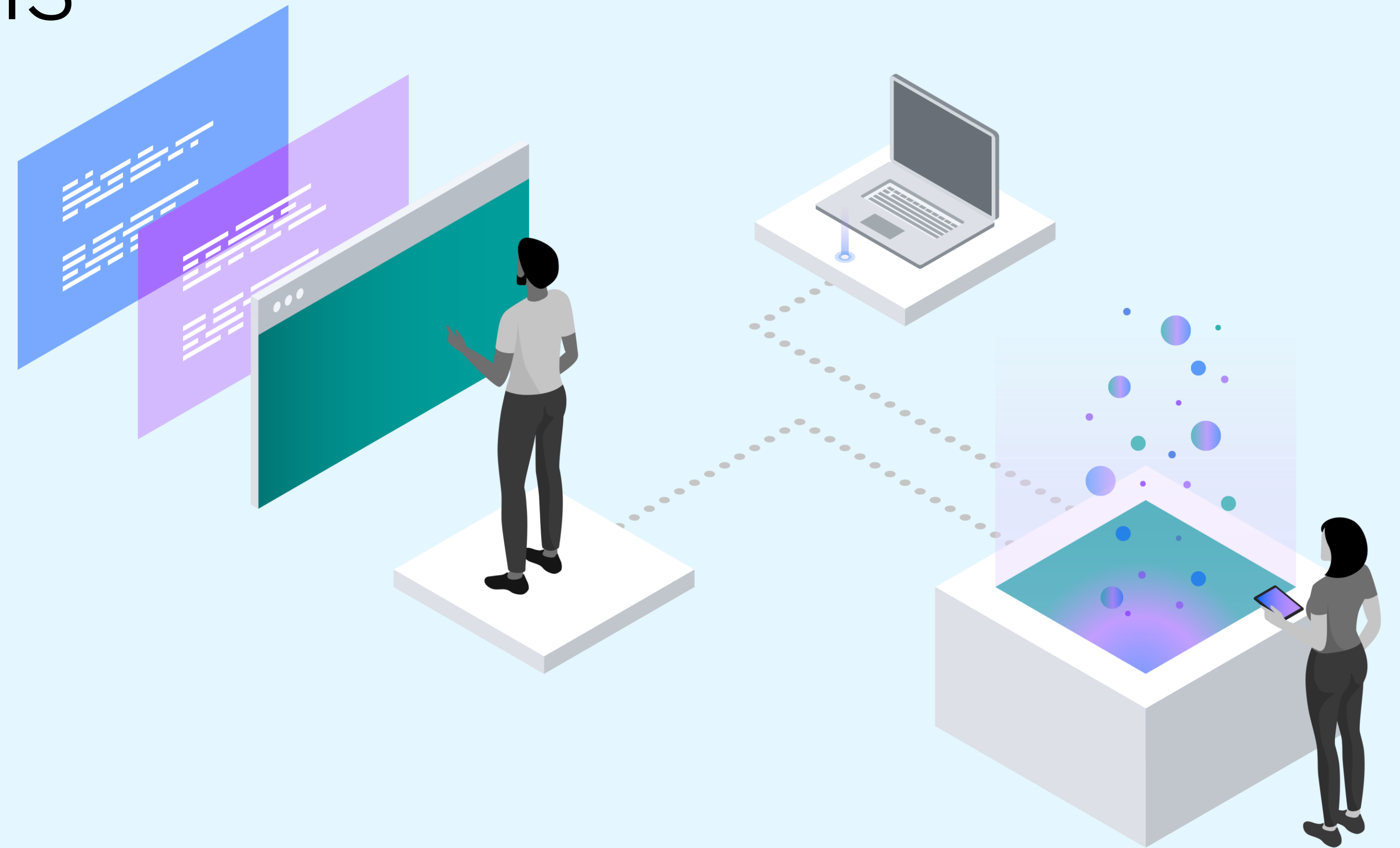


AIOps with IBM Z Overview & Solutions



IT under pressure: Meeting greater customer demands with fewer skilled employees

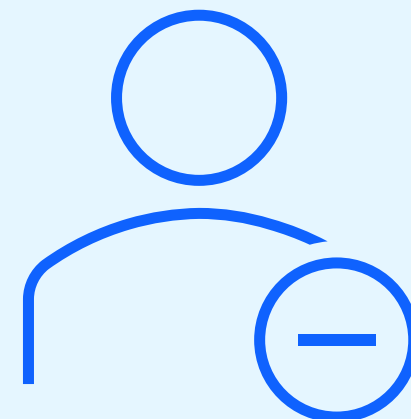
1 sec

of latency causes a 7% reduction in customer conversion and a 16% reduction in customer satisfaction



50%

of all employees need to upskill or reskill by 2025 for responsibilities arising from automation and new technologies



