

CISCO *Live!*



#CiscoLiveAPJC



The bridge to possible

Driving Network Automation

Through application visibility and event correlation

Aleksas Vitenas, Director Service Creation

@alvitena

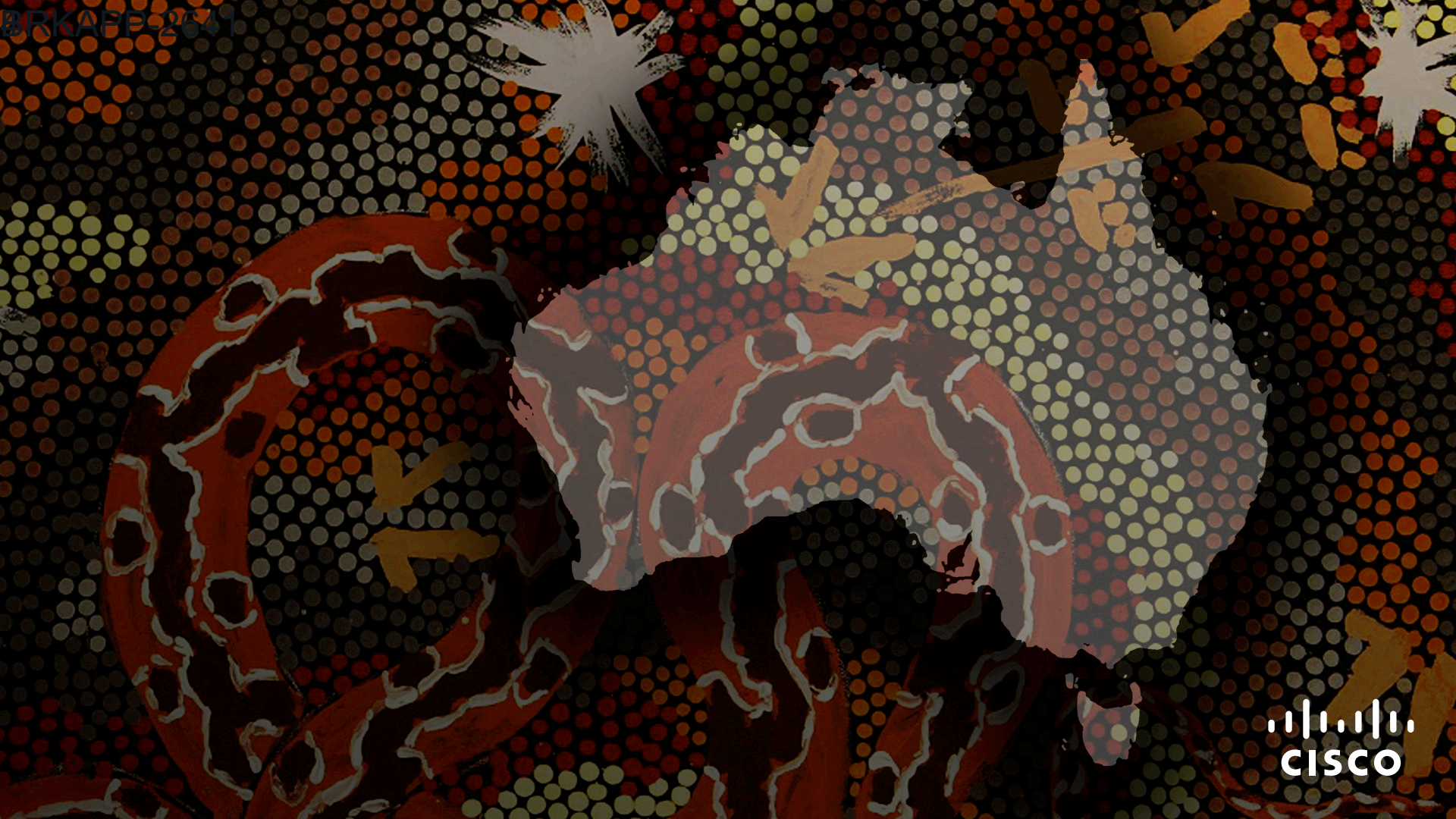
Russ Atkin, Global Service Creation Lead – Managed Full-Stack
Observability

@ruatkin

BRKAPP-2641



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Cisco Webex App

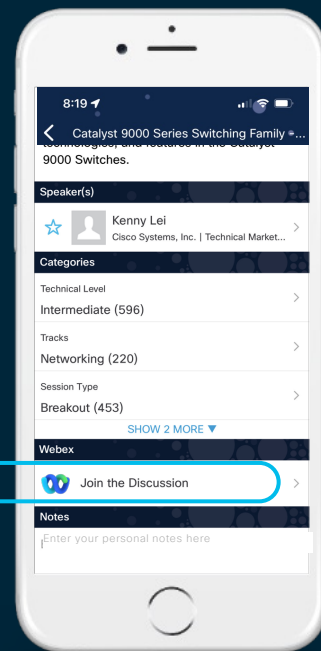
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Agenda

- Introduction
- Overview of AIOps
- Functional Architecture
- Full-Stack Observability
- How FSO supports Functional Architecture
- Conclusion

Some Definitions...

