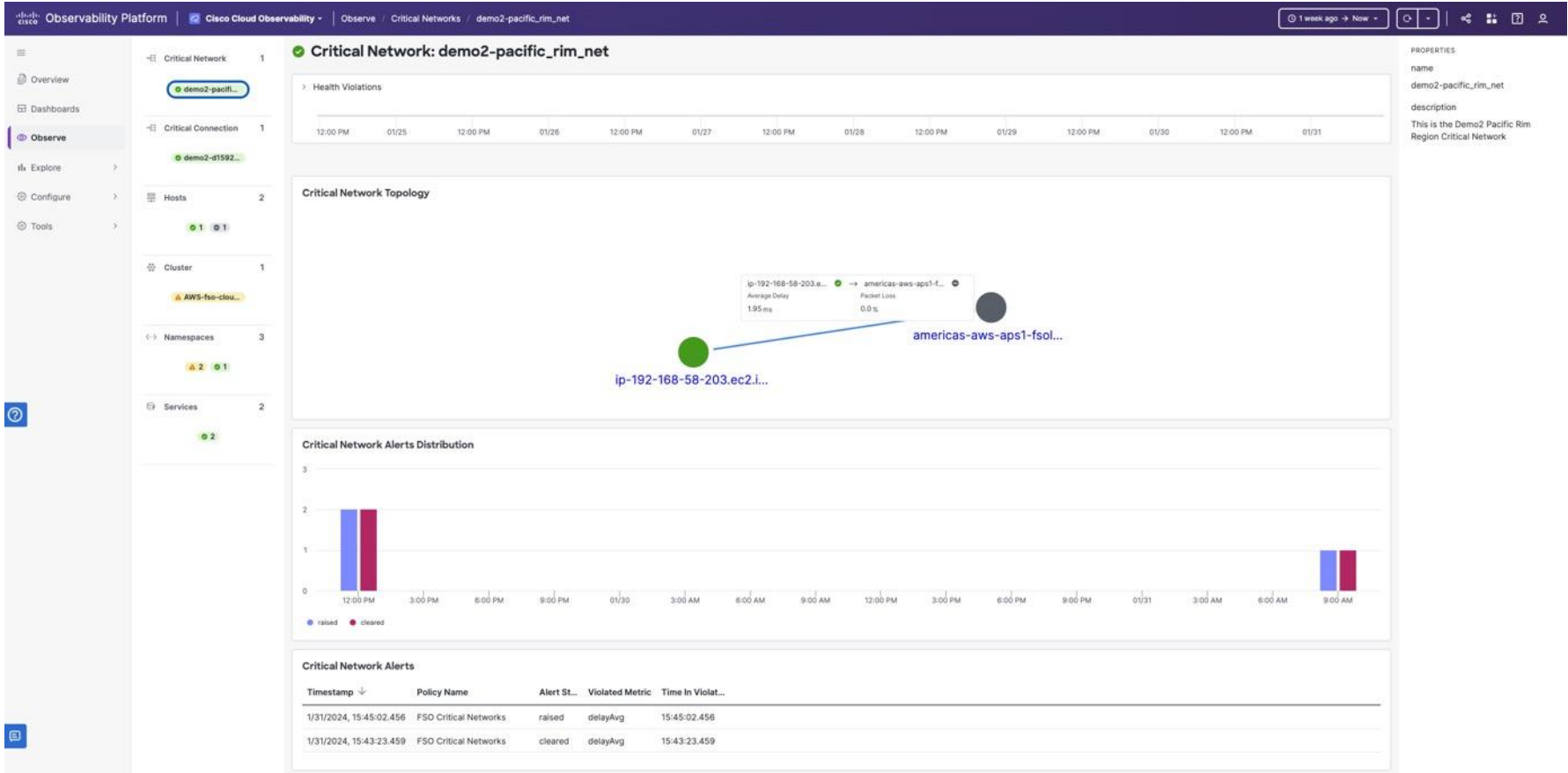
Apply

| Health | name                                  | description                                           |
|--------|---------------------------------------|-------------------------------------------------------|
| ✓      | <a href="#">demo2-pacific_rim_net</a> | This is the Demo2 Pacific Rim Region Critical Network |
| ✗      | <a href="#">demo2-emeai_net</a>       | This is the Demo2 EMEA Region Critical Network        |
| ✓      | <a href="#">demo2-nato_net</a>        | This is the Demo2 Pacific Rim Region Critical Network |

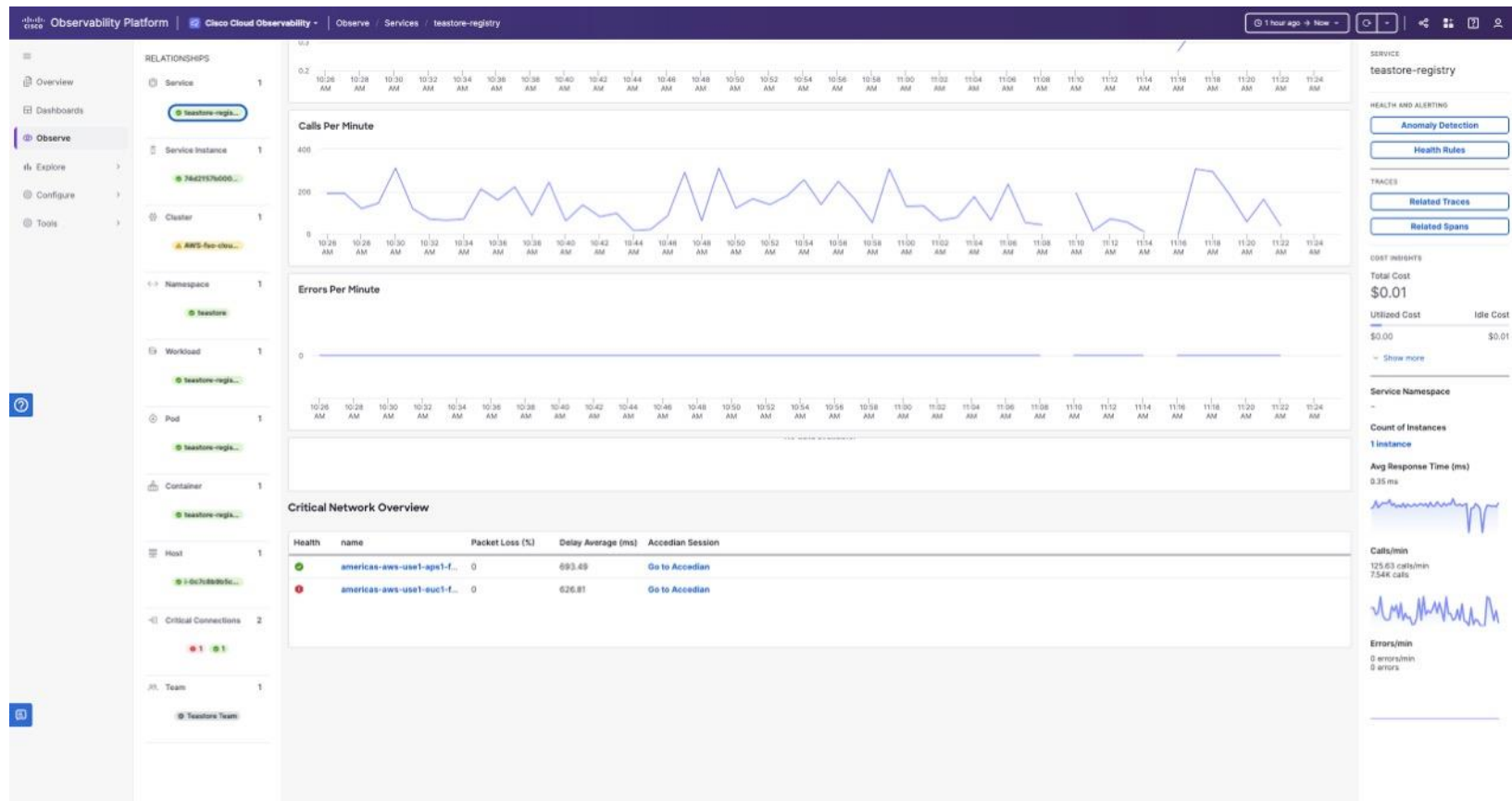
# FSO for Critical Networks



# FSO for Critical Networks



# FSO for Critical Networks



# Business Risk Observability

## USE CASES & SOLUTIONS



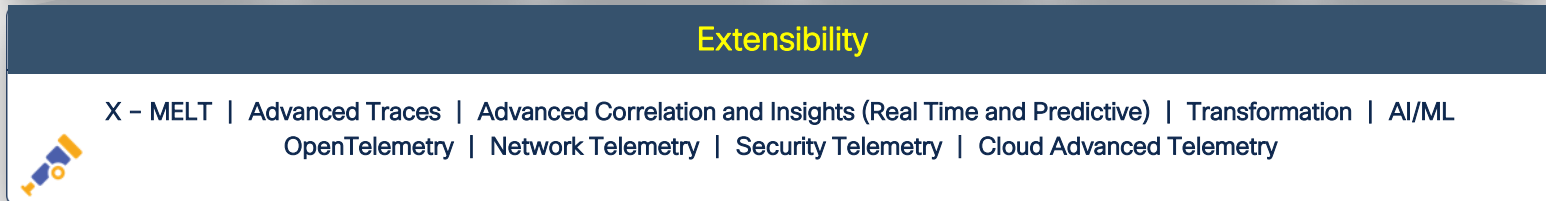
## BUSINESS CONTEXT



## SERVICES



## PLATFORM



# Business Risk Observability for Applications



Provides the business context needed to rapidly assess risk and align teams based on potential Impact

## Business Context Mapping

Mapping vulnerabilities and attacks to common transactions provides the business context to help you quickly understand the location and impact of threats.

+

## Vulnerability and Threat Intelligence

Threat intelligence feeds from multiple yet complementary sources provide the threat context to understand the likelihood of threat exploits.

