

RED HAT FORUMS

Dynatrace: the software intelligence platform for OpenShift

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Country Manager
2019

The world
needs
software to
work
perfectly



Visibility is key – monitoring has become a necessity



Visibility is key – monitoring has become a necessity

but traditional monitoring is a dead end



Traditional
Monitoring

Tool overload

Hybrid
Multi-Cloud

Web-scale and
Automation

Container and
Microservices

DevOps

Digital Experience



The new enterprise cloud = more tools + same old problems

Traditional
Monitoring

Hybrid
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Container and
Microservices

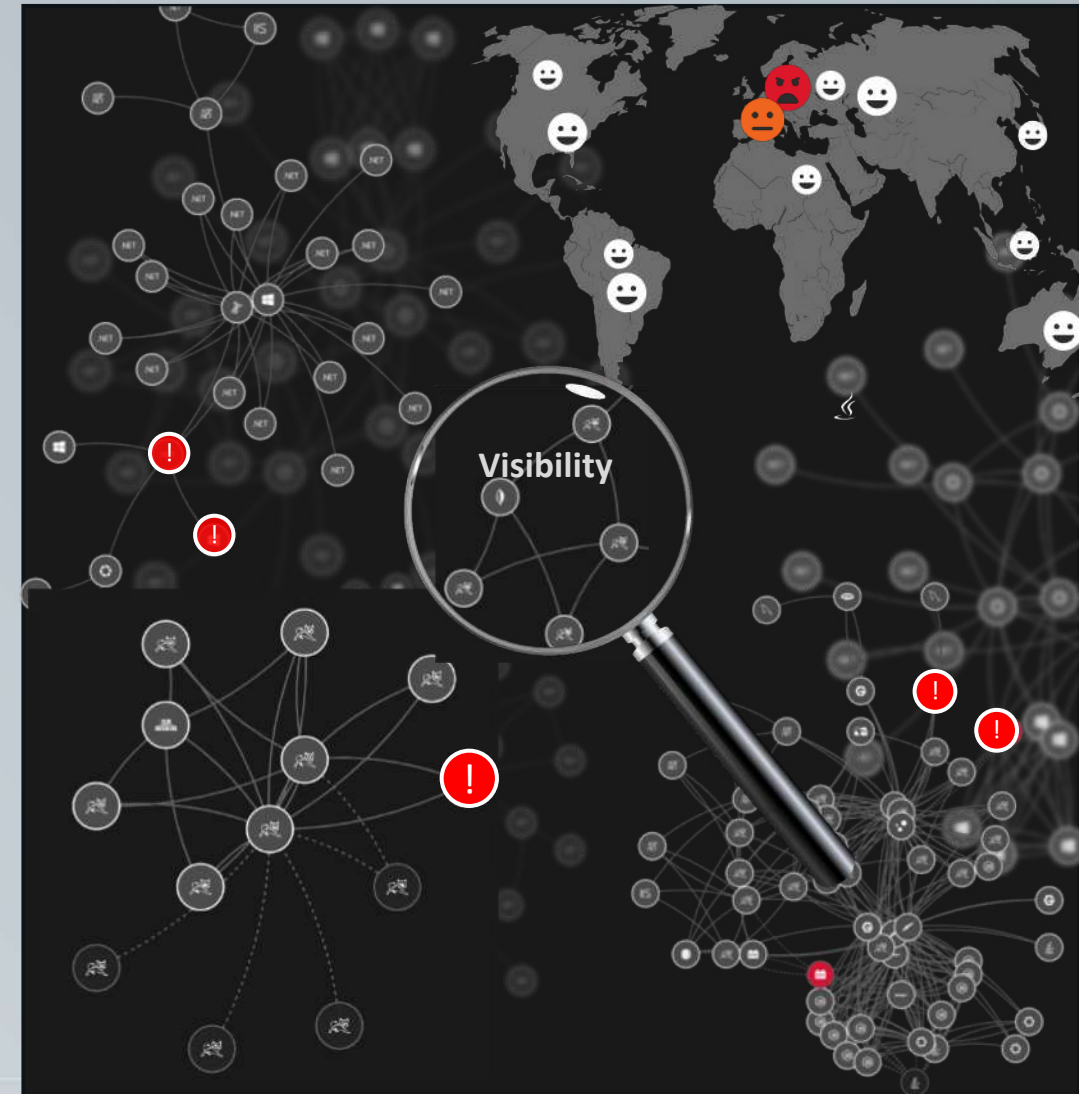
DevOps

Digital Experience

What are you missing?

The typical organization monitors no more than 5% of their apps for performance and availability.

Because the effort is too much and the tooling can't scale.



Traditional
Monitoring

Hybrid
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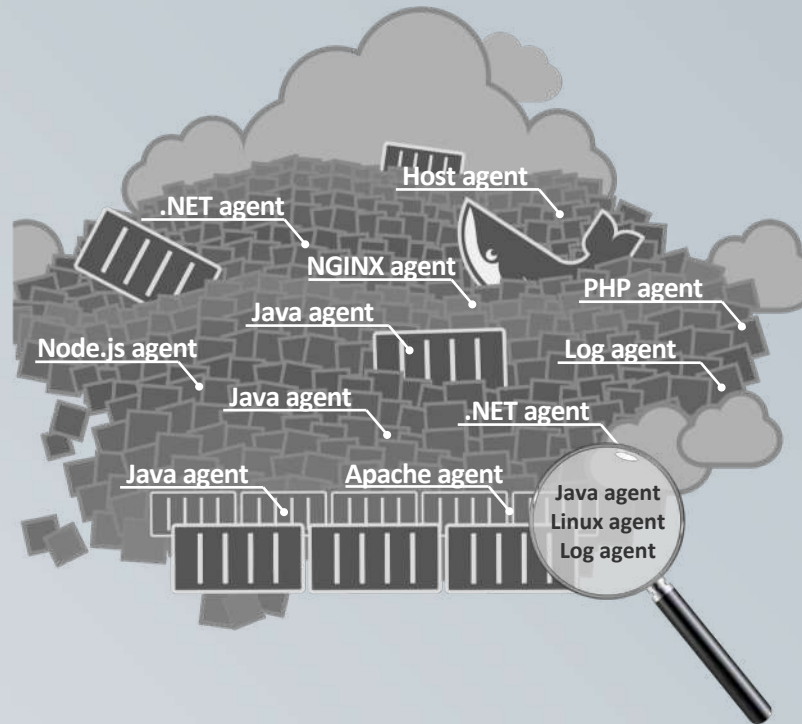
Digital Experience

