From the cloud to the mainframe & everything in between
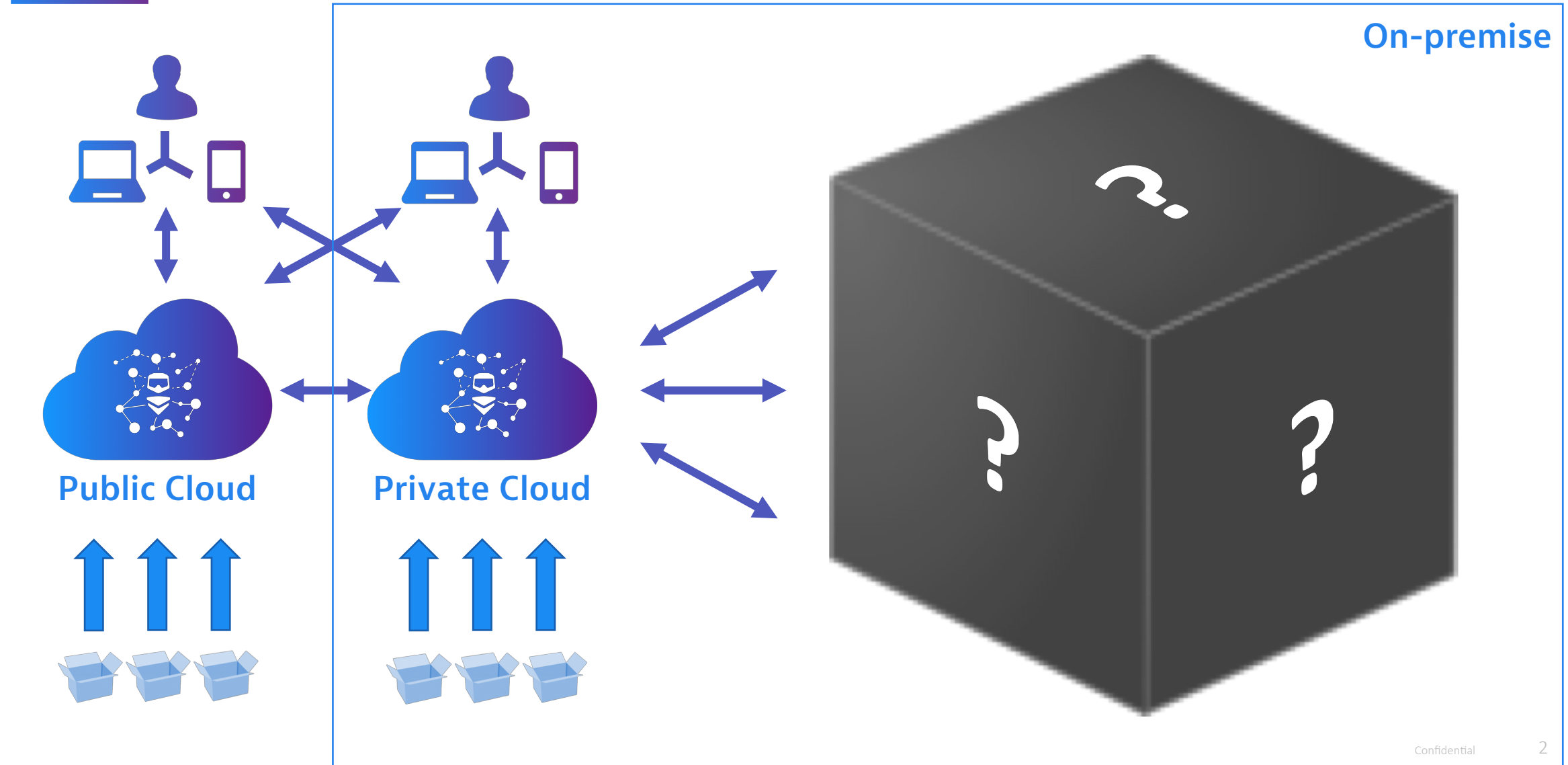
———
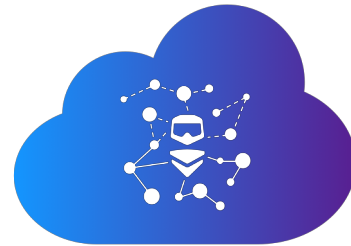
Managing hybrid complexity

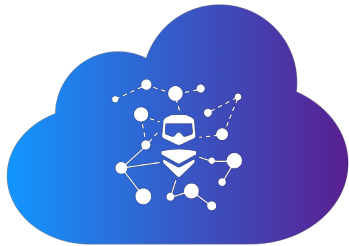**dynatrace**
Perform

Kurt Aigner
Product Management
Dynatrace

Managing hybrid complexity

Public Cloud

Private Cloud

On-premise

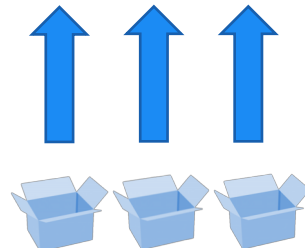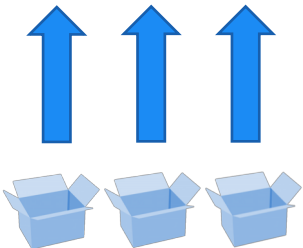# Opening the black box

Public Cloud

Private Cloud

TIBCO™

MuleSoft®

IBM Integration Bus

IBM MQ

IBM DataPower

IBM System Z

TIBCO™ **BusinessWorks**

- Supported via OneAgent

- TIBCO - End-to-end tracing via web requests and Java message services

- Process group detection of TIBCO BusinessWorks 6.4 applications based on Domains, Spaces, and App Nodes.

Supported technologies and vers...

Dynatrace LLC [US] | https://www.dynatrace.com/support/...

ESBs and SOA	Versions
Apache OpenEJB	3.1.4
Mule	3.0 - 3.8
Oracle Service Bus	10.3.4 / 12c (12.1.3)
TIBCO ActiveMatrix BusinessWorks	5.8.2-5.13, **6.4**