=

## Business Risk Scoring

Scoring composited from analysis of runtime behavior + business impact + intelligence provides complete business risk context to instantly assess and prioritize action across ITOps and SecOps teams

# Cisco Business Risk Observability in action

## Per Business Transaction

High risk of exploitation with a correlated high business impact. Operator must act due to active nature of threat.

Differentiate between what's important versus what's urgent. High severity, but low likelihood of exploitation or business impact

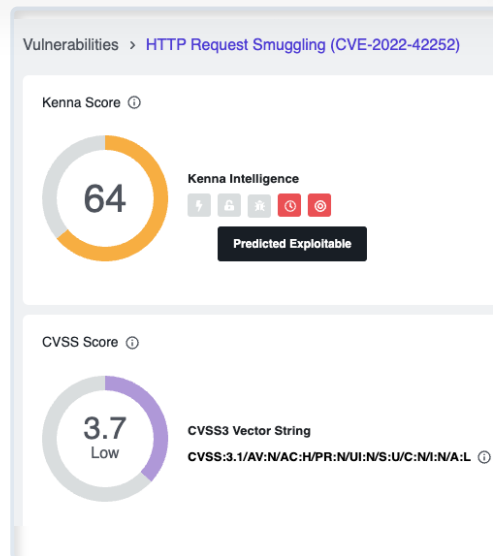
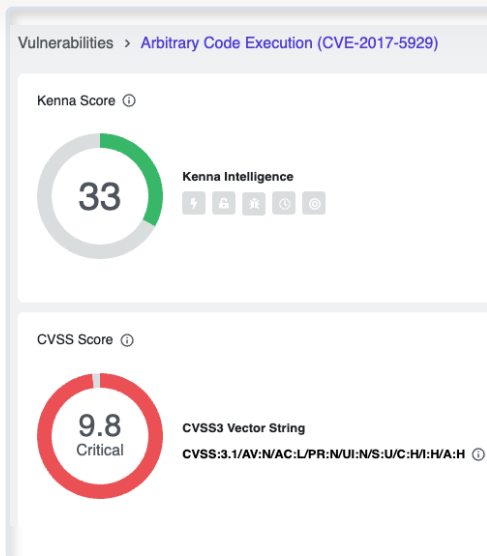
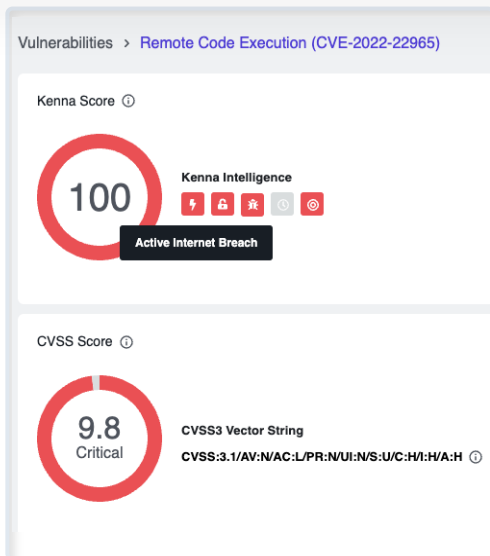
Operator often ignore this case due to low CVSS score, but must act because of high business risk and impact potential

### Real-time Score:

Estimate of the likelihood of exploitation based on what is happening in real-time.

### CVSS Score:

Qualitative ratings of Public Disclosed Vulnerabilities





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# Cisco Observability Platform

Simplified experiences and Extensibility

Scale  
and performance

Unified  
experience

Extensible



Anchored  
on MELT



Provides fully  
extensible entity-  
based data model



Natively supports  
OpenTelemetry



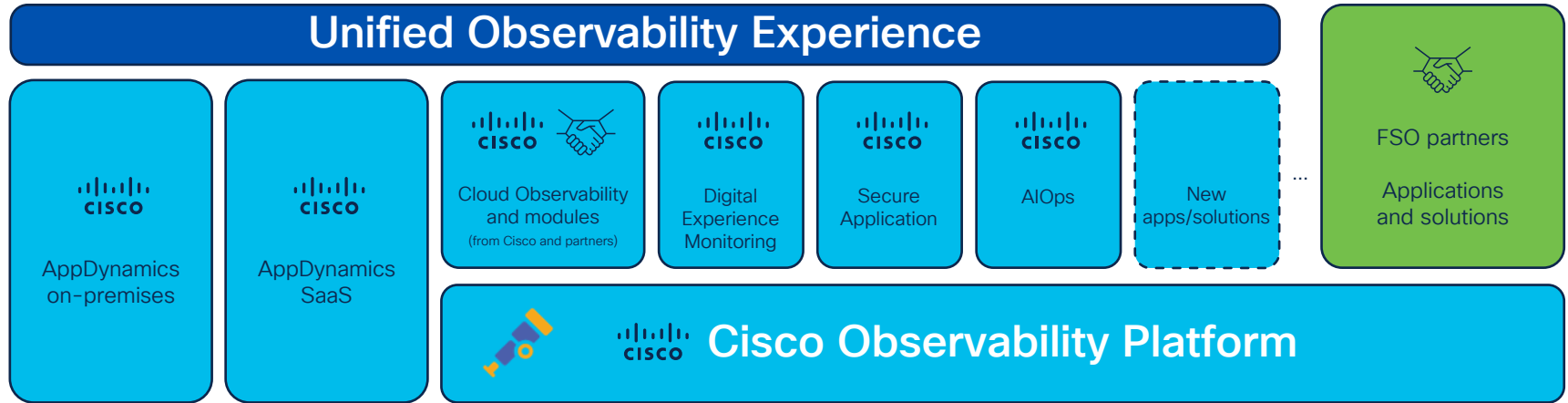
Provides Unified  
Query language

## Extensibility

X-MELT | Advanced traces | Advanced Correlation and insights (real time and predictive) | Transformation | AI / ML  
OpenTelemetry | Network telemetry | Security telemetry | Cloud advanced telemetry

# Cisco Observability Platform @ Cisco FSO portfolio

## FSO use cases



# Cisco Observability Platform Exchange

by Jan/24

## Extend the power of Cisco Observability Platform

Create value from the observable telemetry to address custom use cases around observability

Cisco Observability Platform Exchange

All Applications Modules

 **Cost Insights**  
MODULE by Cisco

Cost Insights provides granular cost data and analysis to help leaders and Financial Ops (FinOps) understand and manage costs associated with an application and infrastructure in the cloud.

[Learn More](#) [Subscribed](#)

 **K8s Cost and Workload Profiler**  
MODULE by Cisco

The AppDynamics Cloud Efficiency and Risk Profiler analyzes workloads running on a Kubernetes cluster to identify performance and reliability risks and inefficient configurations.

[Learn More](#) [Subscribed](#)

 **Application Resource Optimizer**  
MODULE by Cisco

Application Resource Optimizer provides the ability to optimize cloud workloads and provides recommendations to cloud practitioners on how to optimally run workloads in the cloud.

[Learn More](#) [Subscribed](#)

 **Fintech by Evolvito**  
MODULE by Evolvito

For banks, financial institutions, and other highly transactional businesses to gather and view multiple data sources in a single place to best understand user experience. This module allows CTOs to correlate different bank objects, such as physical branches, financial data centers, POS, networks, cloud environments, geographies, and more. This is a module built by Evolvito exclusively for the Cisco FSO Platform.

[Learn More](#) [Subscribed](#)

 **Kanari Capacity Forecaster**  
MODULE by Kanari

The Kanari Capacity Forecaster adds machine learning capabilities to the FSO platform. Leveraging the powerful ecosystem of Azure Data Factory and Kanari algorithms, proactive management based on any metric will be available.

[Learn More](#) [Request](#)

 **vSphere Observability**  
MODULE by Cloud Fabrix

This module seamlessly integrates vSphere telemetry into Cisco FSO Platform with enriched and open observability. It transforms vSphere metrics, events, and logs into Open Telemetry format and adds contextual intelligence, establishes end-to-end application dependency map, and visualizes all this data in AppDynamics Cloud for enhanced and unified observability experience.

[Learn More](#) [Subscribed](#)

 **Cisco Secure Application**  
MODULE by Cisco

Cisco Secure Application provides business risk based visibility of security issues so DevOps teams can prioritize fixes for cloud native applications to reduce the risks associated with an application, its data and infrastructure in the cloud.

[Learn More](#) [Subscribed](#)

 **Claims by Evolvito**  
MODULE by Evolvito

Our claims solution enables insurance providers to know exactly where processing stands, in real-time, by state, region, policy types, and more. These claims process insights help identify any stalls or issues that arise.

[Learn More](#) [Subscribed](#)

 **E-Commerce by Evolvito**  
MODULE by Evolvito

Our E-commerce solution is designed for enterprise retailers to track a shopper's journey while highlighting retail operations such as the cart service, inventory, checkout, shipping, and their KPIs

[Learn More](#) [Subscribed](#)

 **Campus Analytics**  
MODULE by Cloud Fabrix

Analytics and Insights for Return to Work use case for Enterprise and Telco Campus Networks

[Learn More](#) [Subscribed](#)

 **SAP Observability**  
MODULE by Cloud Fabrix

Insights into SAP Landscapes across Infrastructure, Business and Applications

[Learn More](#) [Subscribed](#)

 **Cloud Carbon Insights**  
Module by ClimatIQ

Automatically measure and monitor the carbon footprint of your cloud infrastructure.

[Learn More](#) [Subscribed](#)

 **Service Level Objectives (SLO)**  
MODULE by Nob9

Display and track Nob9's service level objectives (SLOs) in the FSO platform.

 **MODULE by Evolvito, Powered by DataRobot**

an Evolvito FSO Module, integrate DataRobot ML Ops into your observability with the Cisco ML Ops by Evolvito. Powered by DataRobot seamlessly merges best-in-class machine learning monitoring with streamlined operational efficiency. Experience enhanced anomaly detection, predicted data performance, and more.

 **Cisco Cloud Observability**  
APPLICATION by Cisco

Cisco Cloud Observability is a modern application performance management (APM) solution for observing, securing, and optimizing cloud native architectures with business context.

# Cisco Observability Platform Exchange

## by Cisco Live Amsterdam 2024

**Operational Intelligence**  
MODULE by Cloud Fabrix

Event Correlation and Noise Reduction, RCA, Incident auto-remediation.