Microservices – traditional monitoring doesn't work

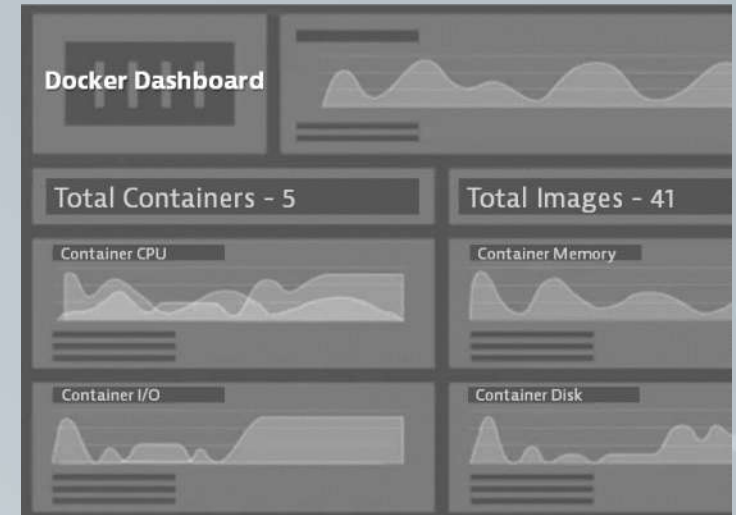
Agent explosion

Or

Rely on container metrics



Installing agents into every container does
not scale



This doesn't represent application performance

Traditional
Monitoring

Hybrid
Multi-Cloud

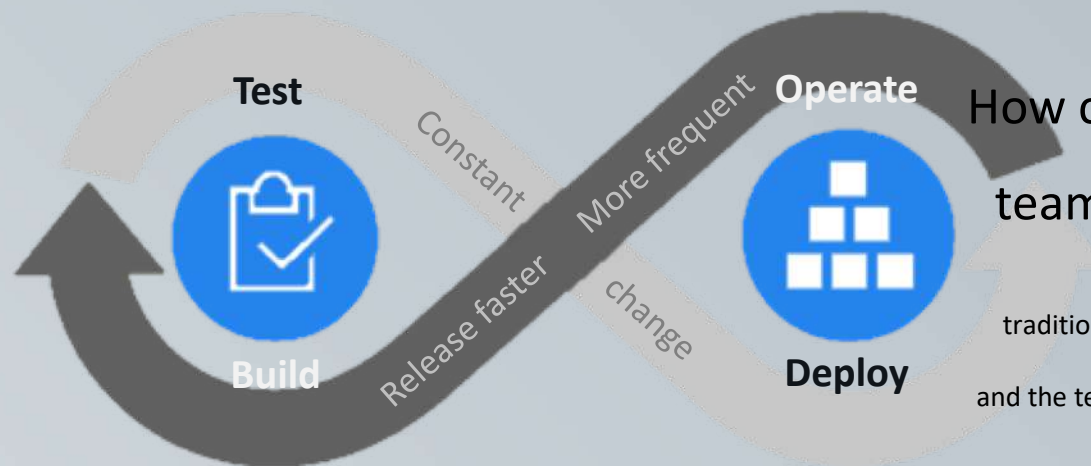
Web-scale and
Automation

Container and
Microservices

DevOps

Digital Experience

Trying to innovate faster with DevOps?



How can your biz + dev + ops
teams move faster when...

traditional tools **cannot** auto-adapt to change?
and the teams **don't** share a single source of truth?

Traditional
Monitoring

Hybrid
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Web-scale and
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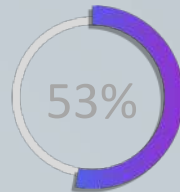
Container and
Microservices

DevOps

Digital Experience ◀

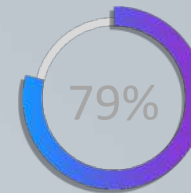
Bad user experience? Game over.

Performance



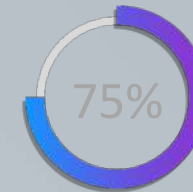
of mobile users abandon session if
longer than 3 seconds to load

