Unified End to End Observability at RAITEC

How Dynatrace Revolutionized IT Operations and broke up Silos

PRESENTER

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Senior System Architect

PRESENTER

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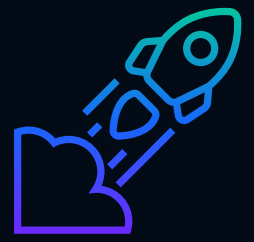
Dynatrace
Senior Solutions Engineer

Agenda

- Dynatrace Introduction
- RAITEC Introduction
- Key challenges
- Addressing the challenges
- Automated Problem Remediation

Dynatrace: Who we are



Our mission

We deliver answers and intelligent automation from data.

Our purpose

To enable flawless and secure digital interactions.

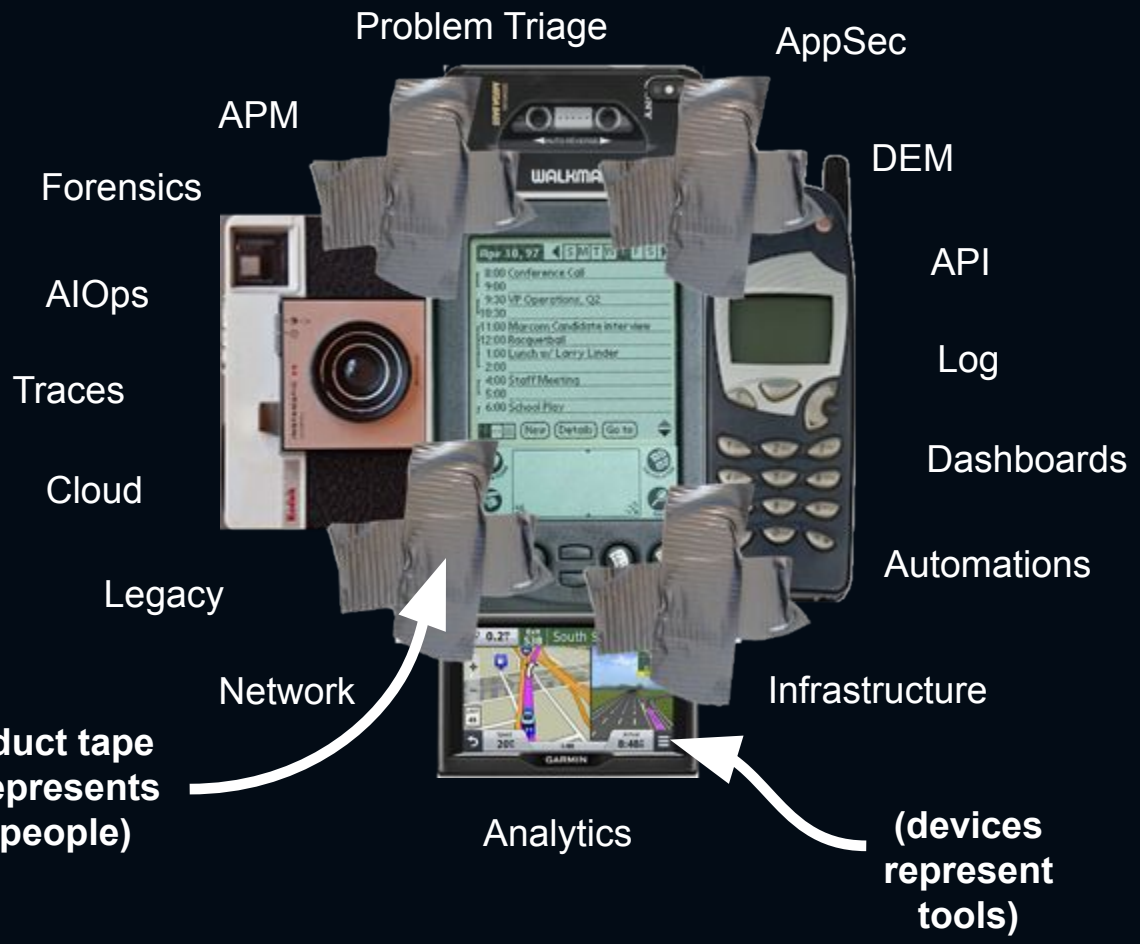
Our vision

A world where software works perfectly.

There Is an Alternative Approach …

DIY / Multi-Tool approach

Siloed, Disconnected, Blind Spots, Ineffective and Costly



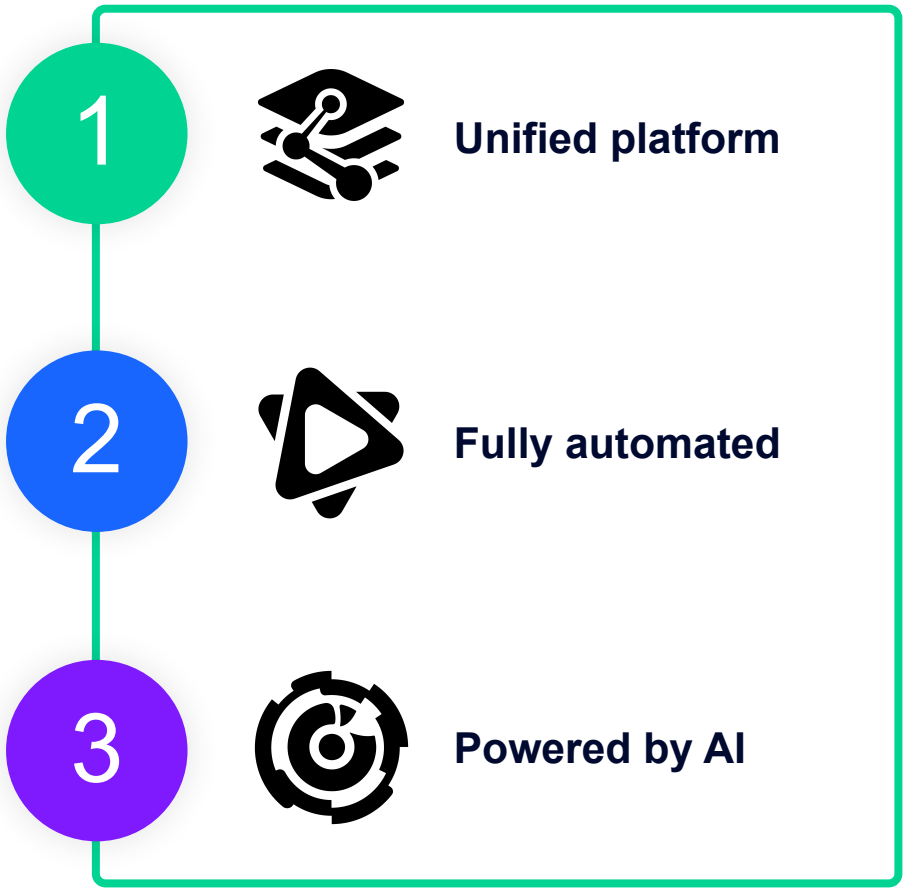
Automated Platform Approach

Unified, Collaborative, Cost Effective, Efficient

- Extend coverage with automated discovery and configuration
- Enhance collaboration with AIOps-delivered Answers and root cause identification
- Minimize disruptions with Automated Resolutions
- Deliver healthy digital experiences and happy customers with End-to-End Observability and Security

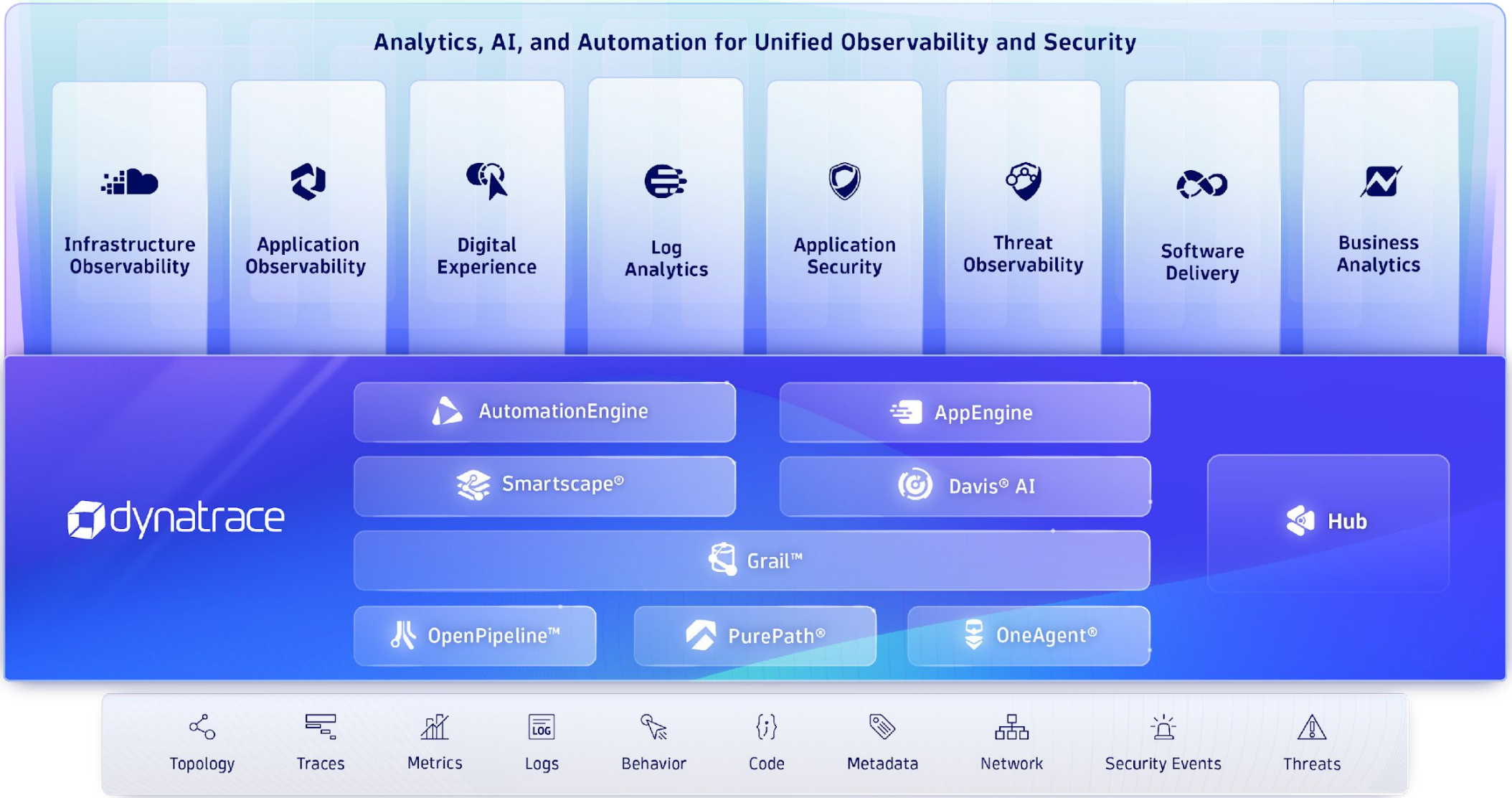
How we do it

3 key differentiators



dynatrace

CLOUD DONE RIGHT.