[Learn More](#) [Subscribed](#)

**Asset Intelligence Analytics**  
MODULE by Cloud Fabrix

Application and Infrastructure Dependency mapping and analytics.

[Learn More](#) [Subscribed](#)

**Infra Observability - Network and Storage**  
MODULE by Cloud Fabrix

Full Stack Infrastructure Observability (virtual, compute, N/W, Storage).

[Learn More](#) [Subscribed](#)

**i4Cube Manufacturing Monitoring**  
Industry Device Monitoring

i4Cube provides monitoring for the industry production lines and machines. This module integrates industry data from production lines, machines and other events and metrics into the FSO platform.

[Learn More](#) [Subscribed](#)

**AS400 Server Monitoring**  
Synchronise IBM iSeries AS400 data with the Cisco Observability Platform

Our solution offers remote monitoring of IBM iSeries. The collected data from IBM iSeries is ingested in Cisco Observability Platform with real-time visibility into system performance through interactive dashboards, unified analysis, metrics and events.

[Learn More](#) [Subscribed](#)

**Kubernetes Change Management**  
Kubernetes Reliability Platform

K8s continuous reliability platform, ensuring a healthy and improved performance and simplifying troubleshooting for quick fixing.

[Learn More](#) [Subscribed](#)

**Intelligence for Oil & Gas**  
For Data Driven O&G Company

Application for observability over assets, equipment network, applications, communication health of sensors and devices used in oil and gas production.

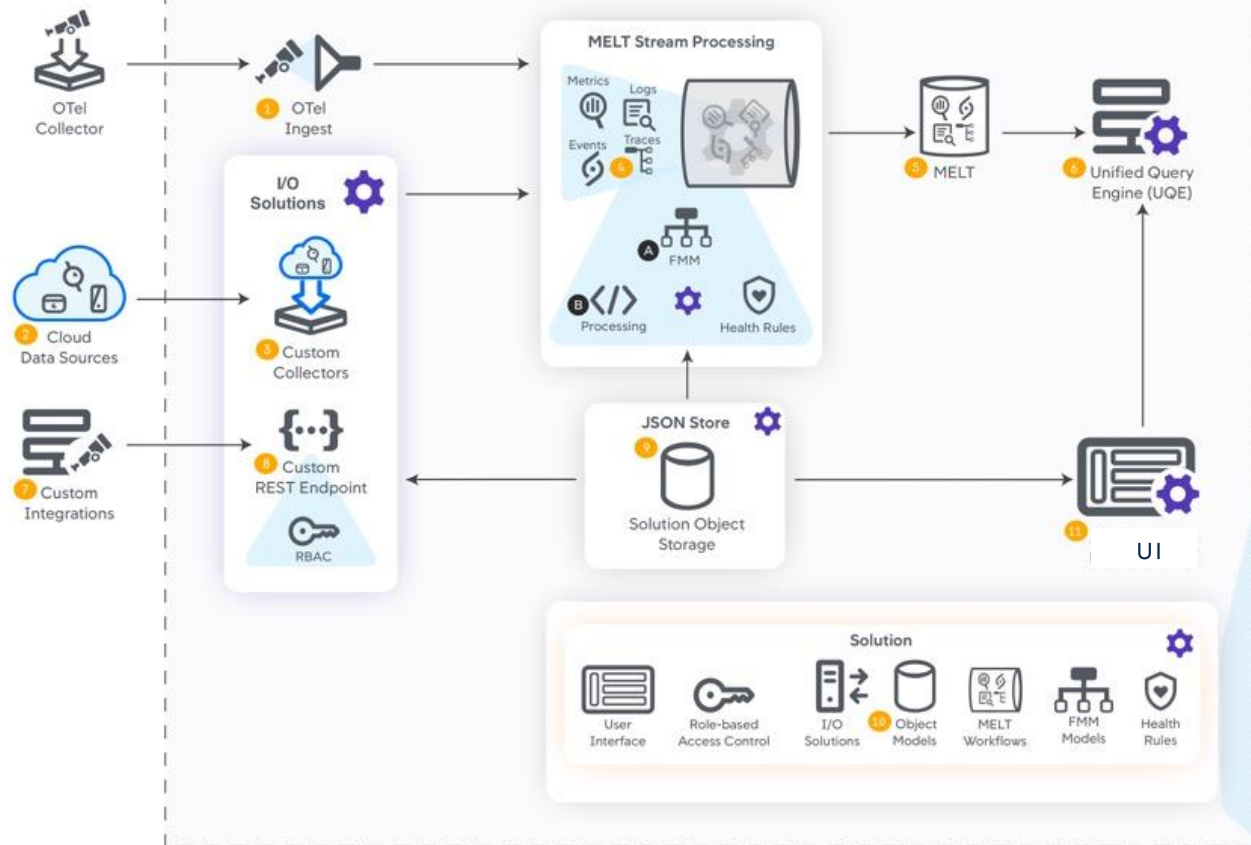
[Learn More](#) [Subscribed](#)

**ML Observability**  
The ML Observability Solution

Quickly and efficiently monitor, visualize, and analyze production alerts to optimize the performance of your ML models, all as part of Aporia's comprehensive AI Control Platform.

[Learn More](#) [Subscribed](#)

# Cisco Observability Platform



# Telemetry data ingestion



## Smart Hybrid Agents

- Depth in data (code-level visibility)
- Extract additional context without code modification (MIDC) and Business Intelligence (BiQ)
- Control plane to be configured remotely
- Ease of Use (Auto-Instrumentation!) and Hybrid (support OTLP)
- Advanced features (Live Mode, Developer Mode, Intelligent Snapshots ...)
- Integration with runtime security (Secure Applications)
- End-User & Database Monitoring
- Less "chatty" protocol



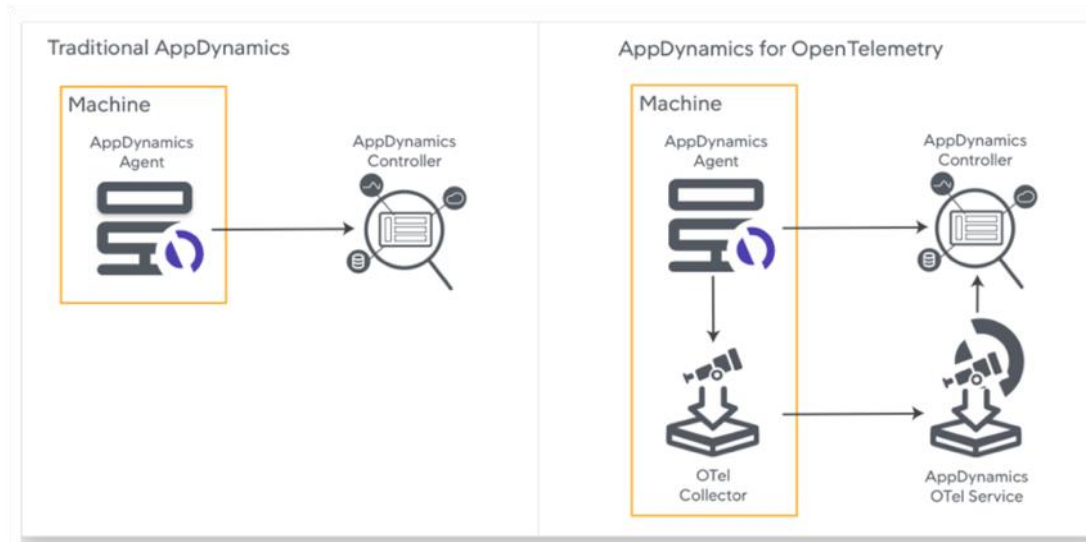
## SDK & Agents

- Observability as Code (agents are optional)
- Standardised data format (Semantic Conventions!)
- Potential support for more technologies and more vendor data
- Send data to multiple backends

# AppDynamics Hybrid Agent

OpenTelemetry is a collection of tools, APIs, and SDKs used to instrument, generate, collect, and export telemetry data (metrics, logs, and traces) to help you analyze software performance and behavior.

AppDynamics provides an OpenTelemetry-compatible backend to ingest OpenTelemetry trace data using OpenTelemetry components. The ingested data is processed by the AppDynamics backend and displayed in the Controller UI. This service is referred to as AppDynamics for OpenTelemetry.



# Open Telemetry Instrumentation

- How we get applications / services to emit traces / logs / metrics
- Automatic or manual
- Support for most popular languages



# OTEL Instrumentation Status Grid

(as of Jan/2024)

| Language        | Traces | Metrics | Logs |
|-----------------|--------|---------|------|
| C++             | ✓      | ✓       | ✓    |
| C# / .NET       | ✓      | ✓       | ✓    |
| Erlang / Elixir | ✓      | ⚠       | ⚠    |
| Go              | ✓      | ✓       | ⊘    |
| Java            | ✓      | ✓       | ✓    |
| JavaScript      | ✓      | ✓       | ⚙    |
| PHP             | ✓      | ✓       | ✓    |
| Python          | ✓      | ✓       | ⚠    |
| Ruby            | ✓      | ⊘       | ⊘    |
| Rust            | β      | α       | α    |
| Swift           | ✓      | ⚠       | ⚙    |