Impact

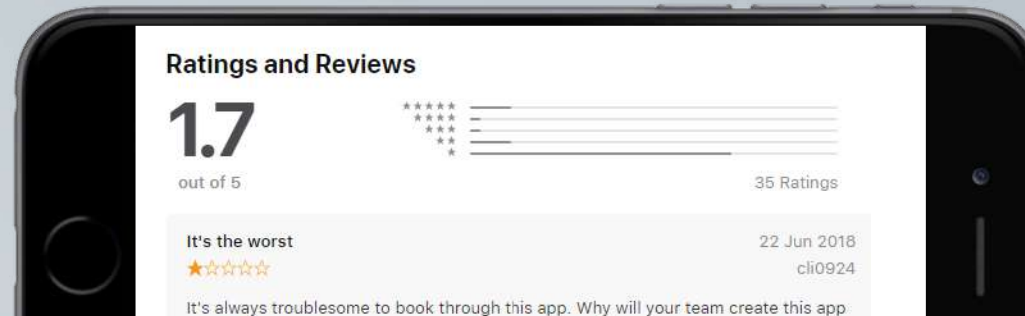


of users will not return after negative
experience

Root cause



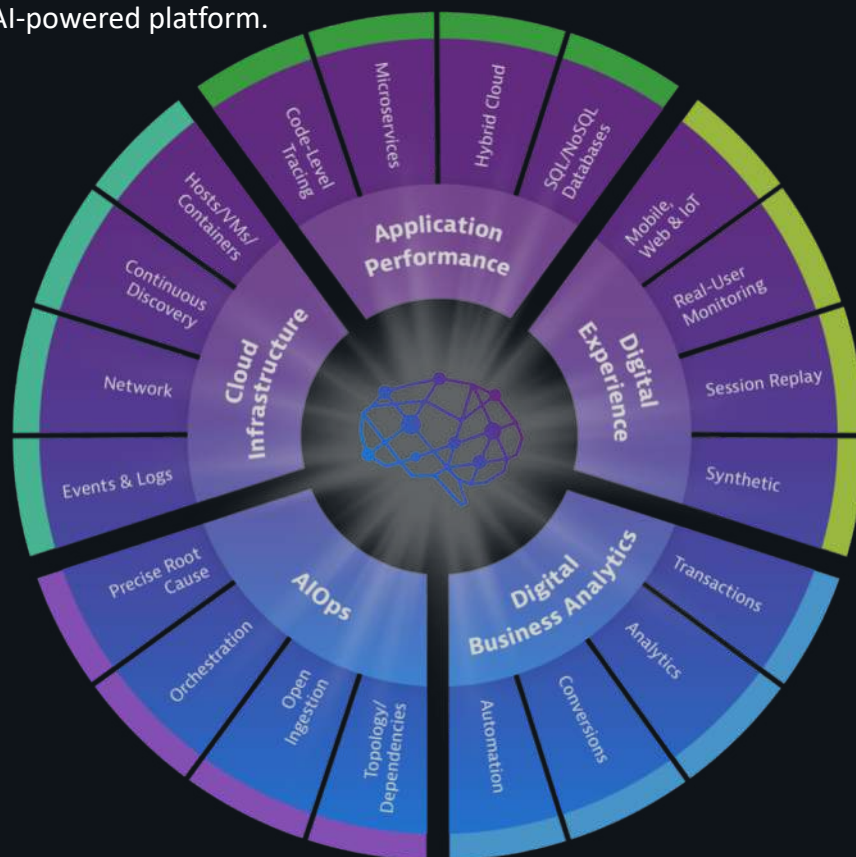
of customer expect online help
resolution within 5 minutes



Traditional tools are **blind** to the most important perspective of all...
the real experience of your end users.

Dynatrace understood transformation needs!

No more bag of tools and wasted time.
Cover it all, in one automatic,
AI-powered platform.



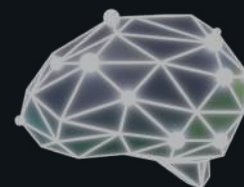
Automatic

Zero-touch configuration, continuous discovery and relationship mapping in real-time, instant answers and precise causation.



Full Stack

End-to-End, Top to Bottom, From End User experience to Infrastructure health



Smart

Davis, Deterministic AI
Answers, not only more data on same view



Web-Scale

Scale-out cloud native architecture,
automatic enterprise-wide deployment.



DAVIS

deterministic AI engine

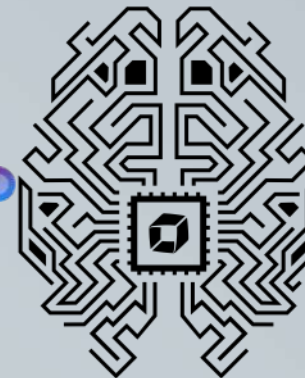
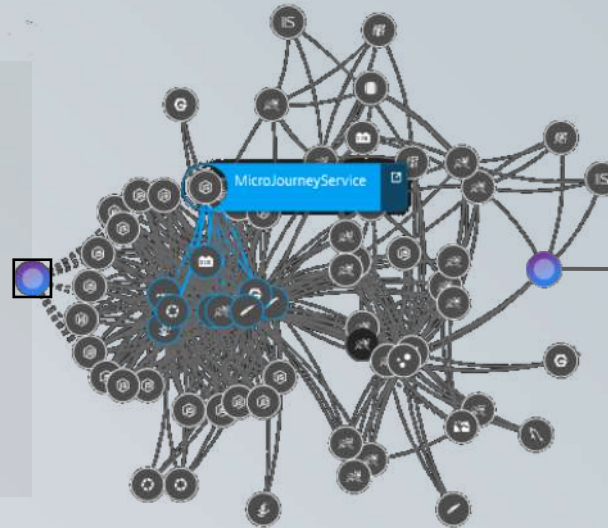
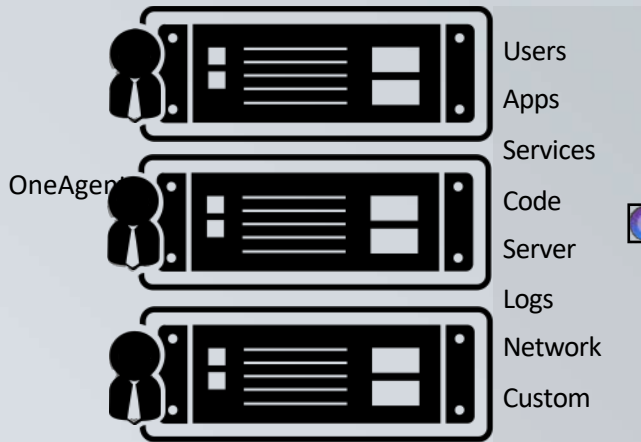
Better data makes Dynatrace A.I. and massive automation possible

High fidelity data

Mapped end-to-end

Deterministic AI

Answers + Action



Automated problem detection
Business impact determined
Root cause explained
No alert storms
Trigger self healing

Completely automated



Red Hat



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Dynatrace Positioned as a Leader in Gartner Magic Quadrant for Application Performance Monitoring*

Dynatrace is furthest in both dimensions within the Leaders Quadrant

*Gartner, Magic Quadrant for Application Performance Monitoring, Charley Rich, Federico De Silva, Sanjit Ganguli, 14 March 2019



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Why Red Hat and Dynatrace?





PlatformSolutionsNewsCompanyServices & supportQ | SaaS loginFree trial

Red Hat OpenShift

Bringing Docker and Kubernetes to the enterprise



Red Hat and Dynatrace Partnership

While containers allows companies to accelerate the creation and deployment of apps, the decoupled nature of containerized services and applications require a more sophisticated performance monitoring approach. Dynatrace addresses this need with an all-in-one, fully automated, AI-powered monitoring solution that allows you to quickly and easily gain insight into the health of your applications and OpenShift environment, and proactively fix problems before they impact users. Together, Dynatrace and Red Hat are redefining the way microservice environments are managed and monitored.

