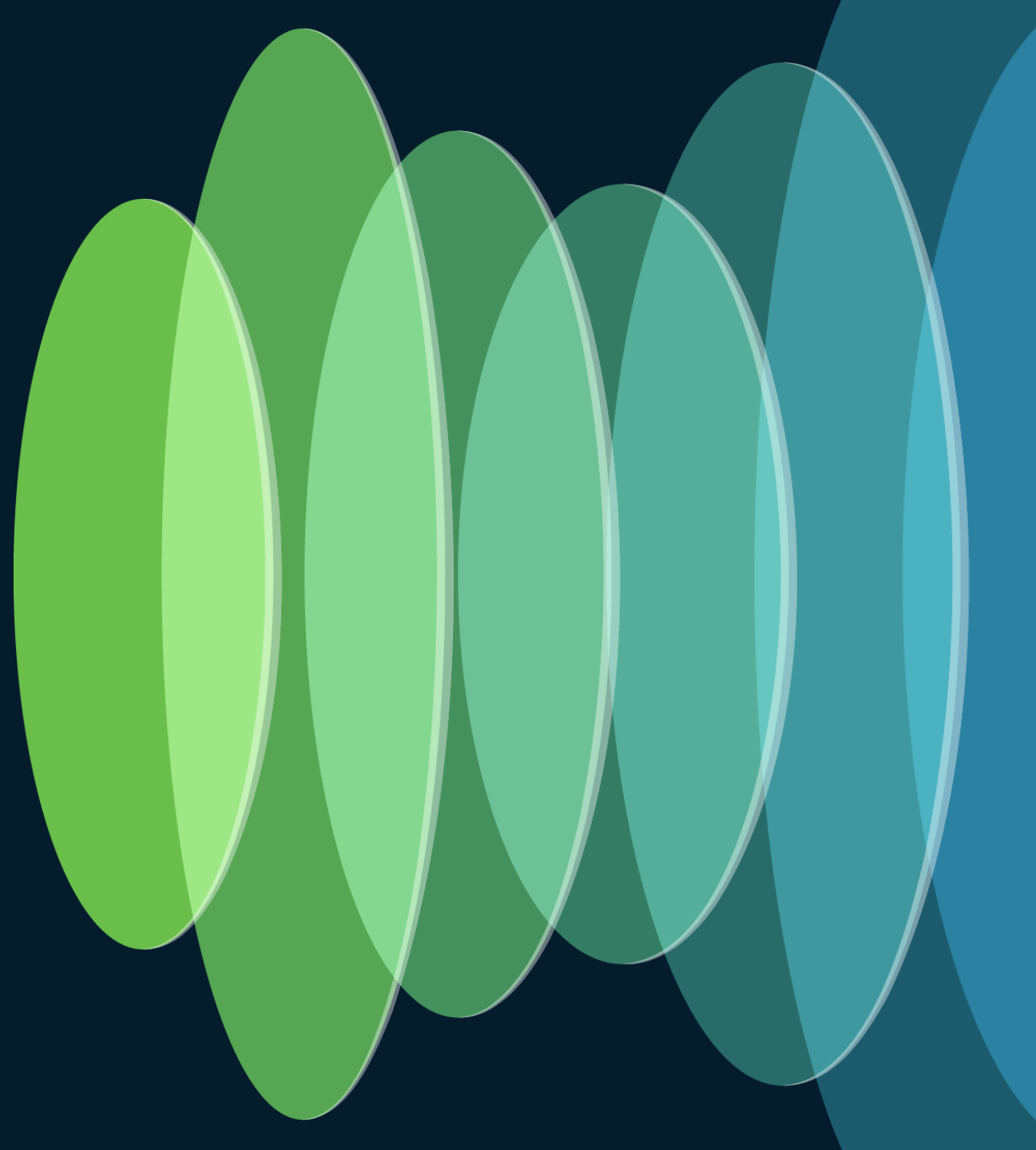


CISCO *Live!*
IT Leadership Program

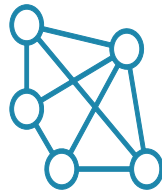




Next Gen Infrastructure with AI, Security & Observability

Ishan Mehta, Director, Software Engineering
ITLGEN-1016

Agenda



AI Ready
Infrastructure



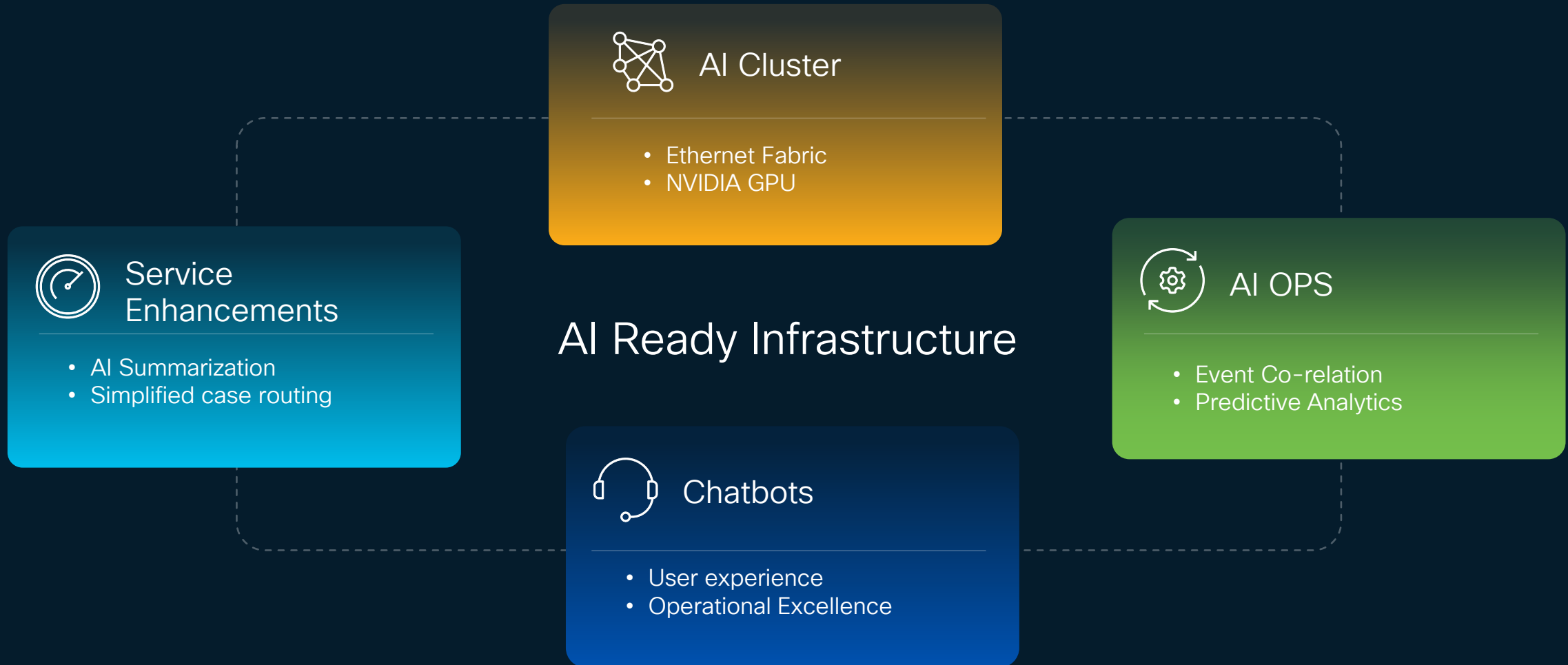
Security
Strategy



Observability
Journey

AI Ready Infrastructure

AI in Infrastructure



AI Cluster

First fabric built on