Web frameworks	Versions
Apache HttpAsyncClient	4.0.x, 4.1.x
Apache HTTP Core (synchronous only)	4.0.x, 4.1.x
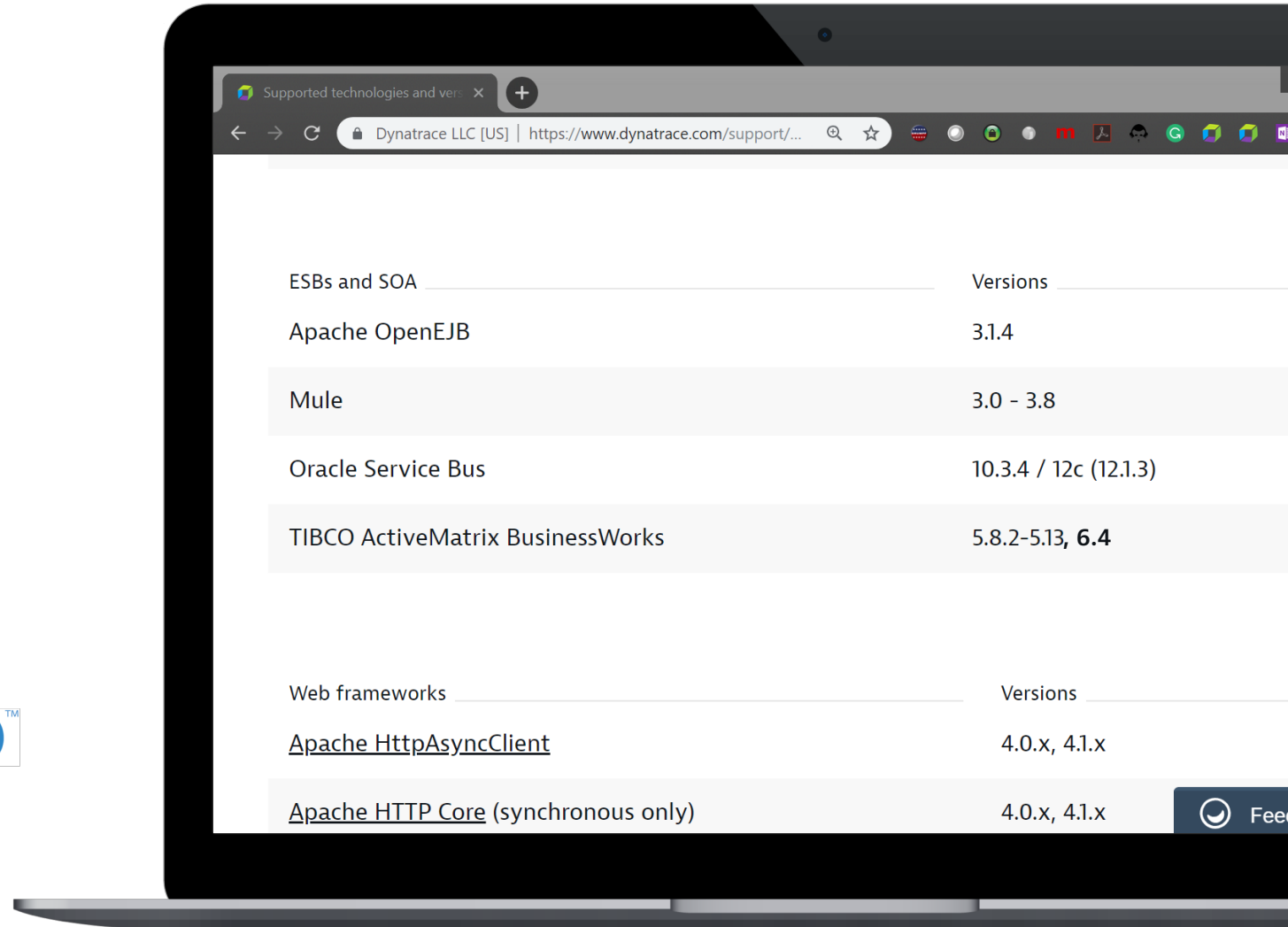
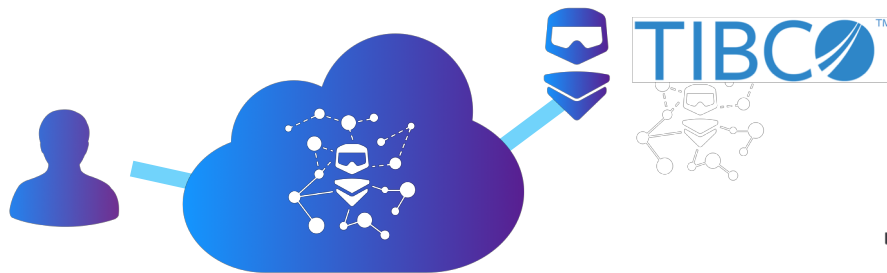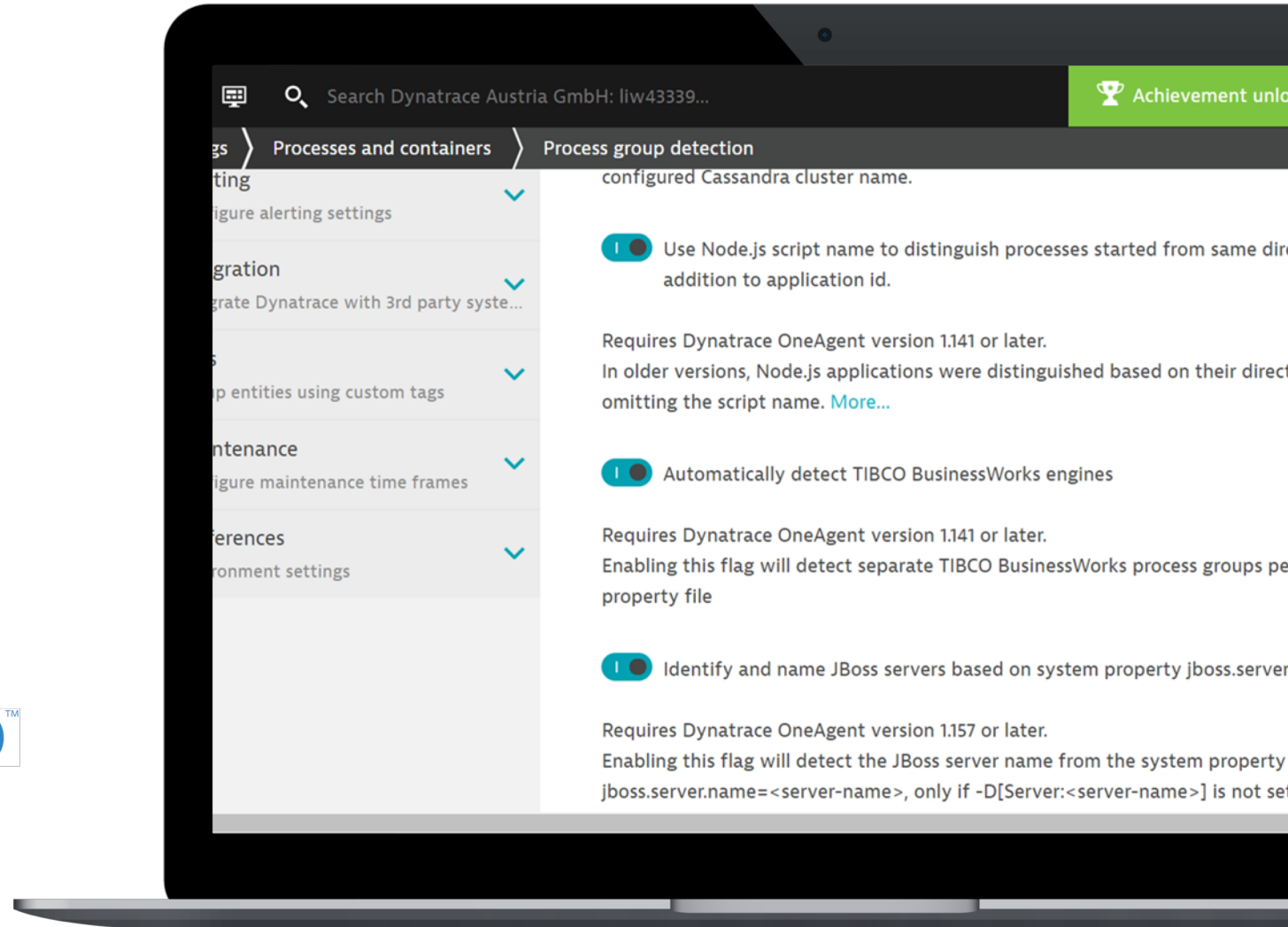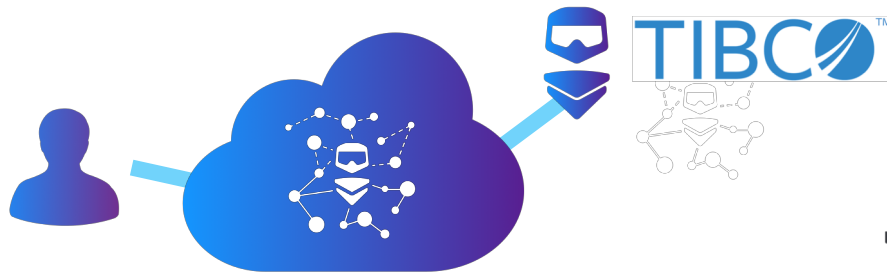TIBCO™

TIBCO™ BusinessWorks

- Supported via OneAgent

- TIBCO - End-to-end tracing via web requests and Java message services

- Process group detection of TIBCO BusinessWorks 6.4 applications based on Domains, Spaces, and App Nodes.

Requirements: Dynatrace OneAgent 1.141+ & TIBCO BusinessWorks process group detection enabled

IBM DataPower ActiveGate extension

- Extension ingests key performance metrics (38), properties and events from all your DataPower instances.

- The Dynatrace platform brings these data in context.