"Beyond years of industry knowledge in the APM space, Dynatrace offers one of the best solutions I've seen for monitoring applications running on OpenShift. What really distinguishes them from others is the use of artificial intelligence based root-cause analysis. OpenShift is a platform to allow you to run decoupled services and applications, which can be a monitoring nightmare, but Dynatrace's insights makes it less scary."

-Chris Morgan, Technical Director for OpenShift Partner Ecosystem, Red Hat

How? Dynatrace OneAgent Operator

OneAgent Operator installed on OpenShift Cluster. That's all it takes.

Hosts

Search

All 42

State

Running 42

Monitoring mode

Full stack 42

Type

VMware 37

Physical host 1

LPAR 4

Tags

K8s Container Name 30

K8s Base Pod Name 30

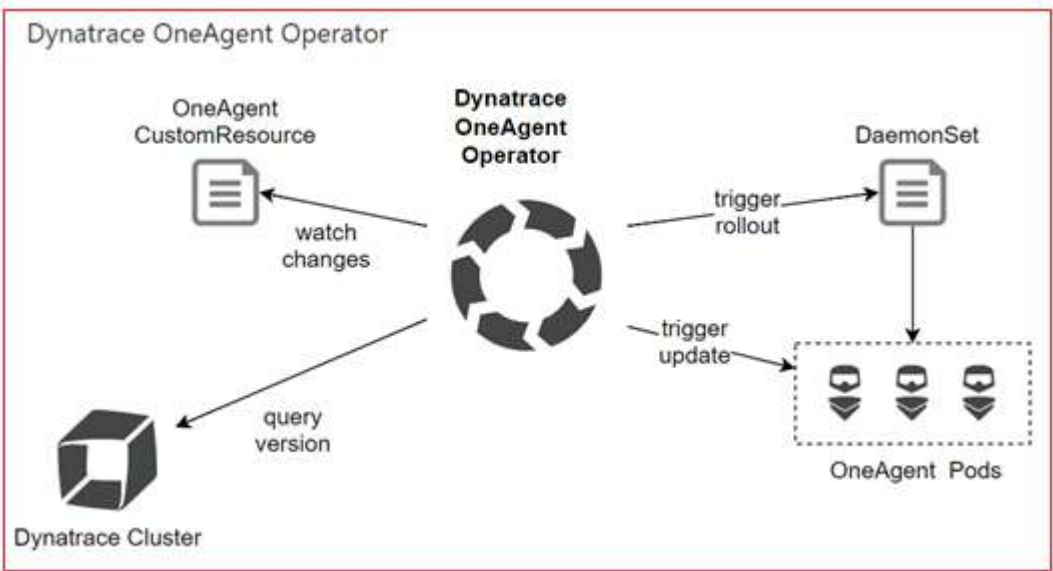
K8s Namespace 30

All hosts

30 hosts

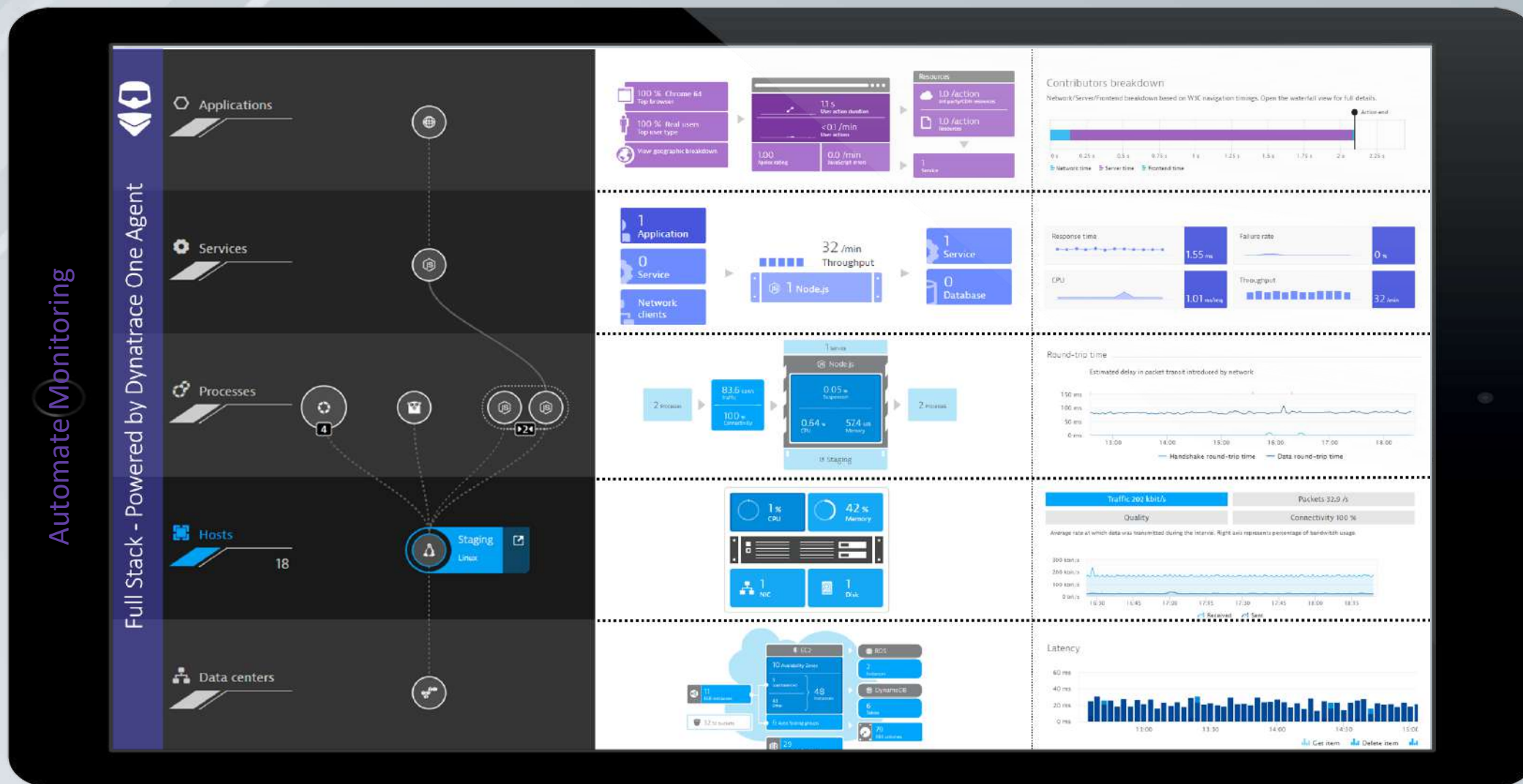
Filtered by

Name



	State	CPU usage	Memory usage	Disk latency	Network traffic
	Running	12 %	35 % of 78.5 GB	2.93 ms	2.02 Mbit/s
	Running	22 %	24 % of 78.5 GB	14.3 ms	16.7 Mbit/s
	Running	6.4 %	20 % of 78.5 GB	4.02 ms	1.28 Mbit/s
	Running	11 %	26 % of 78.5 GB	13 ms	1.28 Mbit/s
	Running	12 %	35 % of 78.5 GB	4.52 ms	2.48 Mbit/s
	Running	10 %	28 % of 78.5 GB	1.53 ms	8.11 Mbit/s
	Running	16 %	20 % of 157 GB	4 ms	7.43 Mbit/s
	Running	7.4 %	20 % of 157 GB	8 ms	170 Mbit/s