Silicon One ASICs

SONiC Operating
System with Cisco
8000 Switches

Ethernet-based
architecture

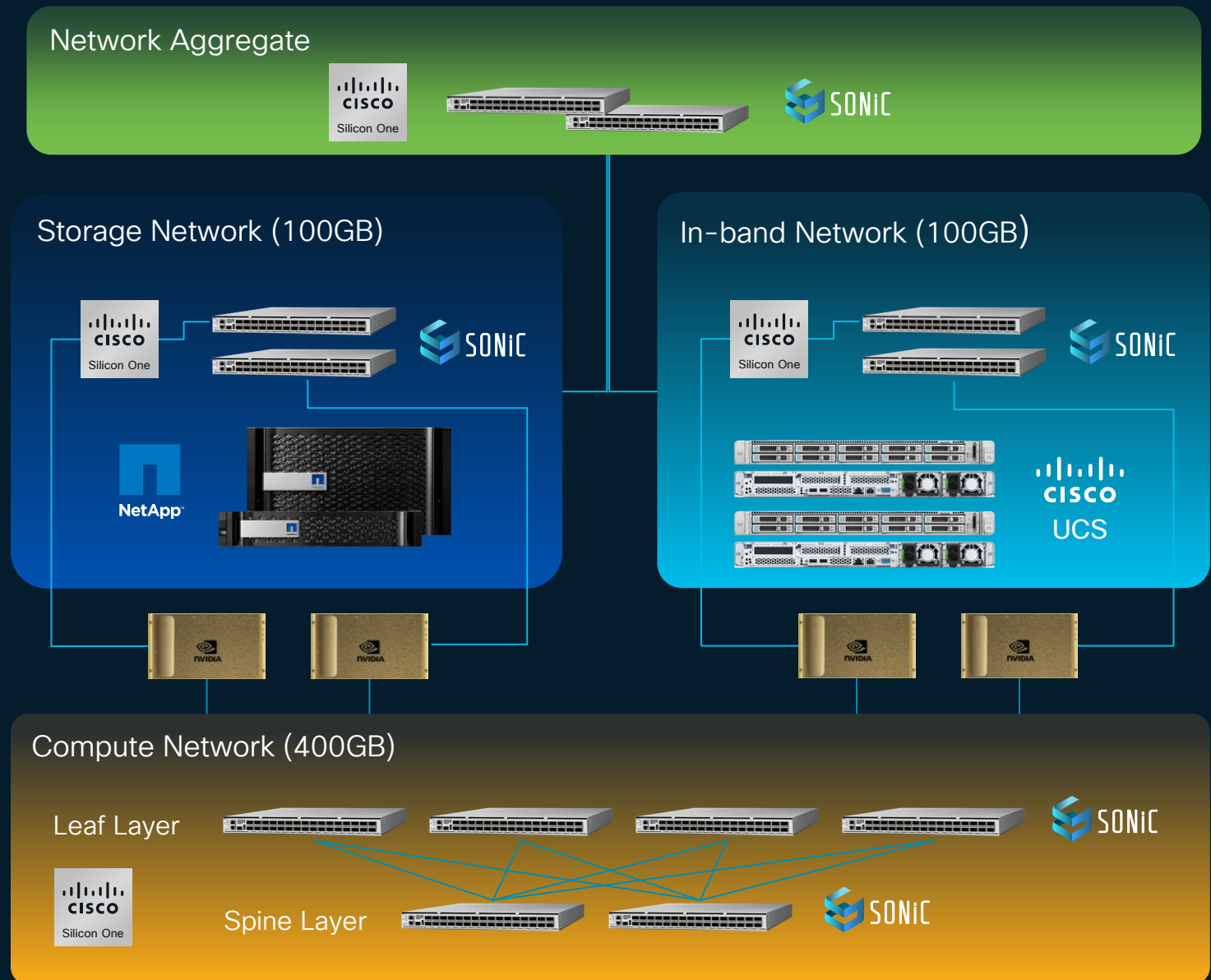
32 Nvidia compute
nodes (8 GPUs each)

32 PetaFLOPS AI
performance per
node

12.8T throughput
per compute leaf

400G non-
blocking compute
fabric

4 NetApp AFF
A900 nodes



Operational Excellence with AIOps

Noise Reduction

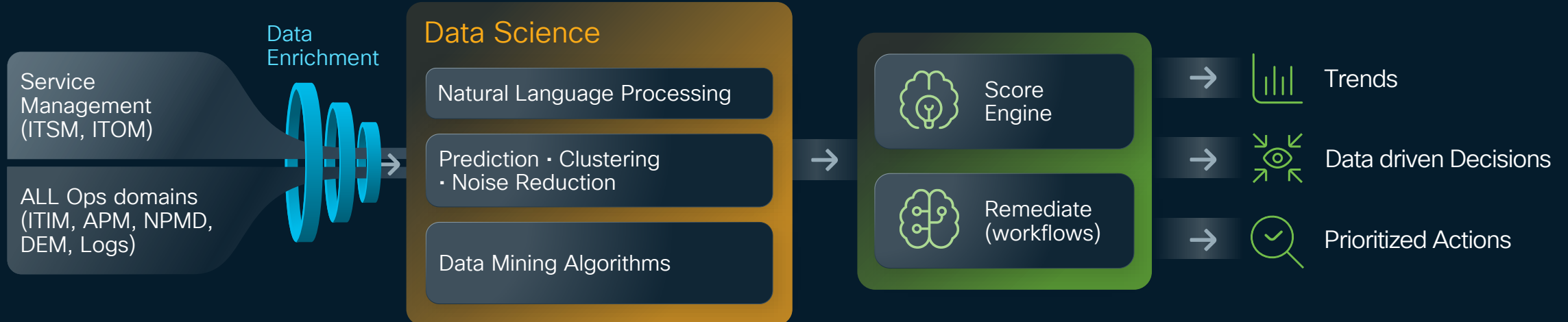
Content and time-based
event grouping;
Event Deduplication