AIOps (*Artificial Intelligence for IT Operations*)*

AIOps combines big data and machine learning to automate IT operations processes, including event correlation, anomaly detection and causality determination.

*Gartner.com Definition

FSO (*Full-Stack Observability*)**

A modern approach to gleaming insight into the performance of complex environments, applying analytics on deep and broad pools of telemetry data (metrics, events, logs, and traces) collected from an array of sources (applications, networks, internet, compute infrastructure, cloud services, Kubernetes, service mesh, microservices, etc.). Full-stack observability allows for easy visualization and troubleshooting of the entire software stack in one connected experience, including APM, Infrastructure Monitoring, Serverless Monitoring, Digital Experience Monitoring, and Logs in Context.

**Gartner Definition used in FSO Market Research Study conducted for Cisco March 2022

FSO (*Full-Stack Observability*)***

Full-stack observability provides technologists with unified, real-time visibility into IT availability and performance up and down the stack for compute, storage, network and public internet, from the customer facing application all the way into the back-end. It enables IT operations, development and networking teams to quickly and easily identify anomalies, understand root causes through dependency analysis, and fix issues before they impact end users and the business. And when this IT performance data is connected to business outcomes, technologists can rank issues based on their potential impact to the organization and prioritize actions accordingly.

***AppDynamics "Journey to Observability" Study March 2022

Managed Services & Full-Stack Observability

Studies show that MSP's are uniquely positioned to deliver on the outcomes that enterprises are looking for

98%



Top reason for
FSO

75%



Greatest
barrier to
achieving
Outcomes

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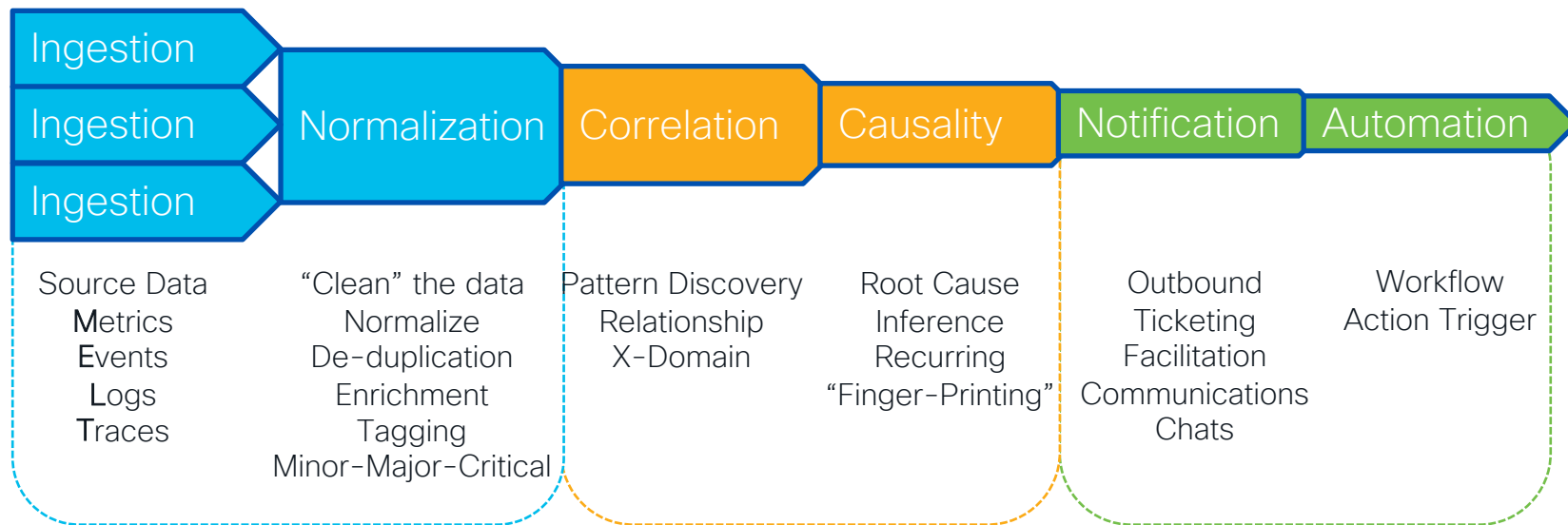
93%



In the coming
year

Overview of AIOps

Key Elements

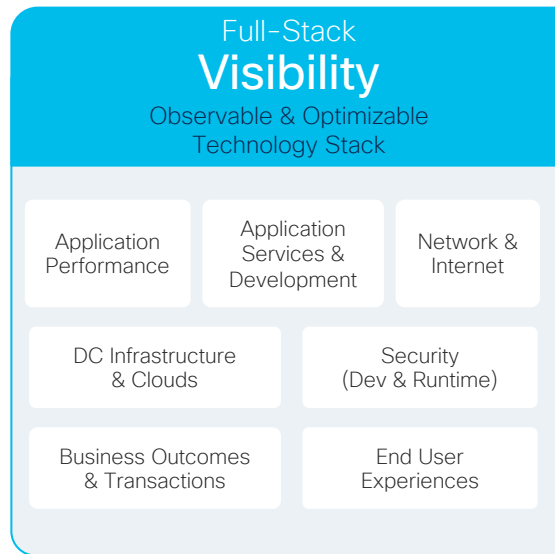


Consider Domain-Centric vs. Domain-Agnostic when considering Platforms – Not all elements may be available

