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Automating the Enterprise Cloud

Observability at scale for Red Hat OpenShift providing answer-driven Automation with Event-Driven Ansible

Kristof Renders

Global Director, Innovation Services

Automating the Enterprise Cloud

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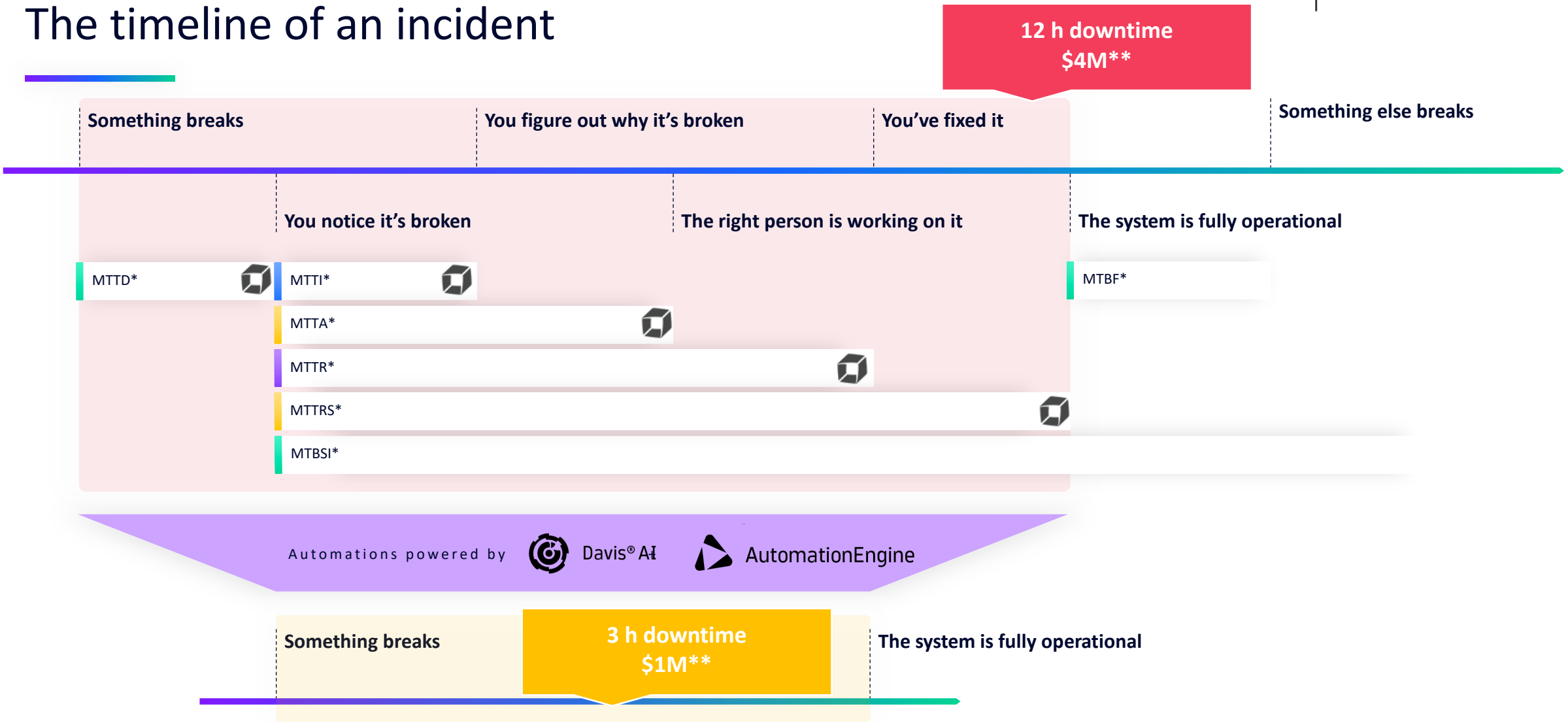
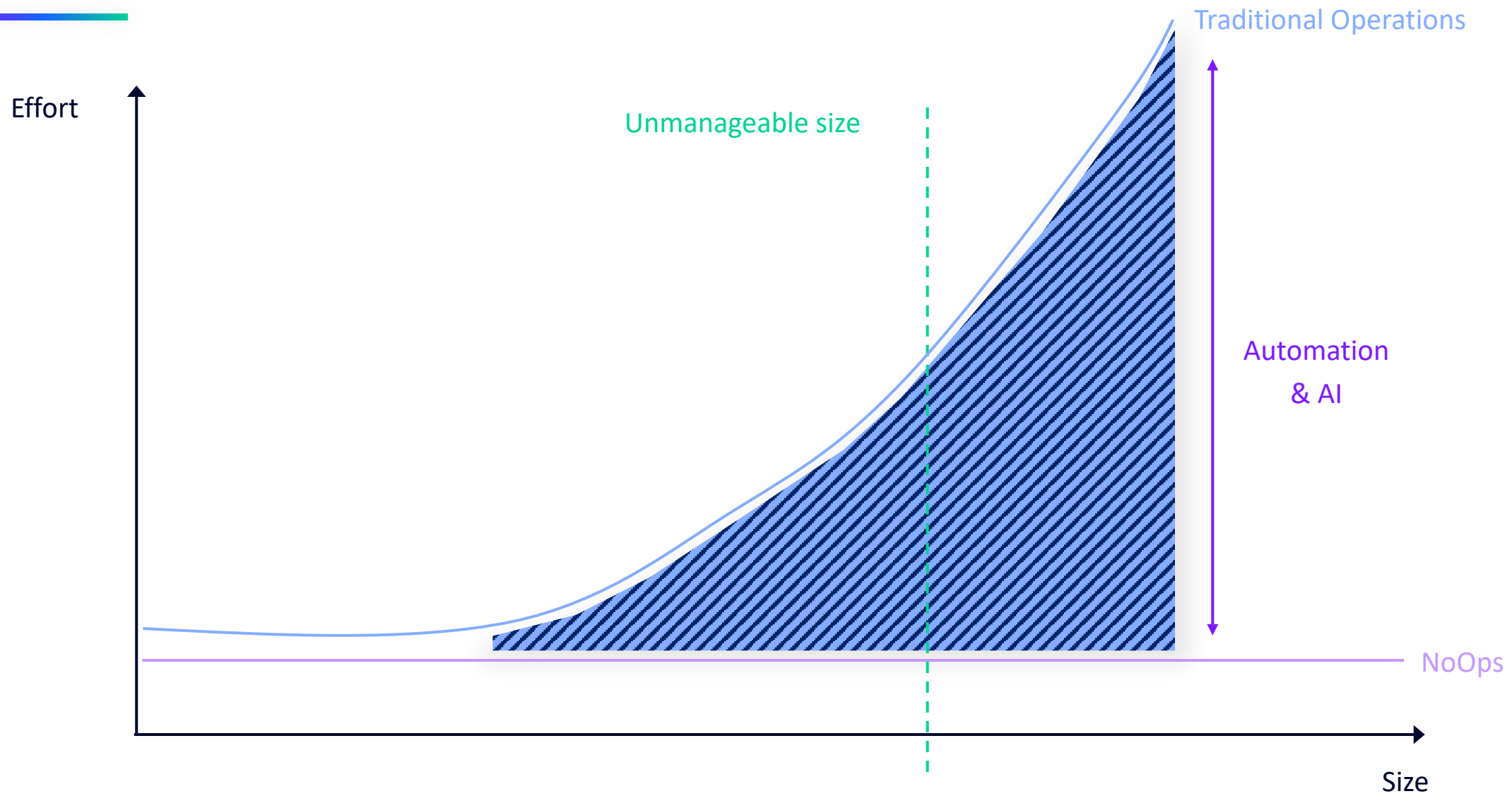
The timeline of an incident