Event Clustering

Decision-making based on
results from prediction &
clustering

Predictive Events

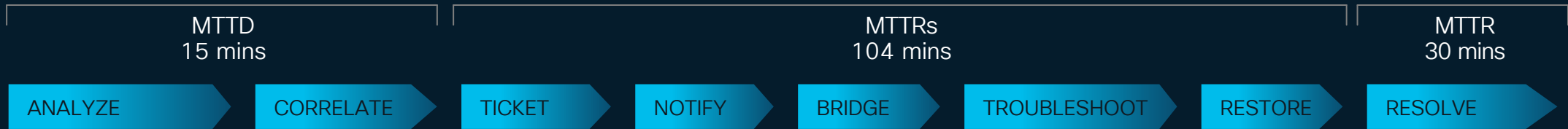
Model training on historical
correlated events with
incidents data



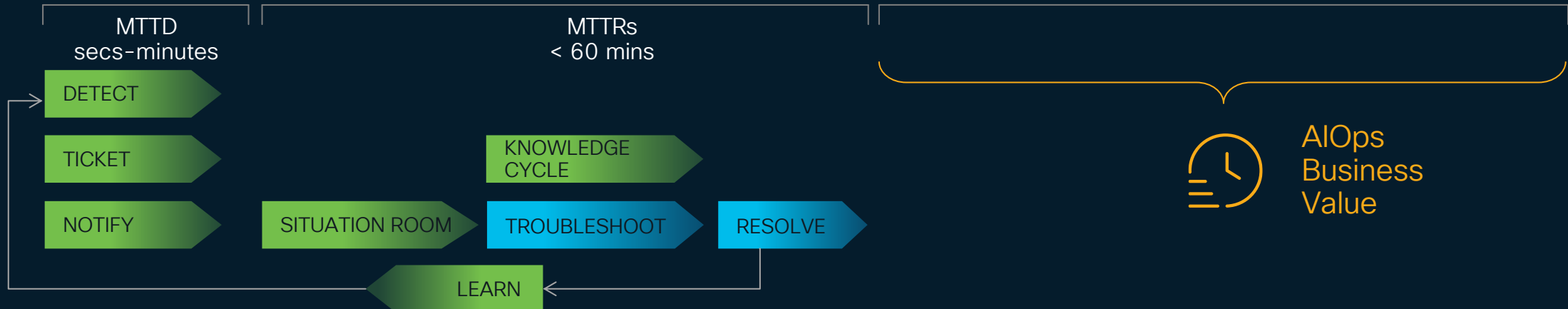
Business value of AIOps

● Humans ● Algorithms

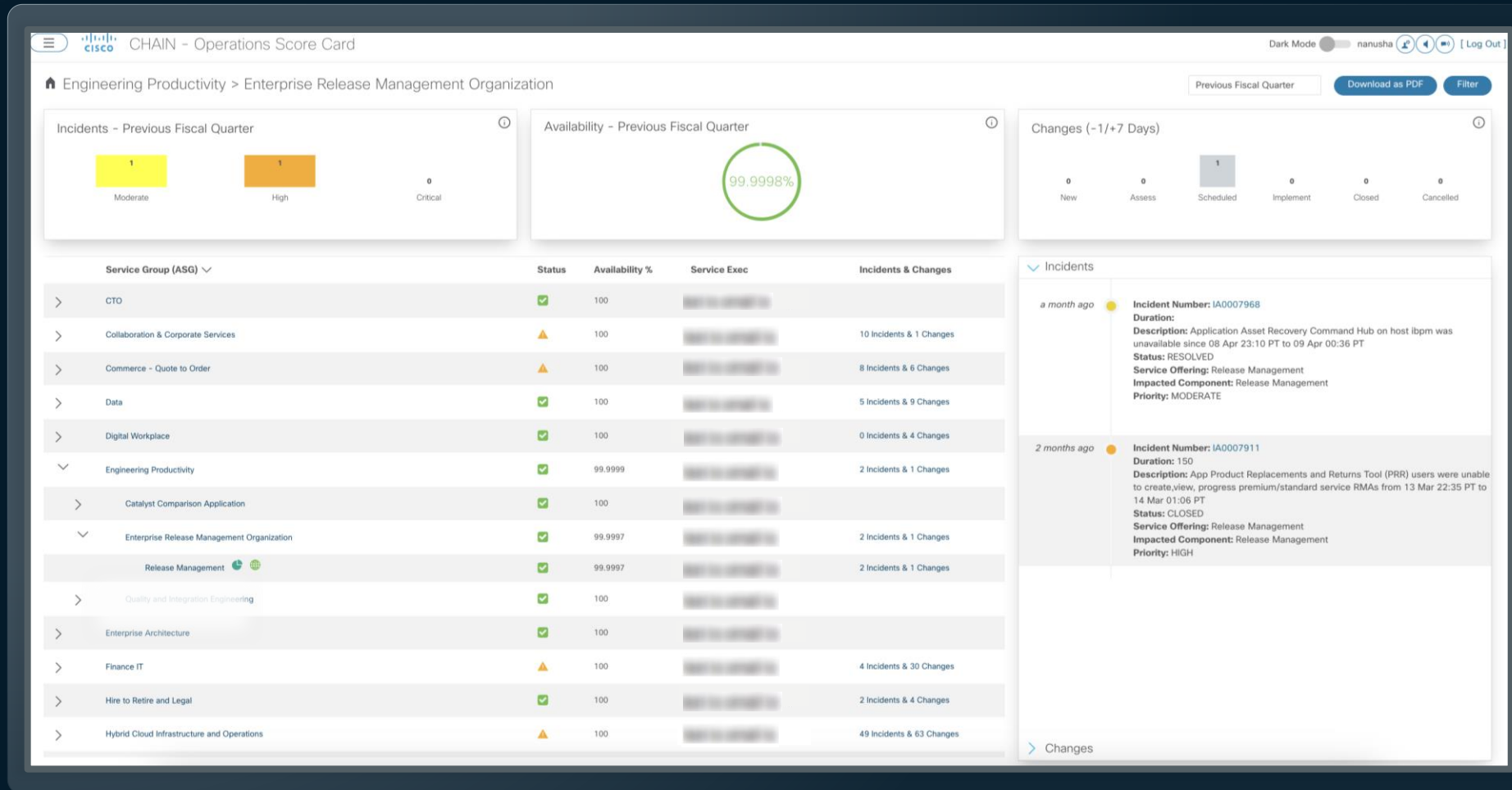
Before AIOps



After AIOps



CIO view



Real-time IT Availability with insights into ongoing Incidents and changes

Drill-down view to business functions and related business impact

Assistant as-a-Service

AI-based advanced **client service platform** to provide **safe, accurate** and **conversational** client support across various services.