<https://opentelemetry.io/docs/instrumentation/>

✓ Stable

☺ Mixed

⊘ Not yet implemented

⚠ Experimental

α/β Alpha/Beta

⚙ In Development

# Simplified Agent Lifecycle Management

Improve operational efficiency with Smart Agent



Simplify agent management in a few clicks

- Inventory, filter, select and generate reports



Quickly access new capabilities with push-button upgrades

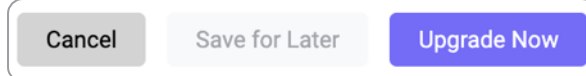
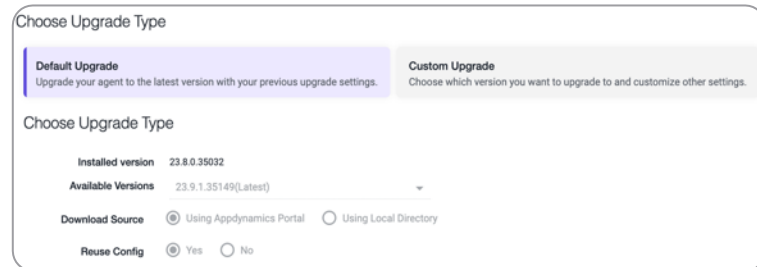
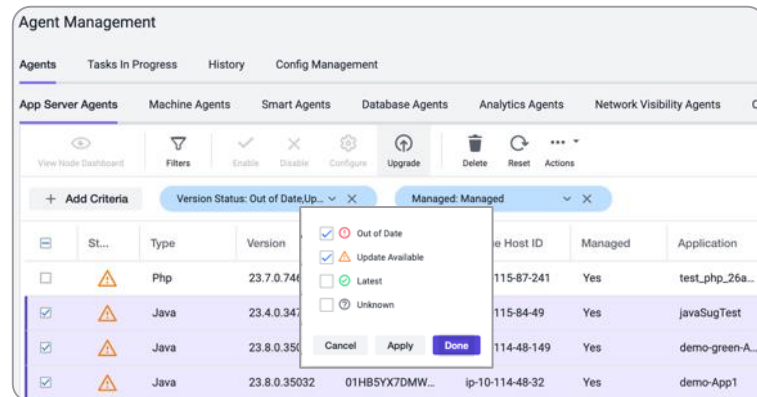
- Utilize new features as they are released
- Select and upgrade with two clicks
- Or customize options for full control



Automatically gain business and performance insights faster\*

- With a single Smart Agent install
- Smart Agent will auto-discover all processes
- And auto-deploy agents per your policies

\* Auto-detect and auto-deploy coming spring 2024



# Cisco Observability Platform Terminology

**Solution** — a collection of functionality available for subscription;

**Package** — a declarative collection of Cisco FSO Platform components, the instruction set programmed by the user and packaged as a zipfile. A Package's zipfile contains exactly one solution.

**Application** — a solution that contains a full Cisco FSO Platform application, which becomes selectable - and extensible (through modules) - via the FSO Platform Exchange.

E.g.: Cloud Native Application Observability

**Module / Enrichment** — a solution add-on that depends on, and enhances another solution

E.g.: Cost Insights

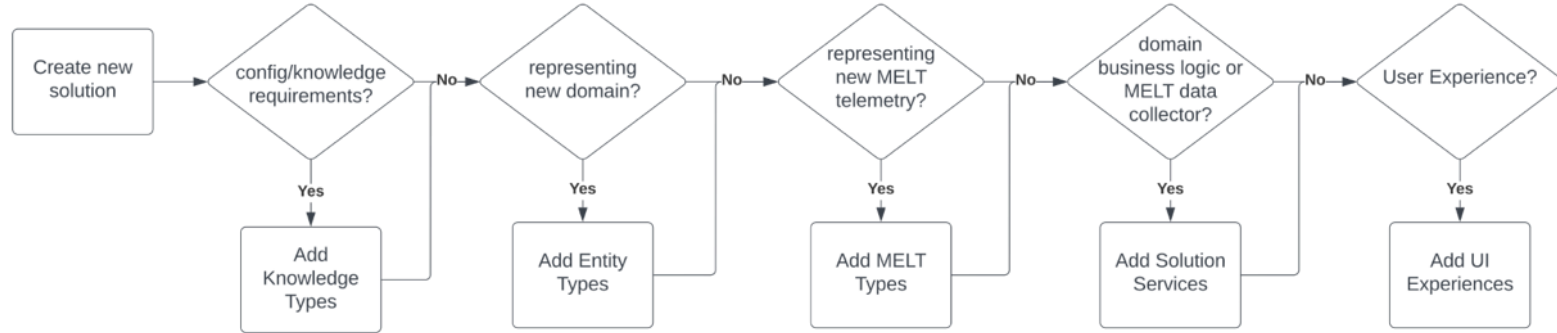
# Cisco FSO Platform Extensibility – Solution Package