RAITEC Motivation

Development

Find bugs in Development

Performance optimization

Load and regression testing

Release validation

Operations

Monitoring and alerting

Dev and Ops uses the same tools

„Speaking the same language“

Solving problems faster

This pictures where created with DALL-E

RAITEC

The Raiffeisen Datacenter

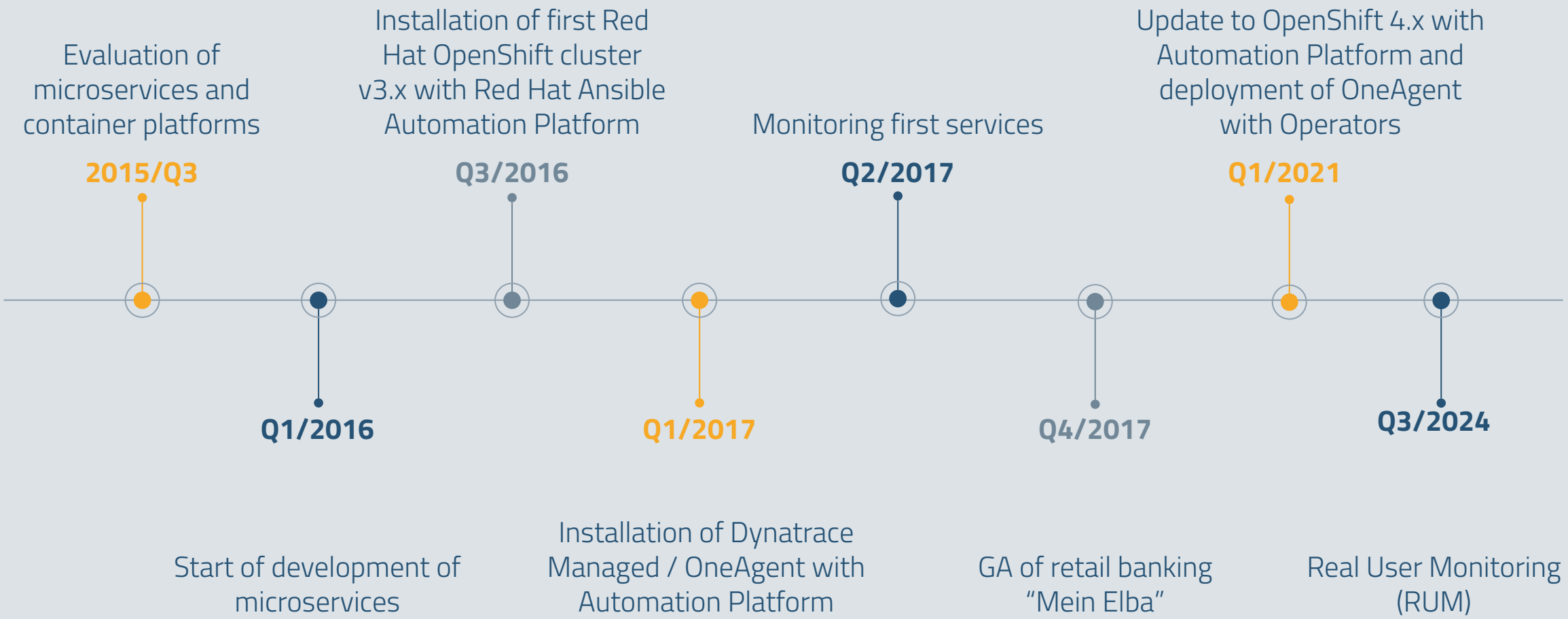
Facts & Figures

- Provides services such as the banking core system
- ~ 30.000 Clients
- ~ 4.500 Server
- Cloud broker
- Complex stakeholder structure

Services

- Platform deployment
- Monitoring and alerting
- Maintenance
- 3rd party software implementation

The Journey


Evaluation of microservices and container platforms
2015/Q3
Q1/2016
Start of development of microservices
Installation of first Red Hat OpenShift cluster v3.x with Red Hat Ansible Automation Platform
Q3/2016
Q1/2017
Installation of Dynatrace Managed / OneAgent with Automation Platform
Monitoring first services
Q2/2017
Q4/2017
GA of retail banking "Mein Elba"
Update to OpenShift 4.x with Automation Platform and deployment of OneAgent with Operators
Q1/2021
Q3/2024
Real User Monitoring (RUM)