20% Operational case reduction within 1 quarter
Target reduction: 50%

Service Provider

Create your own assistant (CYOA)

Bring your own documentation (BYOD)

The image shows two overlapping UI windows from a web application. The background window is titled 'Create a New Assistant' and contains several input fields: 'Name' (with value 'CLDemo'), 'Assistant Identifier' (with value 'cldemo-test'), 'Description' (with a template sentence), 'Instructions' (with a paragraph about being a domain expert), 'Triggers' (with a sentence about automatic triggering), and 'Owners' (with value 'cl-demo'). Each field has a character count. The foreground window is titled 'Upload' and shows a file upload interface with a dropdown menu set to 'CLDemo', a 'Browse File' button, and a file named 'CL-Demo.json' already selected. Both windows have 'Cancel' and 'Submit' buttons at the bottom.

Service Enhancements: AI Features



SO Prediction



Predict Similar Case/KB



Summarization



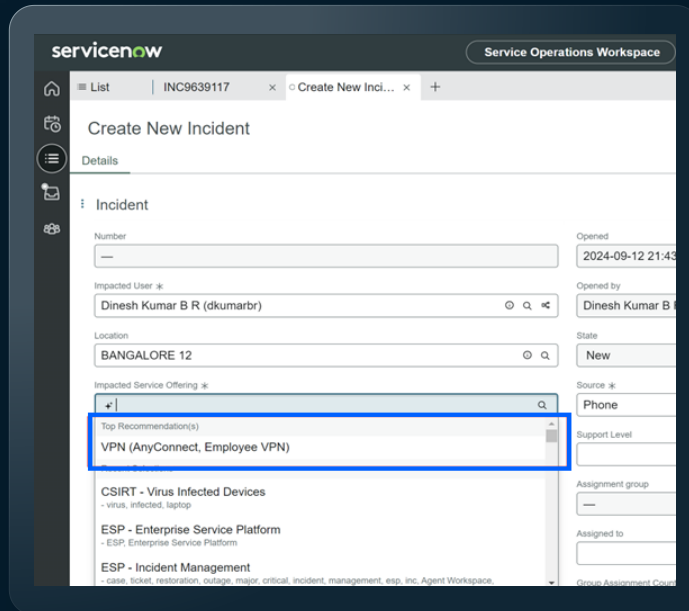
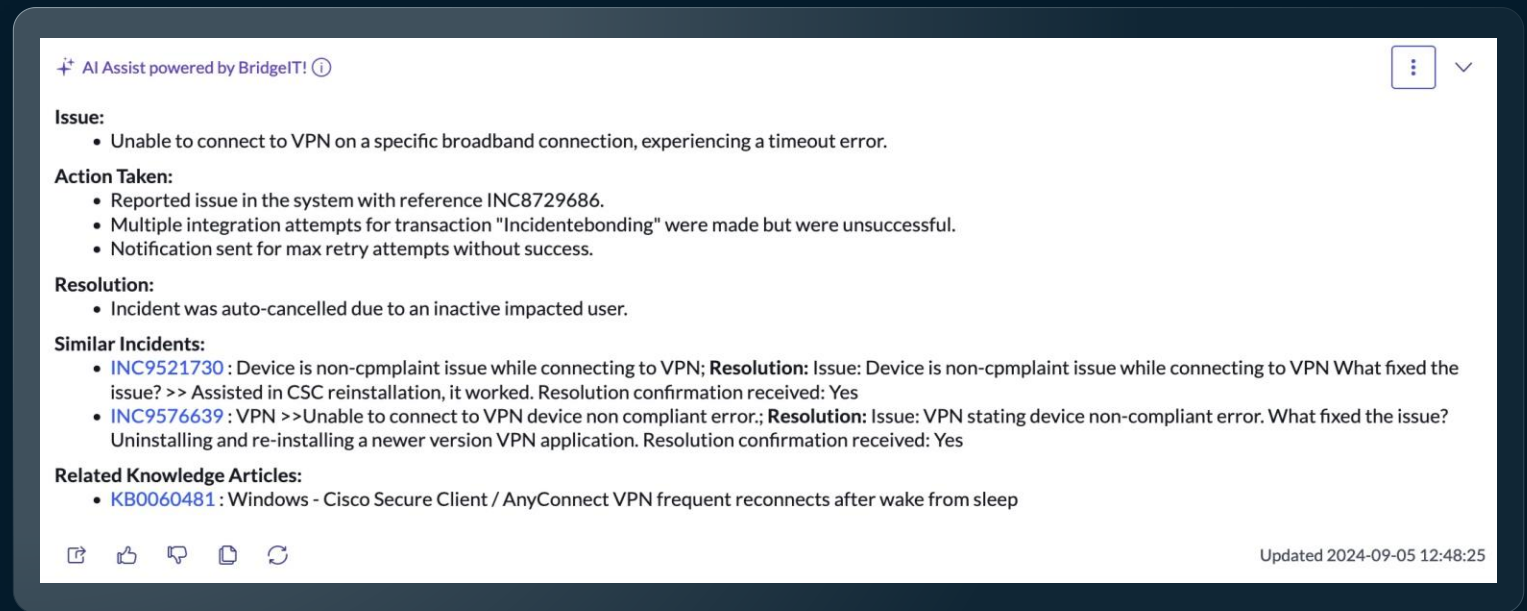
Resolution Generation