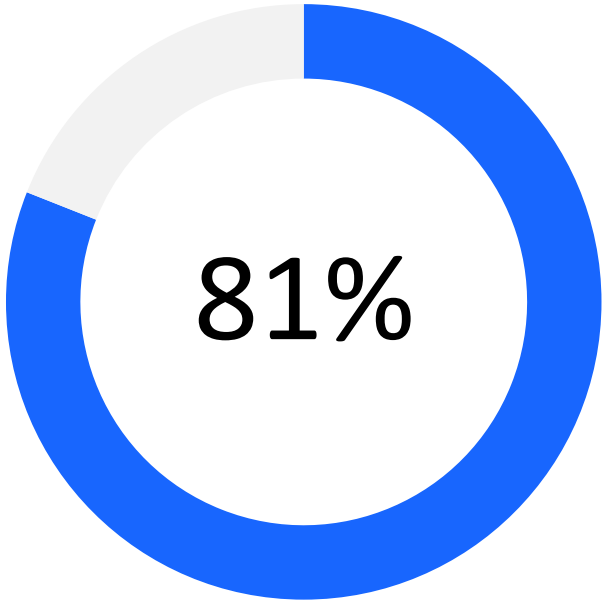
*) **MTTD**: Mean Time to Detect **MTTI**: Mean Time to Investigate **MTTA**: Mean Time to Action **MTTR**: Mean Time to Repair **MTTRS**: Mean Time to Restore Service **MTBF**: Mean Time Between Failures **MTBSI**: Mean Time Between Service Incidents

**) The average cost of downtime is $5,600 per minute, according to a 2014 study by Gartner. https://blogs.gartner.com/andrew-lerner/2014/07/16/the-cost-of-downtime/

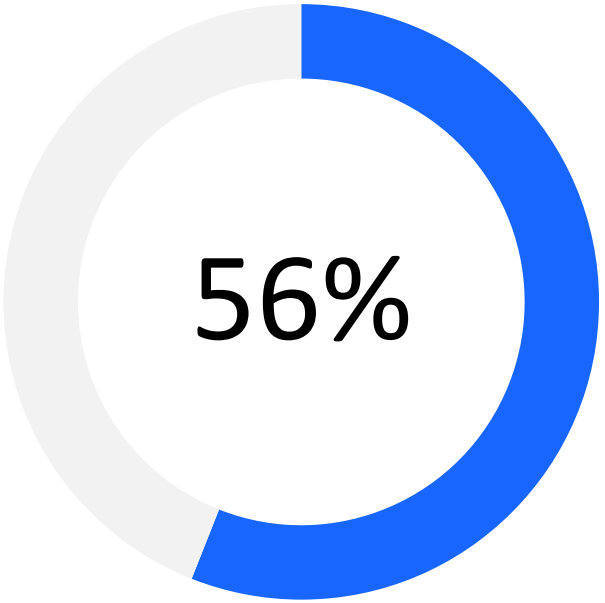
How Many Apps Can You Manage?



Traditional Monitoring Methods are Unable to Keep Up

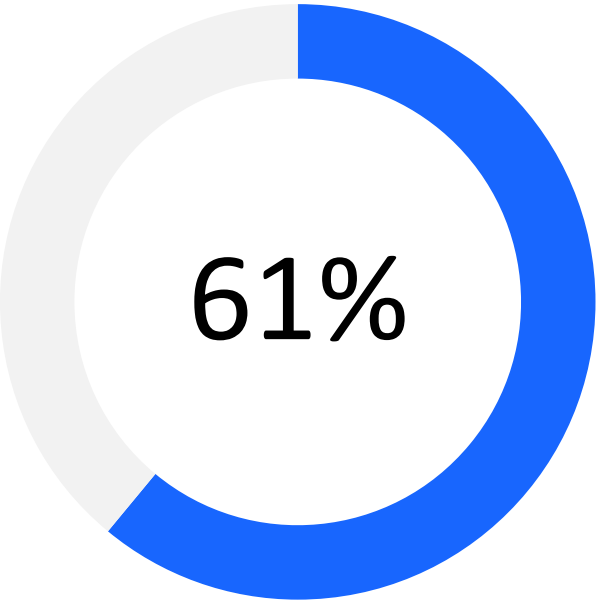


of IT leaders say their use of **Kubernetes has made their infrastructure more dynamic and difficult to manage** with existing solutions and approaches

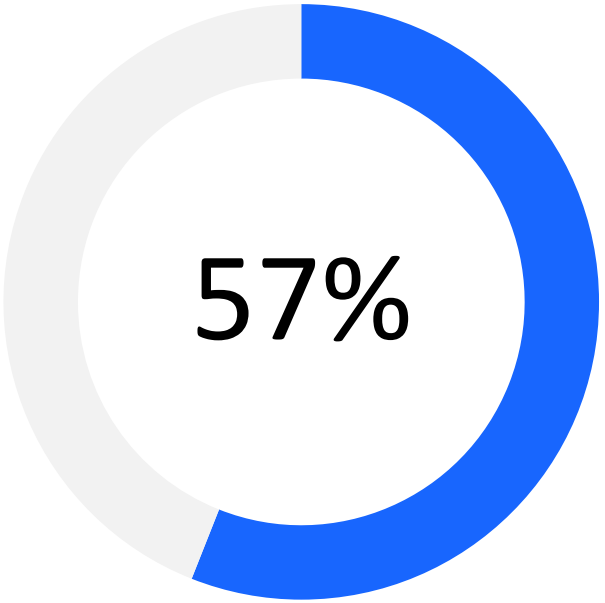


of IT leaders say **traditional infrastructure monitoring solutions are no longer fit for purpose** in a world of cloud and Kubernetes, and they must be replaced with a platform that can provide end-to-end observability across their multicloud environments

Inefficient DIY-Monitoring Create Data Overload

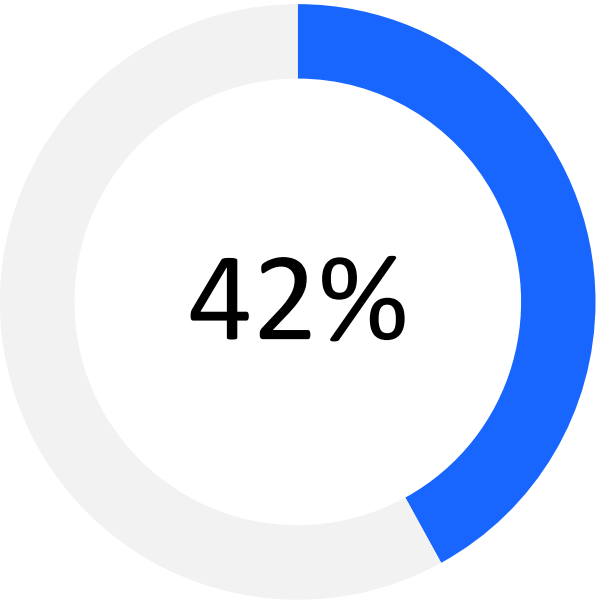


of IT leaders say **observability blind spots in their environments are becoming a greater risk to digital transformation** as teams are finding themselves without an easy way to monitor their technologies end-to-end

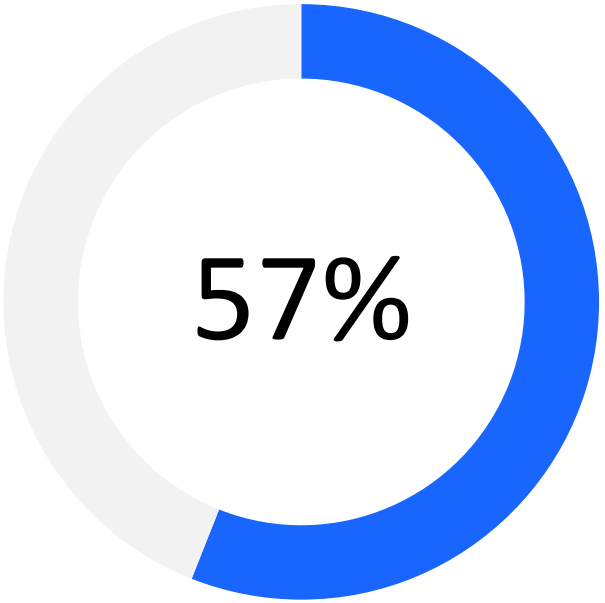


of IT leaders say **multiple monitoring solutions across multicloud environments are making it difficult** to optimize infrastructure performance and resource consumption