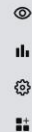


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  "solutionVersion": "0.0.71",
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    "zodiac",
    "fmm"
  ],
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  "contact": "support@cisco.com",
  "homepage": "solutions.cisco.com/demofunction",
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  ],
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      "objectsFile": "objects/functions/collector.json"
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    {
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      "objectsFile": "objects/fmm/k8sCostNamespace.json"
    },
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      "objectsFile": "objects/fmm/k8sCostMetricsDefinition.json"
    },
    {
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      "objectsFile": "objects/fmm/k8sCostMetricsDefinitionEfficiency.json"
    },
    {
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    }
  ]
}
```

# Cisco FSO Platform Extensibility

## Solution package creation flow example





Zoom to namespace

common

infra

k8s

db

apm

aws

azure

cloud

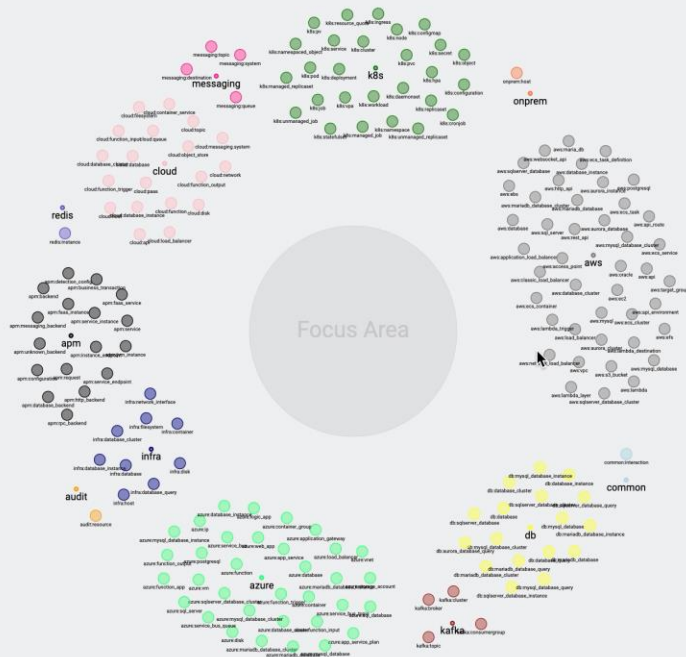
kafka

redis

onprem

audit

messaging



## Schema

Entities (178)

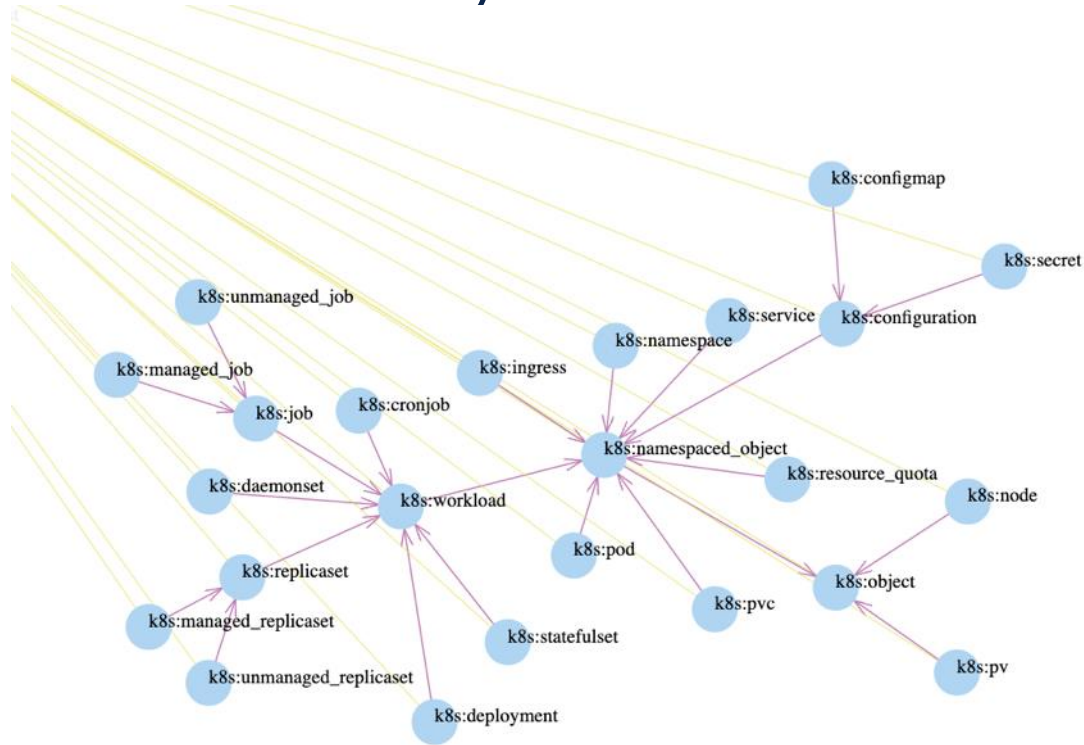
Metrics (742)

Events (7)

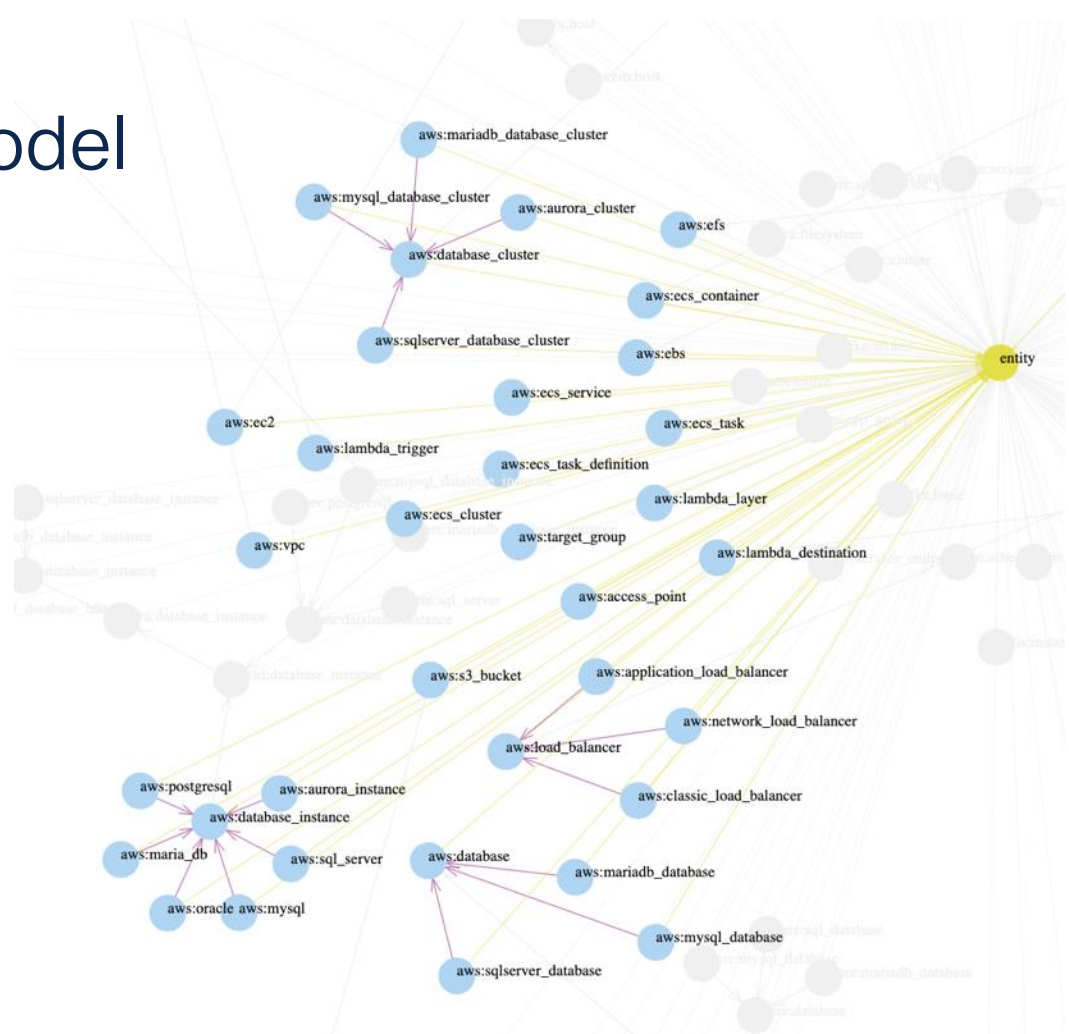
Guide Me

Feedback

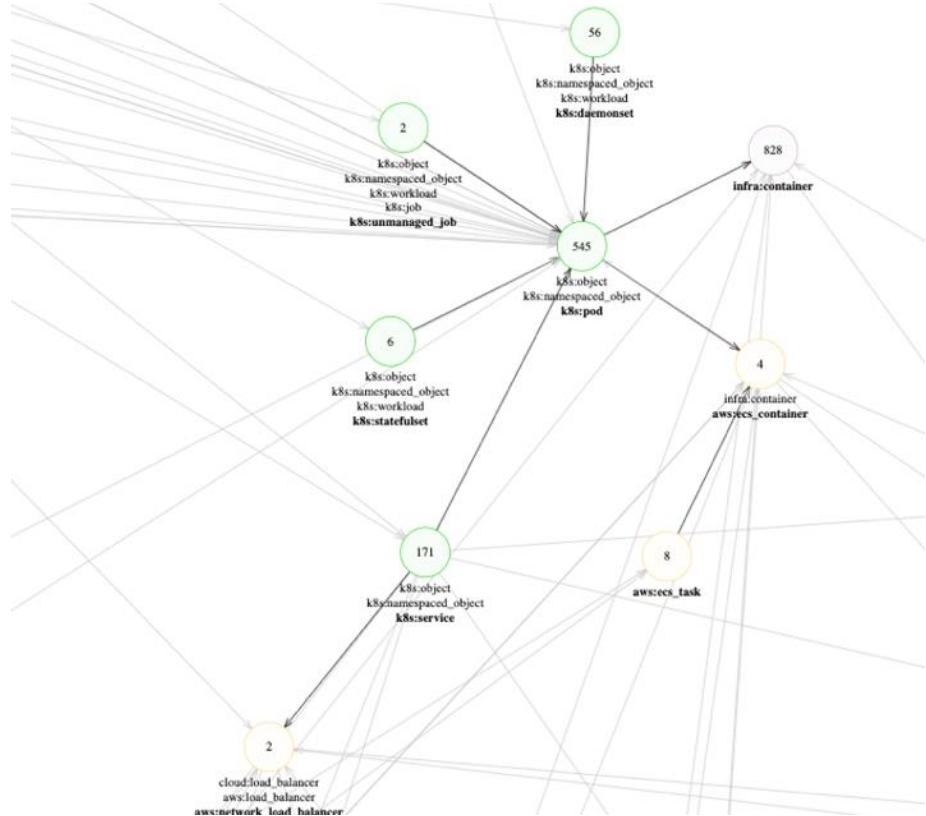
# Eg.1: Kubernetes Entity Model



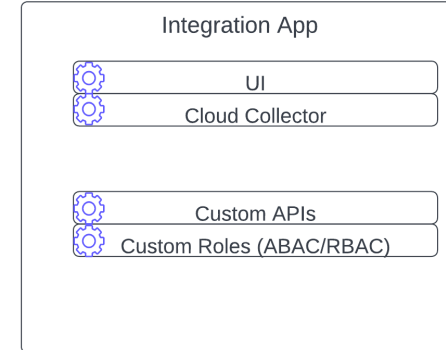
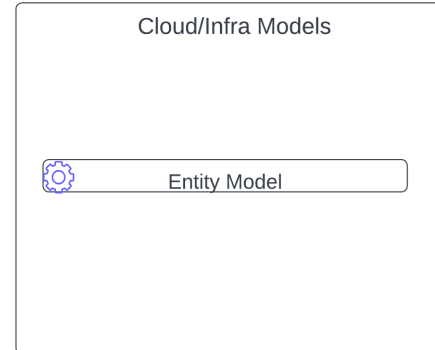
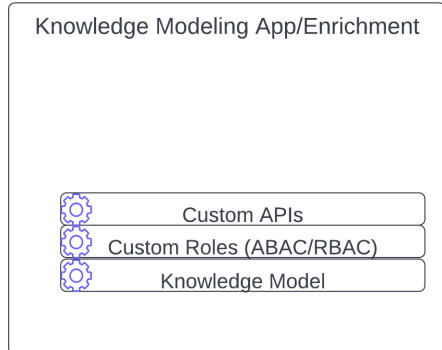