CR Review Summary

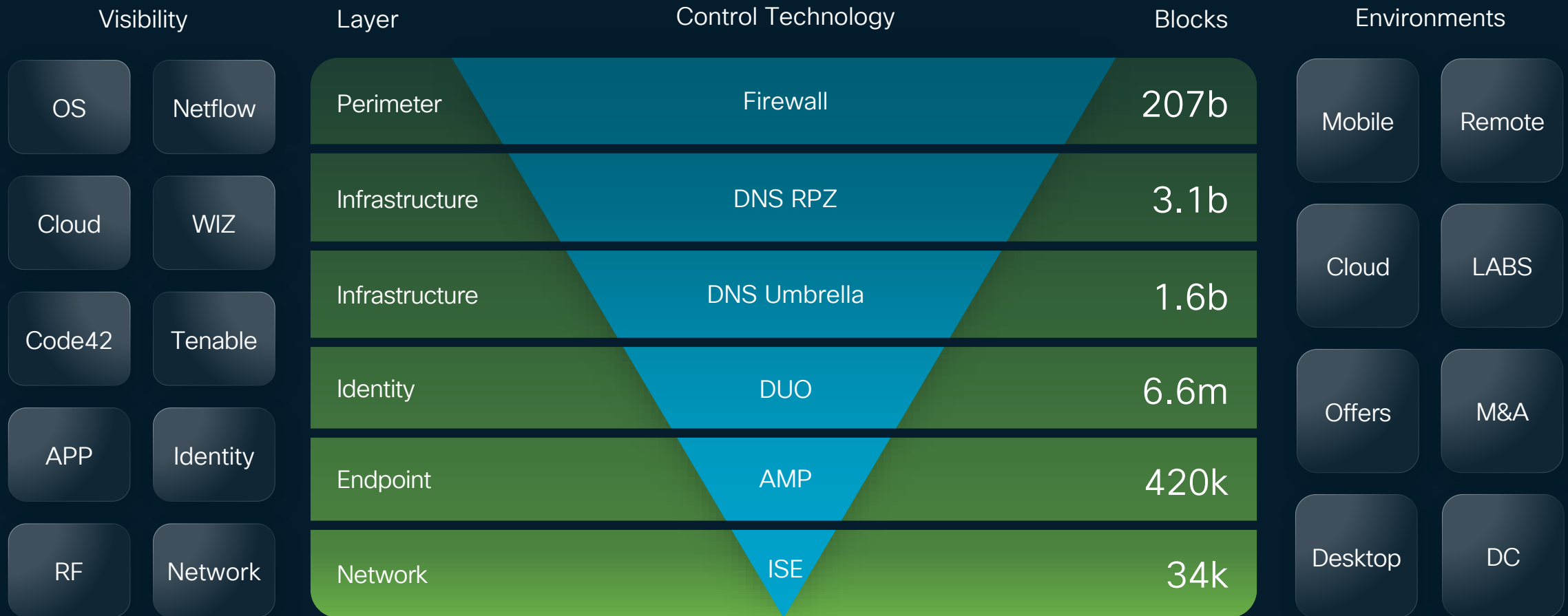


KB Generation



Security Strategy

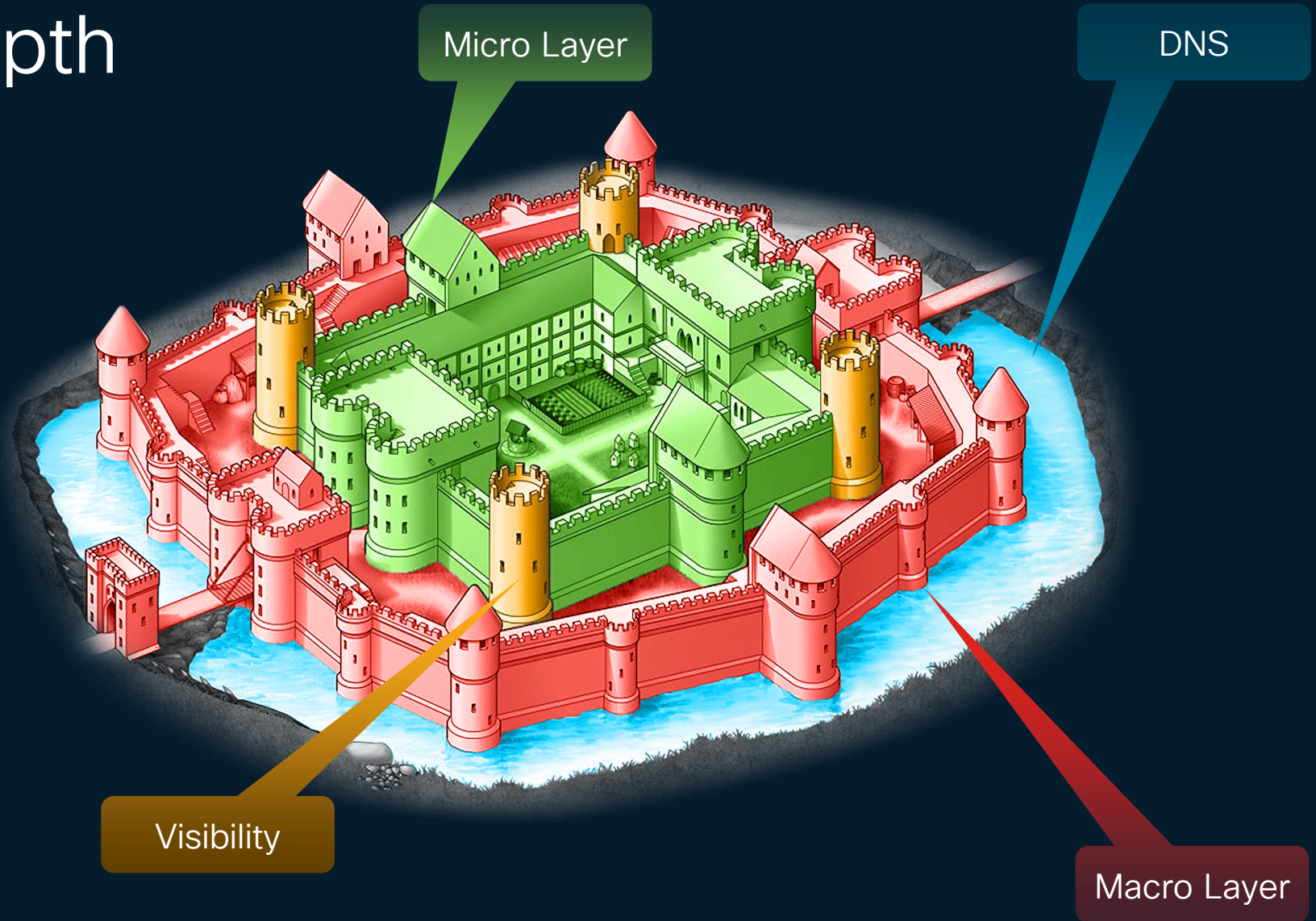
Threats in a Quarter: ~219B Malicious Attempts