- How is the performance of my DataPower devices affecting my users and services?
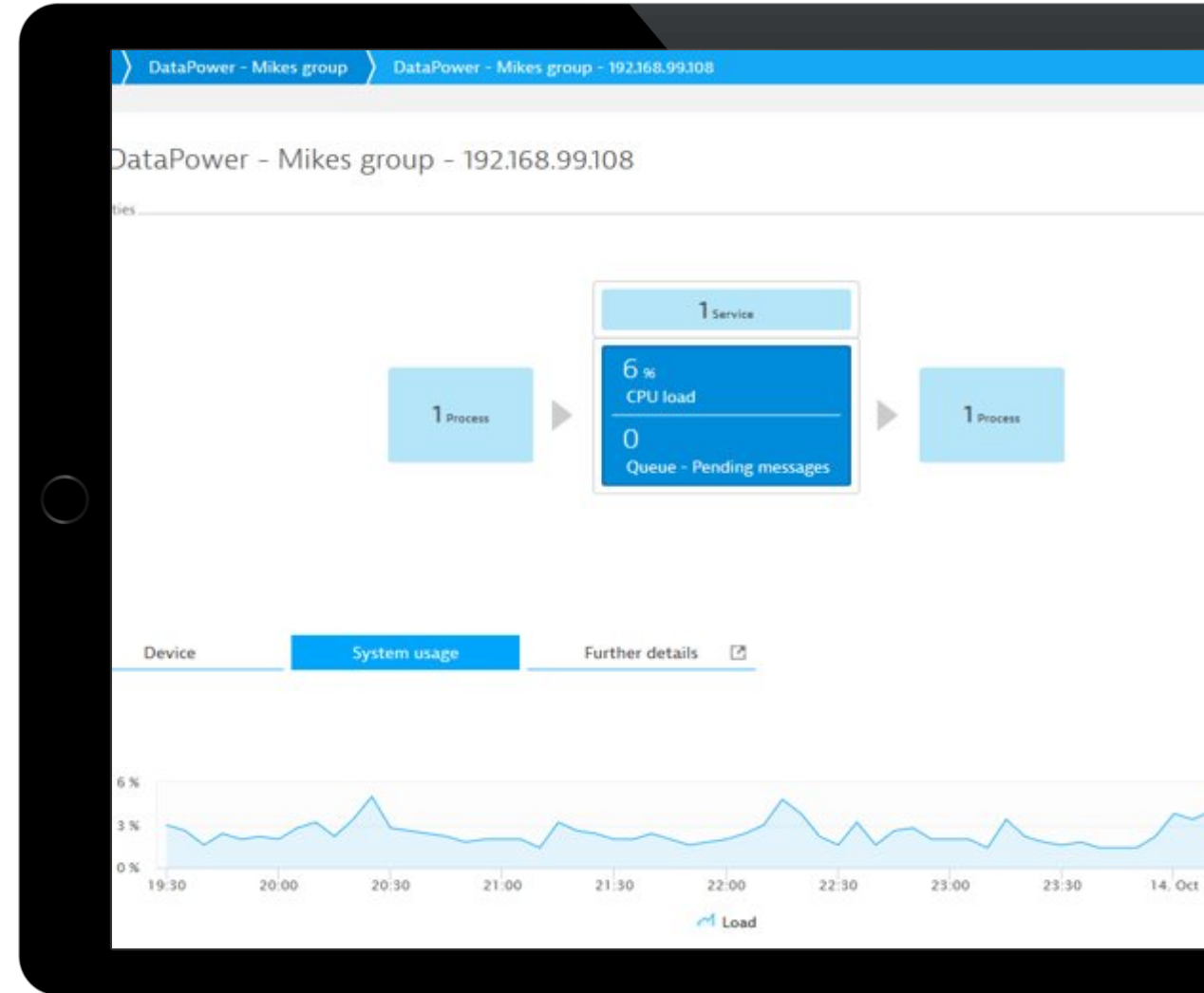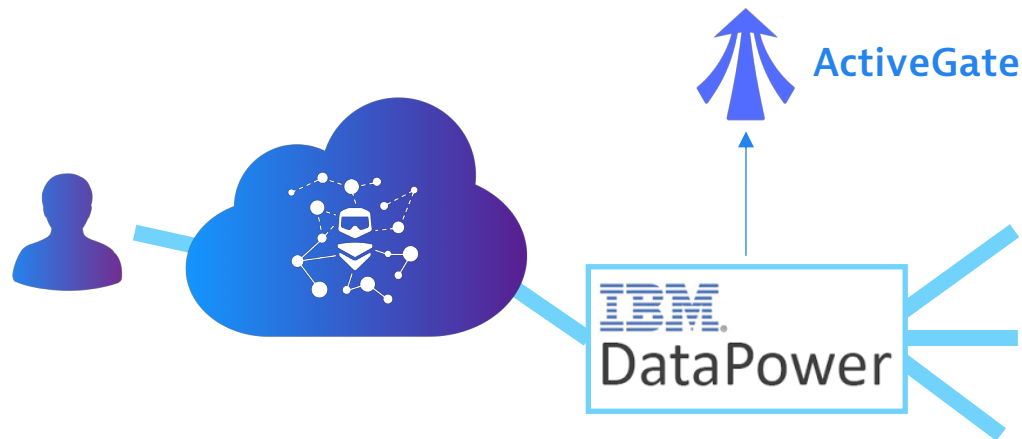
ActiveGate

Requirements: DataPower appliance - XML Management Interface enabled, Dynatrace 1.156+ & ActiveGate 1.155+

IBM MQ ActiveGate extension

- Supported via an ActiveGate extension

- Key performance metrics (22),

  - Queue Manager: status, connections

  - Channel: status, substage, messages, …

  - Queue: depth, max message length, …

  - Listener: channel listener status
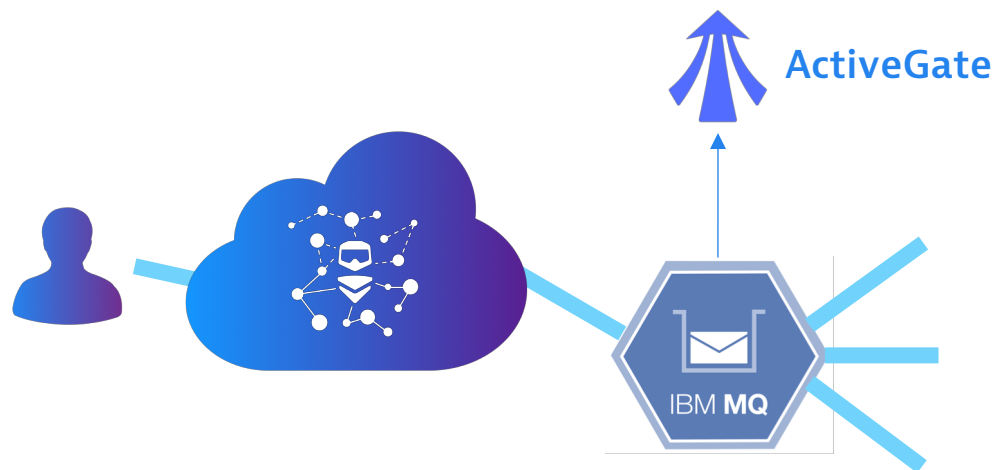
ActiveGate