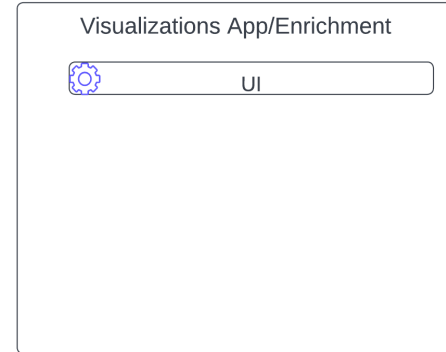
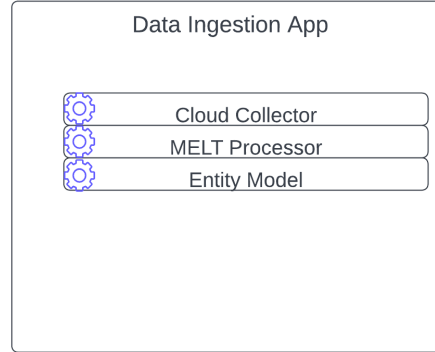
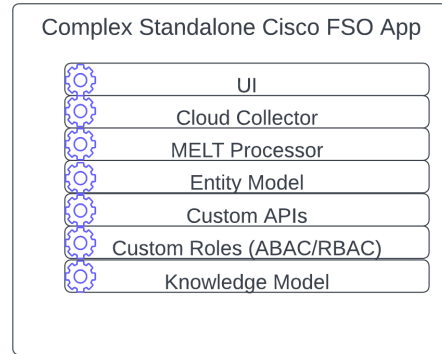
## Eg.2: AWS Entity Model



## Eg.3: Related models

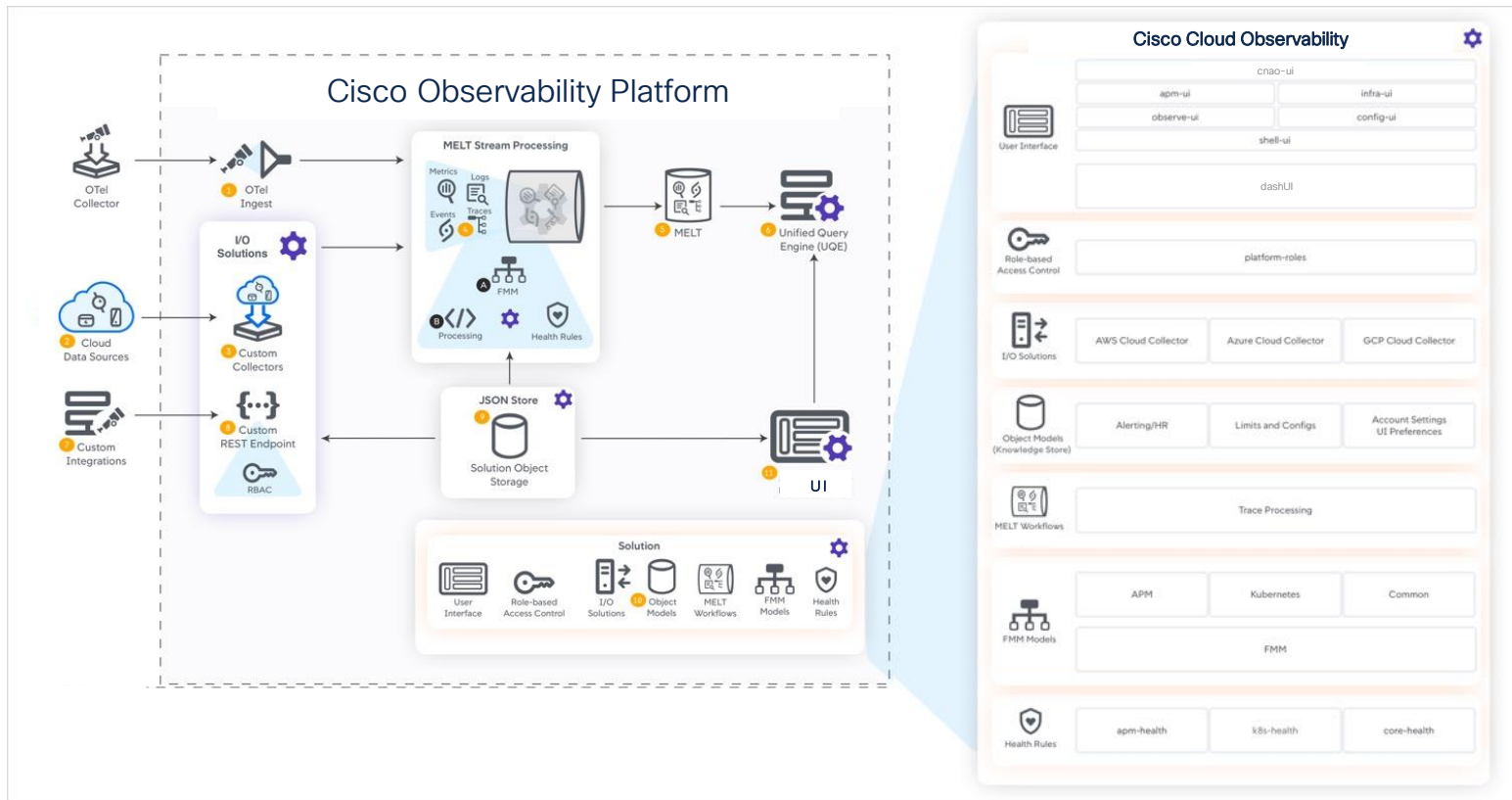


# Cisco FSO Platform – comprehensive Solution model

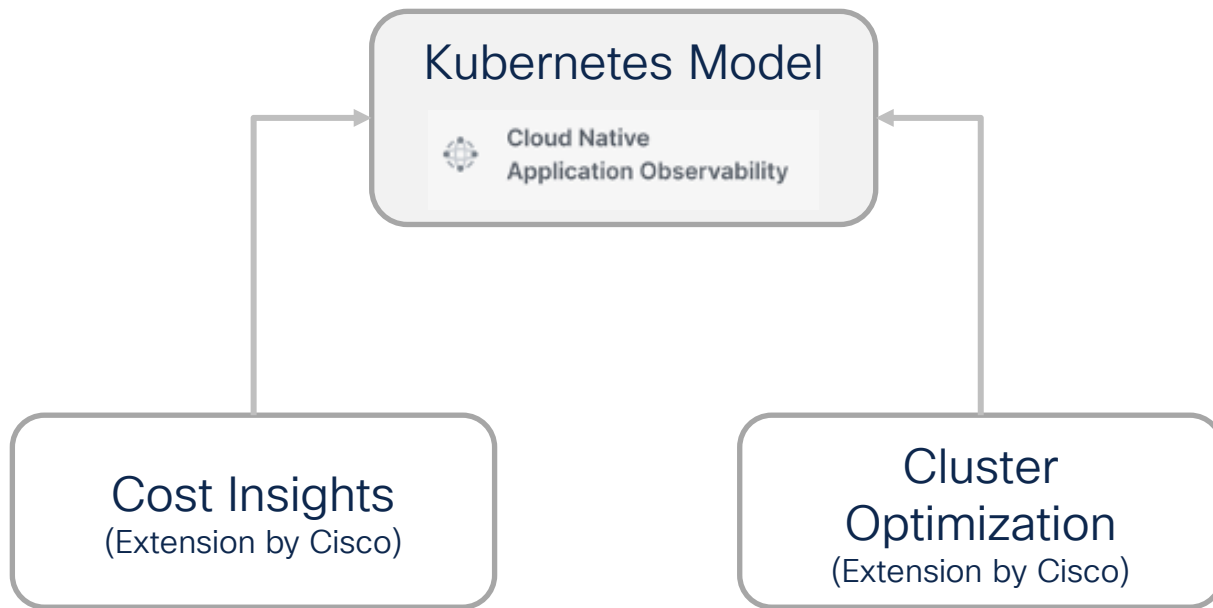


# Example: Cisco Cloud Observability

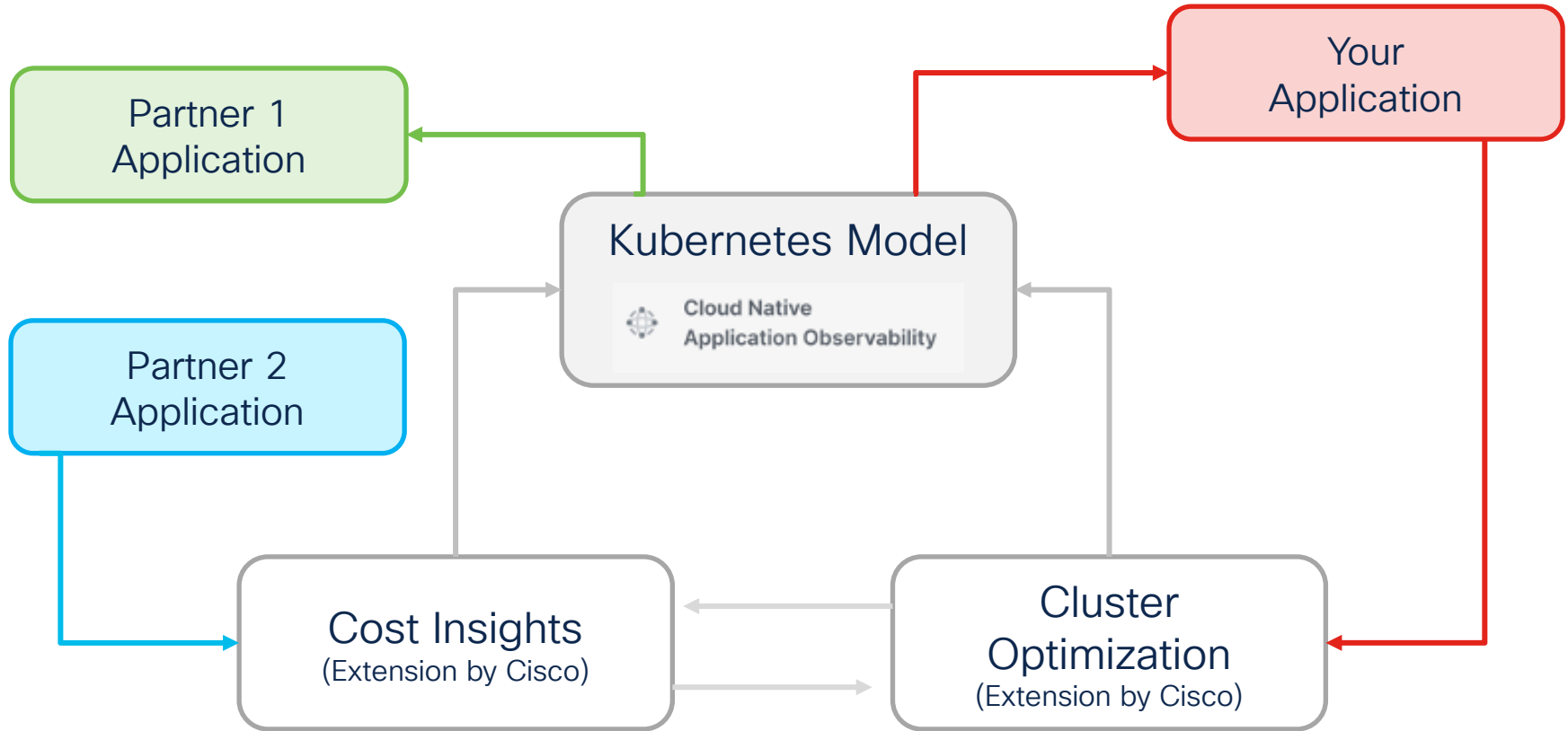
A complete application on Cisco Observability Platform



# Example: Extensibility via entity model enrichments



# Example: mutually beneficial relationships



# Agenda

- Full-stack observability (FSO):
  - How we got here
  - What is FSO and why now
  - What we mean by “full”
- Cisco FSO deliverables
  - Scope and Approach
  - Use-cases and integrations
  - Cisco FSO Platform
    - Architecture and Extensibility detailed
- Demos:
  - Cisco & Partners solutions / modules

# 18 Partner Modules @ Cisco Cloud Observability

by Cisco Amsterdam 2024

## FSO use cases



Vertical  
Business  
Insights

5



SAP

1



Networking  
Infrastructure  
& Operations

7



MLOps  
DevOps  
AI

4



Sustainability

1



Cisco Cloud Observability



Digital  
Experience  
Monitoring



Secure  
Application



AIOps



## Cisco Observability Platform

# 18 Partner Modules @ Cisco Cloud Observability

by Cisco Live Amsterdam 2024



## Vertical business insights

**ēVOLUTiō**

Fintech

Claims

Ecommerce

**softserve**

Operational Intelligence  
for Oil fields

**performit**

I4Clube Business  
Performance Monitoring



## SAP

**CloudFabrix**

SAP Observability



## Networking and infrastructure

**CloudFabrix**

vSphere Observability