\$250K

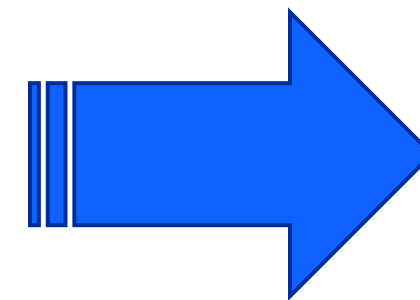
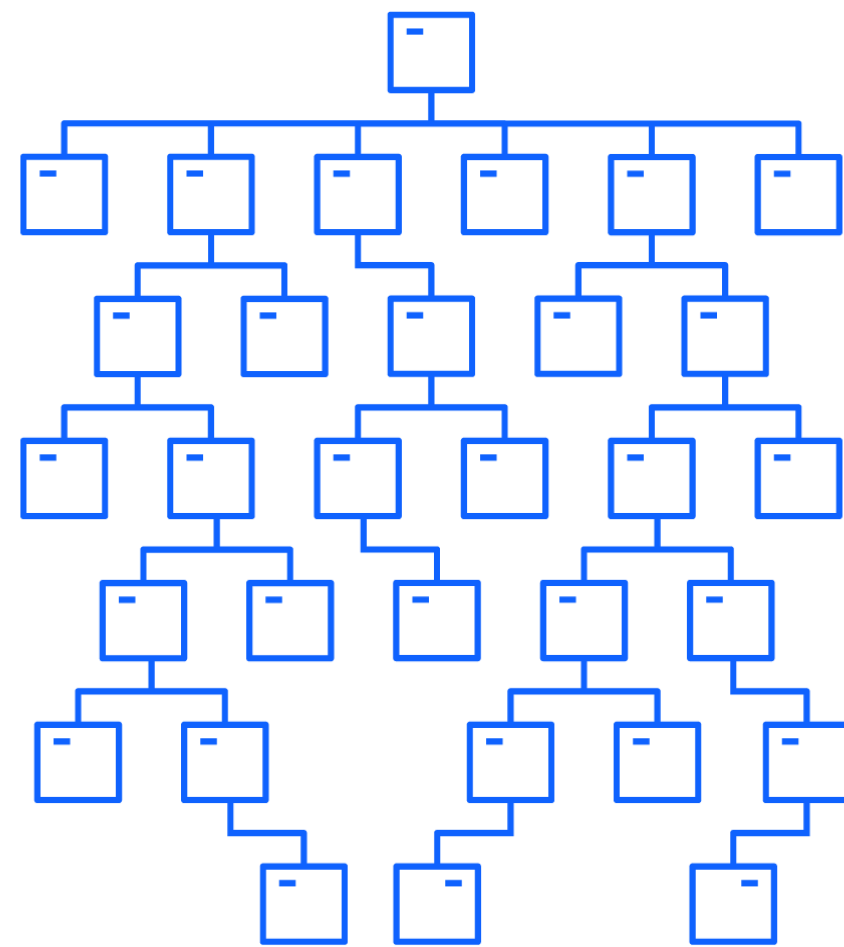
the average cost of an hour of downtime when a revenue generating production service is impacted



Current Landscape: Management Complexity

76% of companies use 2 or more public clouds

Organizations are using an average of over 1,000 applications across multiple clouds