Unified Observability and AIOps Drive Success

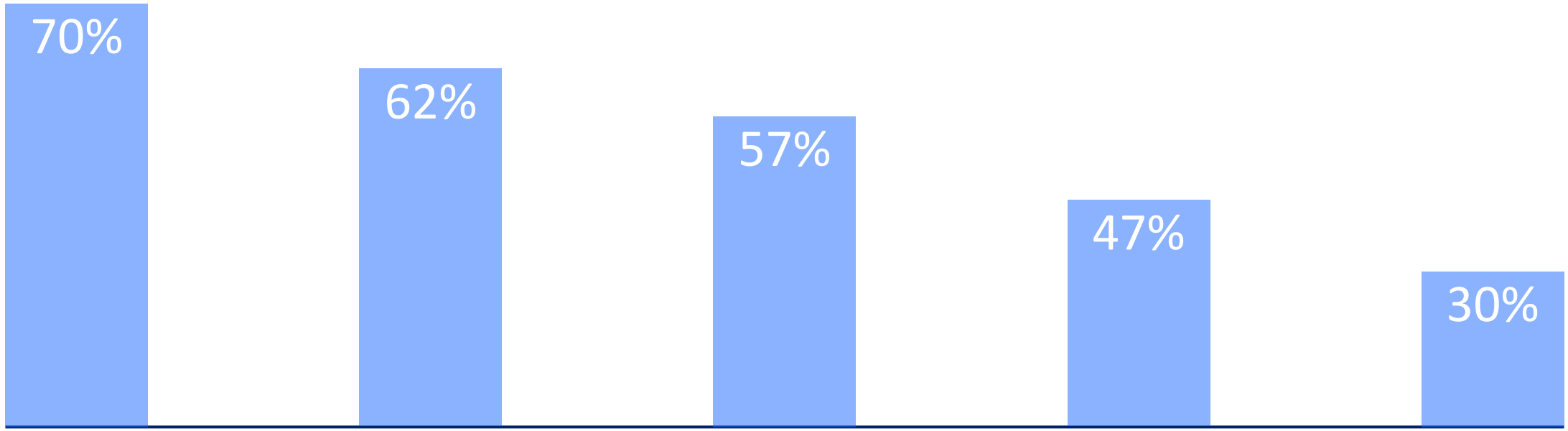


Nearly half of IT team's time Is spent on manual, routine work to "keep the lights on" across their environments, creating a major productivity drain and leading to missed revenue opportunities due to delays in innovation



of IT leaders say **manual instrumentation and configuration of monitoring tools is unsustainable** in dynamic multicloud and Kubernetes environments, and teams increasingly struggle to keep up

Biggest Barriers to Achieving Large-scale Automation



Integrating different monitoring solutions for legacy infrastructure and cloud environments

Conflicting data from multiple monitoring solutions hinders AI-driven decision making

Absence of a single AI-powered platform that can drive proactive automation across their multicloud environments

Inconsistent data capture/structure from use of different observability standards and open source standards making it difficult to retain the rich context needed

Difficulty achieving end-to-end observability across cloud platforms, hybrid infrastructure and container orchestration systems

The Diagnostics of the unknowns

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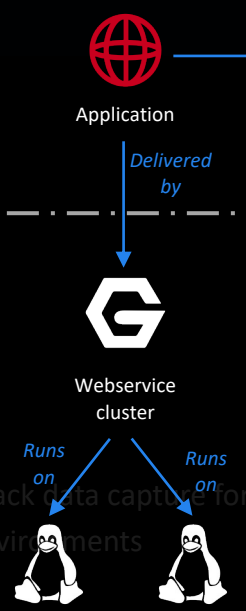
Davis
Explainable AI engine, for automatic answers, insights, actions