Key Challenges

Microservice interaction

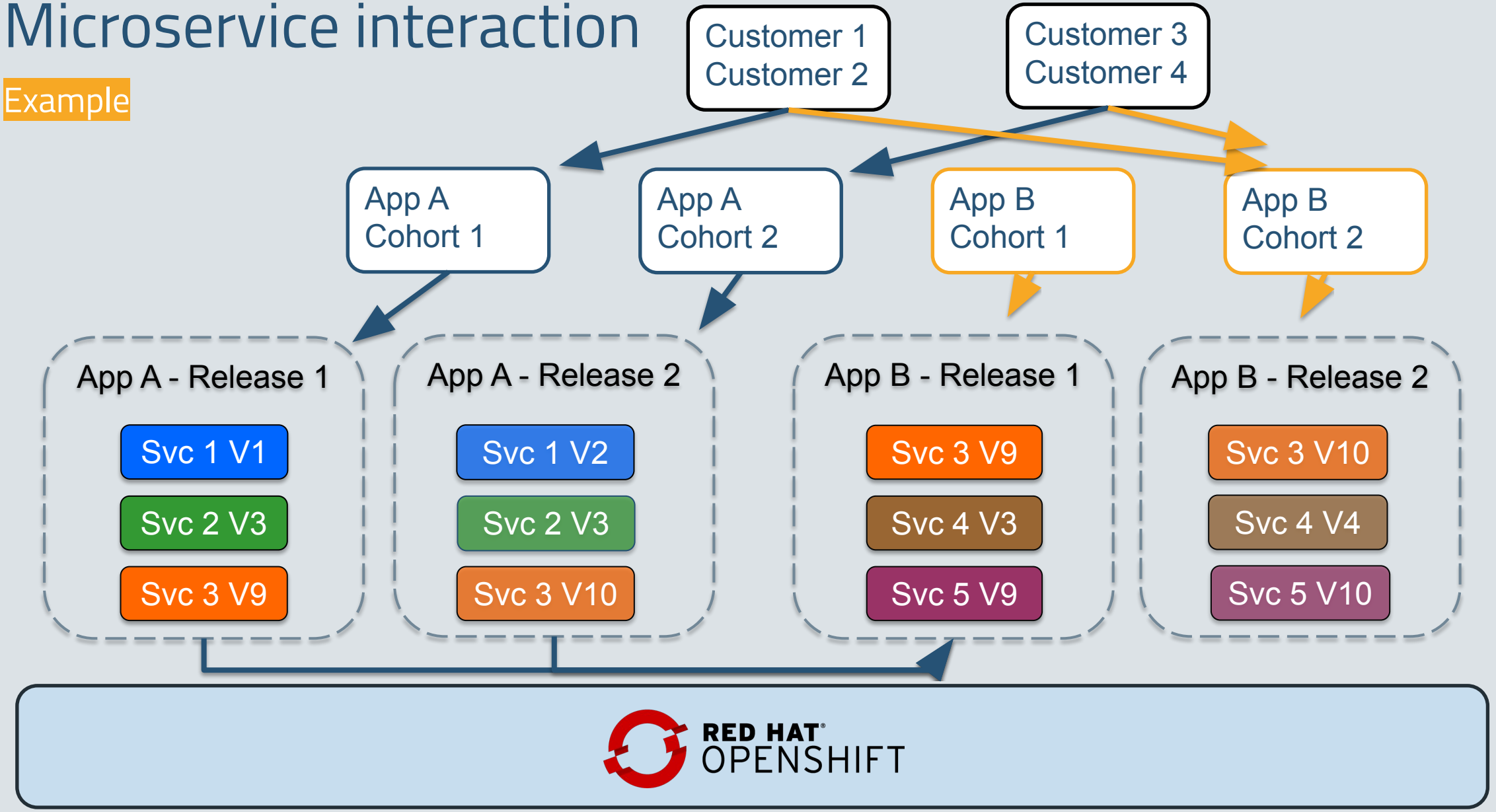
Root-cause analysis

Paradigm shift

This pictures where created with DALL-E

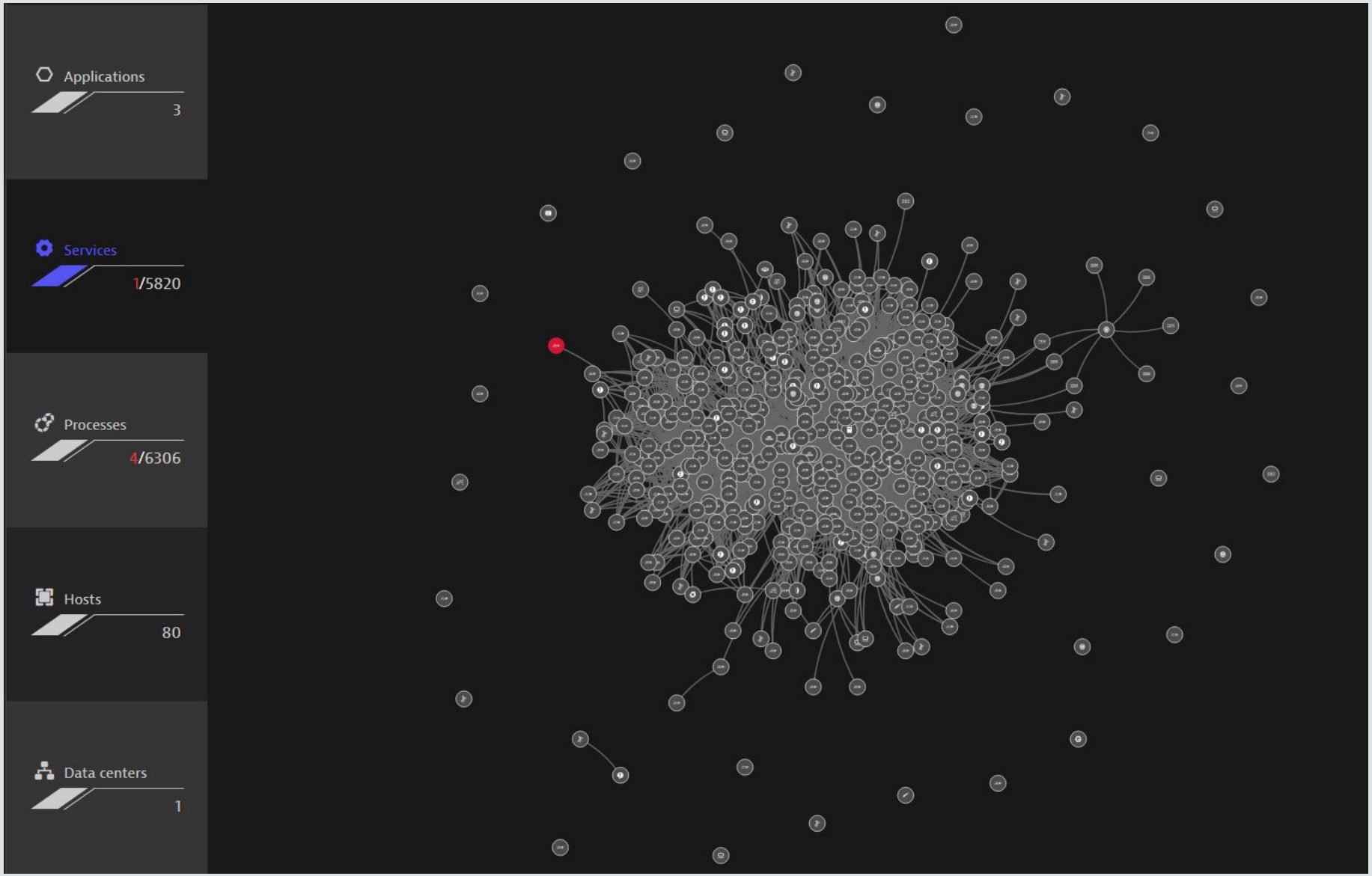
Microservice interaction

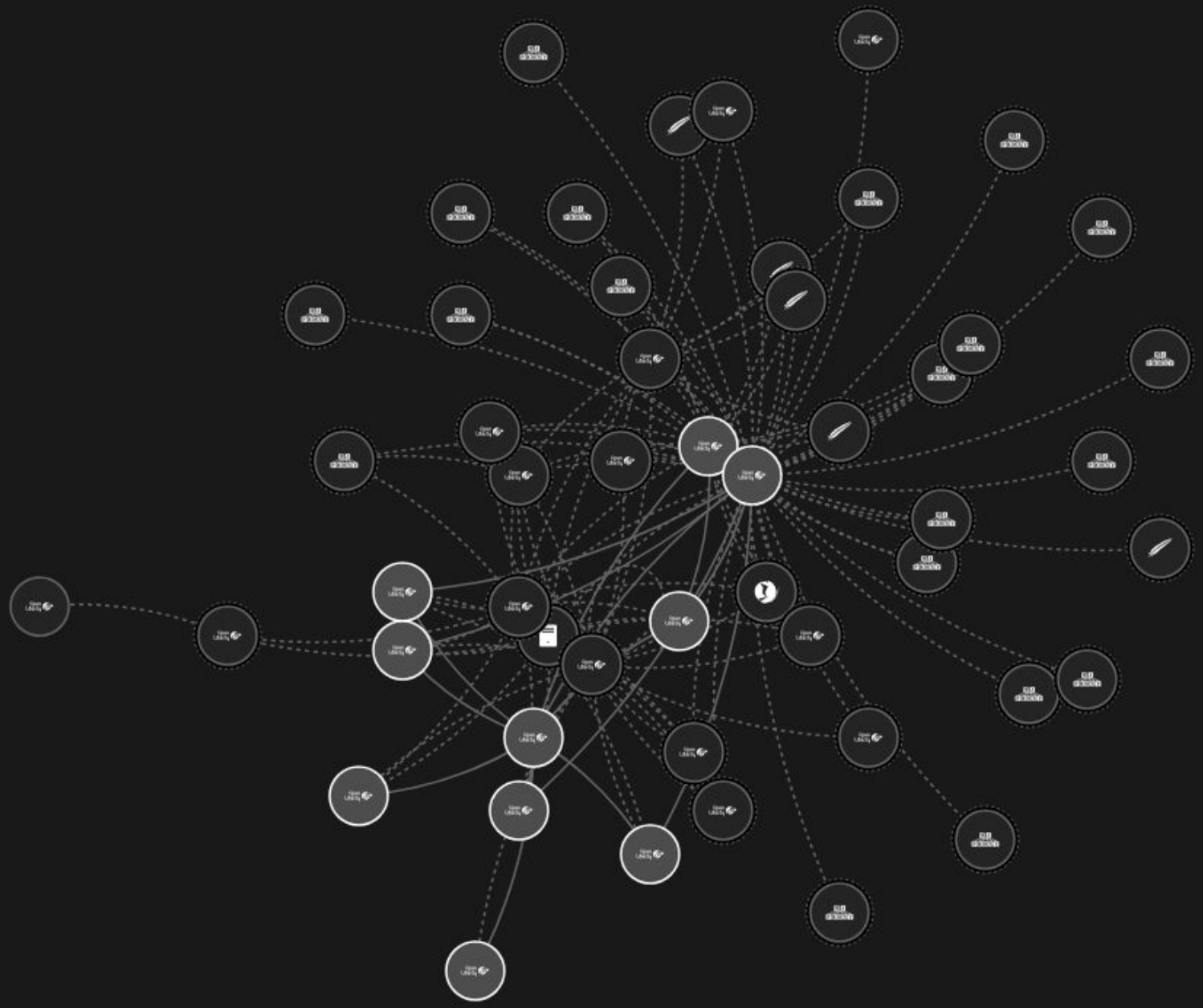
Example

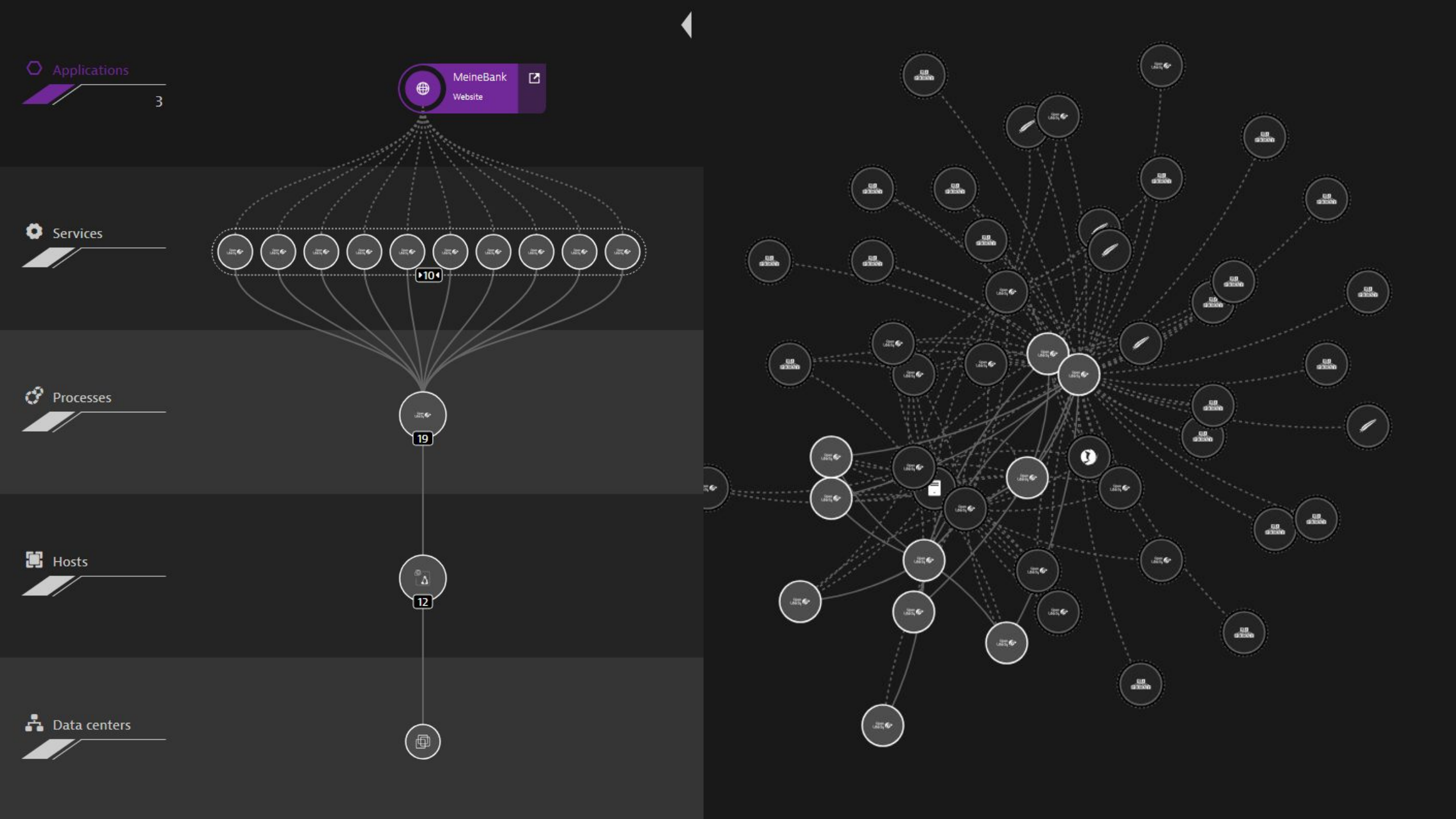


Automated dependency detection

Real live Example






Applications
3
MeineBank
Website
Services
10
Processes
19
Hosts
12
Data centers

AI root cause analysis

The talkative service

Problem

- Appointment booking via retail banking was not working.