IBM MQ

Requirements: IBM MQ 8.0+, Dynatrace 1.156+ & ActiveGate 1.155+

Message Queue - Group1 > Message Queue - Group1 - QM_ORANGE

Message Queue - Group1 - QM_ORANGE

- Services

100 %
Queue Manager Availability

5k
Queue depth

0 Processes

0 Processes

Queue Manager | Queue | Channel | Further details

ability

19:30 20:00 20:30 21:00 21:30 22:00 22:30 23:00 23:30 14. Oct
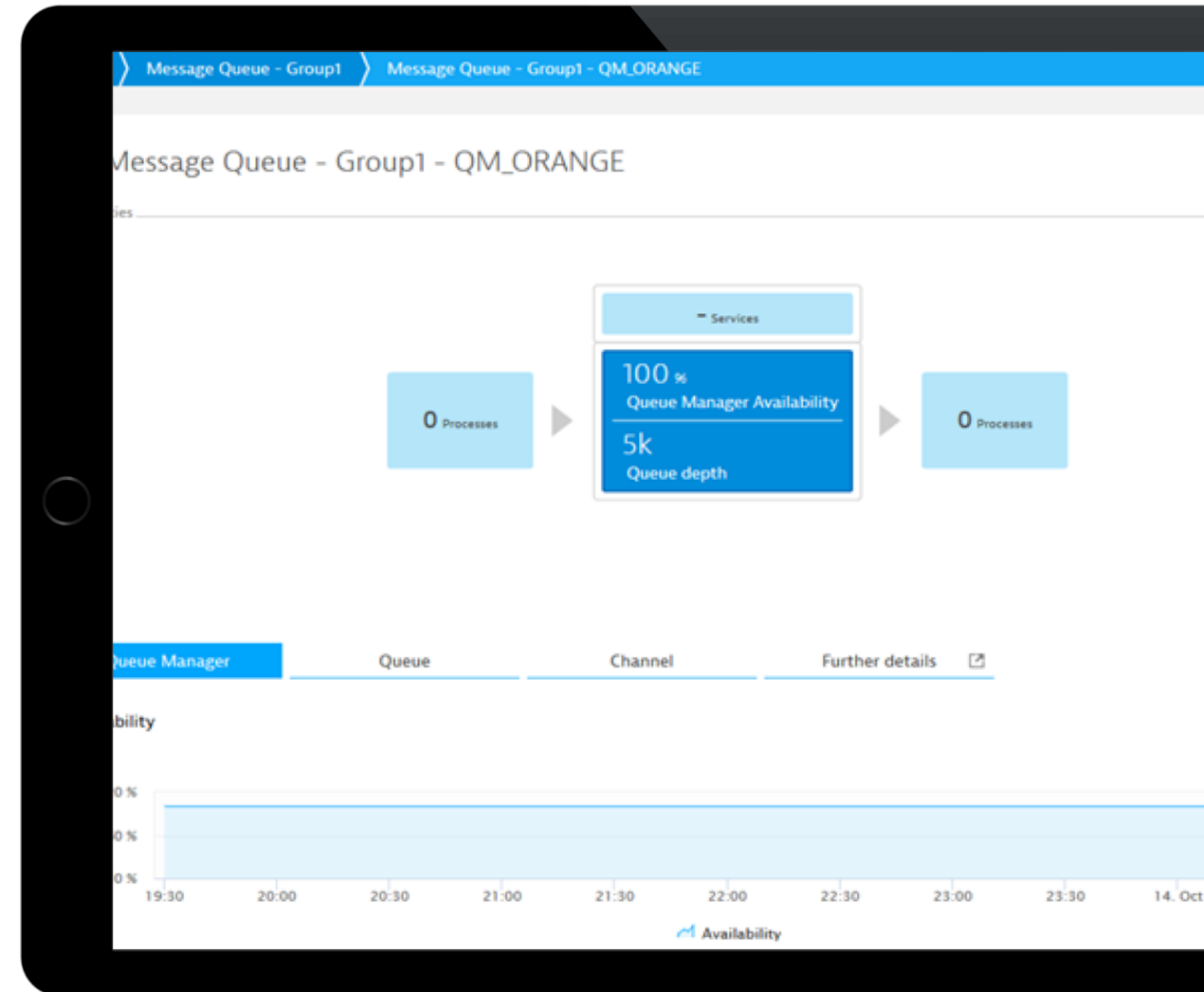
Availability

Perform

Confidential   7

IBM Integration Bus

- Supported via OneAgent for
  - web requests
  - web services
  - IBM MQ

- Process group detection of IIB servers

- Each broker is detected as a service

Requirements: IBM Integration Bus 9/10, Dynatrace OneAgent 1.153 (EAP), Dynatrace OneAgent 1.163 (planned beta)

Opening the black box

Public Cloud   **Private Cloud**

TIBC™

MuleSoft

IBM Integration Bus

IBM MQ

IBM DataPower
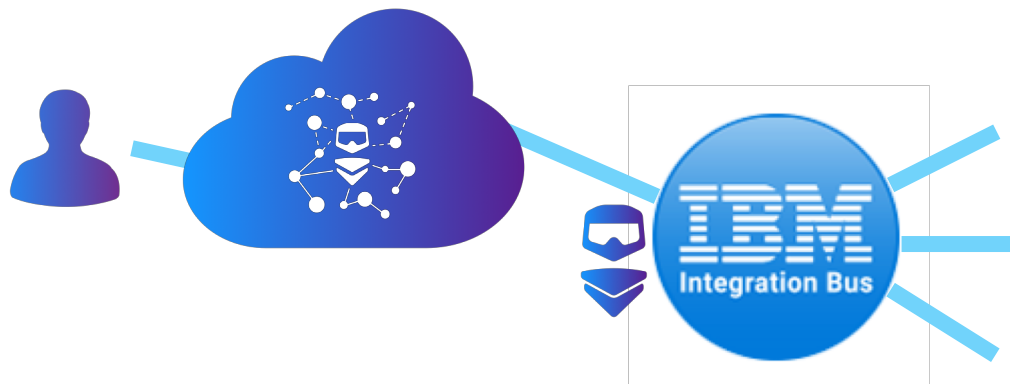
IBM System Z

Dynatrace Mainframe Support

IBM Integration Bus

MQ Trigger Monitor

MQ Bridge

SOAP

CICS Transaction Gateway

IMS Connect API

IMS TM Resource Adapter

DB2
DL/I

z/OS CICS
z/OS IMS
OneAgent for zLinux

z/OS deployment

IBM Z mainframe

z/OS Logical partition

CICS region 1
CICS agent

...

CICS region n
CICS agent

zDC
zLocal

z/OS Logical partition

IMS region 1
IMS agent

...

IMS region n
IMS agent

zDC
zLocal

Dynatrace

zRemote
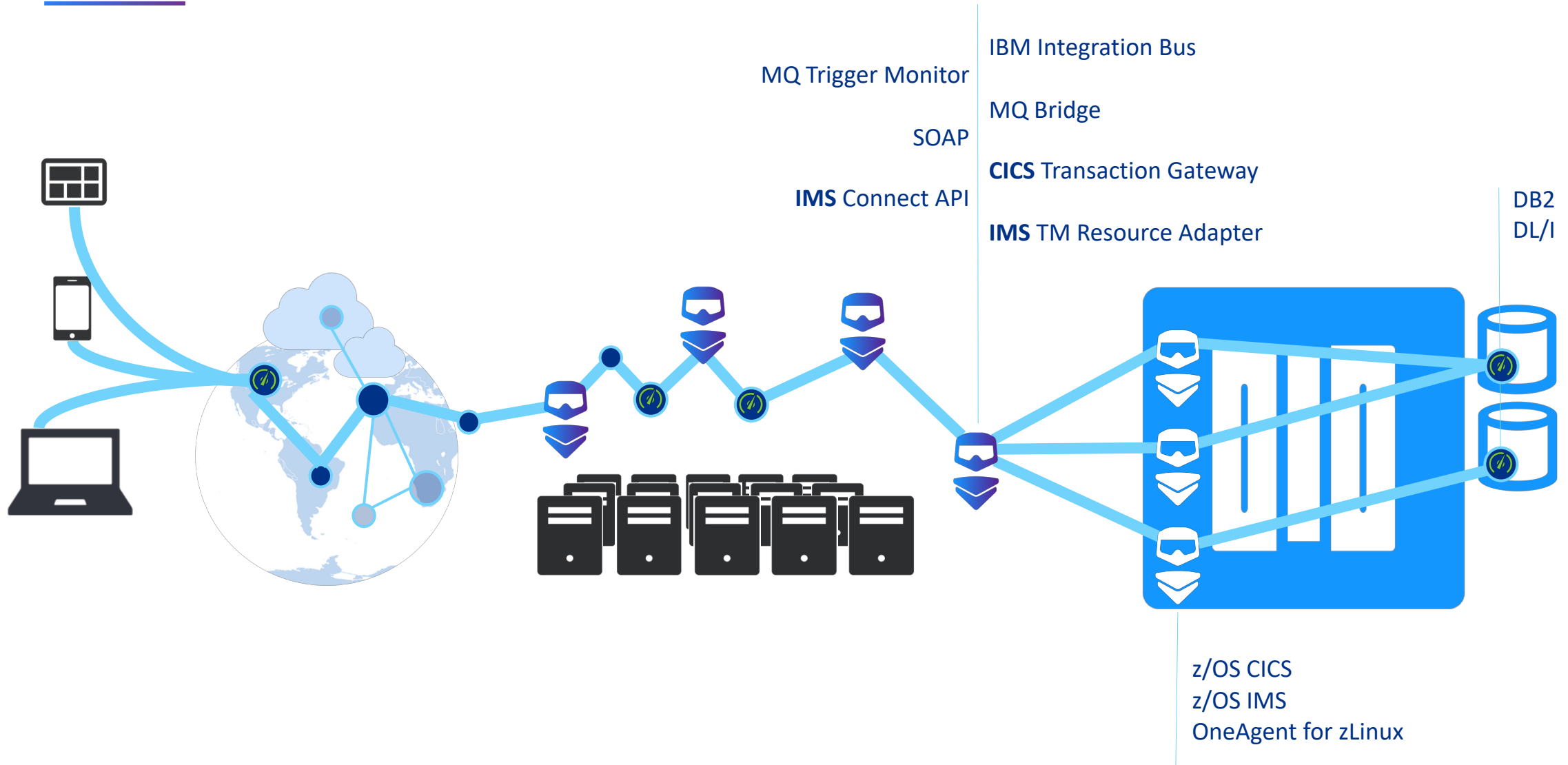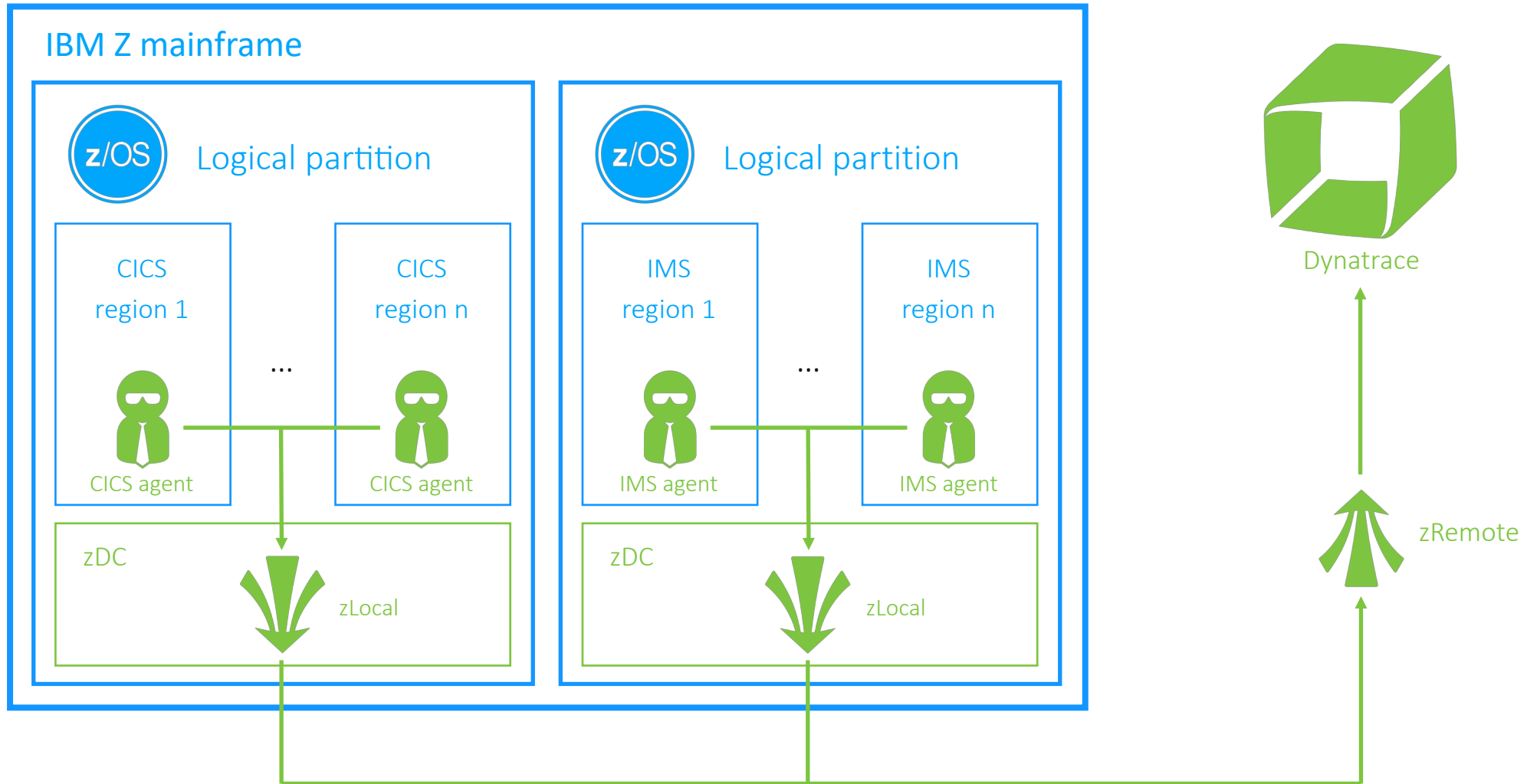
Applications