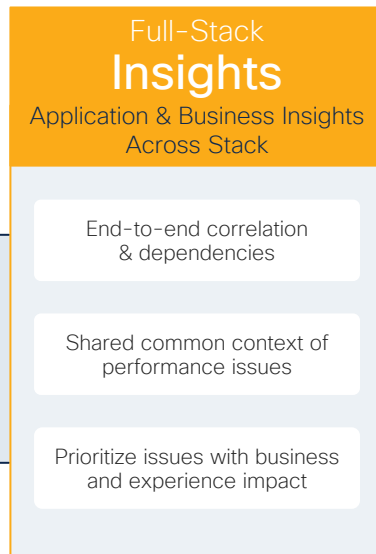
Full-Stack Observability

with Business Context

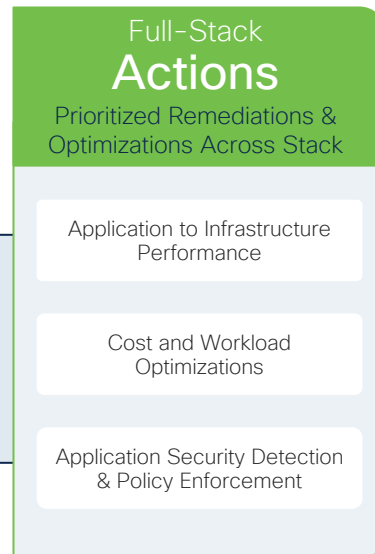
Prioritize issues with Business Context



M.E.L.T & OpenTelemetry

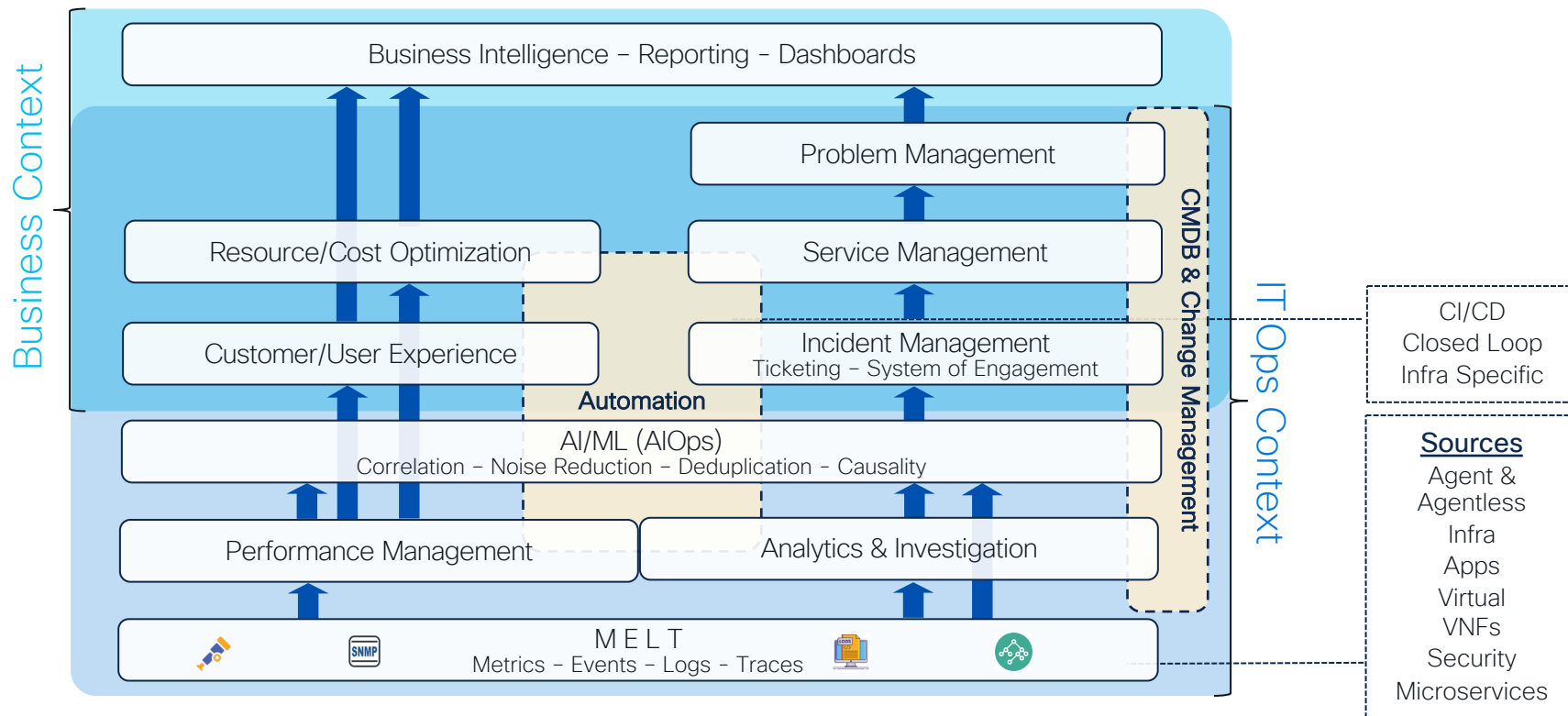


Transactions, Incident, KPIs

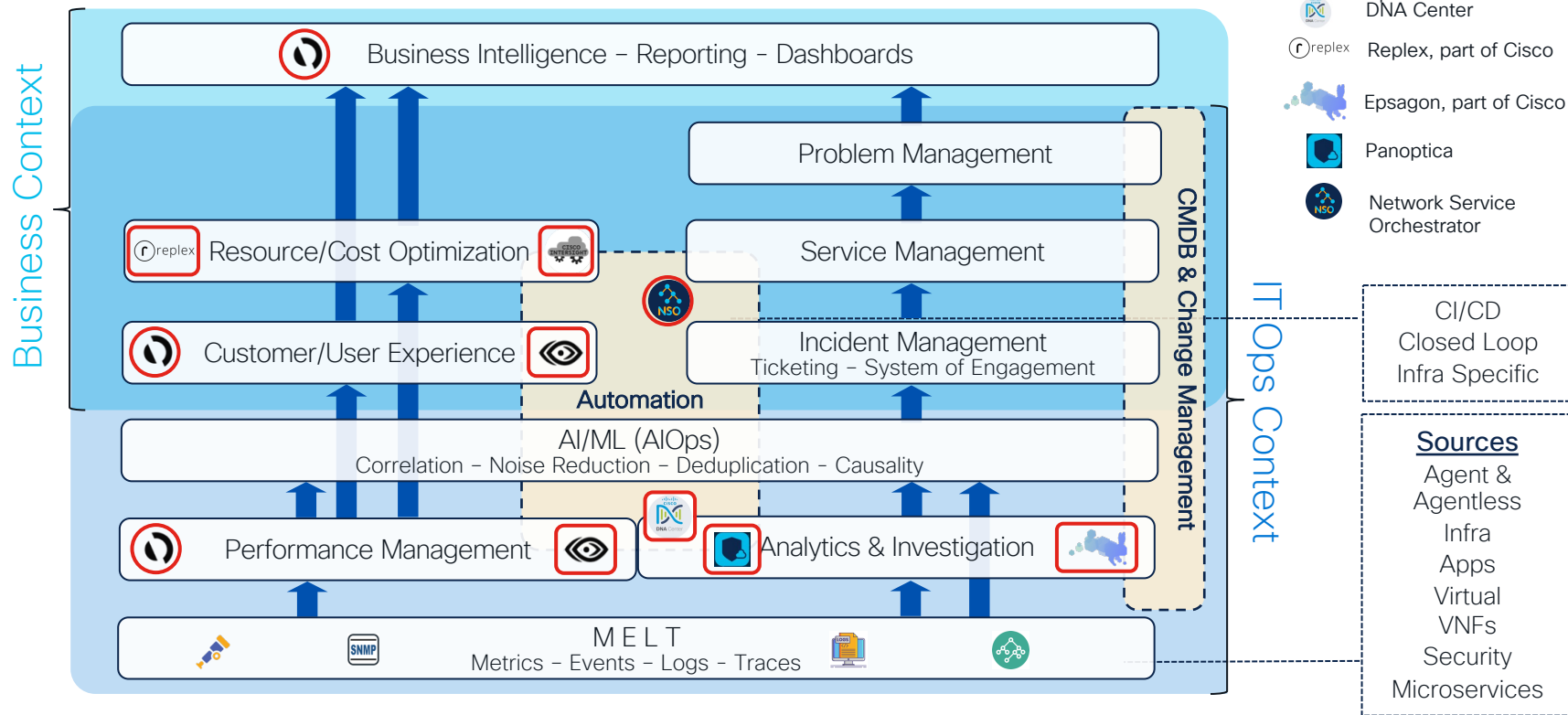


Full-Stack actions for the business

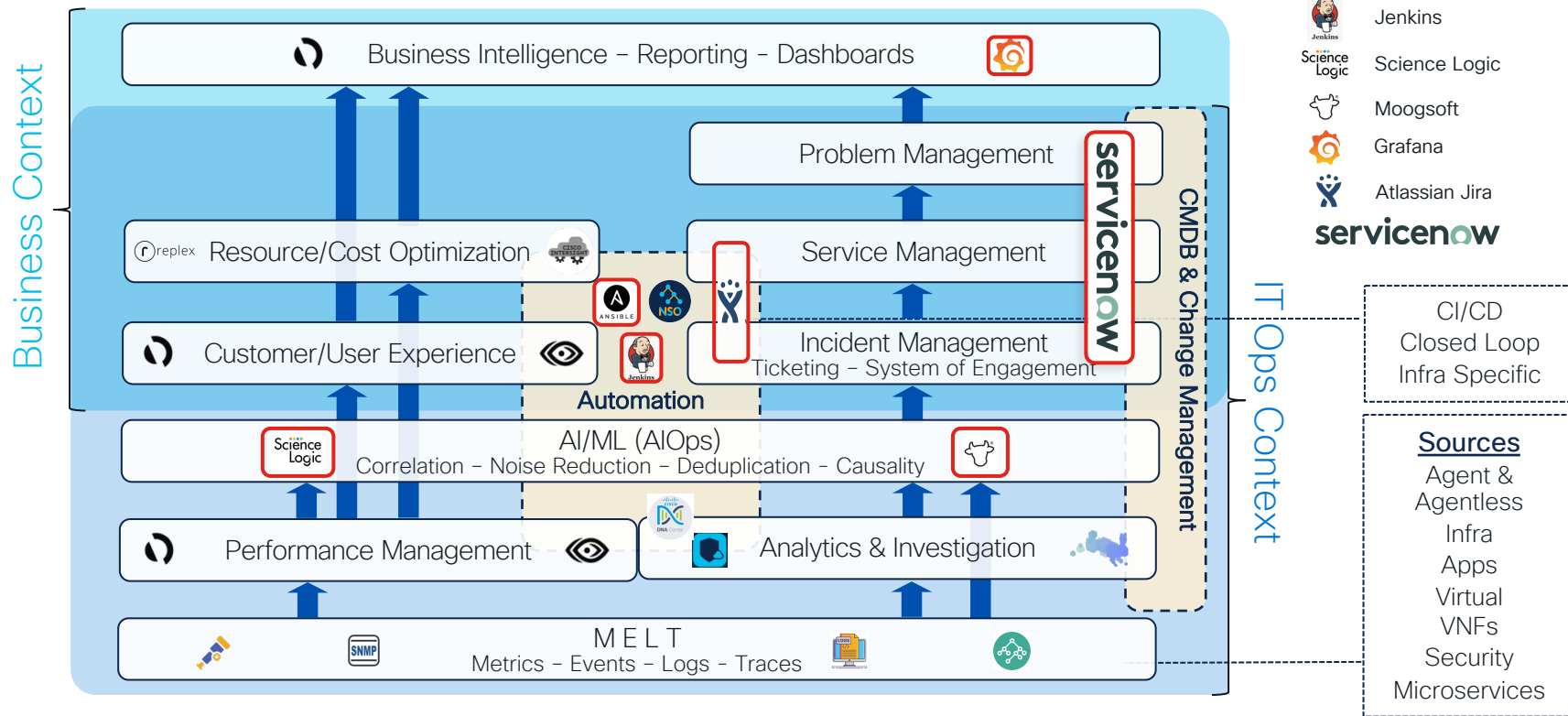
Functional Architecture