Classic solution approach

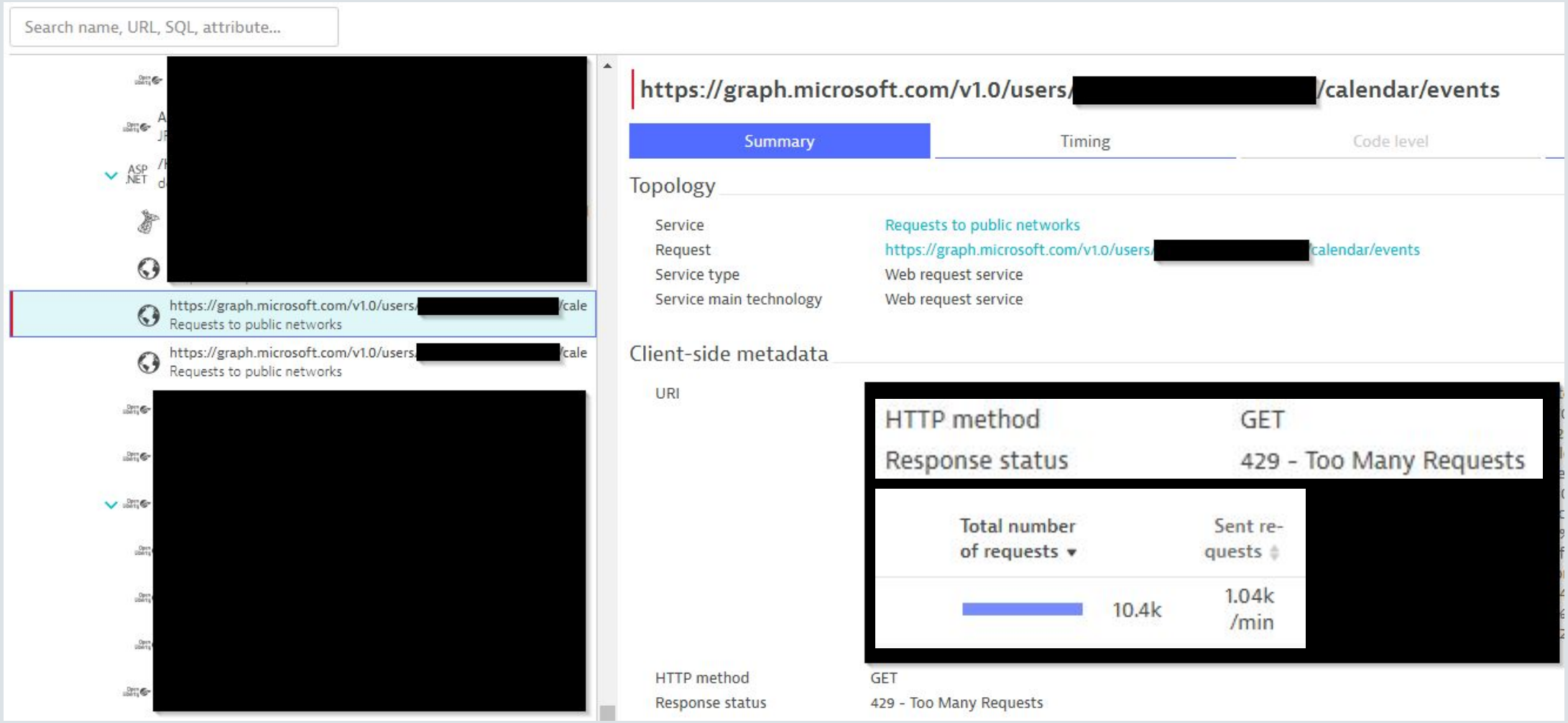
- Examined application log files.
- Analyzed OS log files.
- Investigated network traces.
- Monitored infrastructure.

New solution approach using Dynatrace

- Installed Dynatrace for unified monitoring.
- Teams accessed the same, real-time data.
- Identified the root cause within 5 minutes.

AI root cause analysis

The talkative service



AI root cause analysis

A service with hiccups

Problem

- Service became unresponsive every 5 minutes, causing short outages for users.

Classic solution approach

- Reviewed application server logs.
- Analyzed client-side logs.
- Spent two days troubleshooting without success.

New solution approach using Dynatrace

- Deployed Dynatrace for unified monitoring.
- Pinpointed the root cause in less than 10 minutes.
- Confirmed that the application server was not the issue.

11 services: Multiple service problems

Problem P-2412927 detected at Dec 6 15:25 - Dec 6 15:49 (was open for 24 minutes).

Share feedback

Affected applications	Affected services	Affected infrastructure	Affected SLOs
–	11	–	–

DAVIS ®
analyzed dependencies
across 46,167 monitored entities

Business impact analysis

Davis observed the following number of service calls and affected real users during the first 30 minutes of the problem timeframe.

- / -
affected users

1.4M
affected service calls

Show more

10 impacted services

3.56k+ Requests per minute impacted

[redacted]
Web service

Response time degradation
The current response time (~289.18 ms) exceeds the auto-detected baseline (~59.05 ms) by 389.77 %.
Service method [redacted] has a slowdown.

Affected requests: 30.8 /min
Service method [redacted]

[redacted]
Web service

Response time degradation
The current response time (~230.04 ms) exceeds the auto-detected baseline (~57.42 ms) by 300.63 %.
Service method [redacted] has a slowdown.

Affected requests: 94.4 /min
Service method [redacted]

[redacted]
Web request service

Response time degradation
The current response time (~190.61 ms) exceeds the auto-detected baseline (~61.57 ms) by 209.58 %.
Service method [redacted] has a slowdown.

Affected requests: 103 /min
Service method [redacted]

Failure rate increase
The error rate increased to 10.76 %.
Service method [redacted] has a failure rate increase.

Affected requests:
Service method

[redacted]
Based on our dependency analysis all incidents have the same root cause

[redacted]
Database

18 Service response time degradation events
The current response time (~13.25 ms) exceeds the auto-detected baseline (~4.28 ms) by 209.94 %. Service method Insert into [redacted] has a slo...

Events on:
Service [redacted]

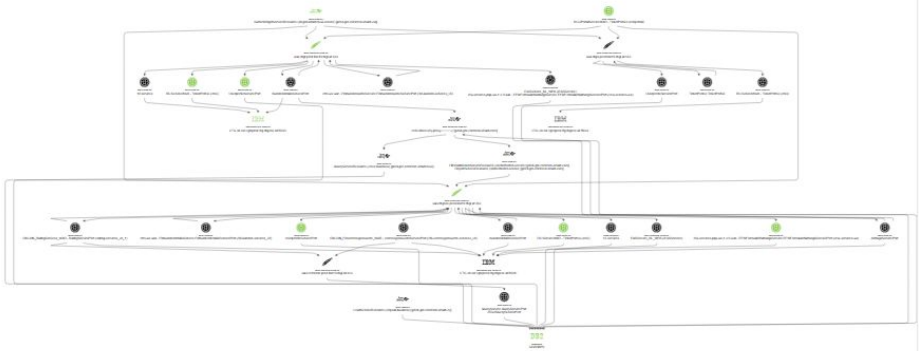
See how response times vary across requests during the selected period.

Analyze outliers

Metric anomalies detected
Review the metrics which show abnormal or outlying behavior.

Show 2 more

Visual resolution path
Click to see how we figured this out.



problem timeframe.

[redacted]

Based on our dependency analysis all incidents have the same root cause

[redacted]
Database

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Show 2 more

Visual resolution path

Click to see how we figured this out.

Red Hat Ansible Automation Platform

The tool we used to deploy Dynatrace

Zero-touch deployment

- Fully integrated into the order process
- Eliminates manual tasks entirely
- New server in under 20 minutes - from order to completion

Application deployment

- Order software from the store
- Install during maintenance window
- Store parameters in a local Git repository

Reporting

- Installation details
- Template usage and job status
- Server inventory

Collaboration

- 8 departments involved
- 20 Ansible Automation Platform teams

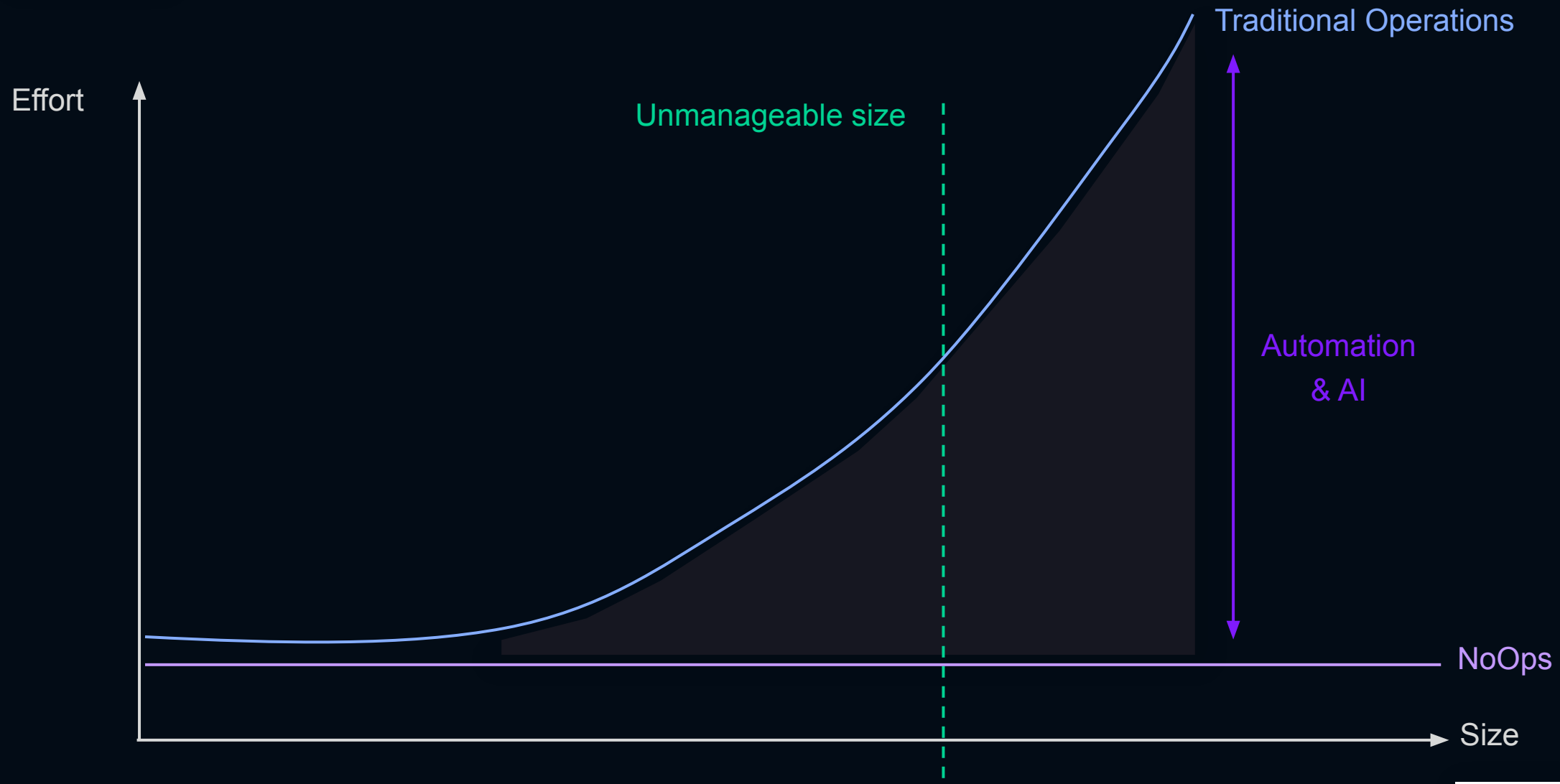
Outlook

Next steps and beyond

- Red Hat OpenShift on bare metal
- Dynatrace SaaS
- Dynatrace &
  Red Hat Ansible Automation Platform

Automated Problem Remediation

HOW MANY APPS CAN YOU MANAGE?