Services

Processes

Hosts
1/3

Data centers

CICS-TOR (HVEAC803)
IBM CICS Terminal-Owning Region

S0W1.10.30.220.44
z/OS
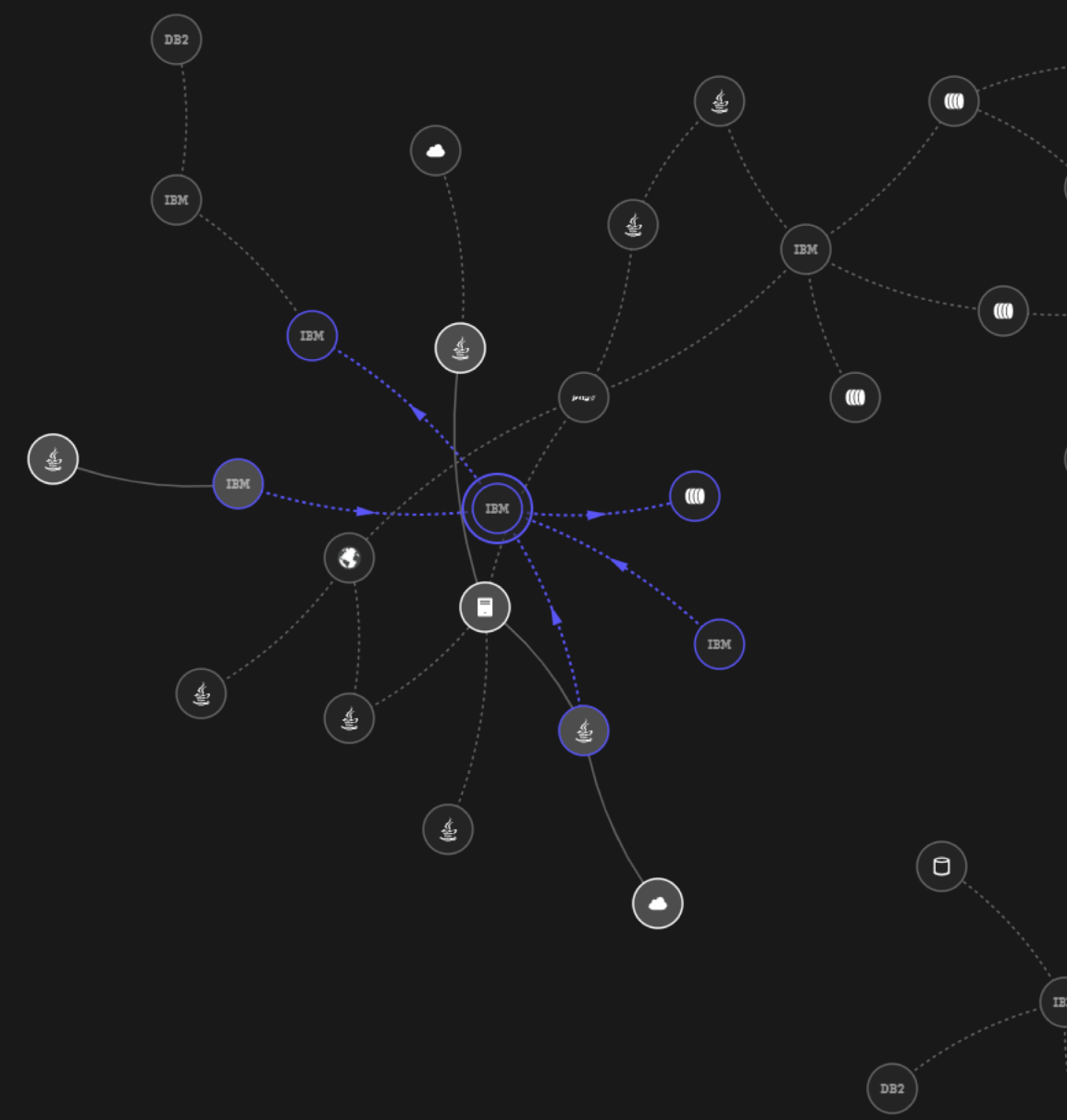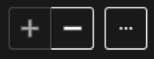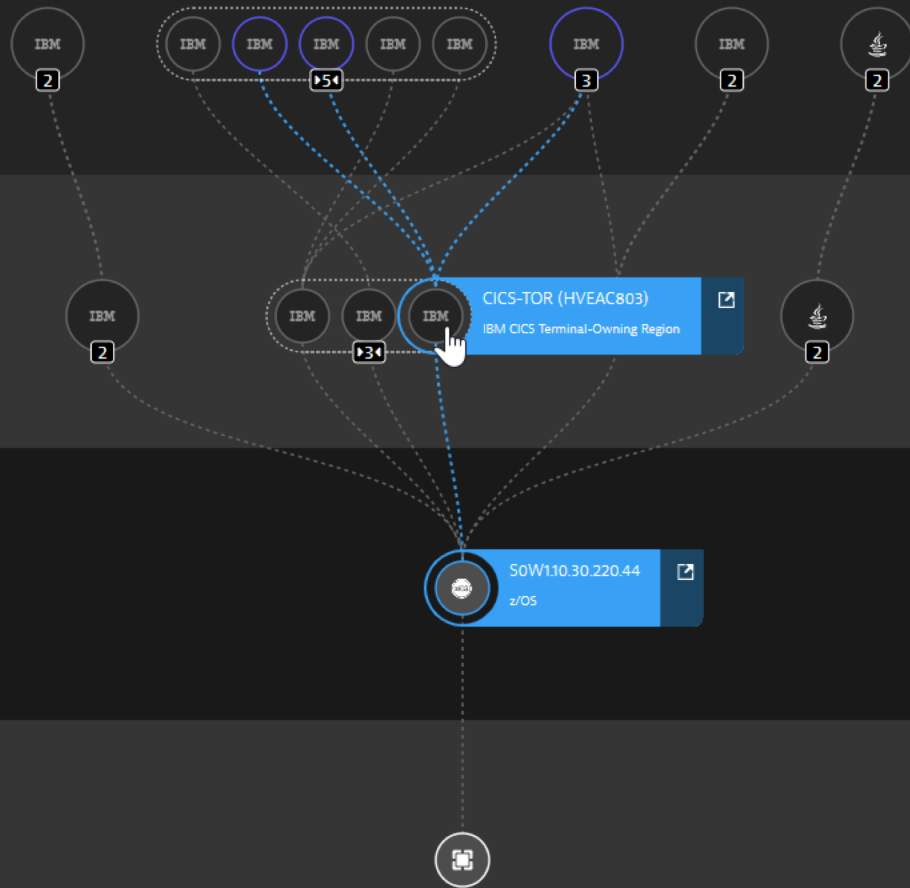
Showing service flow of requests of 'IBM MQ Queue Listener'