	Running	5.07 %	17 % of 157 GB	10 ms	3.59 Mbit/s
	Running	4.86 %	20 % of 157 GB	4 ms	1.67 Mbit/s
	Running	7.33 %	16 % of 157 GB	41.9 ms	2.76 Mbit/s
	Running	4.45 %	18 % of 157 GB	1.16 ms	2.19 Mbit/s

Why Red Hat and Dynatrace?



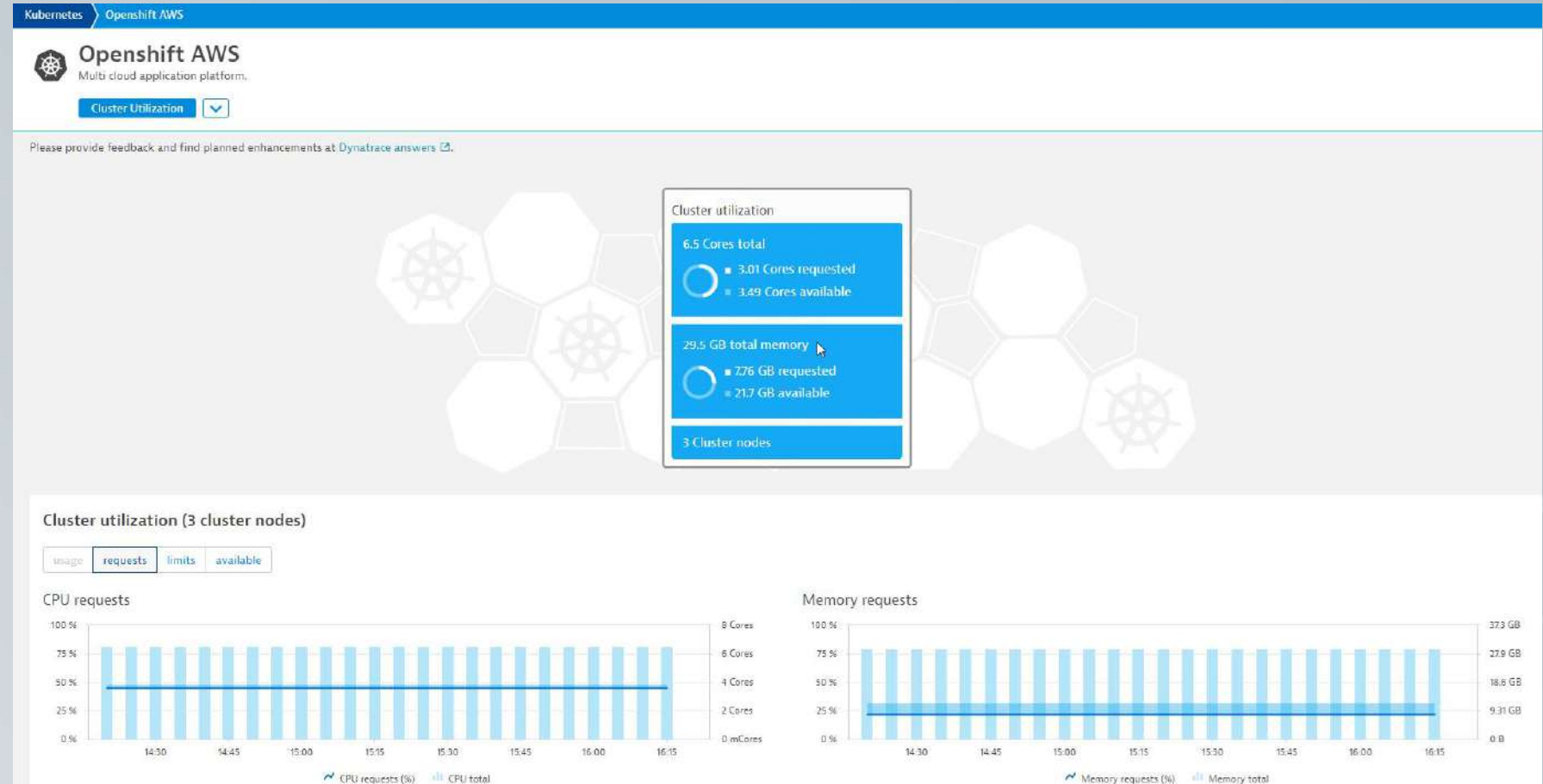
Red Hat



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Dynatrace: Openshift cluster overview

Dynatrace is able to:
monitor each cluster utilization, Health status of individual nodes, Actual usage of resources and how much resources has been requested, How much additional workload can be deployed per node



Problems

Business Impact



www.easytravel.com: User action duration degradation

Problem 506 detected at 07:58 (open for 32 minutes). This problem affects real users.

Close problem



Affected applications

1



Affected services

9



Affected infrastructure

2



Davis analyzed
222,513,408 dependencies

Business impact analysis

An analysis of all affected service calls and impacted real users during the first 33 minutes of the problem shows the following potential impact.



536

Impacted users (show first 100)



4.52M

Affected service calls

▼ Show more

1 impacted application

29.2 User actions per minute impacted



www.easytravel.com
Web application

User action duration degradation

The current response time (2.68 s) exceeds the auto-detected baseline (1.39 s) by 92 %.