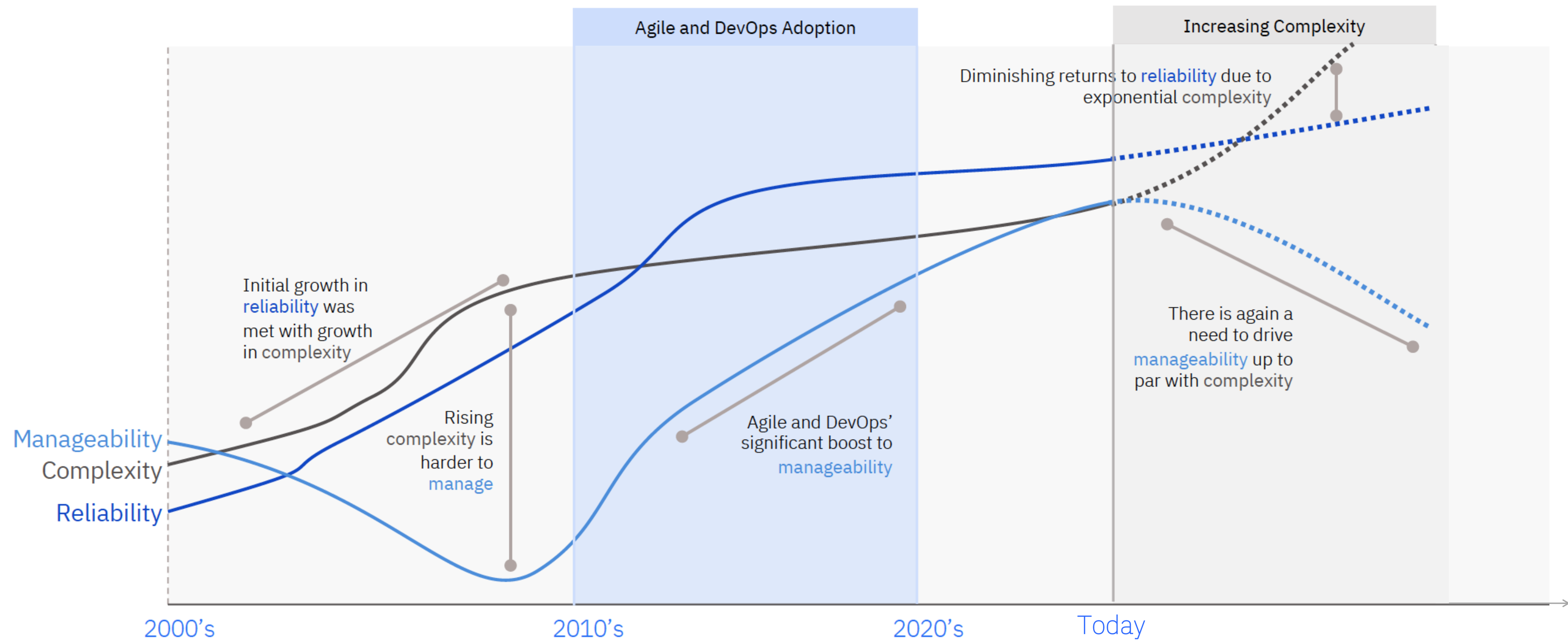


*There's **too much data** for one person to handle*

- Businesses need **real-time visibility** into their infrastructure and application estates to leverage actionable insights to **automate and enhance overall IT operations**
- Current **break-fix**, reactive approaches to IT management simply **cannot scale**
- Adopting **piecemeal** software solutions results in inconsistencies and inefficiencies, **undermining** integrated workflows and automations and **reducing visibility**

Why AIOps?

Modernization Accelerates Complexity



Example
Technology
Adoption

- Legacy, Monolith Apps
- Enterprise Apps
- Web Applications
- Mobile
- IoT
- Hyperscaler Cloud
- 5G, Edge
- Distributed Cloud
- AI Training & Inferencing
- NTN
- Quantum

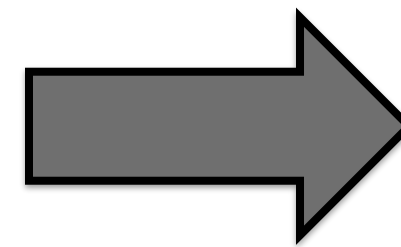
The capabilities of an AIOps Platform



Gartner defines an AIOps Platform as **using machine learning to conglomerate insight, toward intelligent, AI powered Correlation & Automation solutions** in the following areas:

AIOps Capabilities

- + Cross-domain data ingestion and integration
- + Topology generation
- + Event correlation and analytics
- + Incident and pattern recognition
- + Augmented remediation



Business Outcomes

- + Consolidate tools, teams and domains to work together and share understanding
- + See your entire IT estate and understand how incidents originate and propagate
- + Remove the toil of manual investigations, saving time and expanding operations capacity
- + Save time on repetitive fixes or deployments and empower operations to tackle complex problems

AIOps - Two IBM Z perspectives

“ZAIOps” – z/OS scope

- Encompasses z/OS monitoring & management solutions including the OMEGAMON suite, IBM Z Anomaly Analytics, IBM Z Operational Log and Data Analytics, IBM Z System Automation, and more.