Campus Analytics

Asset Intelligence

Operational Intelligence

Infrastructure Observability

**performit**

AS400 Monitoring

**komodor**

Kubernetes Change  
Management



## MLOps / DevOps / AI

**ēVOLUTiō**

MLOps powered by  
DataRobot

**aporia**

ML Observability

**NOBL9**

Service Level Objectives

**KANARI**

Capacity Planner



## Sustainability

**climatiq**

Cloud Carbon Insights

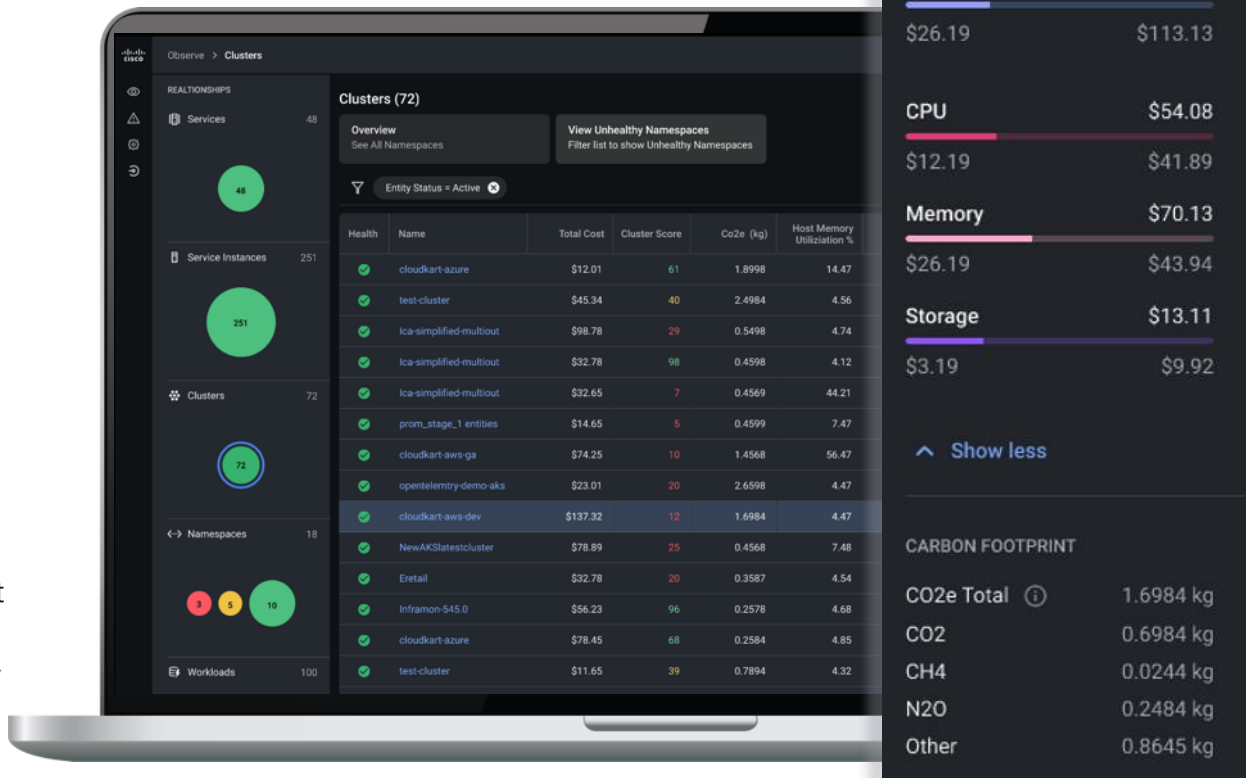
# Cost Insights by Cisco (1/2)

- Cost Analysis for K8s Resources
  - Understanding costs for K8s components
  - Visibility at Clusters, Workloads, Namespaces, Pods
  - Gain a deeper visibility into Cloud Spend
- Allocation vs Utilization
  - Compare allocation of resources to usage
  - Understand usage trends of Compute and Memory
  - Identify over-provisioned resources and saving opportunities



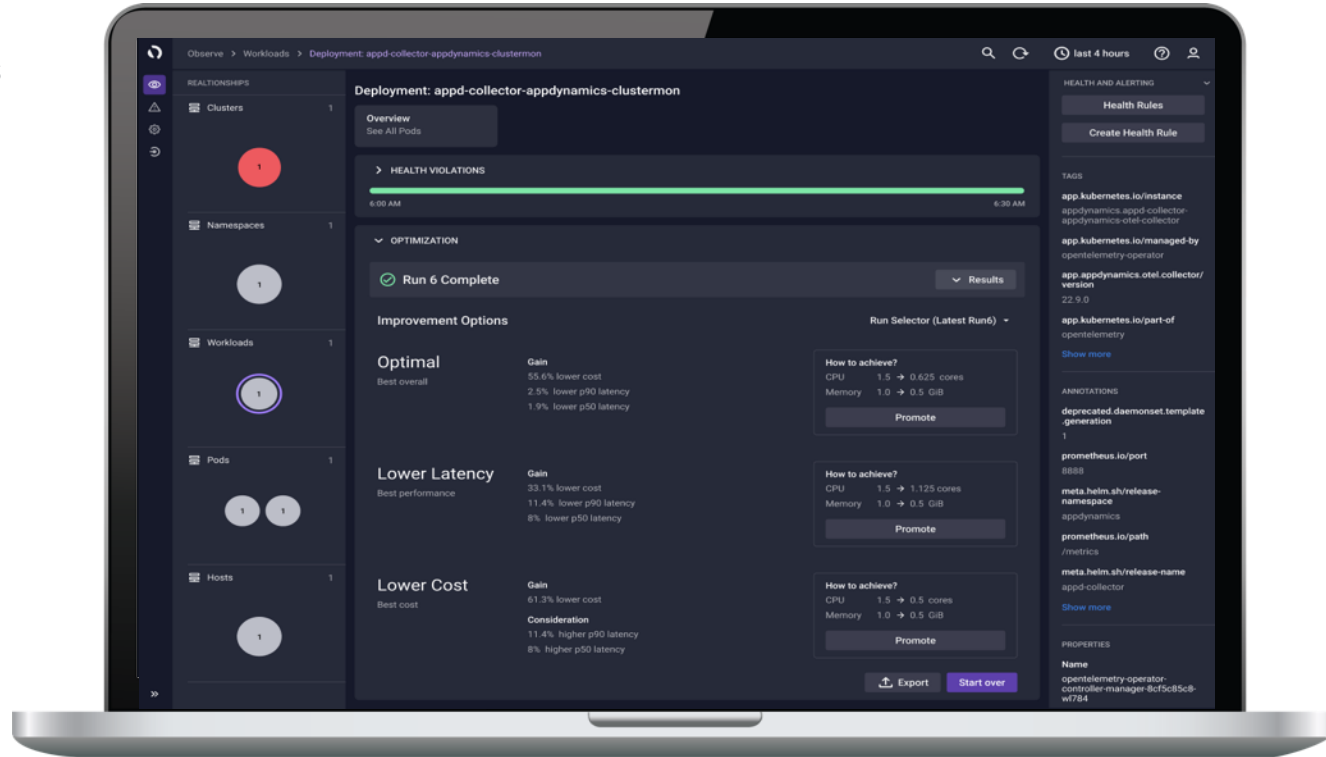
# Cost Insights by Cisco (2/2)

- Cost Insights for APM services
  - Correlate Cost data from Infrastructure with APM
  - Ability to track costs over time to understand spend
  - Manage Cost for cloud native services effectively
- Helping Customers become Sustainable
  - Granular visibility for customers to gauge their environmental impact
  - Identify workloads with high Co2 Impact with lower costs
  - Provide visible usage for ESG reporting
  - Leveraging ClimatIQ APIs to collect emissions data
  - Ability to offset carbon footprint by optimizing resources



# Application Resource Optimizer by Cisco

- Provide deeper insights into a K8S workload and provide visibility into the workload's resource utilization