AUTOMATED PROBLEM REMEDIATION

Root Cause Identification

Automatically provide high fidelity root cause and configuration item (CI) data with Dynatrace problem events

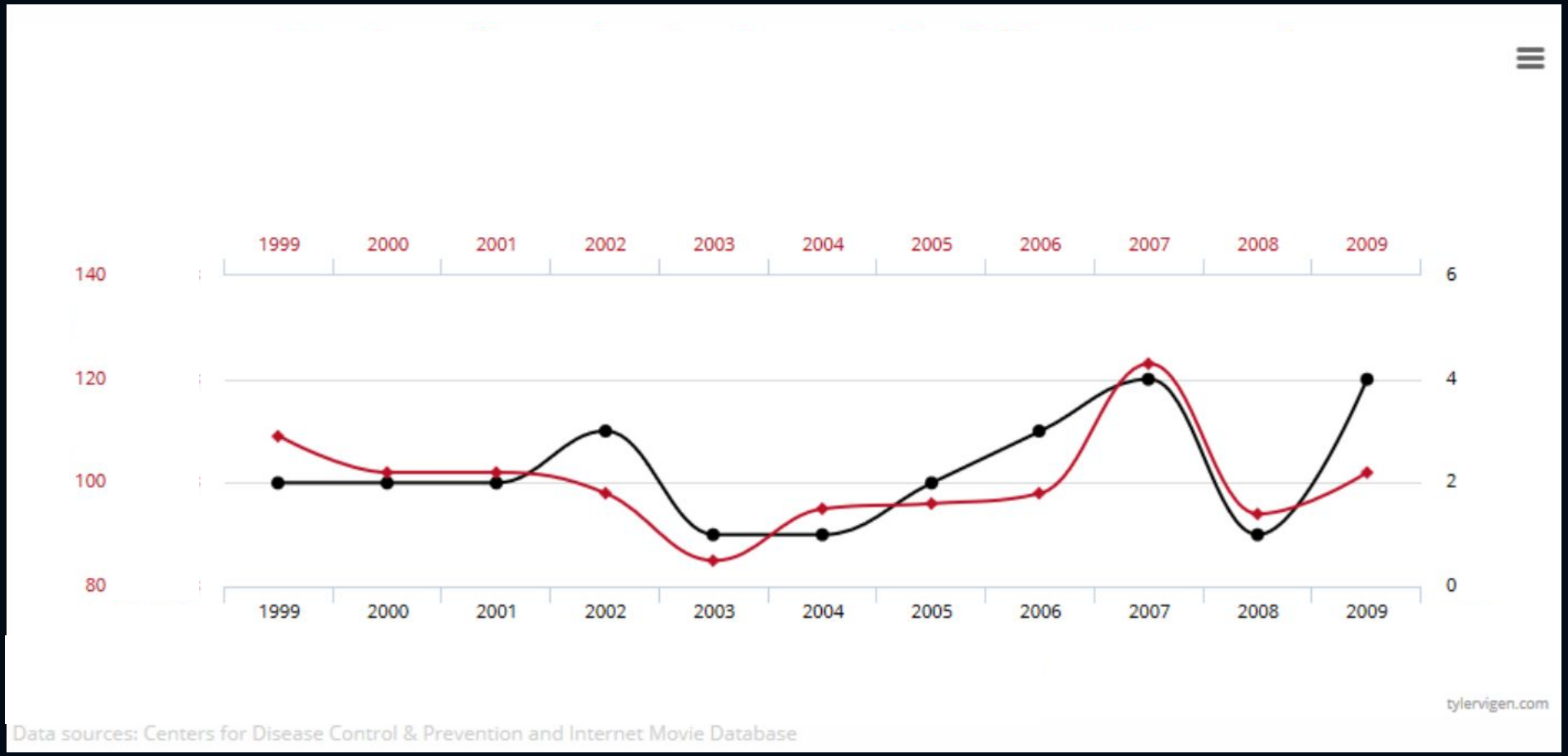
Problem Remediation

Automatically trigger remediation scripts to resolve common application problems

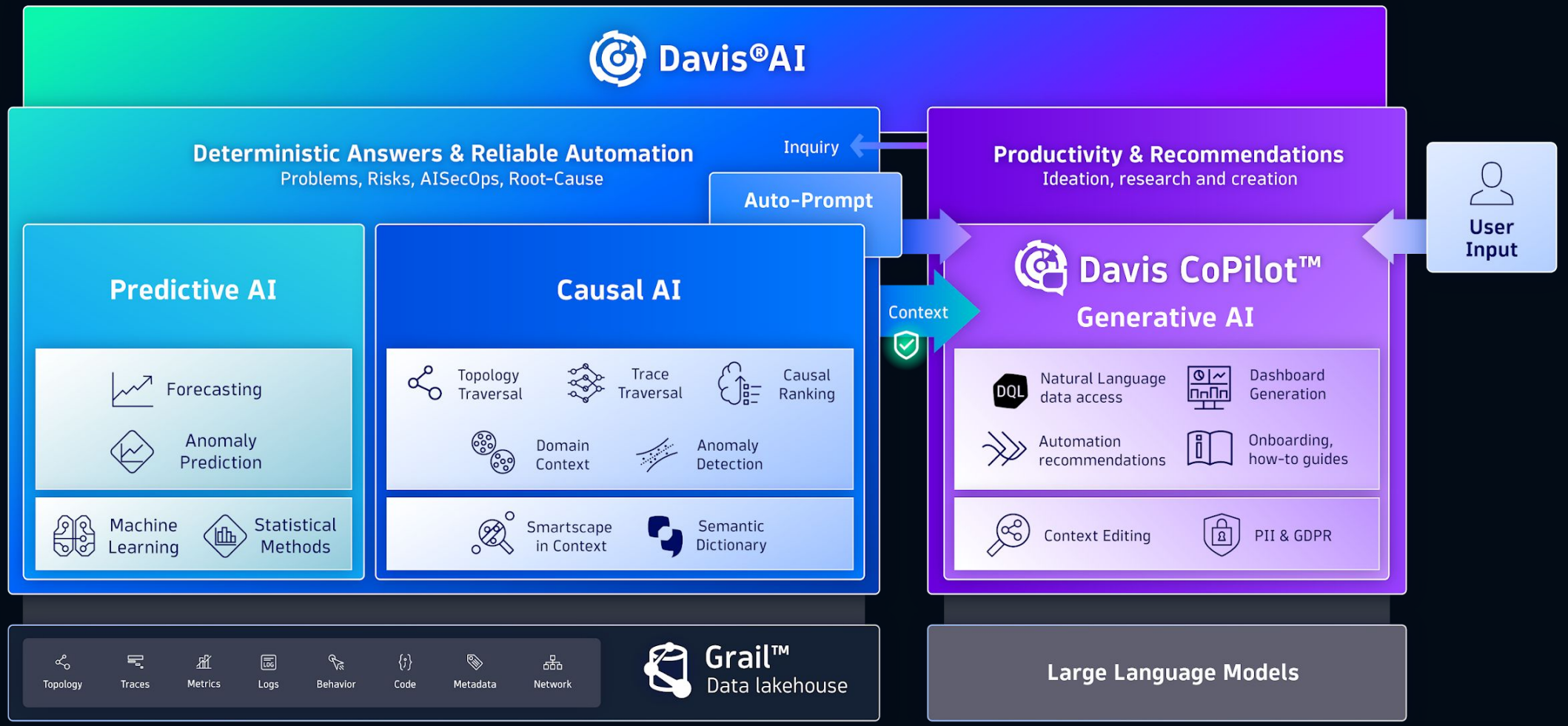
Problem Recovery

Automatically log remediation activities, validate recovery, and communicate status

Correlation vs Causation



DAVIS AI – Industry‘s First hypermodal AI



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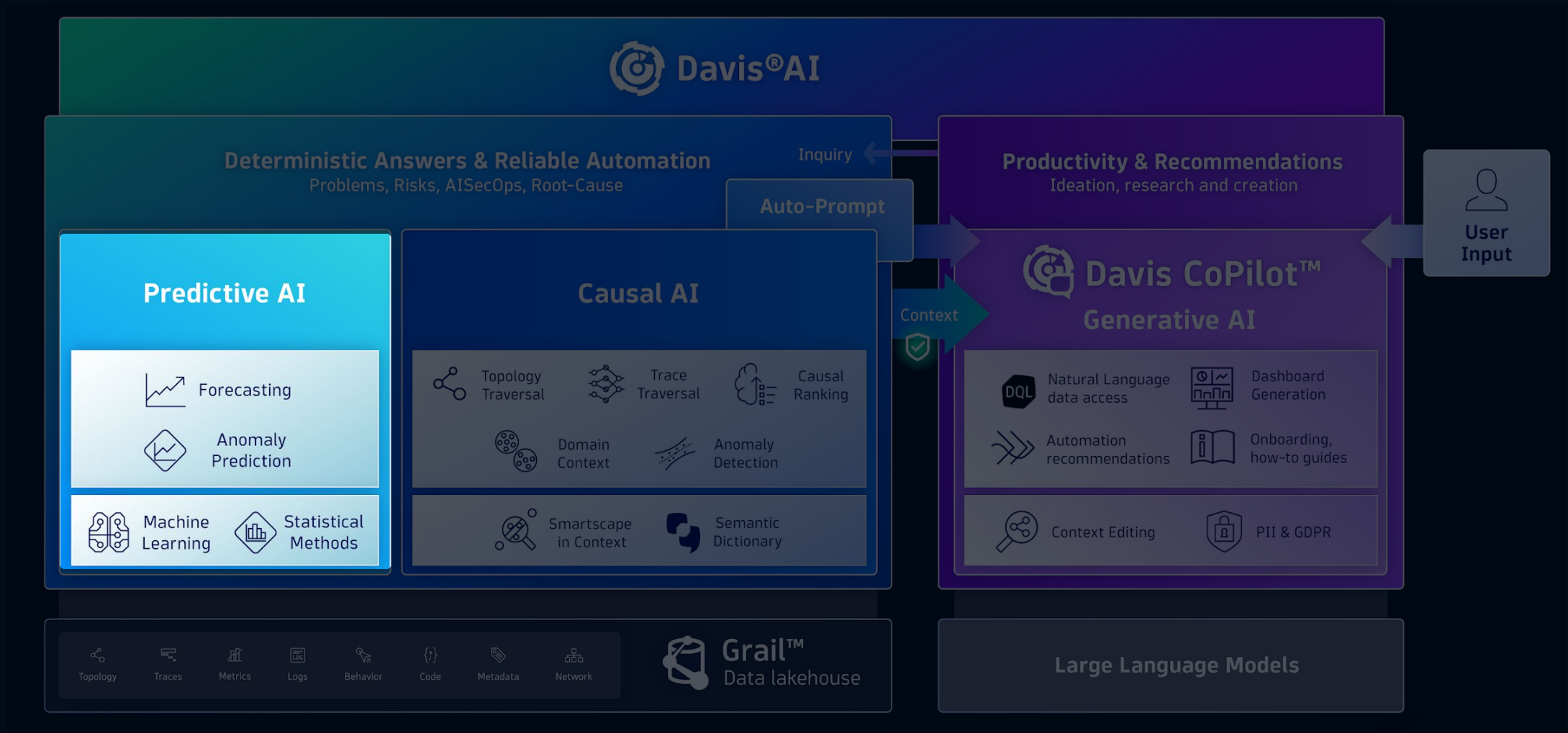