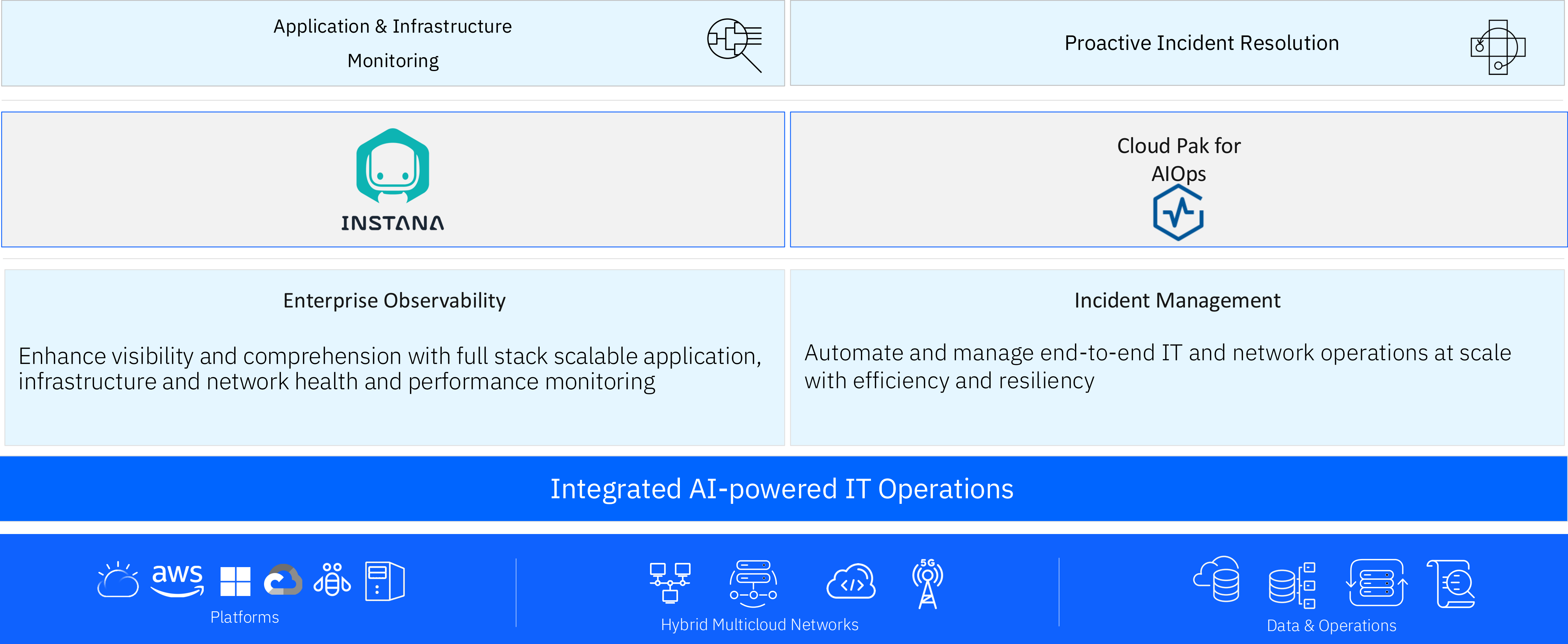
“Hybrid Cloud” AIOps – Broader scope

- Encompasses solutions that support Linux on IBM Z, distributed platforms, containers, public clouds, and more.
- Solutions include Instana, Turbonomic, IBM Cloud Pak for AIOps, SevOne, Apptio, and more.

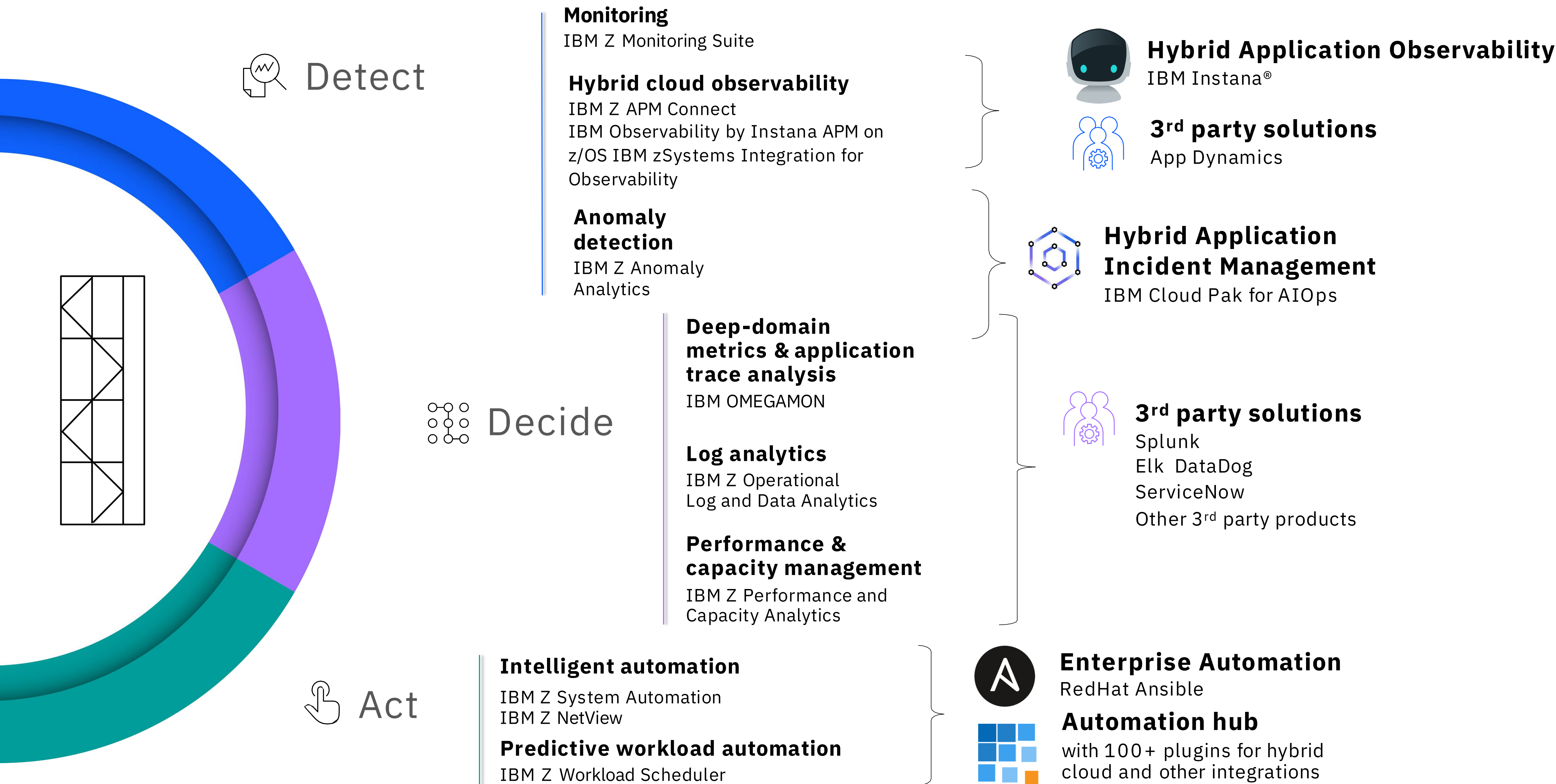
These are not mutually-exclusive perspectives.