Affected user actions

29.2 /min

User action

Loading of page /orange.jsf

Browser

All

Geolocation

All

OS

All

Service Impacted

Comments

Add comment

No comments posted

Root cause

Based on time correlation and analysis of all transactions that use these components, this issue has the following

Root Cause



CheckDestination

Custom service



2 Response time degradations

Service CheckDestination slow down

Today, 07:58 - 08:18

Events on:

Service CheckDestination



Analyze code level, database calls, and outgoing requests.

Analyze response time degradation

2 CPU saturations

CPU saturation

Today, 08:01 - 08:20

Deployment

Deployment change

Today, 07:57 - 08:03

Metric anomalies detected

Review the metrics which show abnormal or outlying behavior.



Visual resolution path

Click to see how we figured this out.

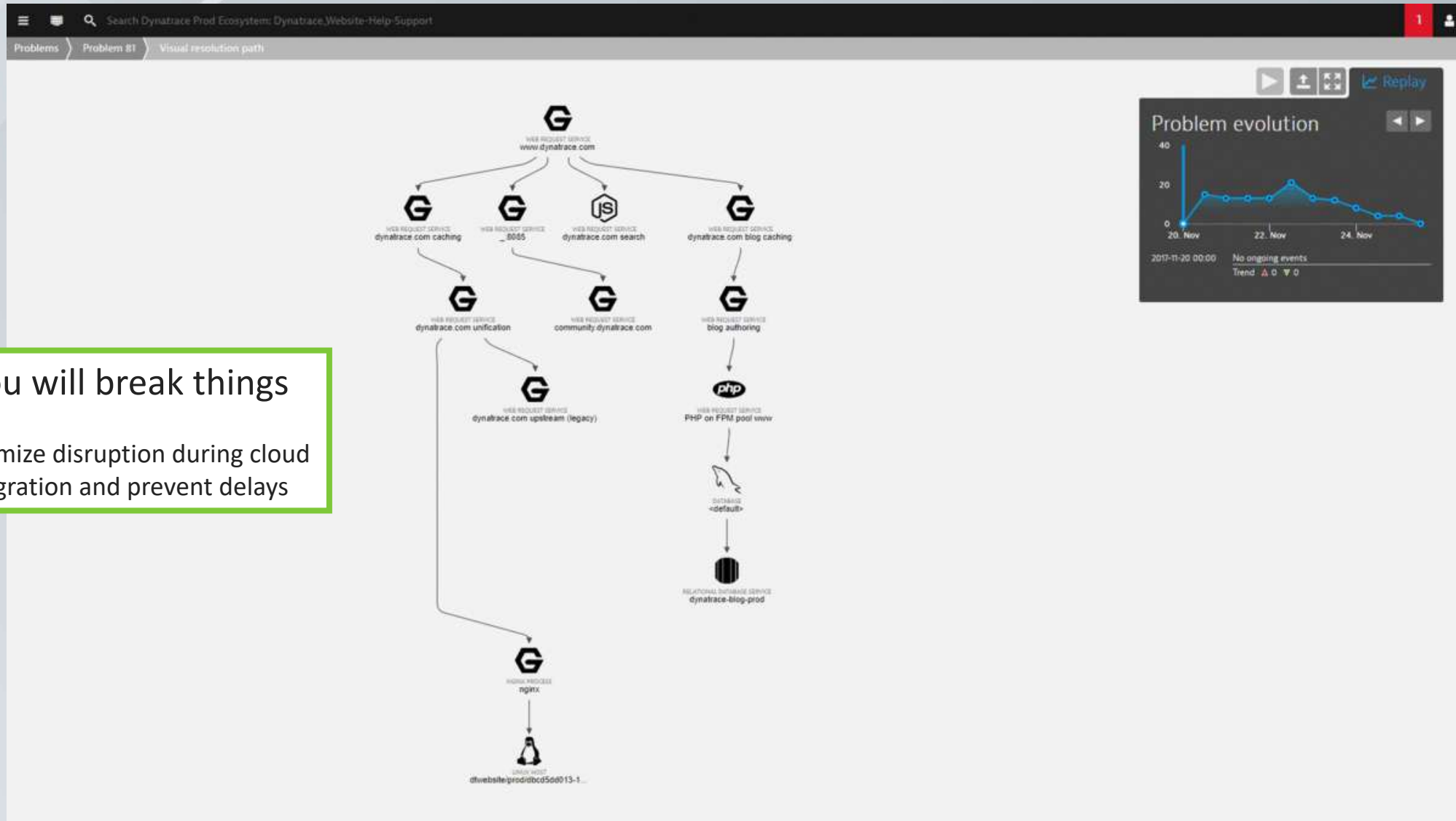


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Davis: When something fails, find out: WHERE, WHY and HOW; FASTER!