◀ Today, 09:56 - 11:56 (2 Hours) ▾ ▶ | Apply

Show | Response time | Throughput

Add filter

100 % call
11×
per request

DB2 DBBG

No contribution available

Average response time | 1.07 ms
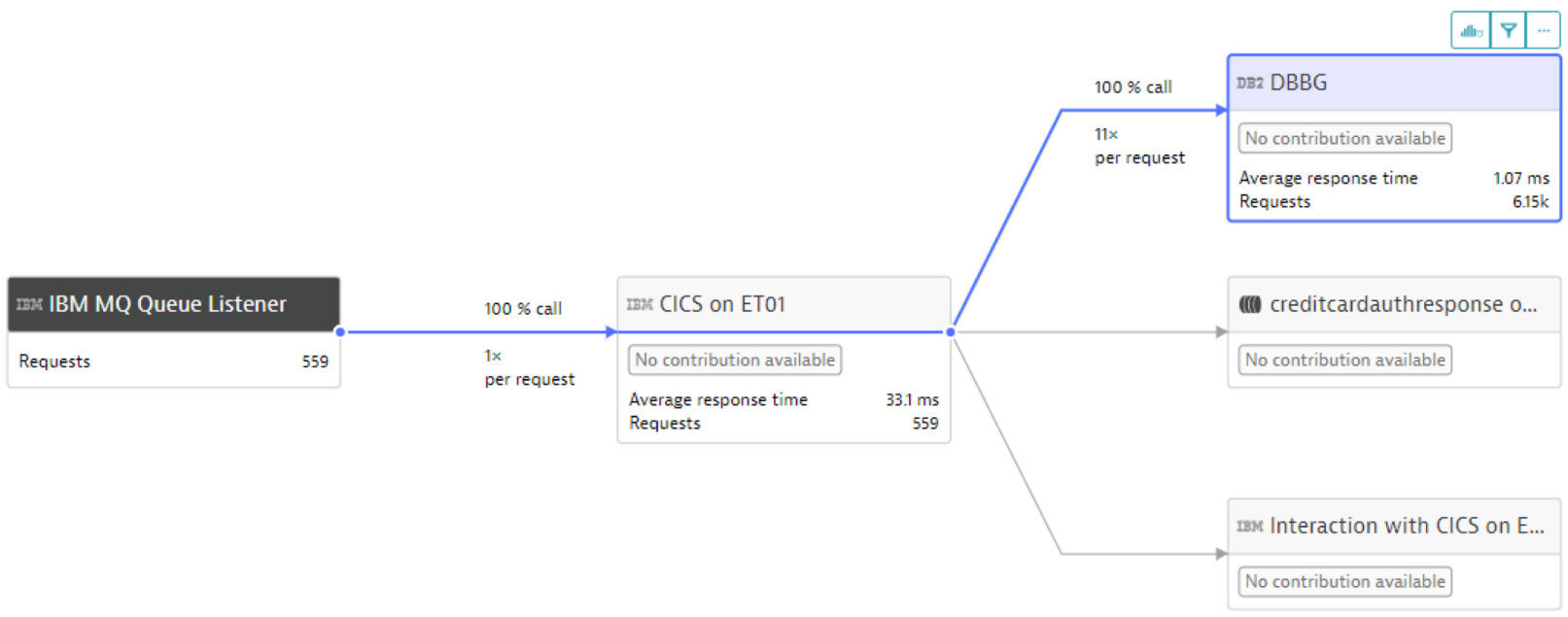Requests | 6.15k

IBM IBM MQ Queue Listener

Requests | 559

100 % call
1×
per request

IBM CICS on ET01

No contribution available

Average response time | 33.1 ms
Requests | 559

creditcardauthresponse o...

No contribution available

IBM Interaction with CICS on E...

No contribution available

Passing transactions | Infrastructure

IBM IBM MQ Queue Listener

Requests | 559 of 559
Failed requests | 0 of 559

Filter service flow to show only those transactions that contain the current call chain

Filter service flow

See every single request in PurePath view

View PurePaths

⌄ show more

IBM 1 IBM CICS Terminal-Owning Region service

DB2 DBBG

Requests calling DBBG via 1 other service

Avg. response time | 1.07 ms
Requests | 6.15k
Failed requests | 0

Understand and analyze the most frequent and expensive database statements

View database statements

⌄ show more

'CICS on ET01 ' PurePath

Start time
2018 November 29 10:58:40

Response time
31.1 ms

Total processing time
31.1 ms

Breakdown of PurePath processing time

■ 31.1 ms other

Top findings

🗄 1 database consuming 10.7 ms	☰ 2 Req / 2 Svc IBM 1 Req / 1 Svc 11 Req / 1 Svc DB2
⚙ 14 requests of 4 services	))) 1 interaction with 1 queue

🔍 Search name, url, sql, attribute,...

∨ IBM DTMD (DTMD)
CICS on ET01

DB2 FETCH (DTETDB2;70;1)
DBBG

DB2 9× FETCH (DTETDB2;114;1)
DBBG

DB2 CLOSE (DTETDB2;82;1)
DBBG

))) MQPUT1
creditcardauthresponse on IBM MQ

IBM DTMD
Interaction with CICS on ET01

DTMD (DTMD)

[Show in fullscreen] [Close details]

Summary	Timing	Errors	**Code level**	Analyze

🔍 Search name, url, sql, attribute,...