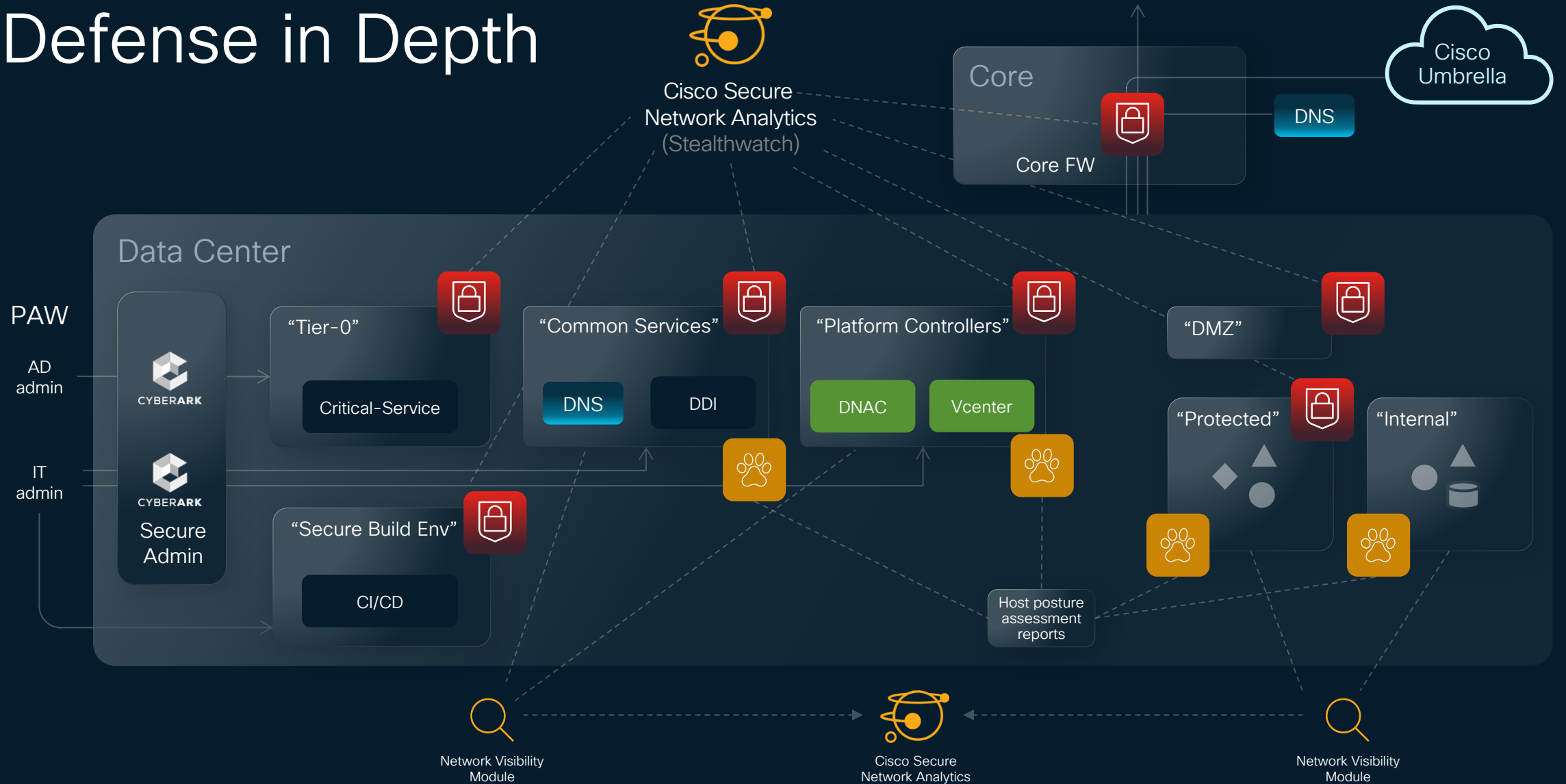
8k Cases

Defense in Depth

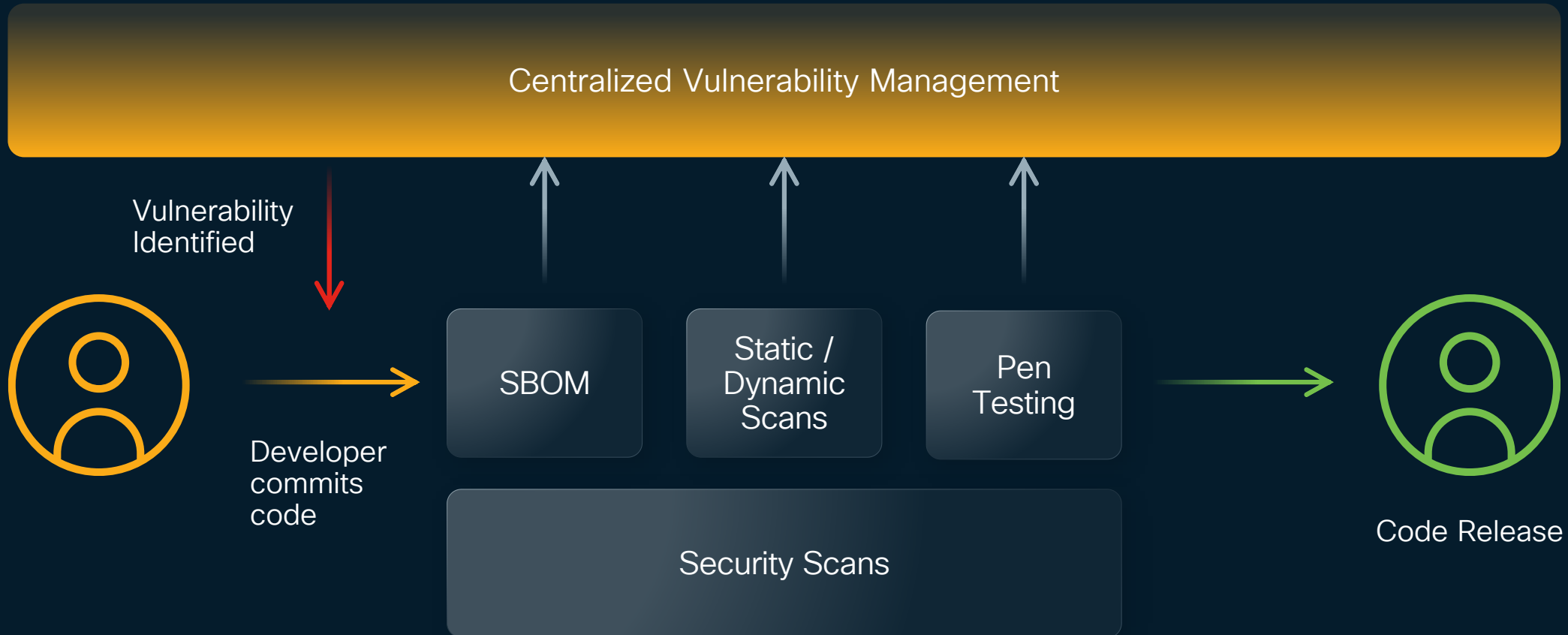
- DNS security
- Segmentations
 - Macro
 - Micro
- Visibility