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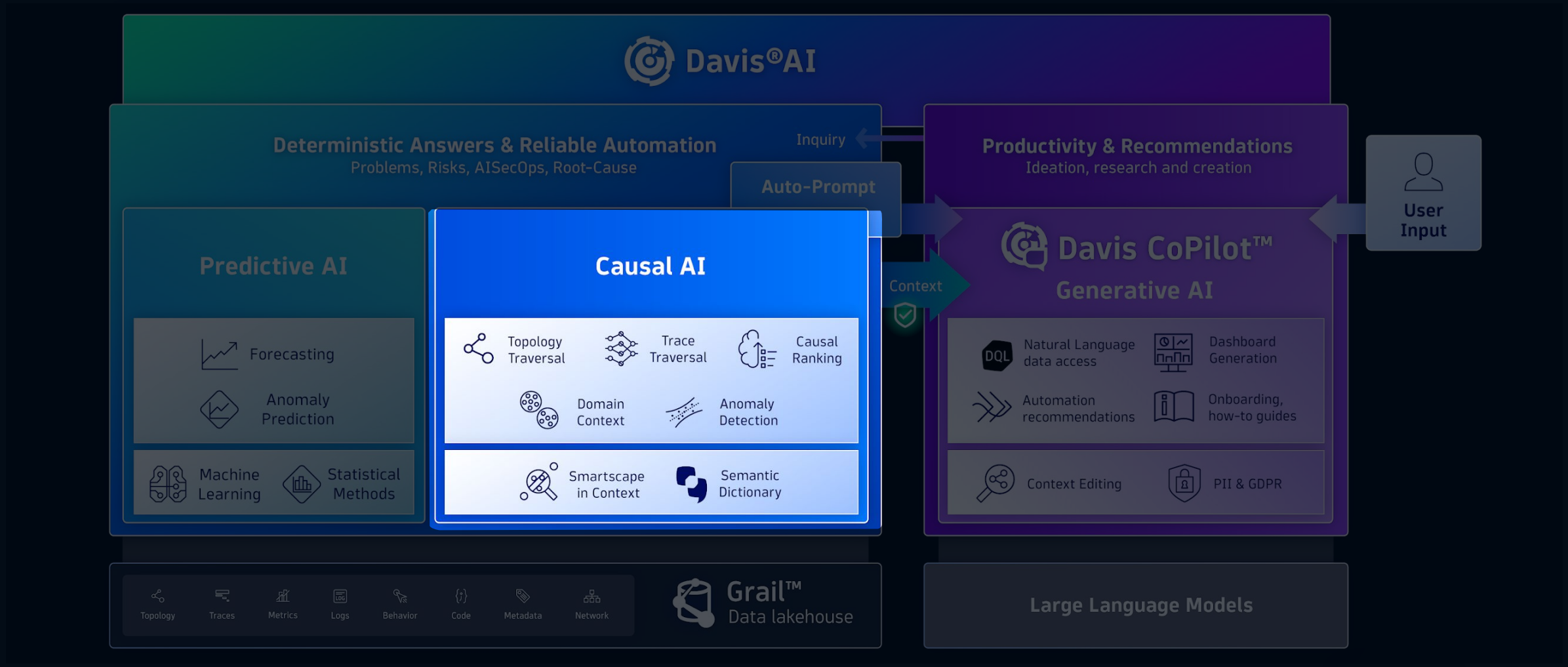

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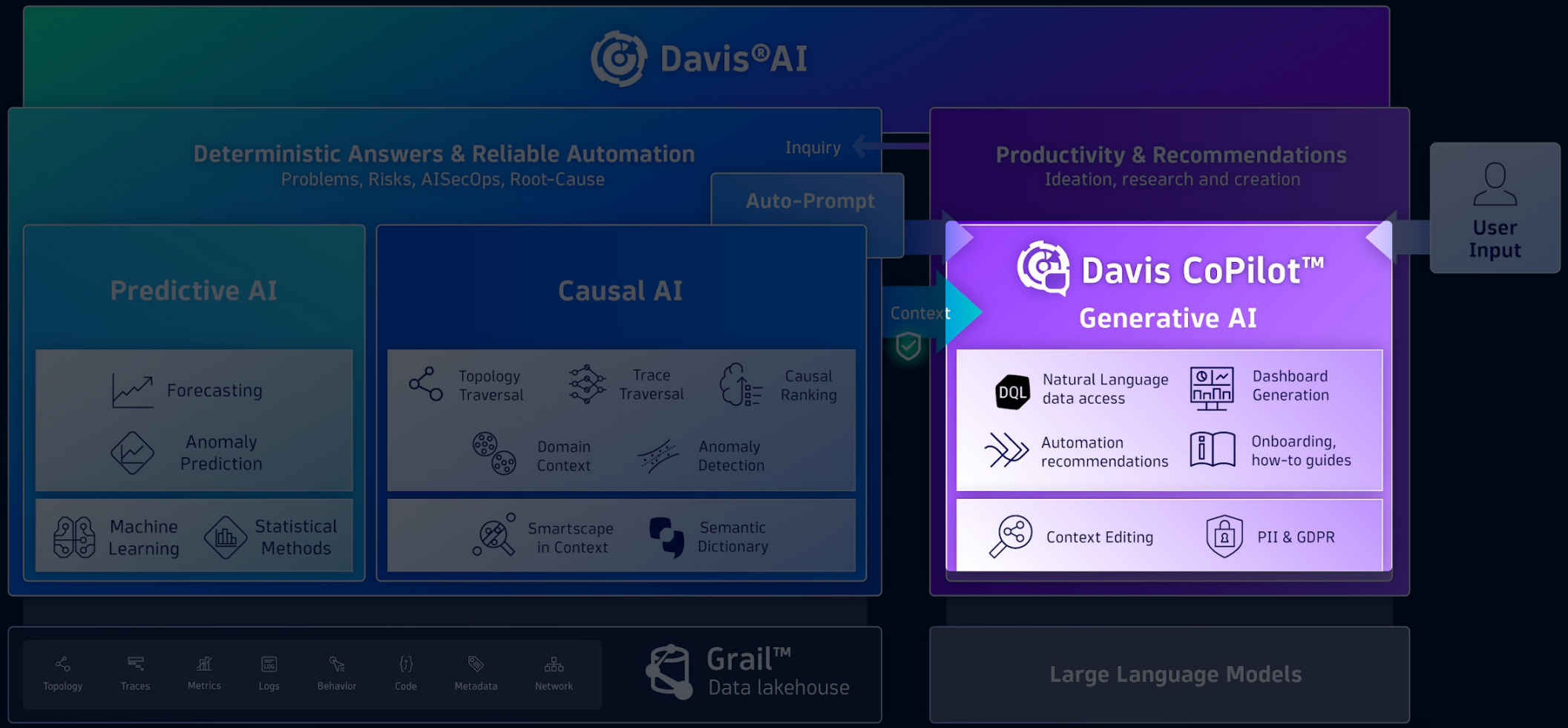