Vertical Stack
Infrastructure layer delivering any application or service

Horizontal Stack
Dynamic dependences in real time cross server frontiers

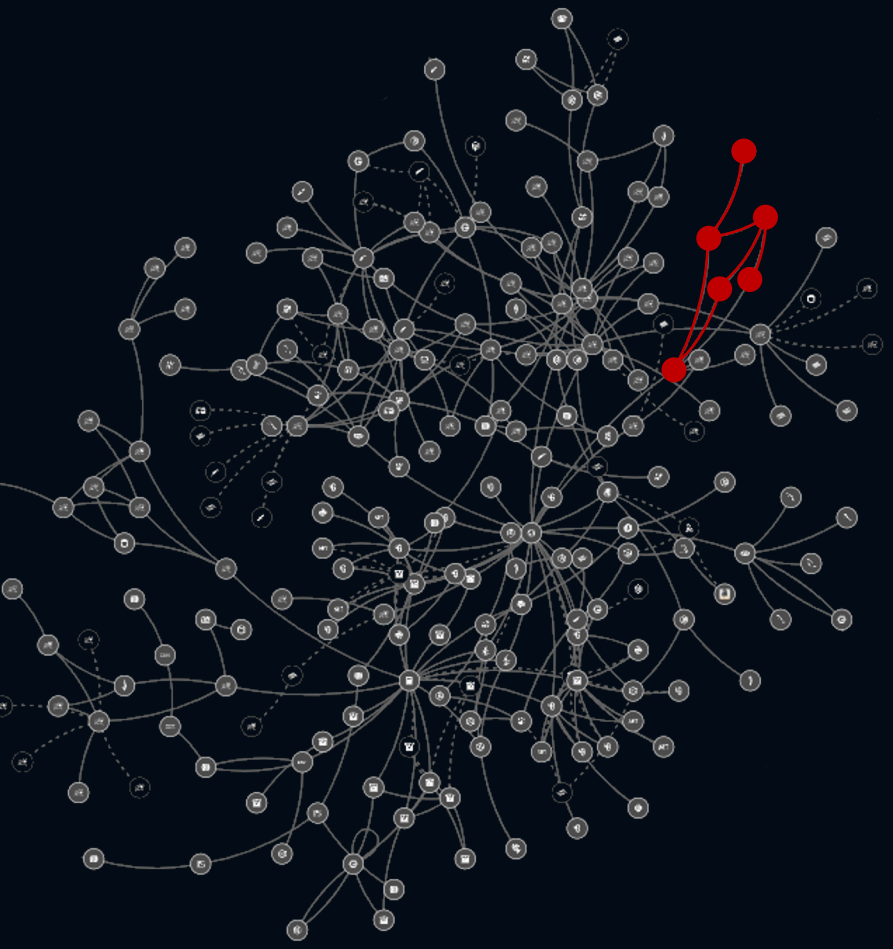


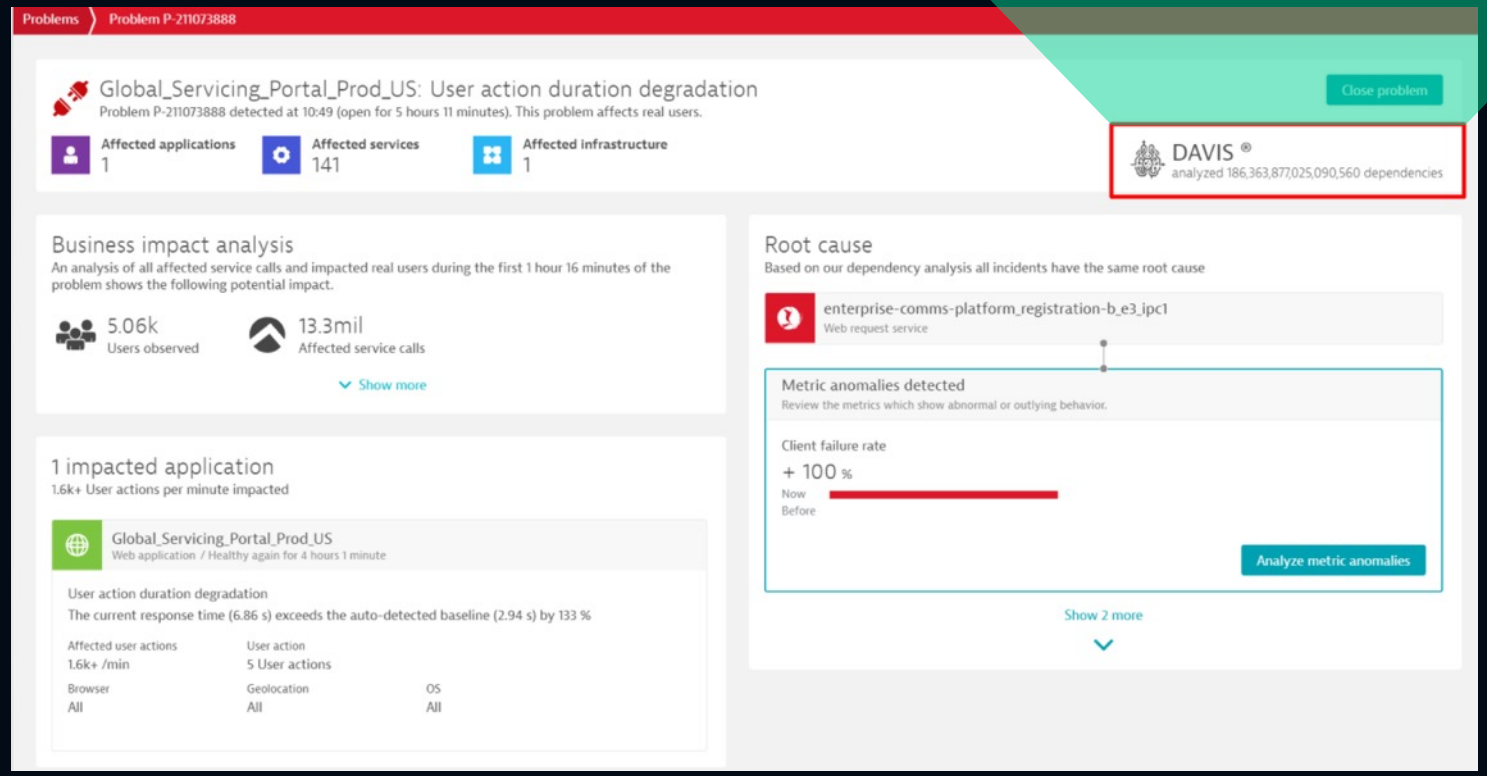
Smartscape + PurePath
End-to-end dependency mapping and deep tracing for real time, precise context

OneAgent
Automatic, full stack data capture for dynamic cloud environments

traces metrics logs topology events behavior

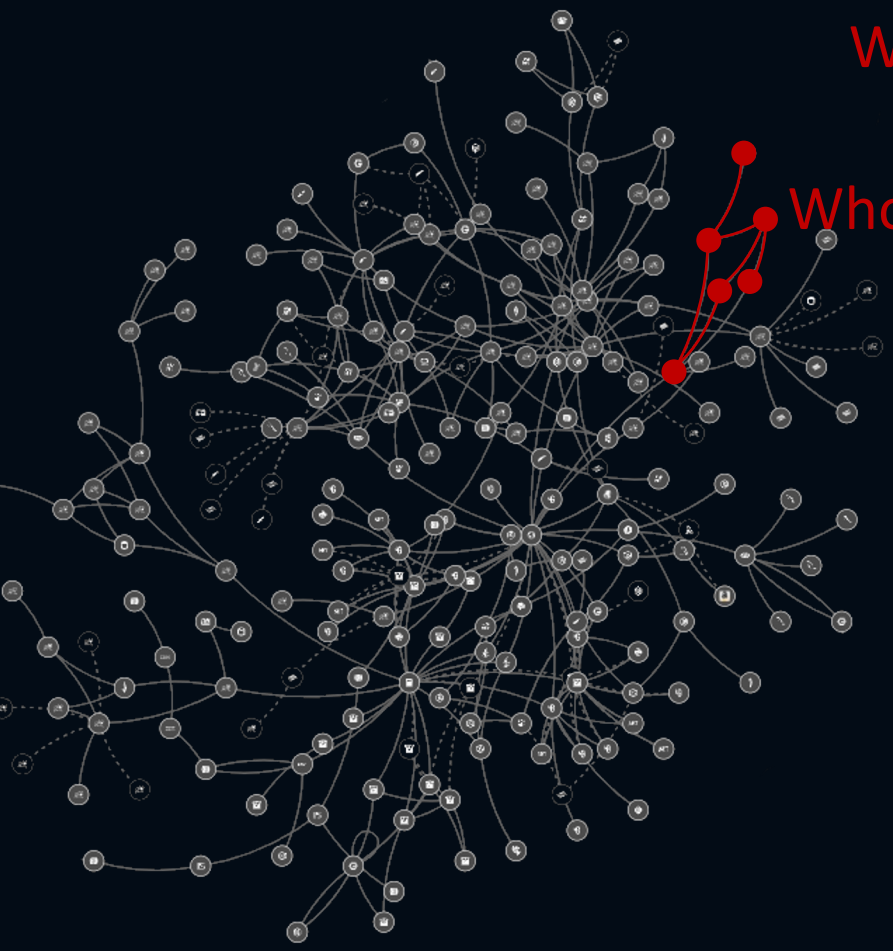
Enterprise complexity…





… cannot rely on humans

When something goes wrong, you need to act fast!



What caused it?

What broke?

Who do I need to inform?

Which services are impacted?

How do I remediate it?

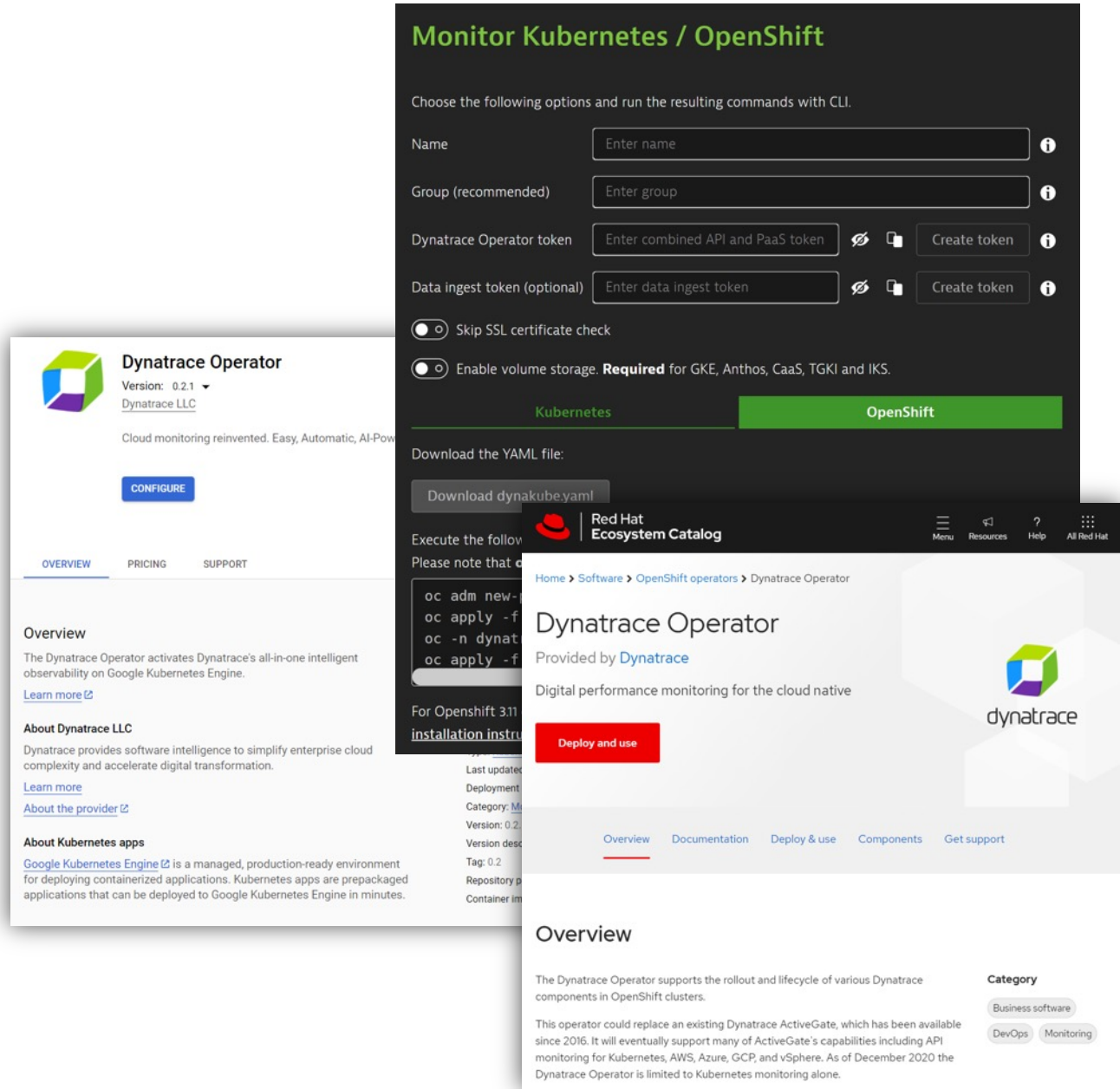
Simplifying OpenShift requires unified observability at scale