	Elapsed	Self time	Duration
∨ DTMD	0 ms	10.7 ms	31.1 ms
MQGET MQ	+5 µs	0.01 ms	0.01 ms
∨ DTETDB2	+0.24 ms	1.59 ms	16.9 ms
OPEN SQL	+0.83 ms	4.61 ms	4.61 ms
∨ FETCH SQL	+5.49 ms	1.64 ms	1.64 ms
DB2 FETCH (DTETDB2;70;1) DBBG	+5.49 ms		1.64 ms
∨ FETCH SQL	+7.19 ms	8.24 ms	8.24 ms
DB2 9× FETCH (DTETDB2;114;1) DBBG	+7.19 ms		8.24 ms
∨ CLOSE SQL	+16 ms	0.78 ms	0.78 ms
DB2 CLOSE (DTETDB2;82;1) DBBG	+16 ms		0.78 ms
DTSDKD1	+17.2 ms	0.69 ms	0.69 ms
DTBP	+18 ms	0.65 ms	0.65 ms
∨ MQPUT1 MQ	+18.8 ms	2.18 ms	2.18 ms

Service-level backtrace of requests of 'Interaction with CICS on ET01 '

◀ Today, 11:53 - 13:53 (2 Hours) ▾ ▶ Apply

Add filter

The services and applications listed below make calls to this service. The tree view represents the sequence of services and application user actions that led to this service call, beginning with the page load or user action in the browser that triggered the sequence. Click to see which specific requests and user actions called this service

Incoming requests to this service

∨ **IBM** Interaction with CICS on ET01 CICS-TOR		515 Requests 0 Failed requests	▼ ⋯
∨ **IBM** CICS on ET01 CICS-TOR		515 Requests 0 Failed requests	▼ ⋯
∨ **IBM** IBM MQ Queue Listener CICS-TOR		515 Requests 0 Failed requests	▼ ⋯
∨ creditcardauthrequest on IBM MQ com.dynatrace.easytravel.business.backend.jar easyTravel (x*)		176 Requests 0 Failed requests	▼ ⋯
∨ BookingService com.dynatrace.easytravel.business.backend.jar easyTravel (x*)		176 Requests 0 Failed requests	▼ ⋯
∨ easyTravel Customer Frontend com.dynatrace.easytravel.customer.frontend.jar easyTravel (x*)		176 Requests 0 Failed requests	▼ ⋯
∨ EasyTravelWebserver:8079 Apache Web Server easyTravel		176 Requests 0 Failed requests	▼ ⋯
⊕ easytravel Application		139 User actions	▼ ⋯

User actions from easytravel

Loading of page /orange-booking-finish.jsf		137 User actions	▼ ⋯
http://apm-et-mf.dtwlab.dynatrace.org:8079/orange-booking-payment.jsf		1 User action	▼ ⋯
http://apm-et-mf.dtwlab.dynatrace.org:8079/orange-booking-finish.jsf		1 User action	▼ ⋯

Analysis of easytravel user actions

⊕ easytravel		EasyTravelWebserver:8079
139 User actions	→	139 Requests 0 Failed requests

- At least 139 analyzed easytravel user actions trigger 139 calls to EasyTravelWebserver:8079
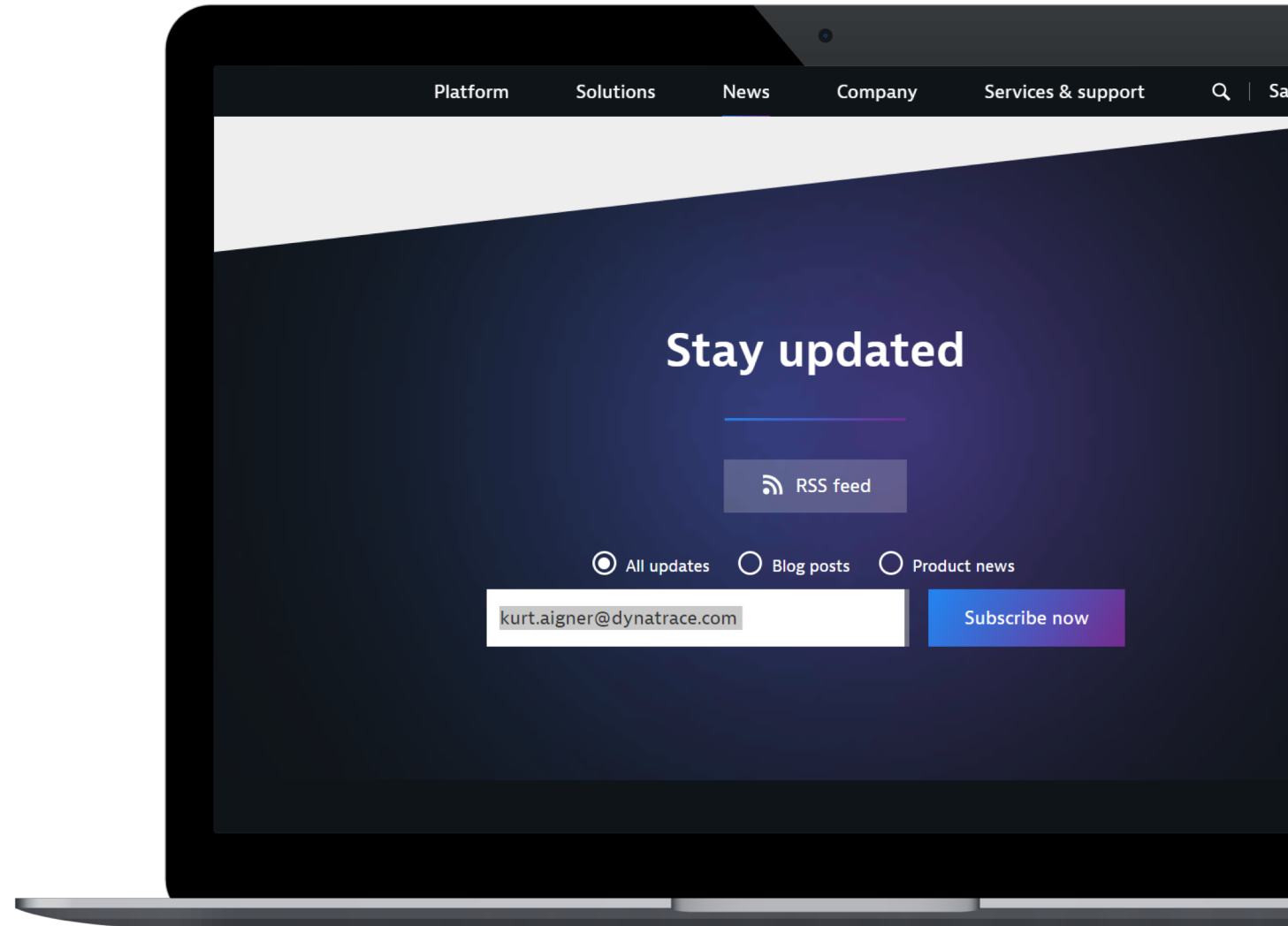- No easytravel user actions failed

So, what's the point here?