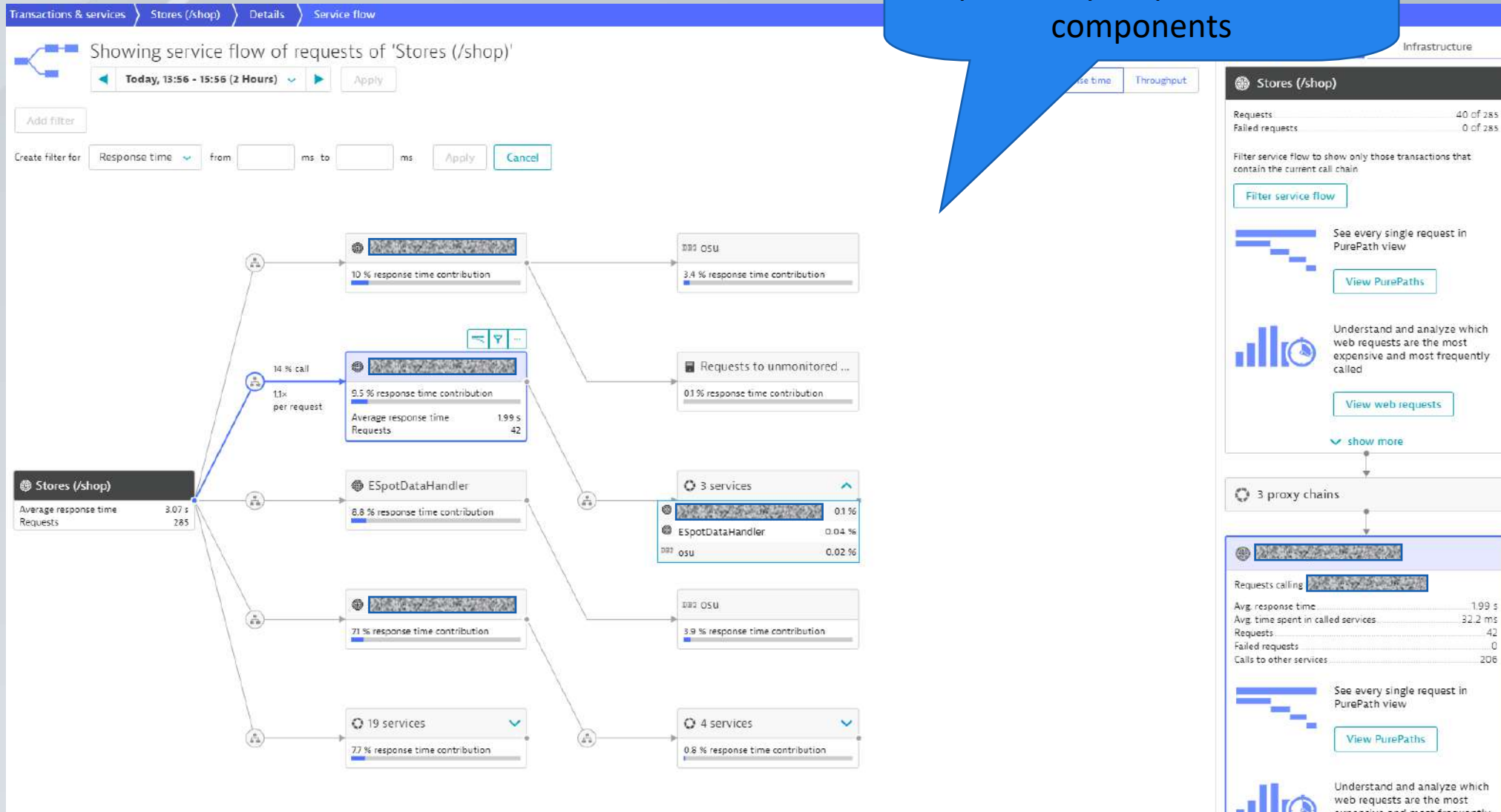
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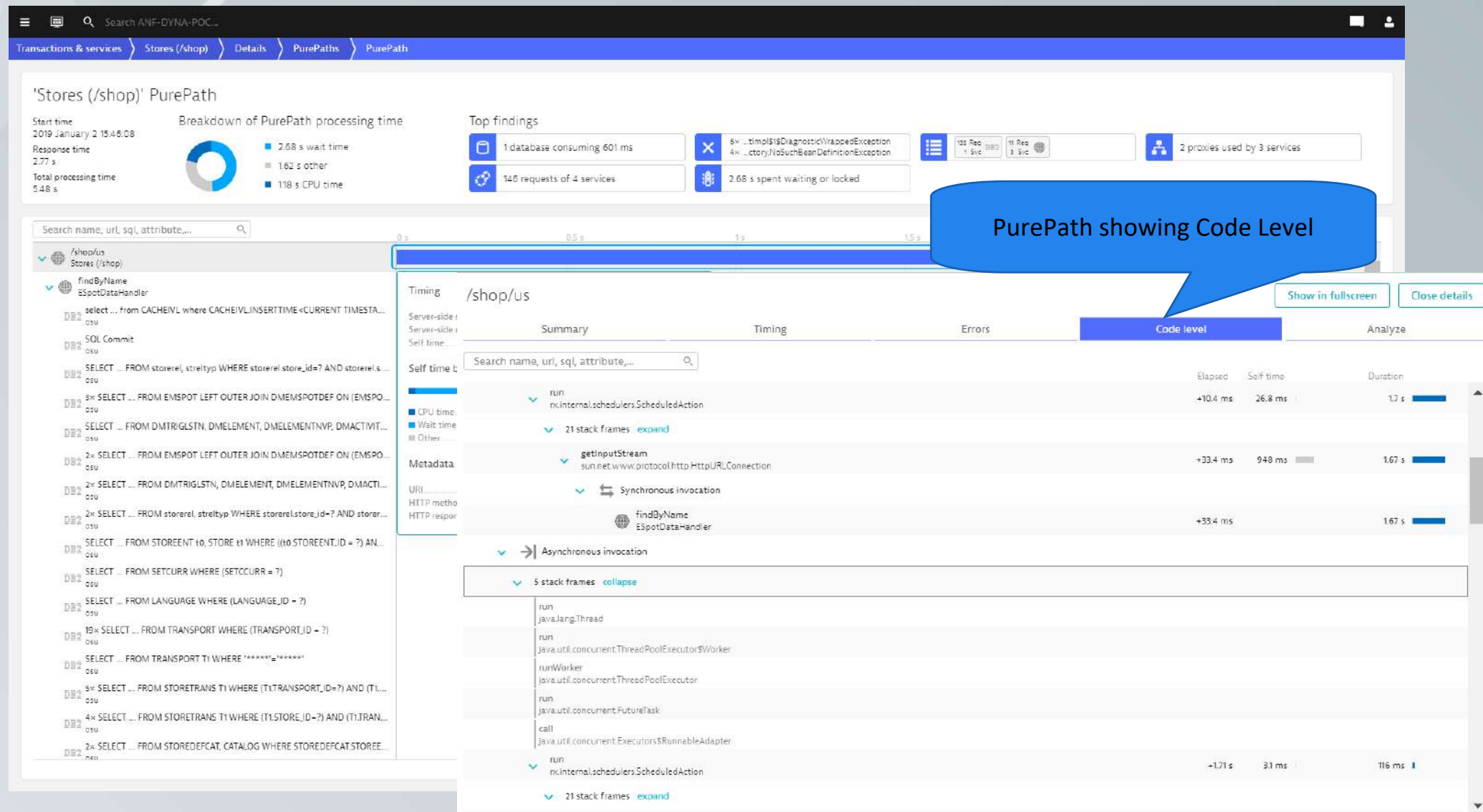
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Service Flow - WHERE to break the monolith?