1. **Continuously discover Kubernetes nodes and pods to keep pace with changes**
2. **Automatically map all components to understand their impact on your environment**
3. **A common data model to improve collaboration between Ops and Apps teams**
4. **Precise root cause analysis to reduce MTTR and spend more time on strategic projects**
5. **Business impact analysis to understand how changes to your environment impact end users**

How easy is it? Really?

Run 1 command for:

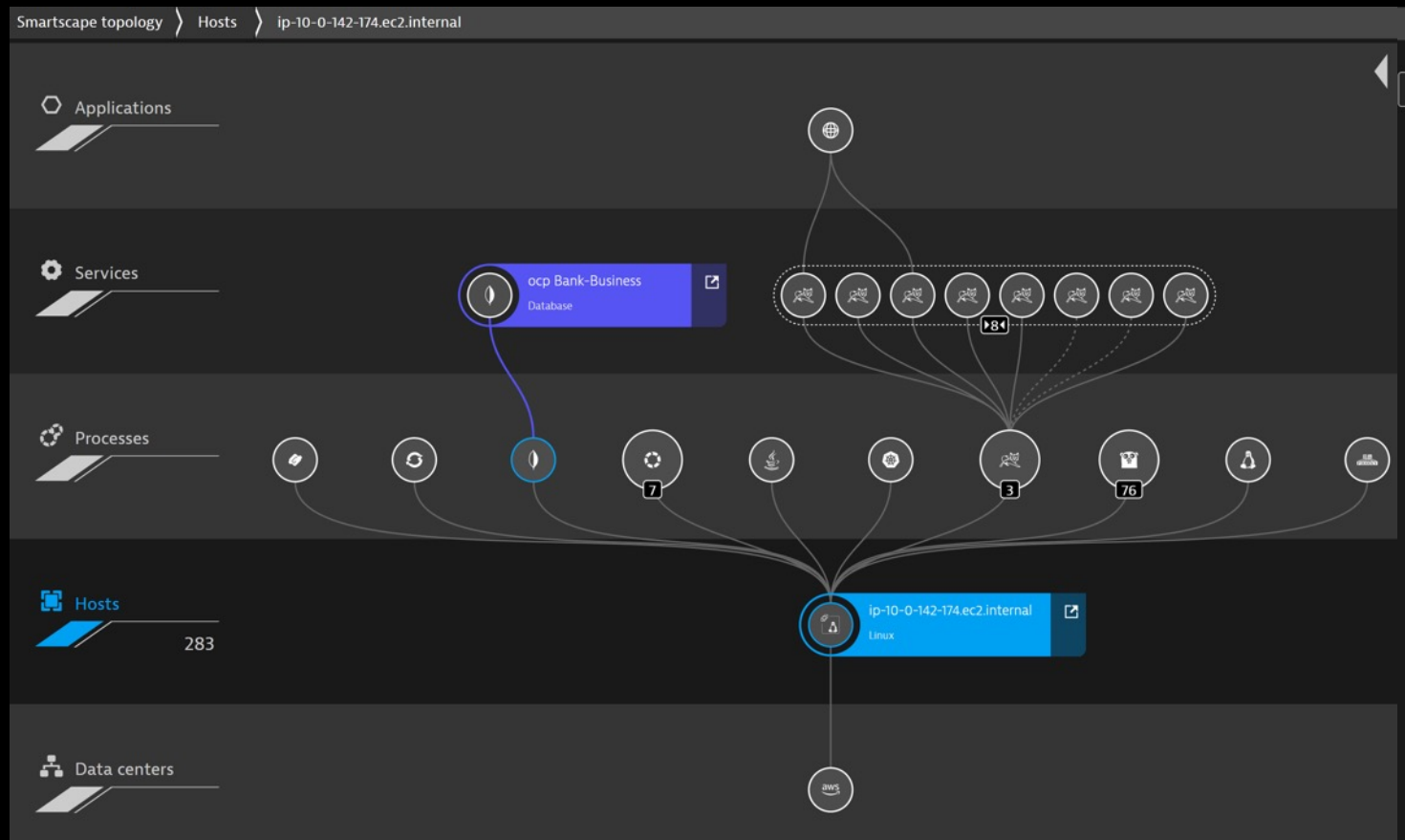
- Complete visibility of entire Kubernetes cluster:
  - Every node
  - Every pod/container
  - Every process
  - Every transaction, at method-level detail
- Connection to Kubernetes API for:
  - Insight into overall cluster health
  - Defined workloads
  - Kubernetes events
- Connection to Prometheus exporters
  - Full visibility of every exposed Prometheus metric
- Full Dynatrace traffic routing