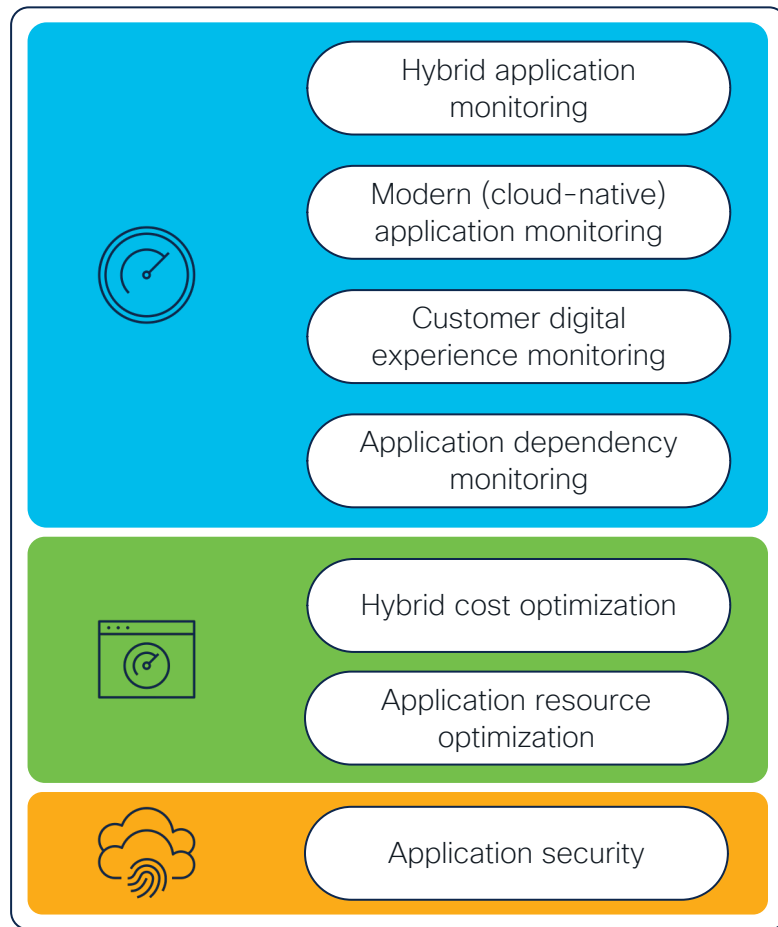
Functional Architecture



Functional Architecture

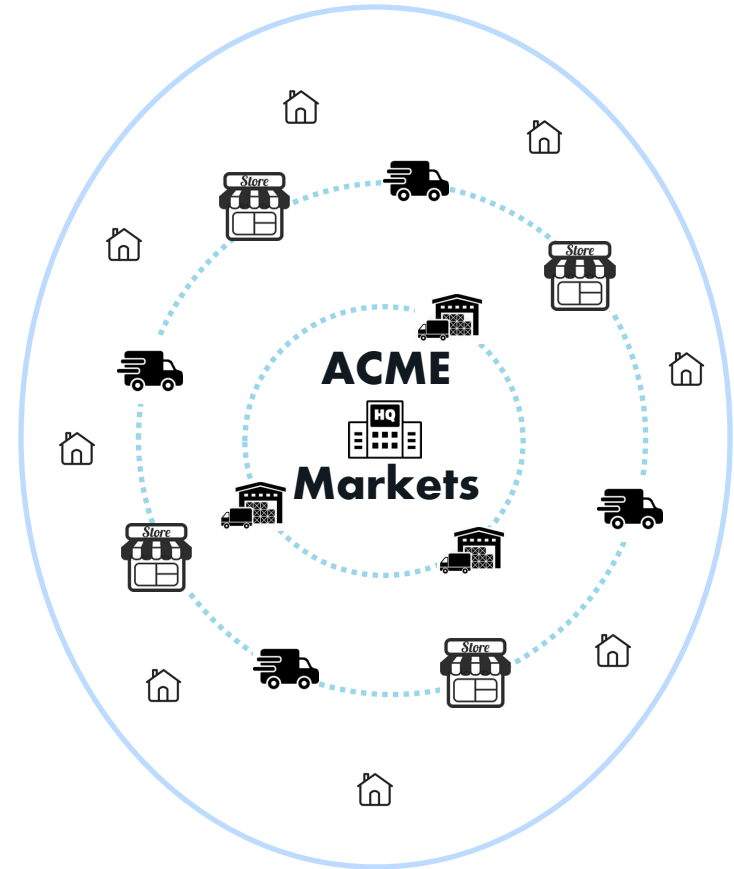


Partner Alignment to Full-Stack Observability Use Cases



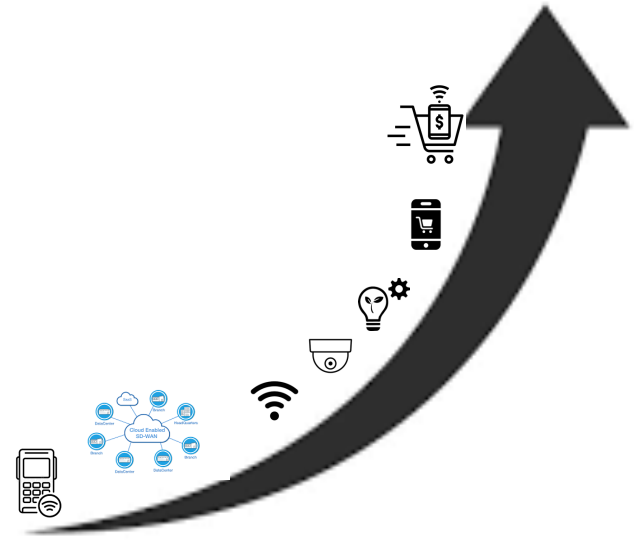
Scenario – “Acme Markets”

- Acme Markets is a countrywide grocery chain transforming its business by the way they interact, sell and deliver their products and services to their customers.
- They have added new products and services including a new App “RoadRunner” that allows their customers to order items for instore pickup or home delivery. In addition, that have recently began looking at cashier-less in-store shopping leveraging the latest in IoT technologies
- While Acme’s leadership is pleased with the progress of their digital transformation, they are finding it brings a new set of operational challenges. The CIO has identified observability and AIOps as a solution.



Acme Markets – Digital Transformation Journey

- Acme's transformation started with updated POS solution, instore security/environmental controls and of course courtesy WiFi
- Their stores, HQ and Distribution warehouses are connected with a SDWAN solution that provides security and redundant connectivity
- Recently Acme hired a leading developer "Bugs AppCo" to create their personal shopping app "RoadRunner"