Service Flows is a real-time dependency map of all service components

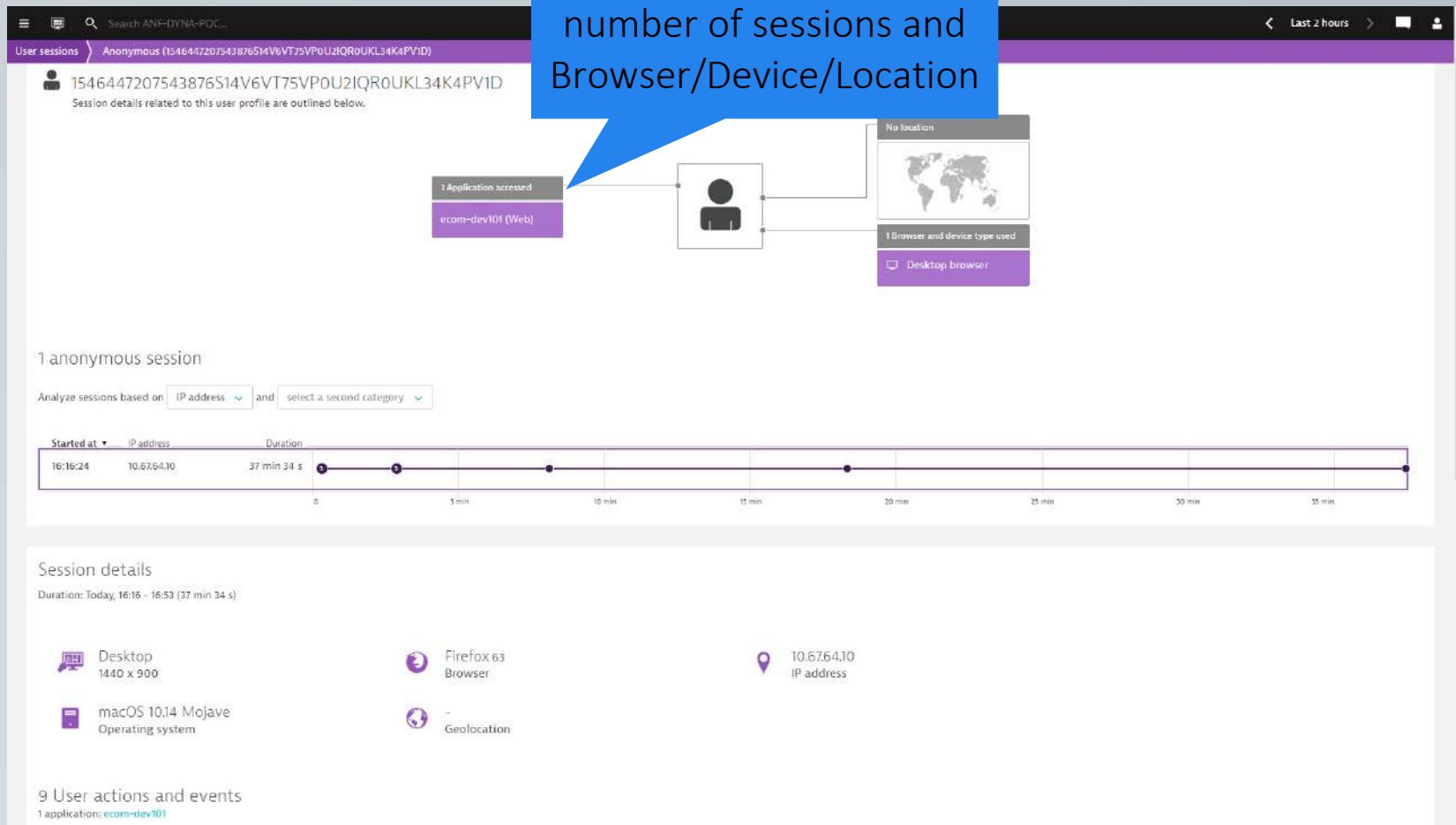


Purepath – Code Level Detail



Real User Monitoring

Application in use and
number of sessions and
Browser/Device/Location



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Best in class: Snam Use-case

Company Facts

SNAM S.p.A. - la principale utility regolata del gas in Europa

Business Needs

Monitoraggio delle nuove applicazioni re-ingegnerizzate su piattaforma Openshift in termini di:

- Monitoraggio della disponibilità e delle performance relative alle componenti applicative sviluppate su modello micro-servizi – es. JARVIS, nuovo portale dei servizi applicativi dell'area Commerciale di SNAM
- Monitoraggio delle applicazioni containerizzate su PaaS - es. Portali Istituzionali Web di SNAM
- Discovery e modeling automatico delle relazioni fra i micro-servizi
- Monitoraggio Full Stack all'interno delle tecnologie PaaS
- Correlazione con metriche di dettaglio provenienti dall'infrastruttura: es. integrazioni con VMware vCenter, Kubernetes
- Elaborazione attraverso tecnologie di Intelligenza Artificiale delle relazioni tra gli elementi monitorati in tempo reale, a supporto dei processi di Incident & Problem Detection, Root Cause & Business Impact Analysis

Benefici attesi:

- Business – ottimizzazione della esperienza utente
- Development – supporto nelle attività di fine-tuning delle performance applicative
- Operations – gestione delle infrastrutture ottimizzata, miglior controllo delle complessità, agilità nella gestione degli alert applicativi ed infrastrutturali

Solution

Adozione della piattaforma Dynatrace per monitorare i nuovi servizi PaaS, con particolare focus sull'applicazione Jarvis sviluppata su modello micro-servizi

Project Success Factors

Capacità della piattaforma Dynatrace di realizzare un monitoraggio end-to-end del servizio, identificare automaticamente la root cause dei problemi fino a livello di codice applicativo e consentire di intervenire tempestivamente minimizzando il rischio di impatto sull'esperienza utente

The Ease & Efficiency of an All-In-One Approach

Costly, do-it-yourself approach...



Automatic, all-in-one approach...



Simplicity

Speed

Efficiency

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THANK YOU



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