- Analyse and optimize application workloads to maximize resource usage and reduce excessive cloud spend



# Security Insights by Cisco



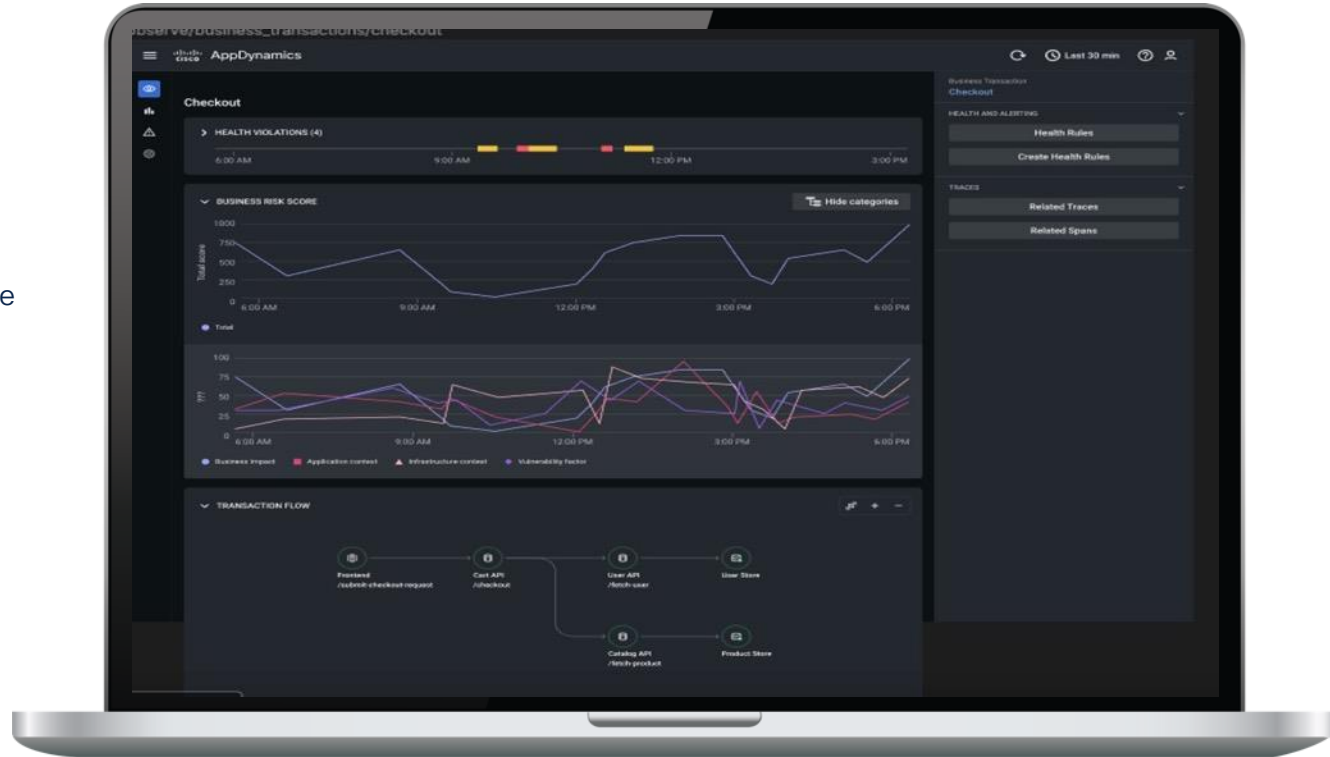
Locate and highlight threats and vulnerabilities across k8s and containers, securing deployment of modern applications on k8s



Detect and protect against leakage of sensitive data with pre-defined expressions to enable faster adoption of cloud services.



Combine threat and vulnerability intelligence with business impact and runtime behavior to provide a business risk score



# Business Risk Observability @ Security Insights

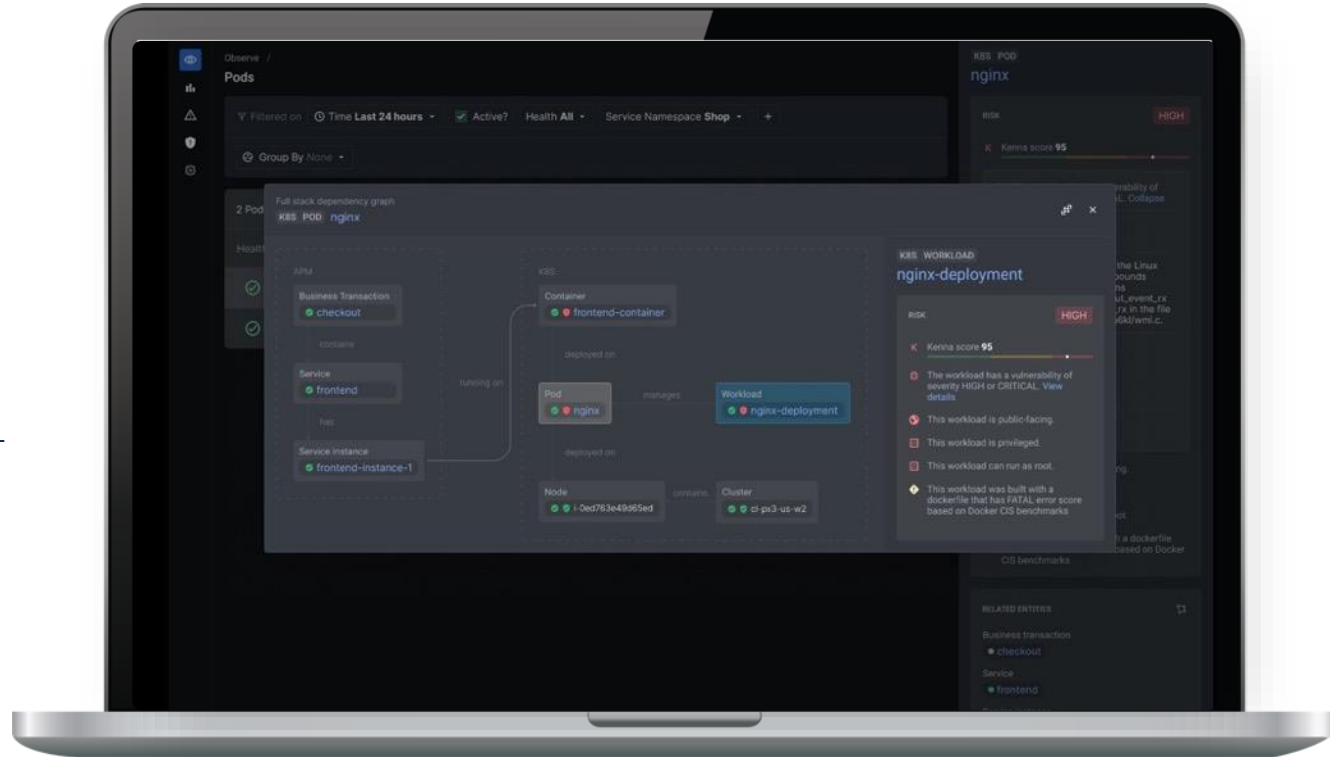
## Threats and Vulnerabilities Across Cloud-Native Kubernetes and Containers

### Integrated view on FSO

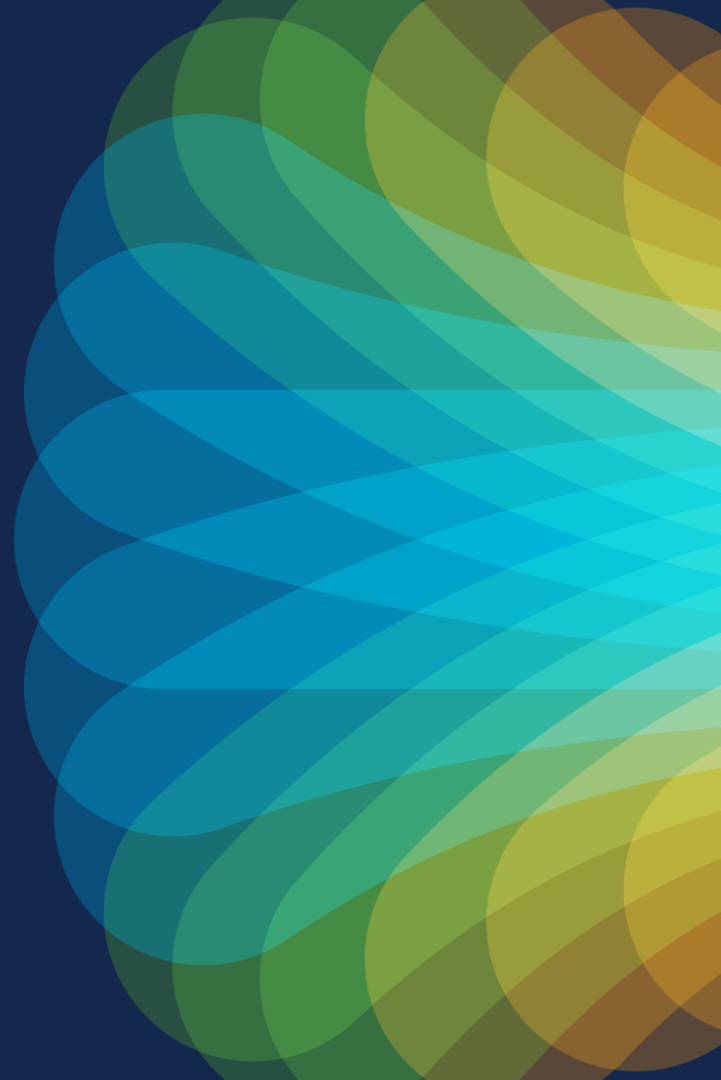
Detect, prioritize, and address container vulnerabilities and security threats right from your observability dashboard

### Factor in business risk

Combine findings into your application context for business-level risk scoring



# DEMOS

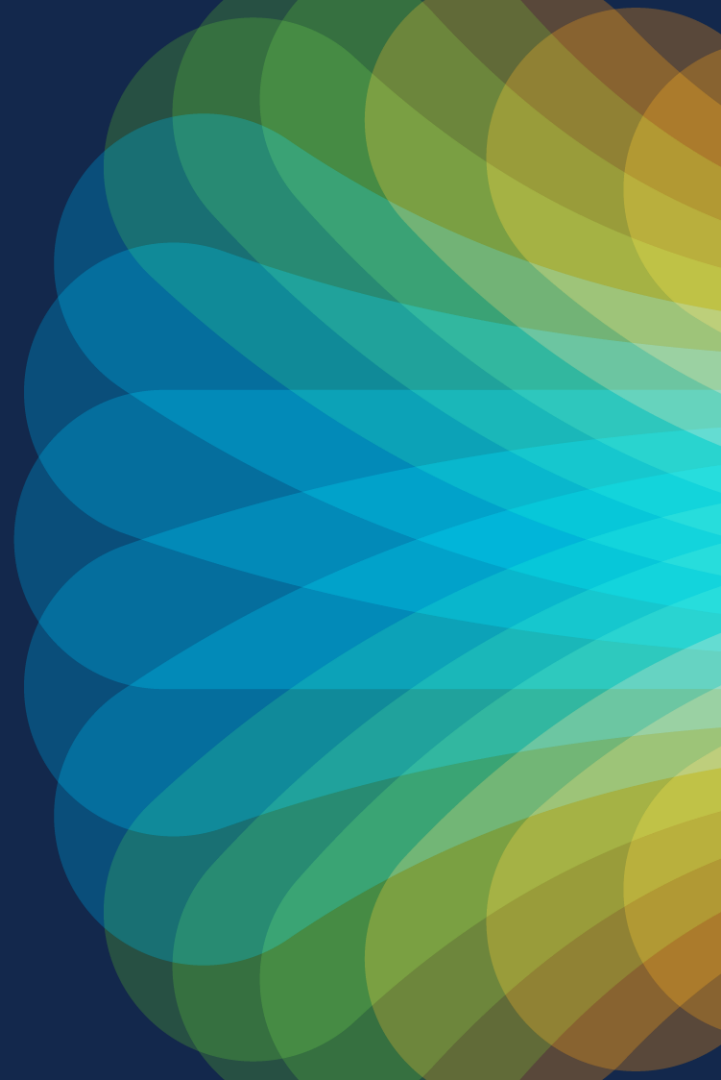




The bridge to possible

# Thank you

CISCO *Live!*



The background of the slide is a vibrant, abstract graphic. It features a large, stylized cloud shape on the left side, composed of overlapping, semi-transparent bands of color in shades of red, orange, yellow, and green. To the right of the cloud, a bright, multi-colored sunburst or starburst pattern radiates outwards, with colors transitioning from yellow and orange in the center to blue and green towards the edges. The overall effect is energetic and colorful.

cisco *Live!*

Let's go