Acme Markets – a Day in the IT Ops life



➤ Payment g/w issues



➤ Workload Management



➤ Redundant SDWAN issues



➤ “RoadRunner” Retail App Performance issues



➤ DB Issues at Warehouse



➤ DevOps team testing new release







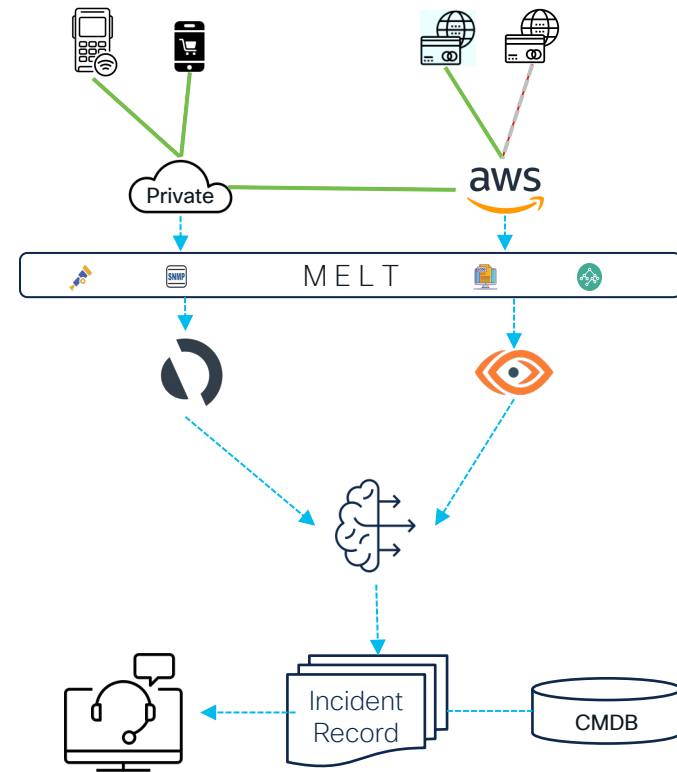
➤ Security Breach from hacker Wiley

Coyote





Day in the IT Ops life

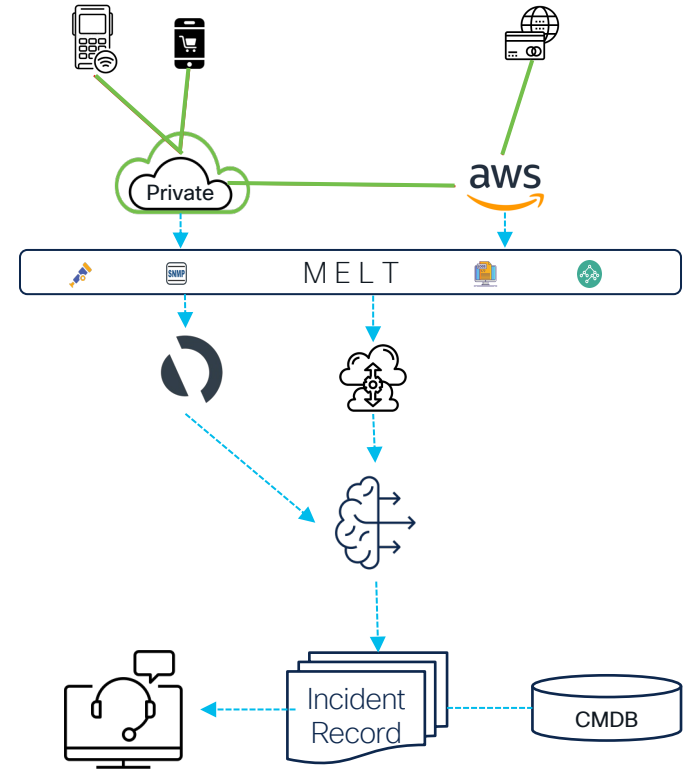
Payment Gateway Issues

	0814h
	Acme's MSP, "Sylvester Services", receives an alert that was generated from the ThousandEyes agent located at "Payment GW Services" indicating a potential issue with processing time sensitive credit and debit card payments...
	Metric data is correlated into a single incident with other observability metrics to create a new ticket & assigns incident to operator for action. Causality points towards Issues with Payment Gateway Provider
	The NOC Operator reviews all the relevant information, sees the performance issues and redirects traffic to alternate payment gateway







A Day in the IT Ops life Workload Management

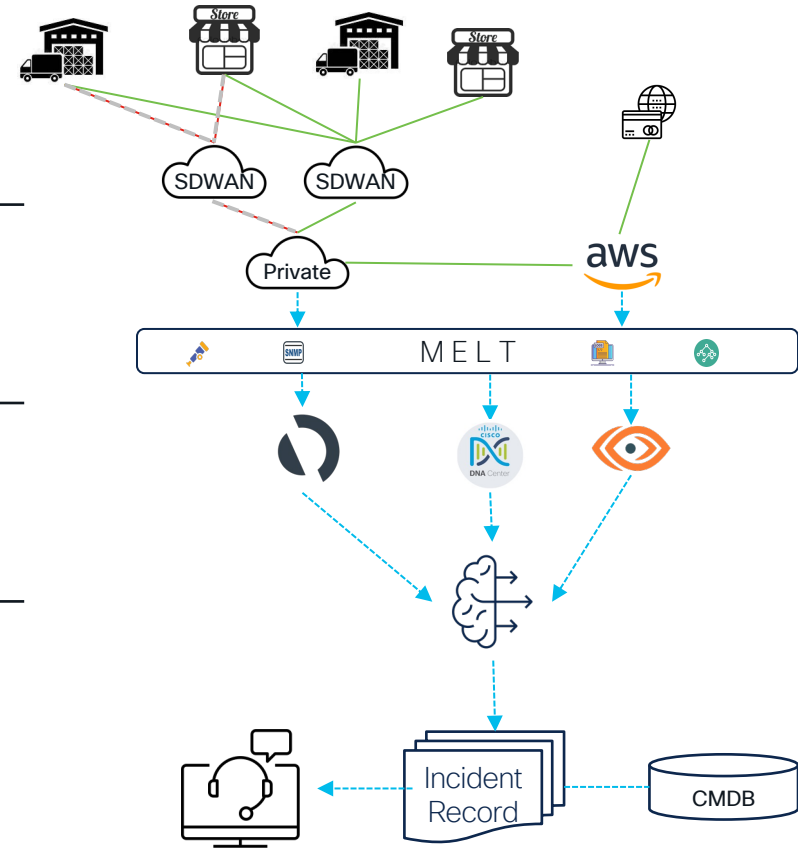
	1003h
	Holiday sale results in a rapid increase in customers processing orders online and in-store... demand has the potential to significantly degraded customer experience and could lead to loss of revenue
	Real User Monitoring along with Application Performance Metrics create a ticket with Causality pointing to lack of processing resources to support the POS Application
	The NOC Operator reviews all the relevant information, confirms lack of resources and initiates automation script for Workload Optimizer to increase applicable resources to handle the increase order volume