They work hand-in-hand to break down silos and bring IBM Z and z/OS into broader AIOps environments.

Observability & AIOps

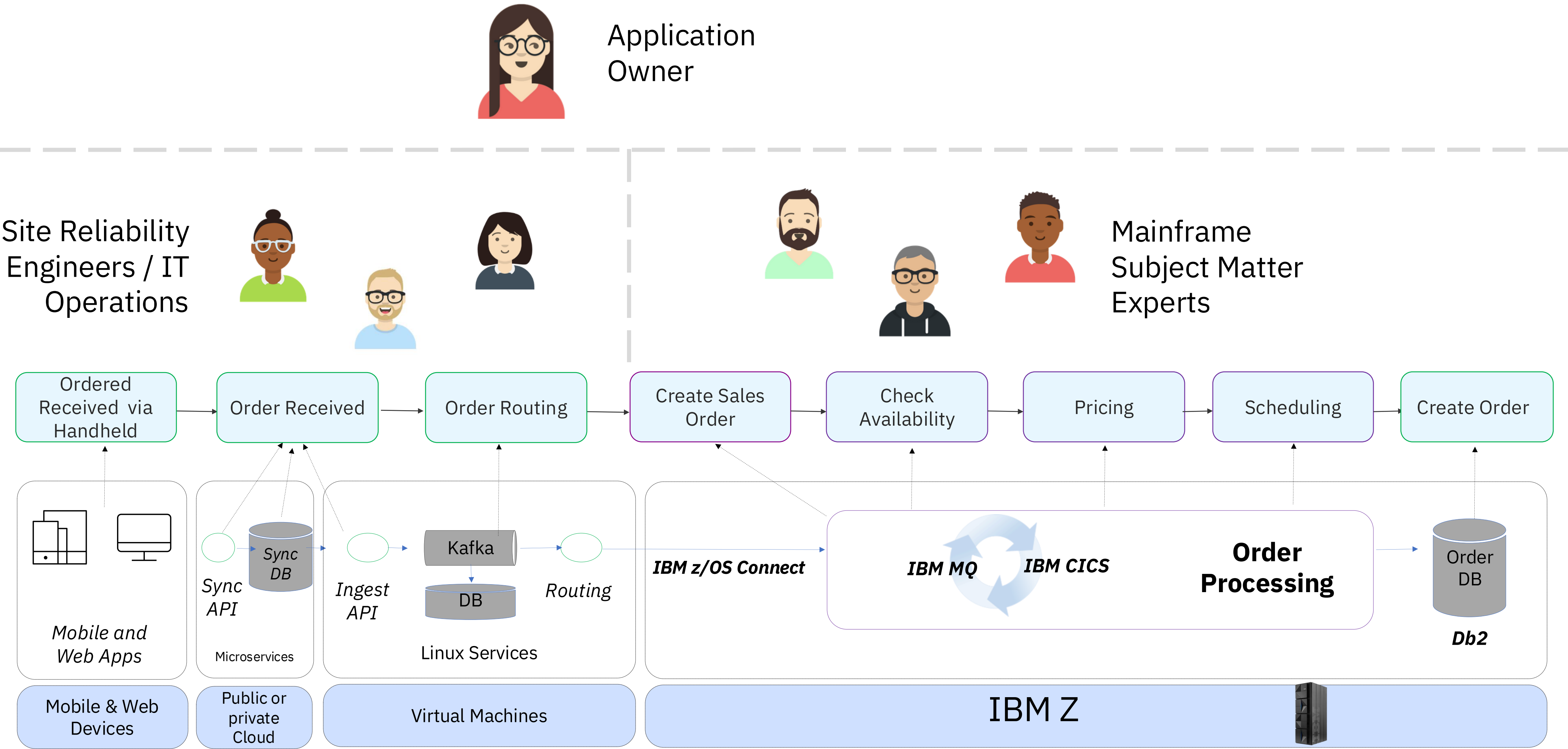


Better together – Hybrid Cloud Integrations



IBM Observability by Instana