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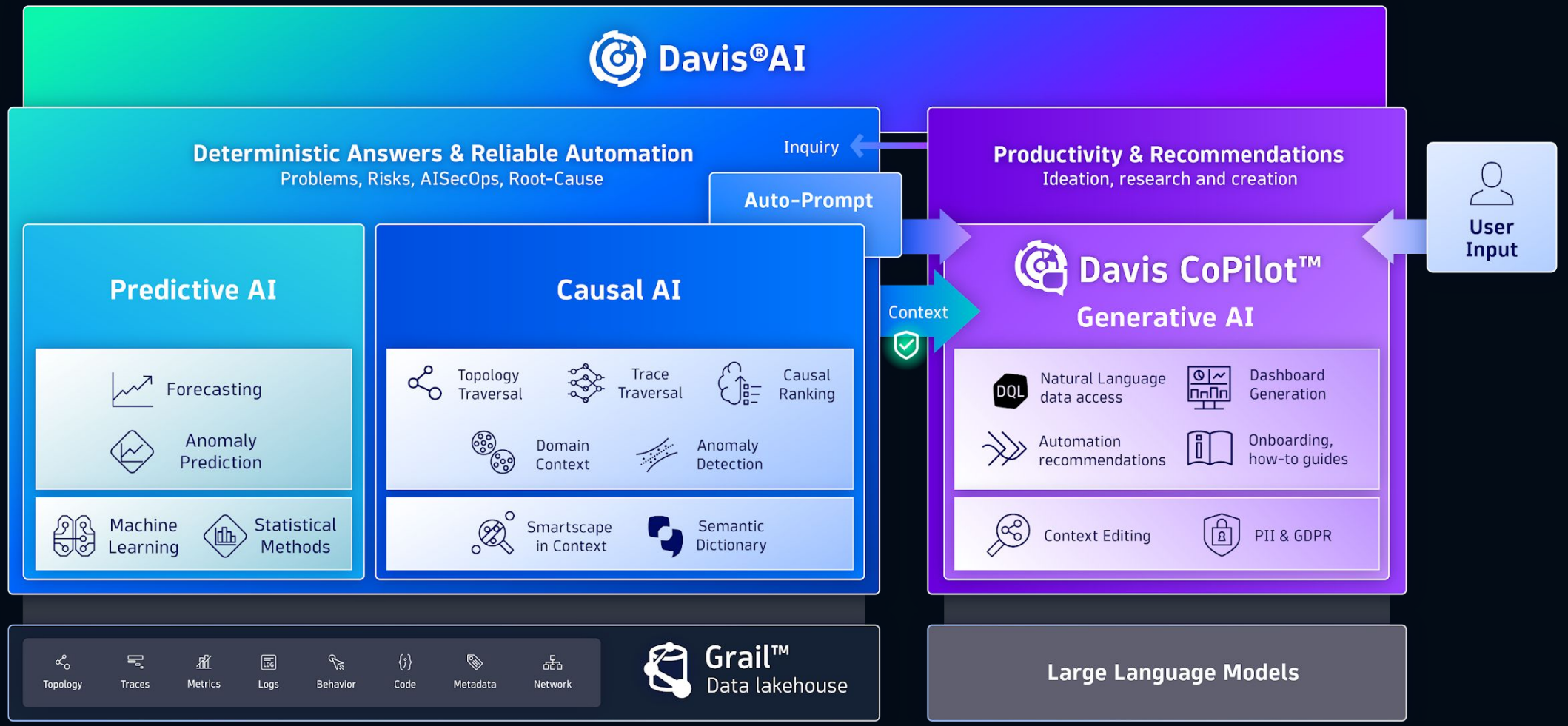
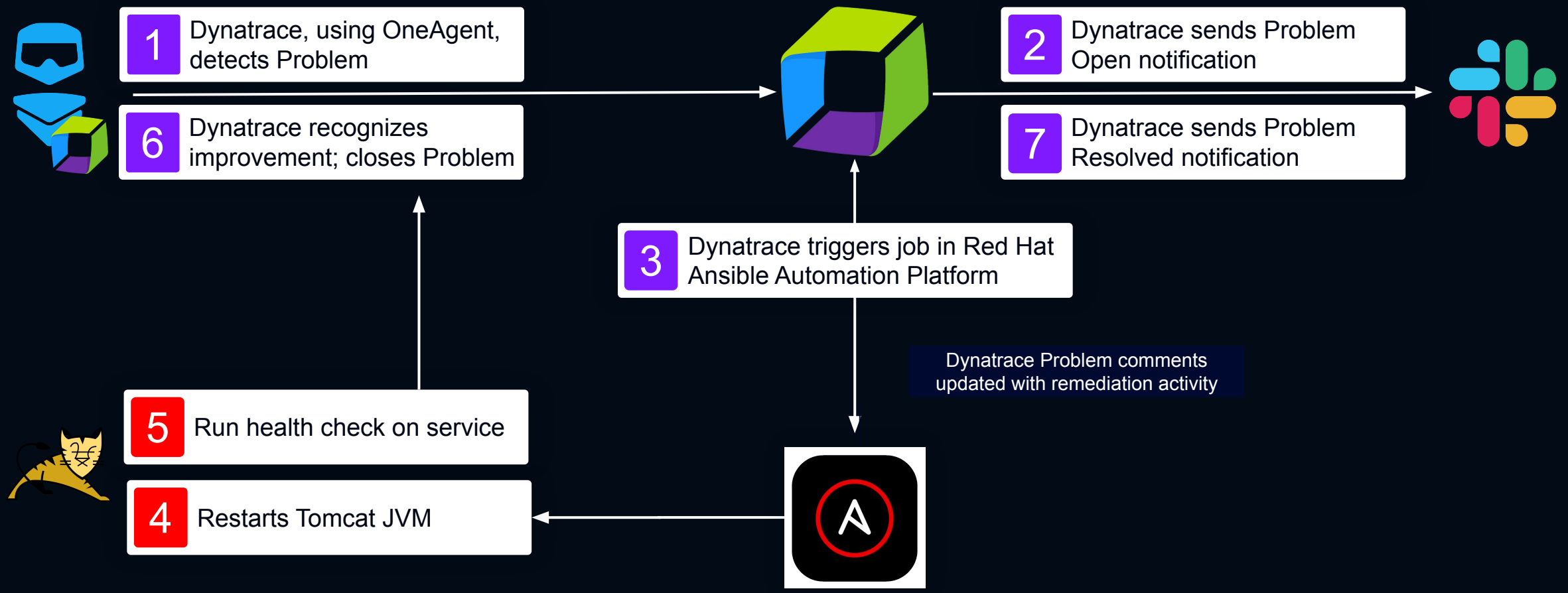
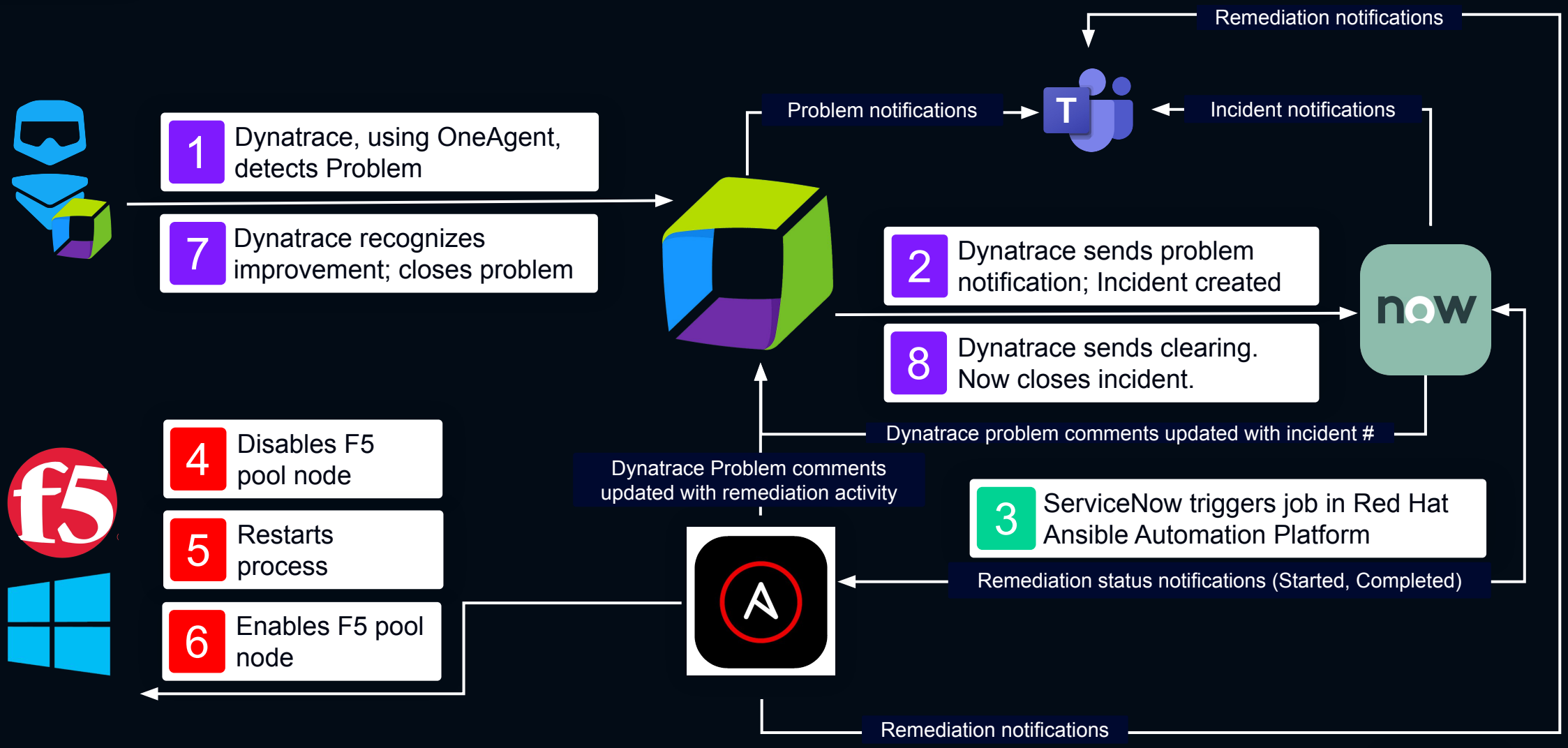