Defense in Depth



Application Security and Infrastructure as a Code



Observability Journey



Cisco IT is complex



Volume



Operational Complexity

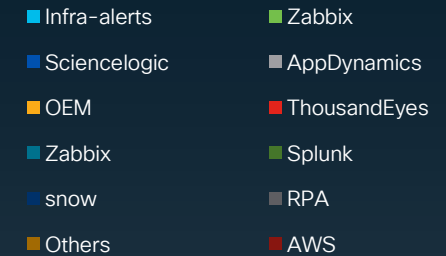


Dependencies



Number of tools

Event Distribution



1500+
IT Users



100
Services



21,000 + App
Endpoints



2,300+
Routers



8,100+
LAN
Switches



11,000+
UCS servers



2M events
/day



40+
Integrations



60,000+
Virtual
Machines



300,000+
Nodes



24,000+
Access points



100,000+
Containers



3000+
Databases



Availability
Monitoring
for 292,500+
Endpoints

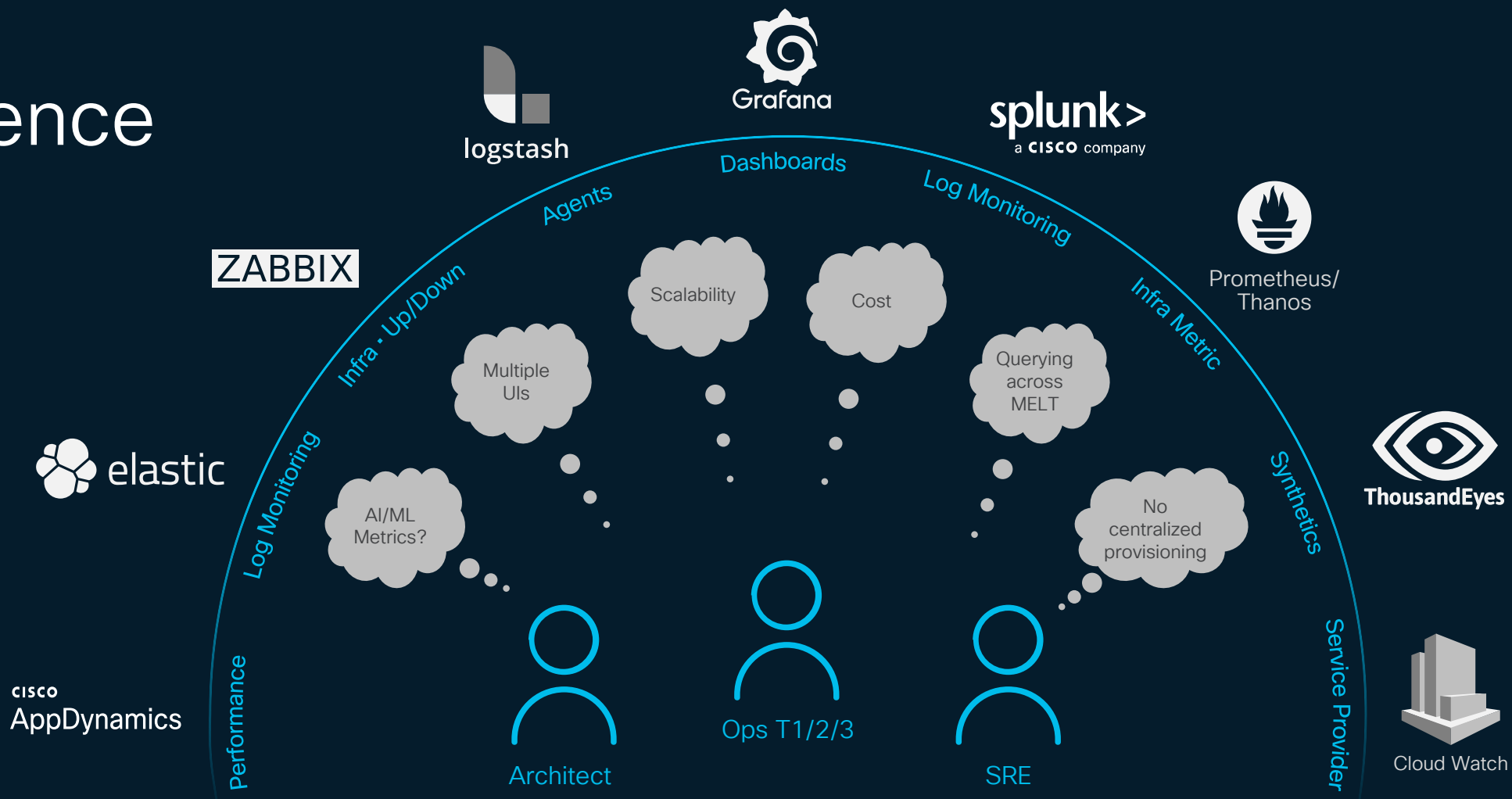


23 TB
Logs/day



500+ KPI's

User Experience Today

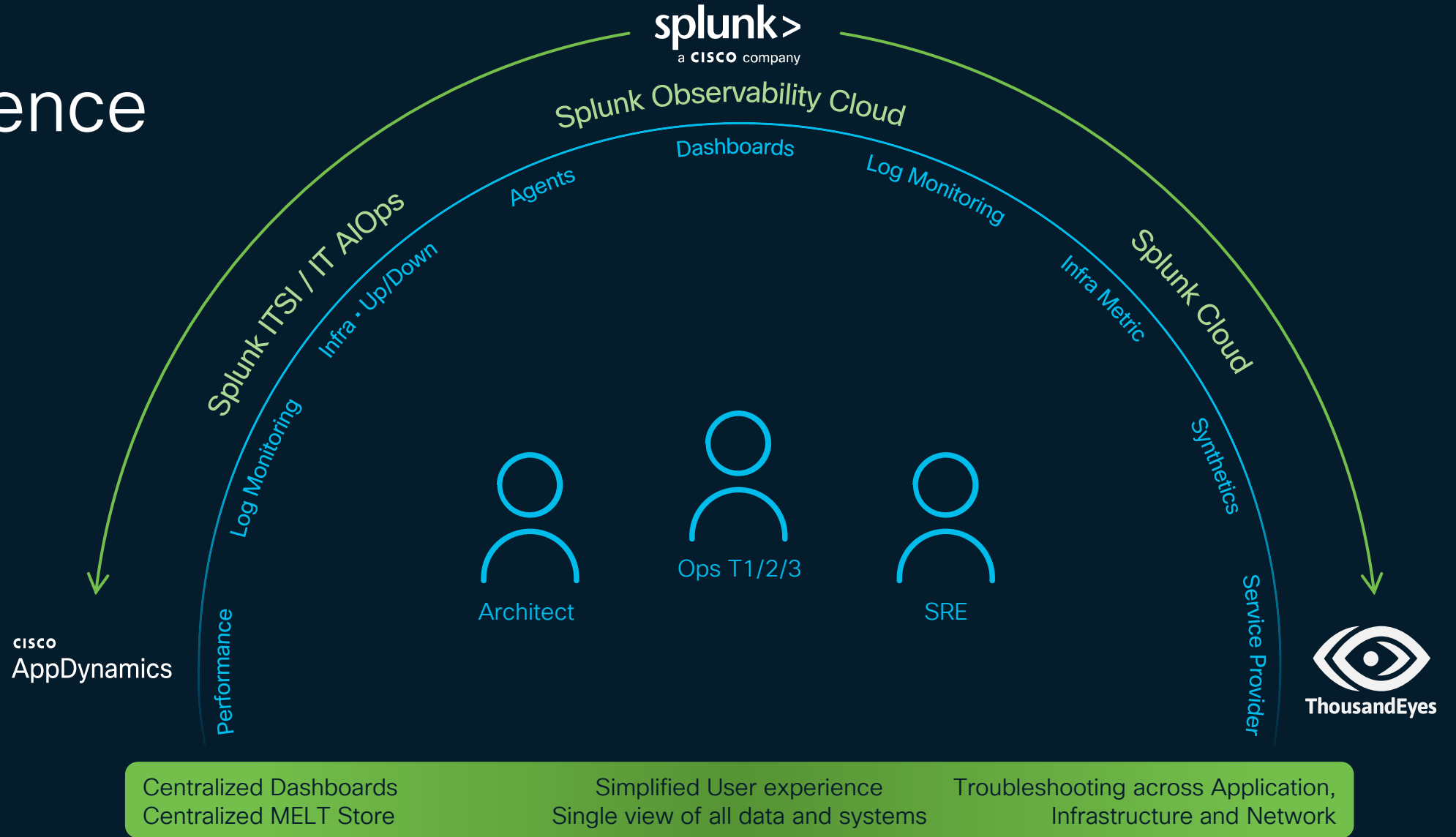


Solution Confusion
Architectural Nightmare