The challenge of enterprise observability



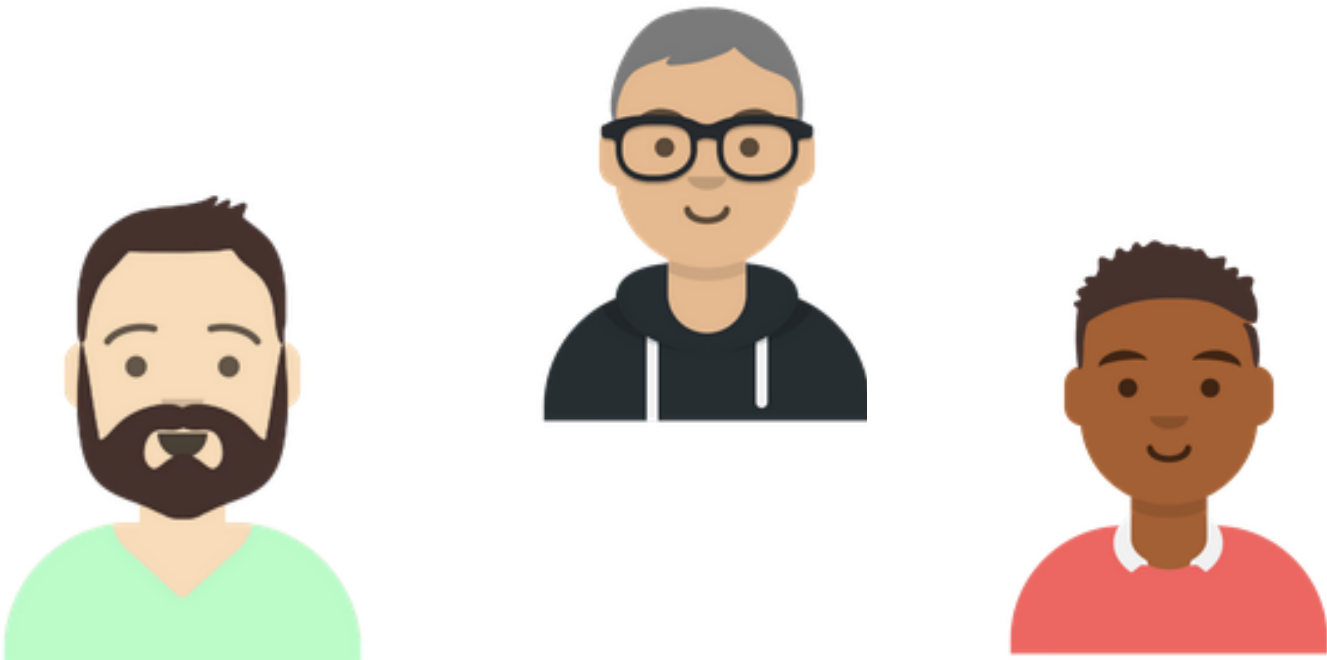
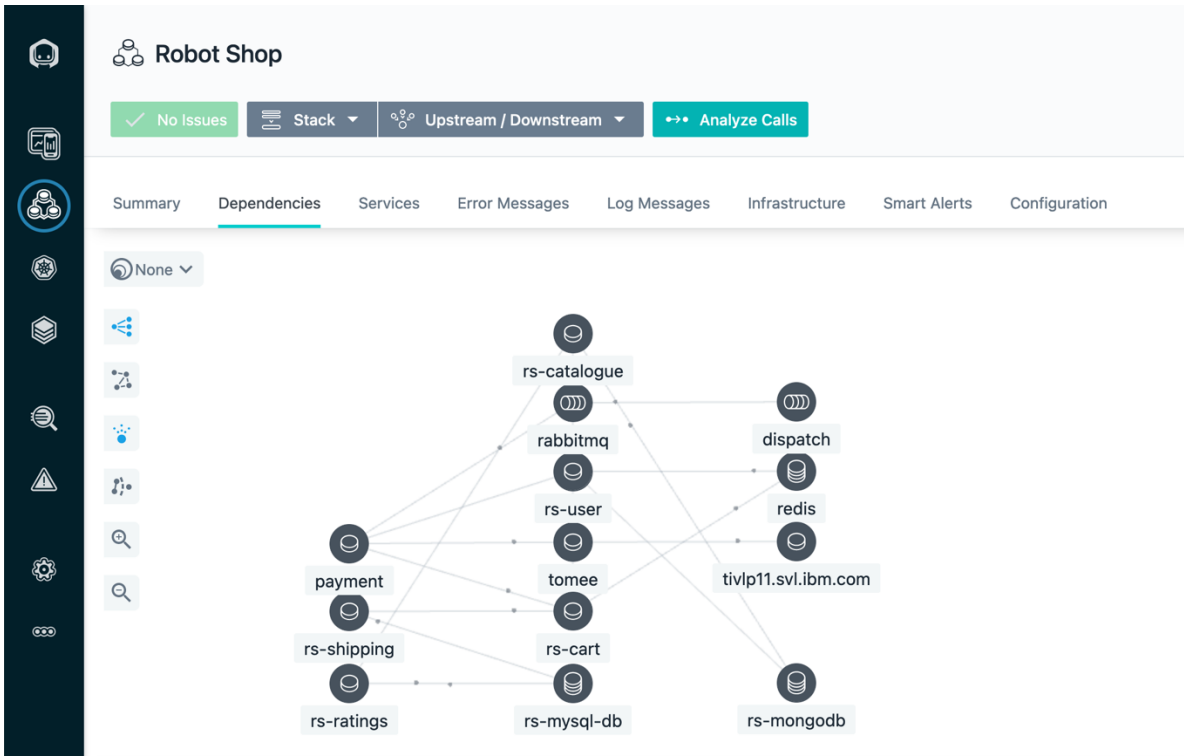
The mainframe is essential to the successful operations and business workflows of major enterprises...