SOLUTION ARCHITECTURE FOR JVM RESTART

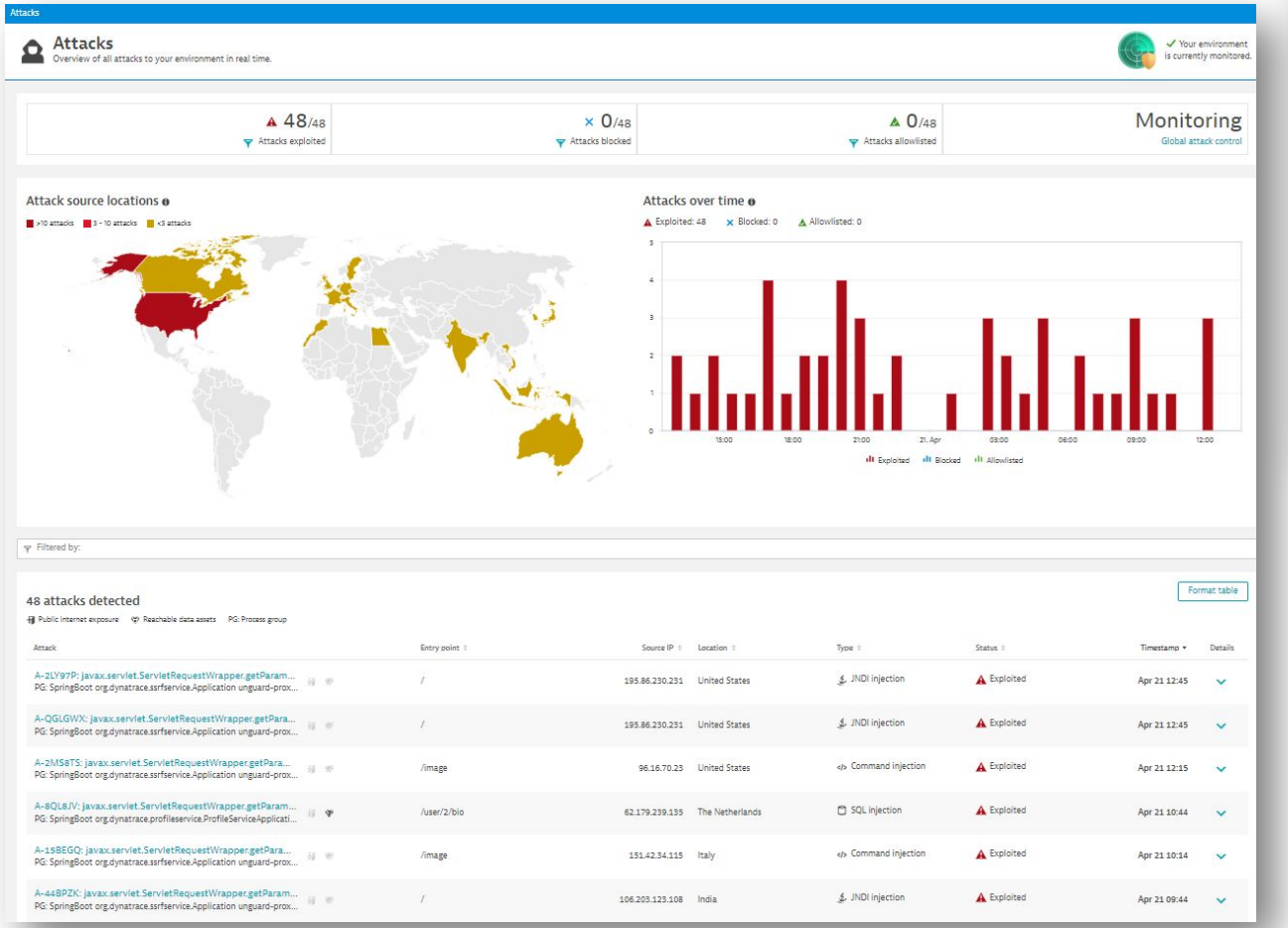


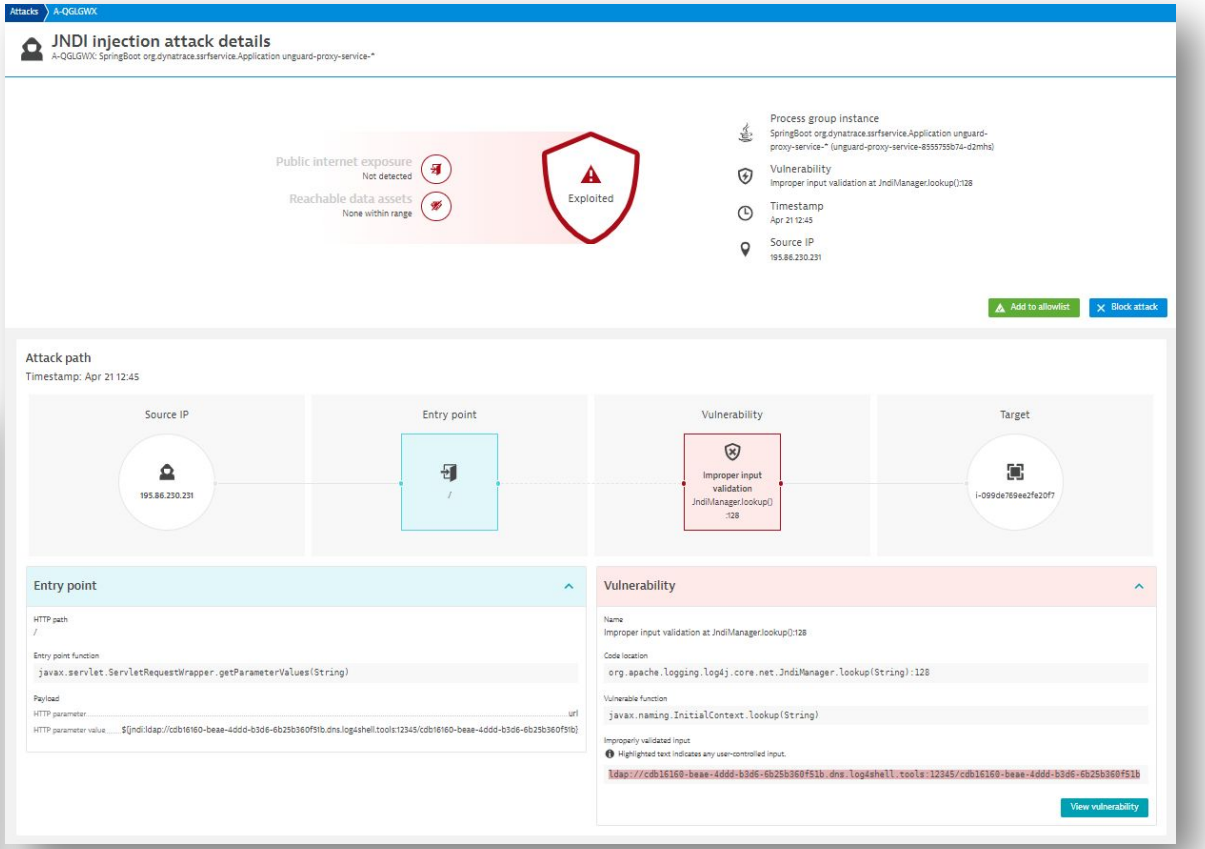
SOLUTION ARCHITECTURE FOR PROCESS RESTART



Attack detection & IP blocking

- Dynatrace detects vulnerabilities & attacks





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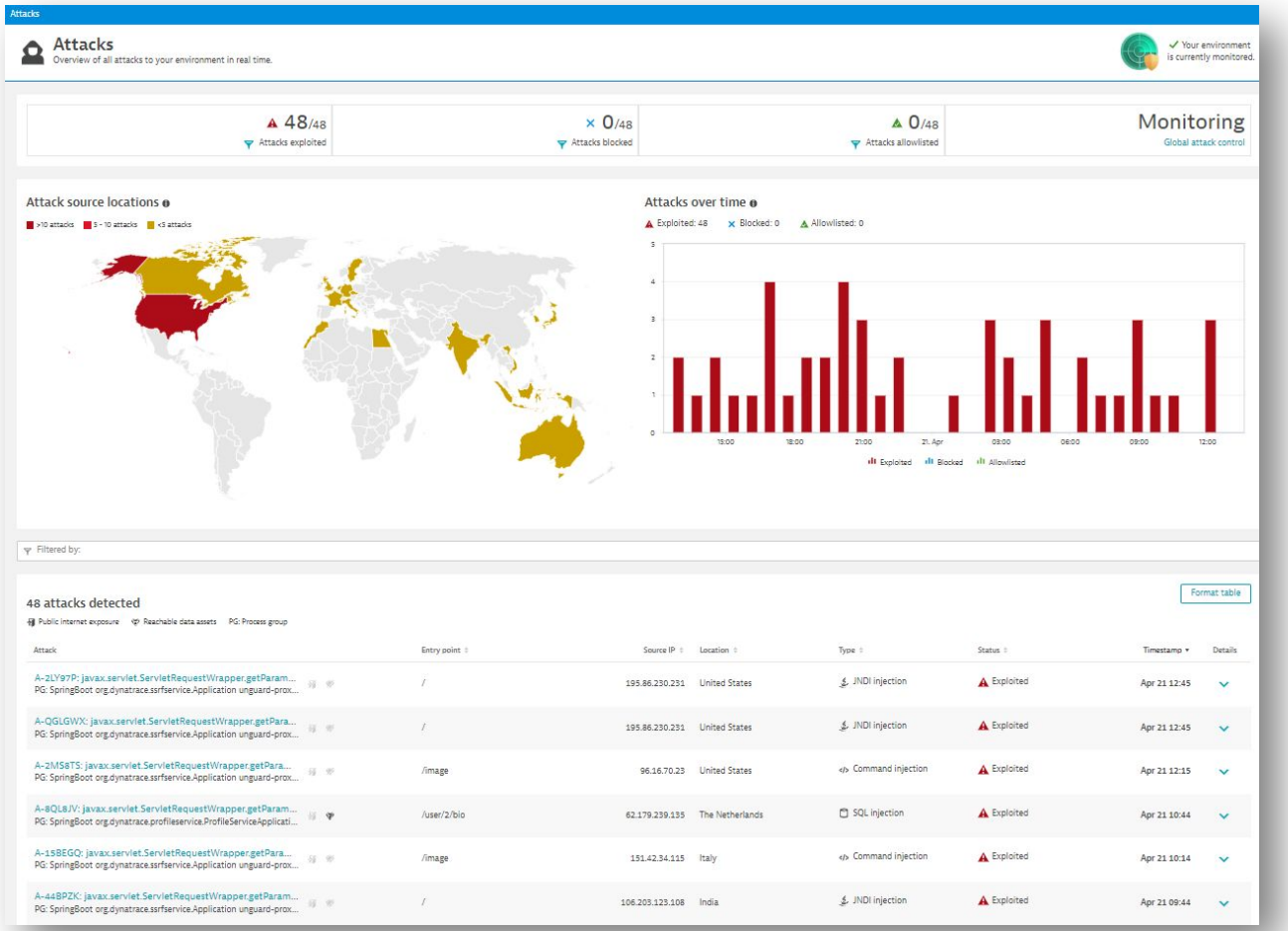

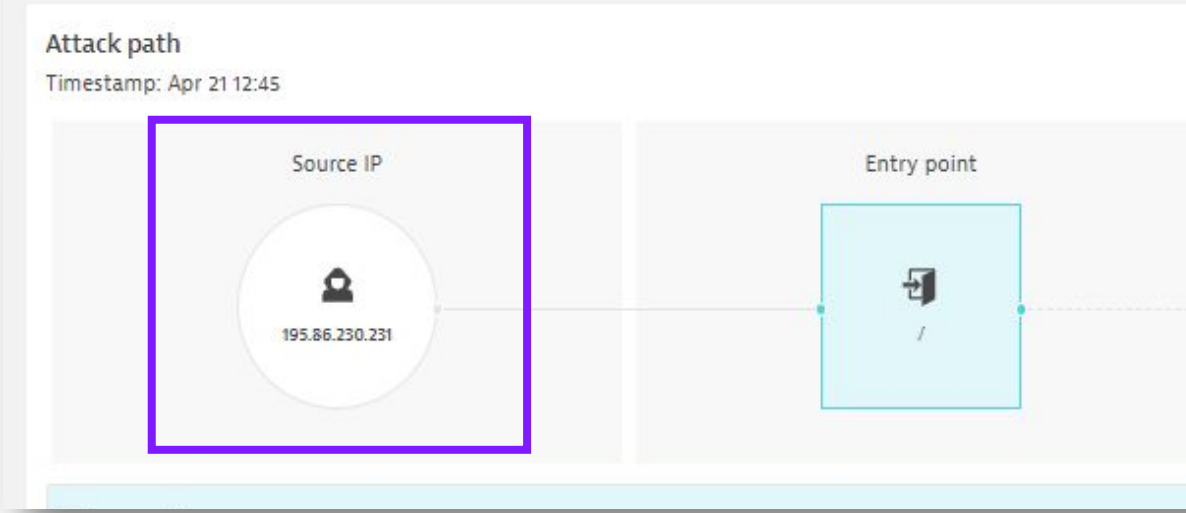

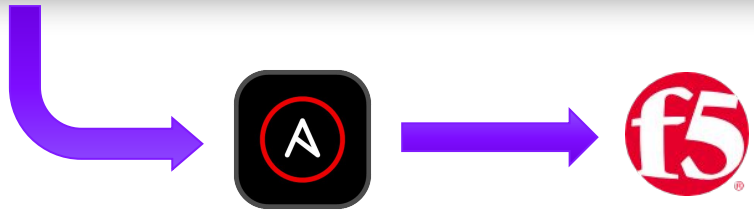

- Automatic trigger of Red Hat Ansible Automation Platform job to block attacker IP on firewall

Drop by...

Drop by and win some Apple AirPods Max!

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IT Services
dynatrace