Silo'd AIOps
Multiple tools for configuration

Acquire each tool separately
Different tools for On-Prem Vs Cloud

User Experience Future



Splunk Cisco IT Story



23

TB/day ingestion
in Business IT
instance

933

Indexes

3.8

sec avg.
search latency

268

MB/sec
Indexing Rate

3

IT Cloud
Regions

6000+

Splunk
Forwarders

Thousand Eyes Cisco IT Story

Monitoring ISP Performance

App
Availability
Monitoring
(SaaS, COTS,
homegrown)

Synthetic
Tests &
Network
Visualization

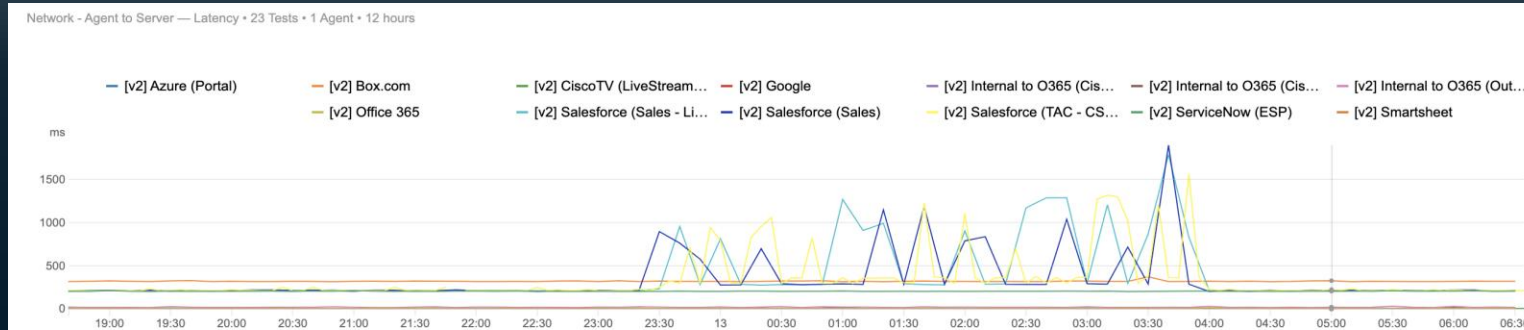
517

Cisco IT applications uses TE

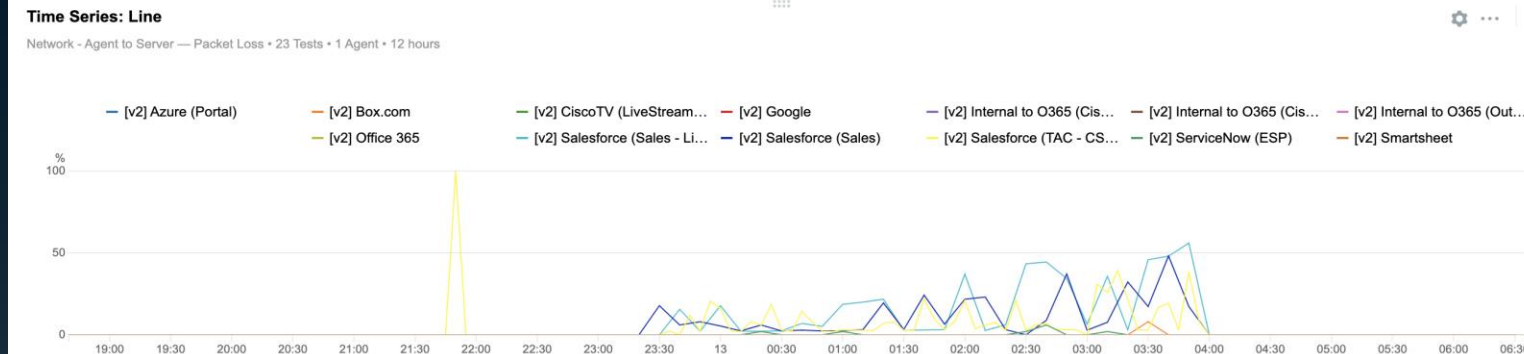
650,000 Thousand
Eyes Units

7450

HTTP, Network & Synthetic Tests.



Latency



Packet Loss



Thank you

CISCO *Live!*
IT Leadership Program

#CiscoLiveAPJC