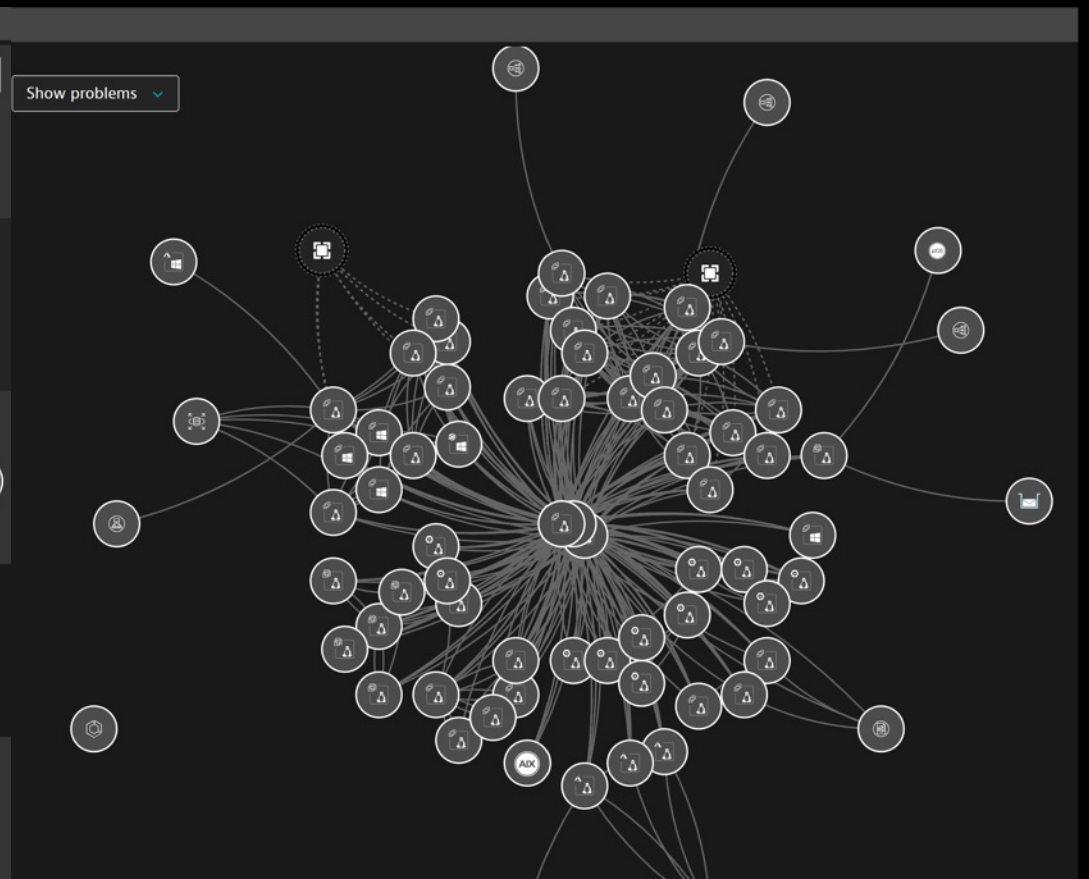


Native Full-stack Visibility

INSTANT, CONTINUOUS, REAL-TIME VISIBILITY OF ALL OPENSHIFT COMPONENTS, INCLUDING THEIR RELATIONSHIPS.