Yet the majority of IBM Z users **lack integration of this key platform** into their enterprise-wide observability strategy

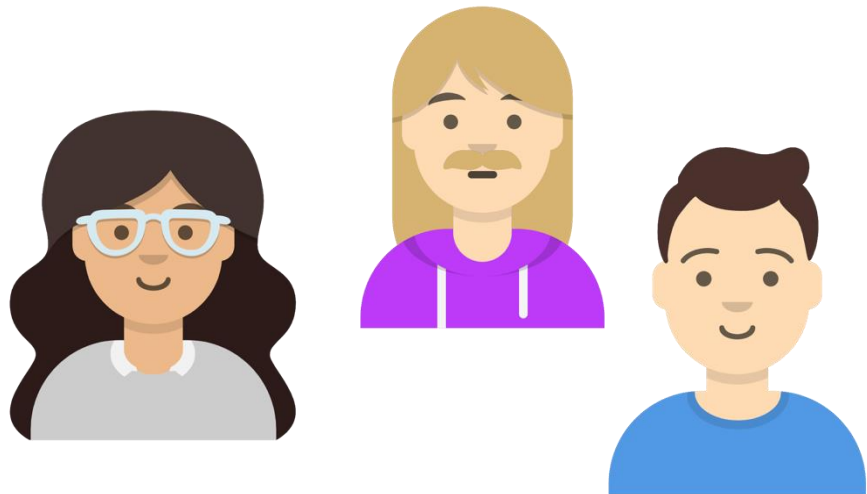
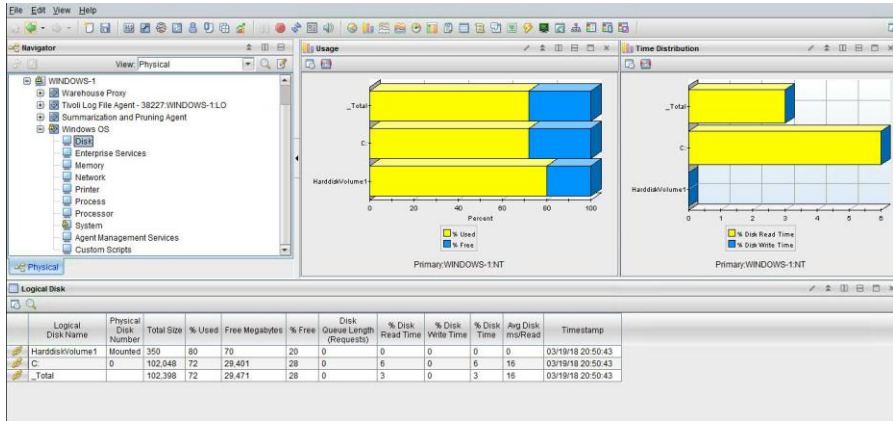
The ongoing challenge of Enterprise Observability