- Any blind spots / black boxes are a huge risk

- See it all, in context

- Backtrace who's calling your backend

- In-depth analysis at source-code level on all tiers

- Use the full power of AI based fault domain isolation end-to-end
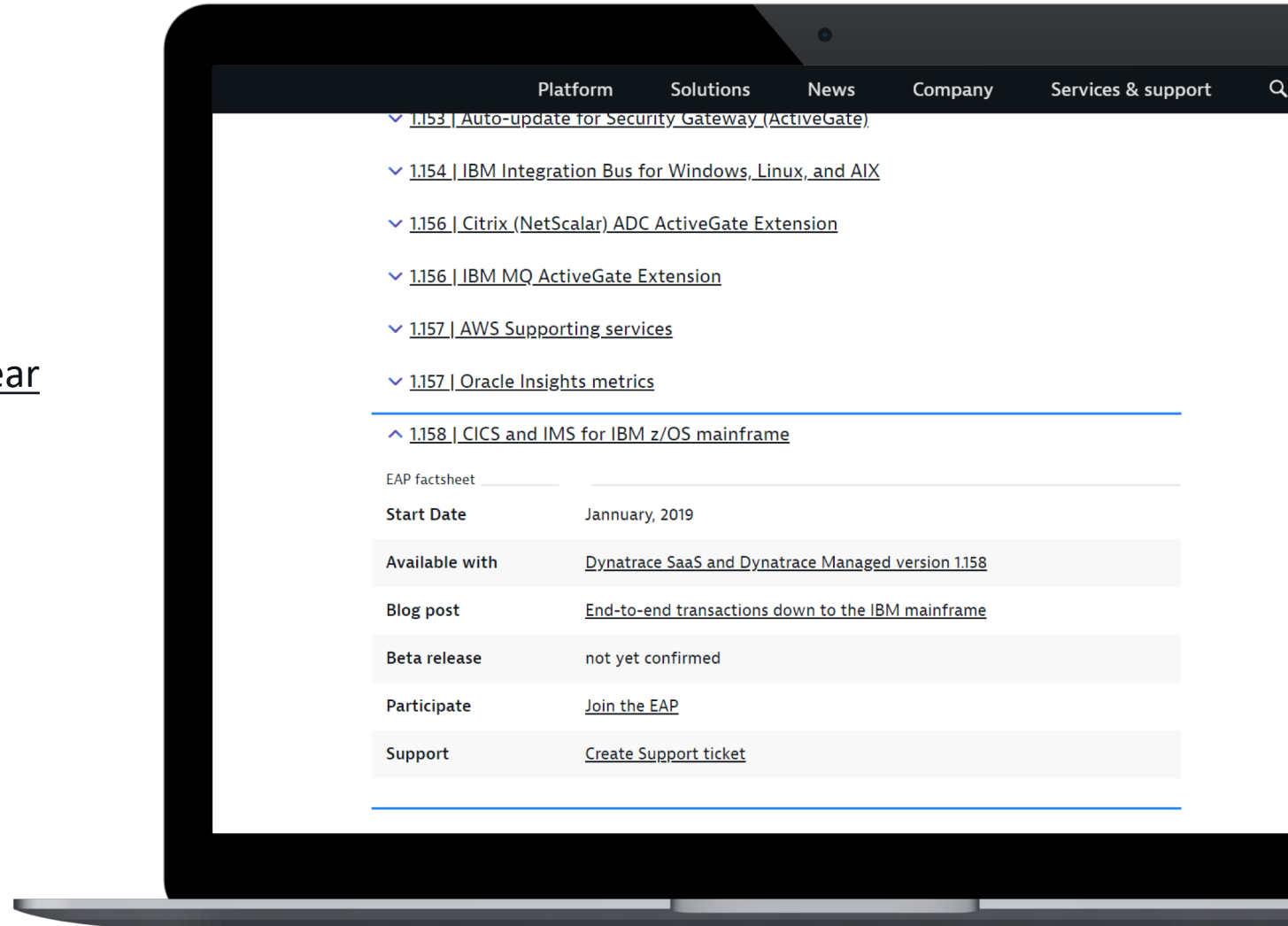
- Mange your whole environment!
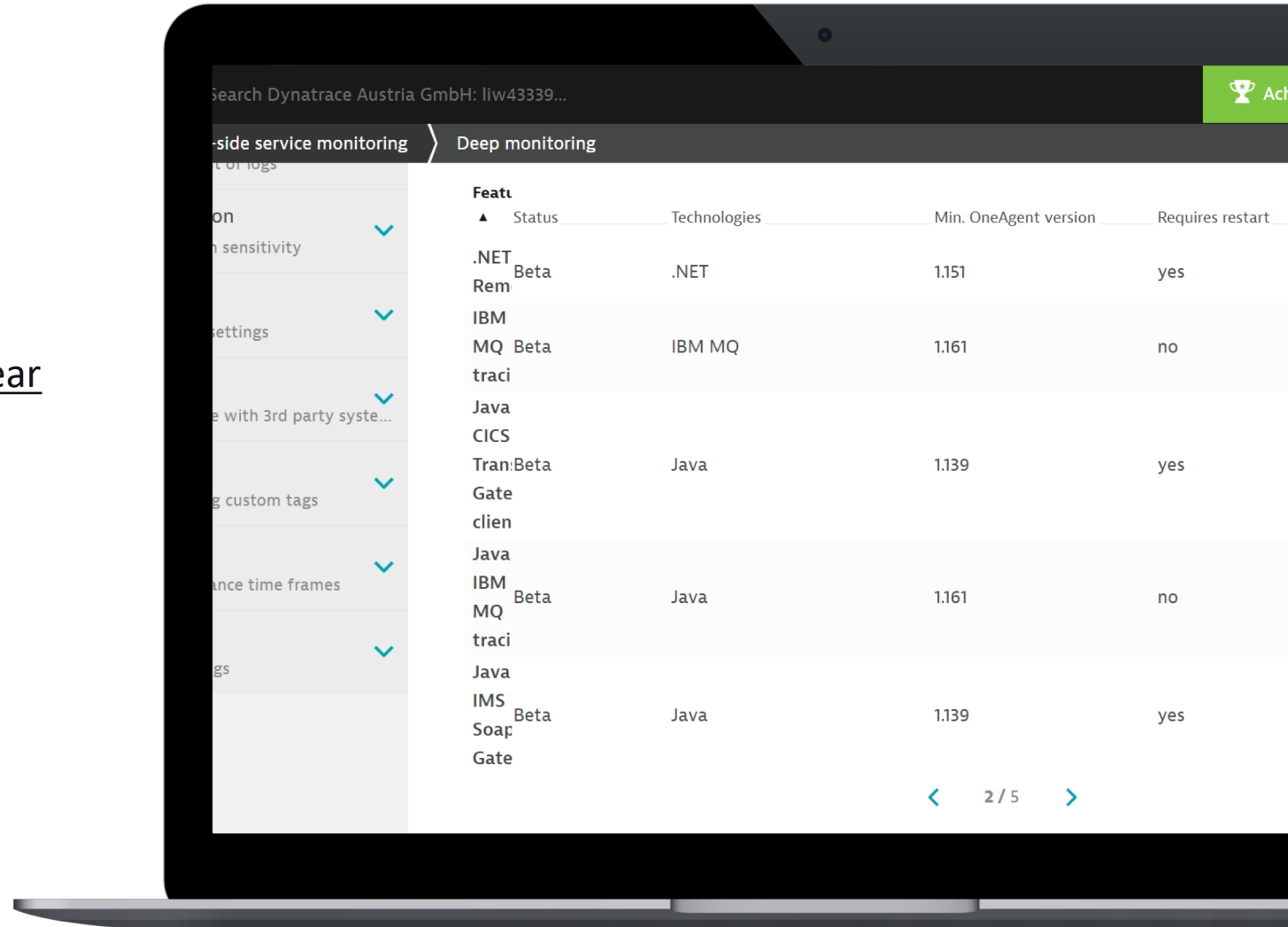
Call to action

- Stay updated
  https://www.dynatrace.com/news/blog/

Call to action

- Stay updated
  https://www.dynatrace.com/news/blog/

- Join early access programs
  https://www.dynatrace.com/support/help/early-access-and-beta-programs/

Call to action

- Stay updated
  https://www.dynatrace.com/news/blog/

- Join early access programs
  https://www.dynatrace.com/support/help/early-access-and-beta-programs/
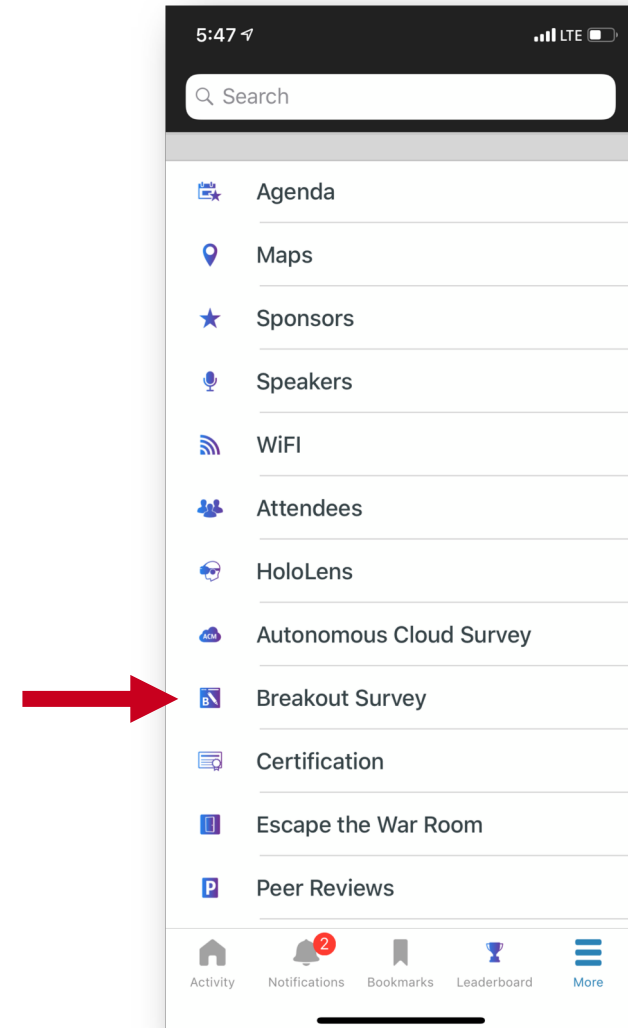
- Try beta feature

Let us know how we did!

- 2 minute survey

- Find it from the Perform app menu

- Complete survey for each breakout you attend

Track = Software Intelligence

Questions?
Innovation Lab

Mike Lundstrom
Extensions
MQ and DataPower

Reinhard Pilz
Mainframe

Patirck Thurner
TIBCO, Mule

Kurt Aigner
Mainframe

Thank you

dynatrace
Perform