ALL DATA CONTEXTUALISED AGAINST THESE COMPONENTS





AI Powered

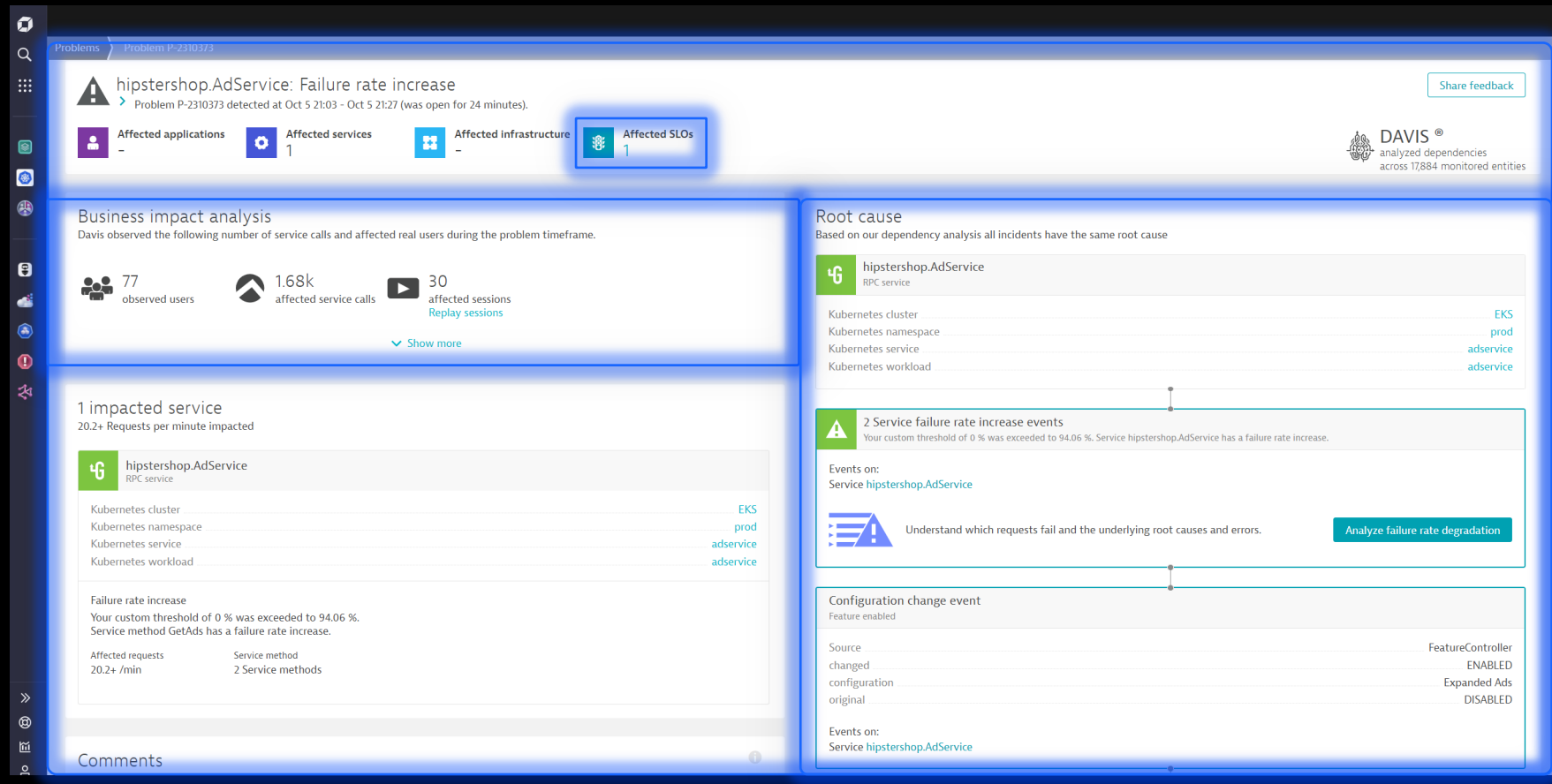
AUTOMATIC PROBLEM DETECTION

AUTOMATIC BUSINESS IMPACT ANALYSIS

AUTOMATIC ROOT CAUSE ANALYSIS, UTILIZING CAUSAL AI

AUTOMATIC TOPOLOGY TRAVERSAL AND ANALYSIS OF ALL DATA TYPES

AUTOMATIC SLO ASSOCIATION



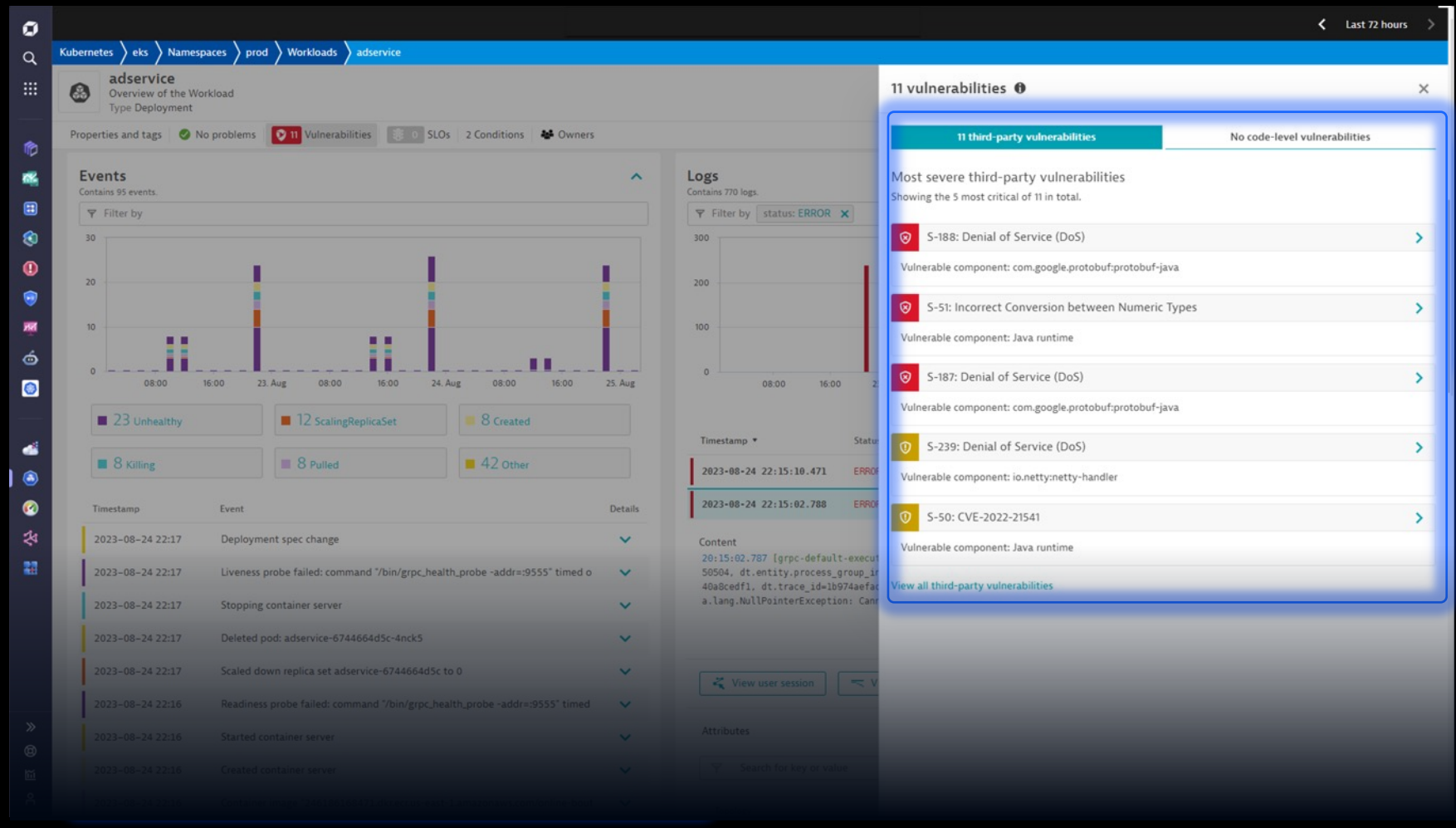
OpenShift Workloads

Use the power of Grail to bring context to OneAgent and OpenTel data

UNIFIED VIEW TO LEVERAGE KEY KUBERNETES WORKLOAD METRICS

IN CONTEXT DATA TO HELP DETECT UNHEALTHY OR SUSPICIOUS BEHAVIOR

KEEP YOUR KUBERNETES CLUSTER SECURE WITH ADVANCED SECURITY ANALYSIS



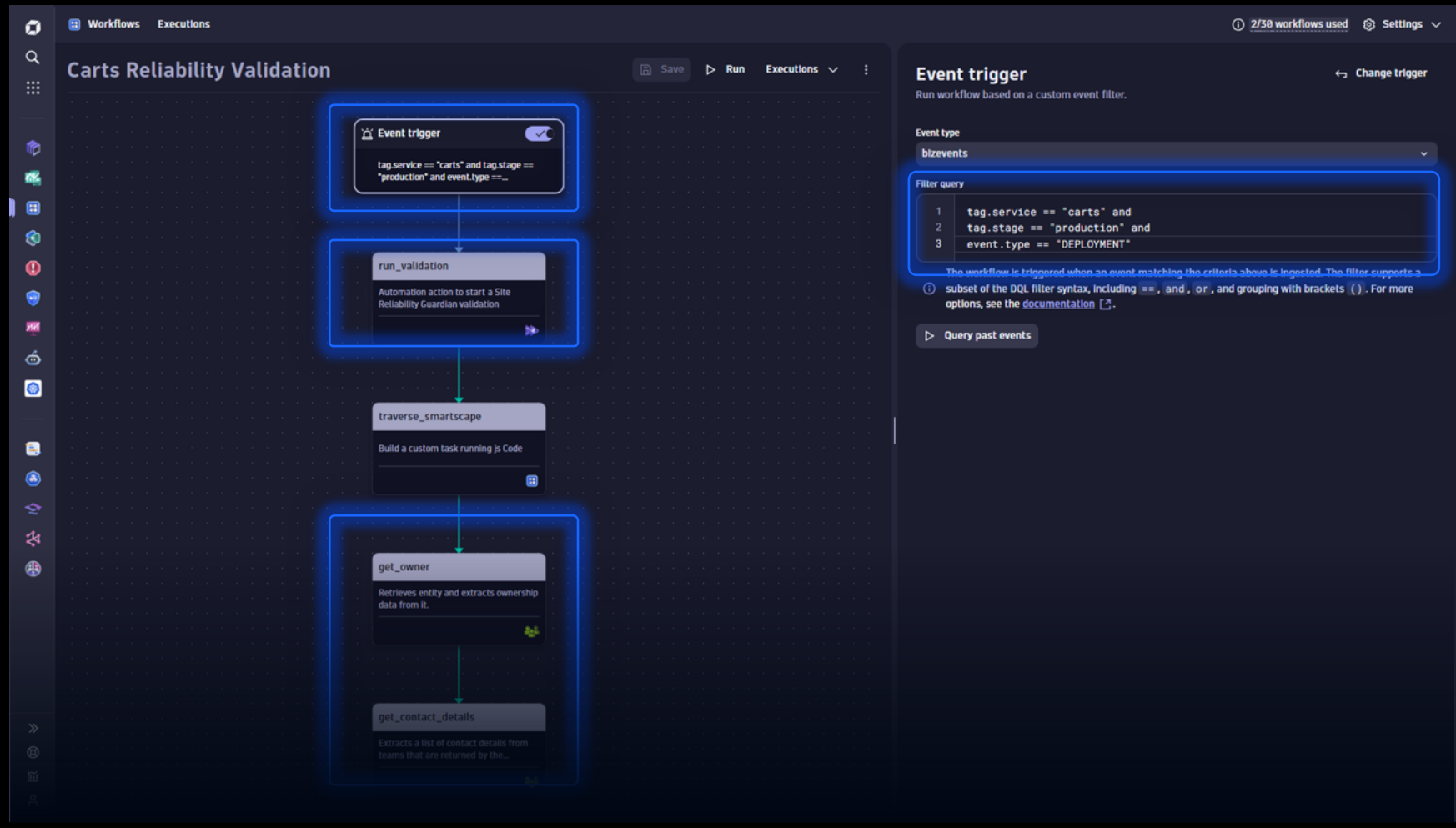
Quality and security gates

Site Reliability Guardian helps ensure better code rollout

VALIDATE THE HEALTH OF COMPONENTS ACROSS ANY DATA IN GRAIL

USE GATES TO ENSURE VULNERABILITIES CAN'T ENTER PRODUCTION

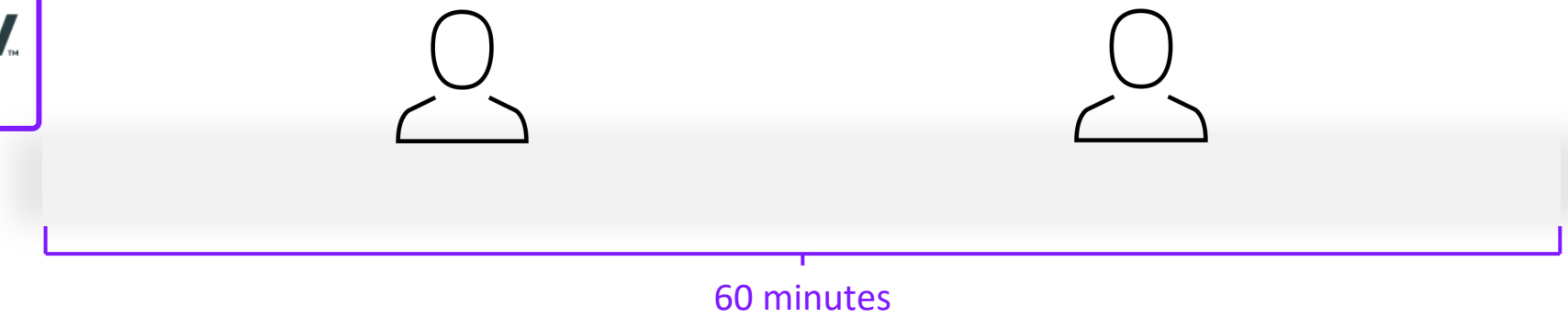
WORKFLOWS ARE ENFORCED IN CORE PLATFORM CAPABILITIES



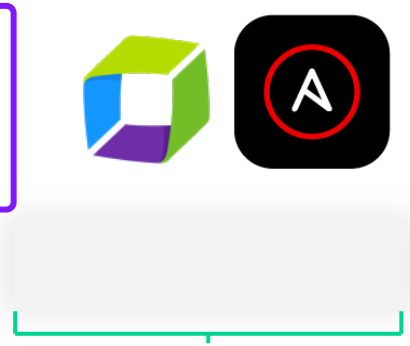
AUTOMATED REMEDIATION CUSTOMER EXAMPLE

U.S. GOVERNMENT INSTITUTION

MANUAL REMEDIATION

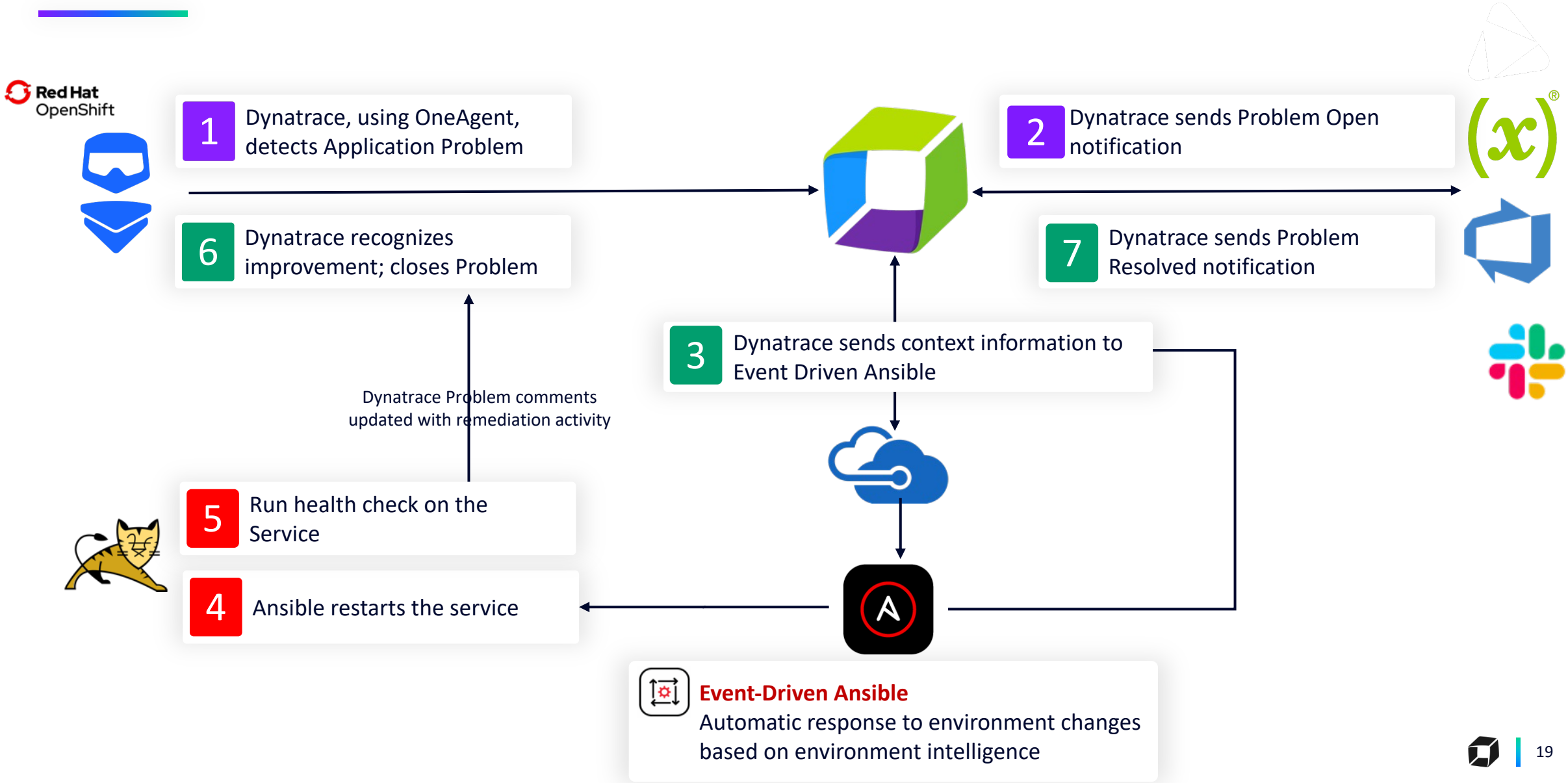


AUTOMATED REMEDIATION



99% reduction in MTTR

Solution Architecture for AI Operations



What Automation means for our customers