A Day in the IT Ops life





SDWAN Issue

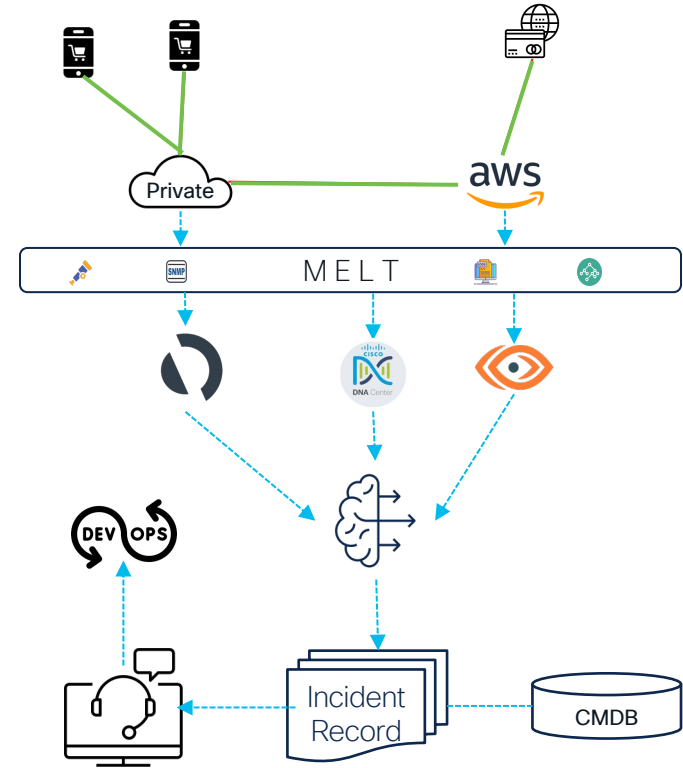
	1123h
	Some of Acme's stores and warehouses are experiencing random performance and overall application availability impacting orders and customer in-store experience
	Metric data correlated across User Monitoring, element monitoring and Network latency... <i>Causality has determined localized issues with a regional carrier.</i>
	The NOC Operator reviews all the relevant information, within ThousandEyes they can clearly see a carrier's POP is derogated and an alternate route is suggested... traffic is re-routed, and normal operations resume.



A Day in the IT Ops life





Retail App Performance Issues

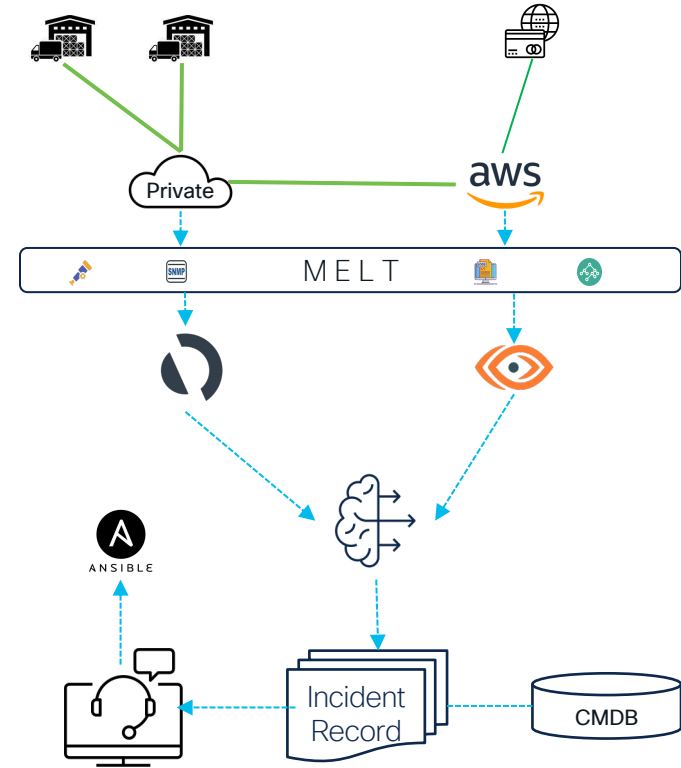
	1337h
	DevOps team has deployed a new feature to the RoadRunner App and customers are having a poor experiencing.
	Metric data correlated across User Monitoring, element monitoring and Network latency... <i>Causality has determined a bug in the RoadRunner App specific to the UI with Apple Devices</i>
	The NOC Operator reviews all the relevant information, engages the DevOps team who review the code and push an immediate fix.



A Day in the IT Ops life

DB Inventory Issues

	1352h
	Staff at all of Acme's warehouses are unable to complete orders due to the Inventory system being unavailable. Just in Time delivers are at risk to the retail stores and customers.
	Metric data correlated across User Monitoring, element monitoring and Network latency... Causality has determined DB Cluster caching issues in the public cloud instance.
	The NOC Operator reviews all the relevant information, they see this incident matches a known problem and execute a script to clear cache to restore normal operations.



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The bridge to possible

Thank you

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