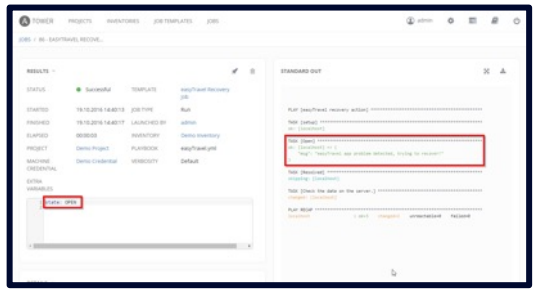
99%

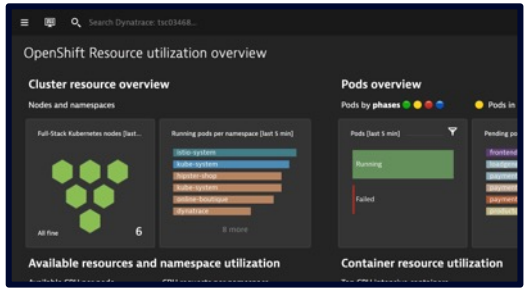
MTTR Reduction

10.950h

Annual FTE burden

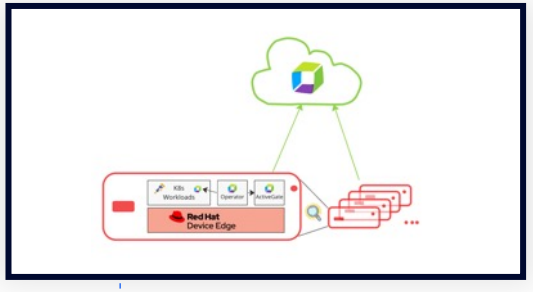
Dynatrace and Red Hat Partnership





Red Hat Enterprise Linux

Scale existing apps across bare-metal, virtual, container, and all types of cloud environments.



2016
Dynatrace becomes Red Hat Certified Partner, enabling insight into deployed applications

May 2017
Dynatrace executes self-healing with Ansible Tower

June 2017
Only APM Red Hat OpenShift Primed partner and Red Hat Container Technology Certified partner

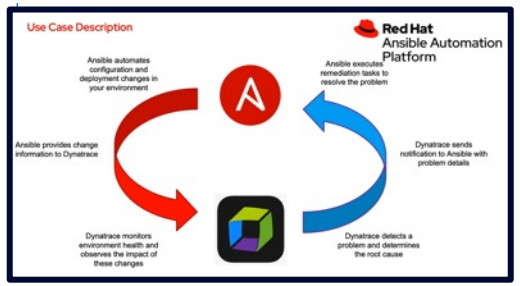
May 2018
Dynatrace OneAgent Operator for Red Hat OpenShift

May 2019
Dynatrace integrates with Red Hat Ansible to deliver a self-driving cloud ecosystem

Feb 2020
Dynatrace Managed is certified for Red Hat Enterprise Linux (RHEL) 8.x distributions

Oct 2022
Dynatrace and Red Hat Ansible kick-off next chapter with EDA

Nov 2023
Dynatrace and Red Hat expand enterprise observability to edge computing



For detailed information

Please visit our booth G1 or contact us via:

marcom@asseco-see.com.tr

Thank You

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Breakout Session Feedback

https://forms.gle/thDhJnogZwRp77iAA