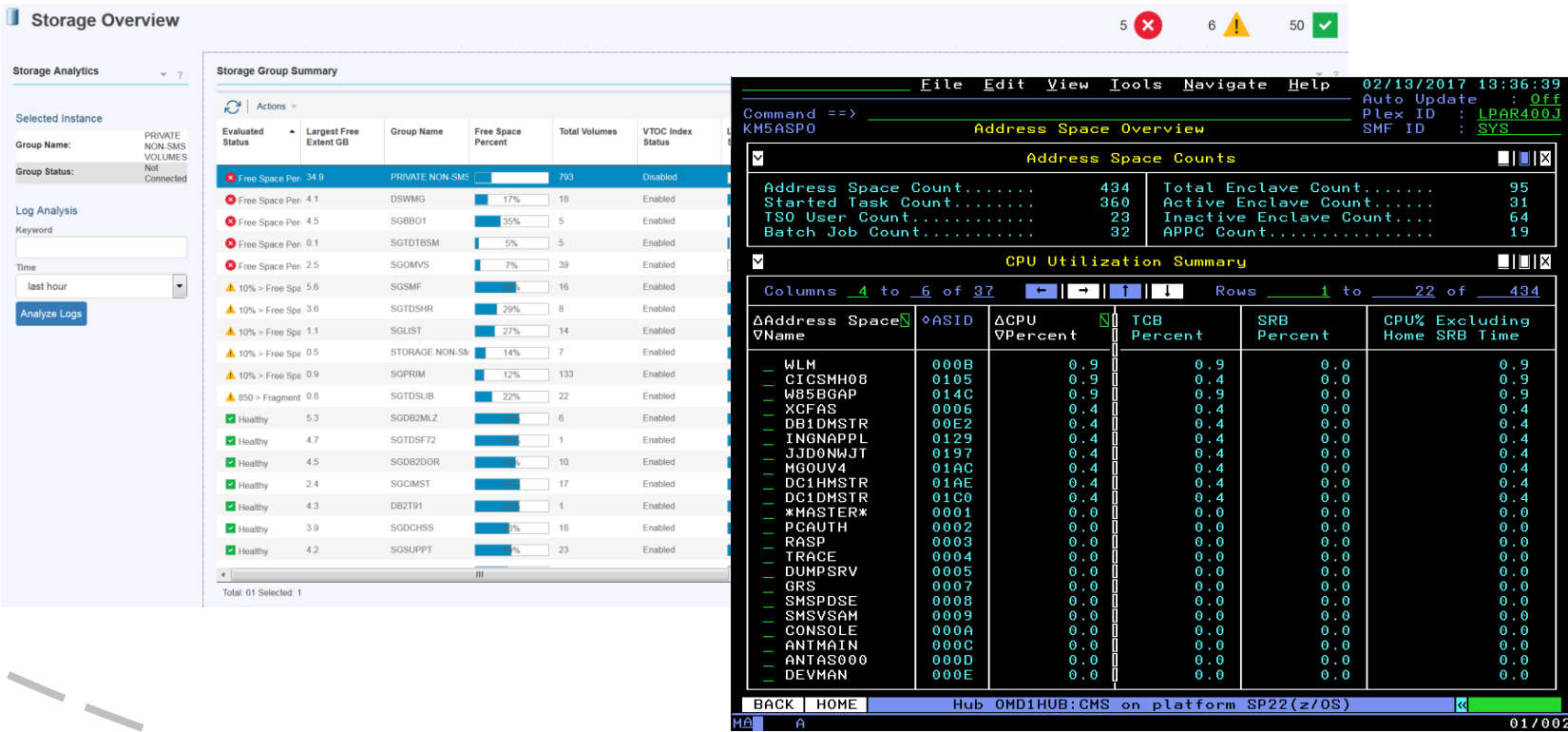
Application owner / SRE



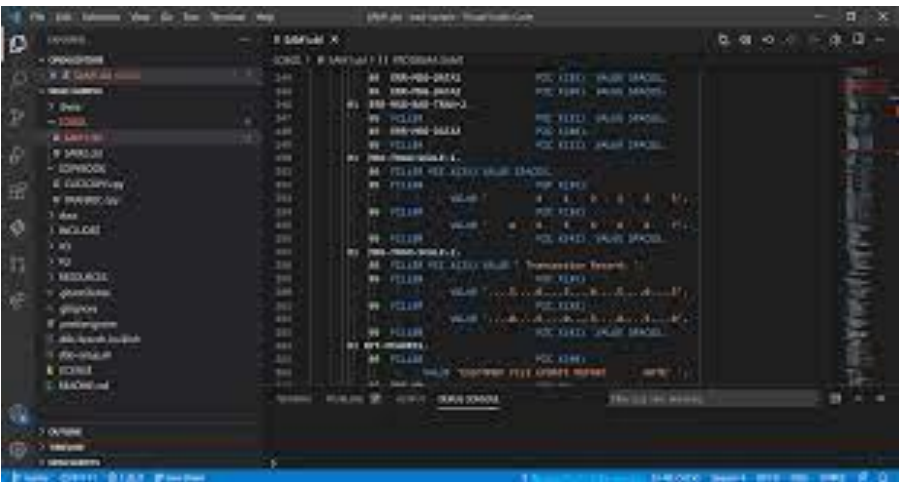
Mainframe Subject Matter Experts



Application development



(Non-zSystems) IT operations

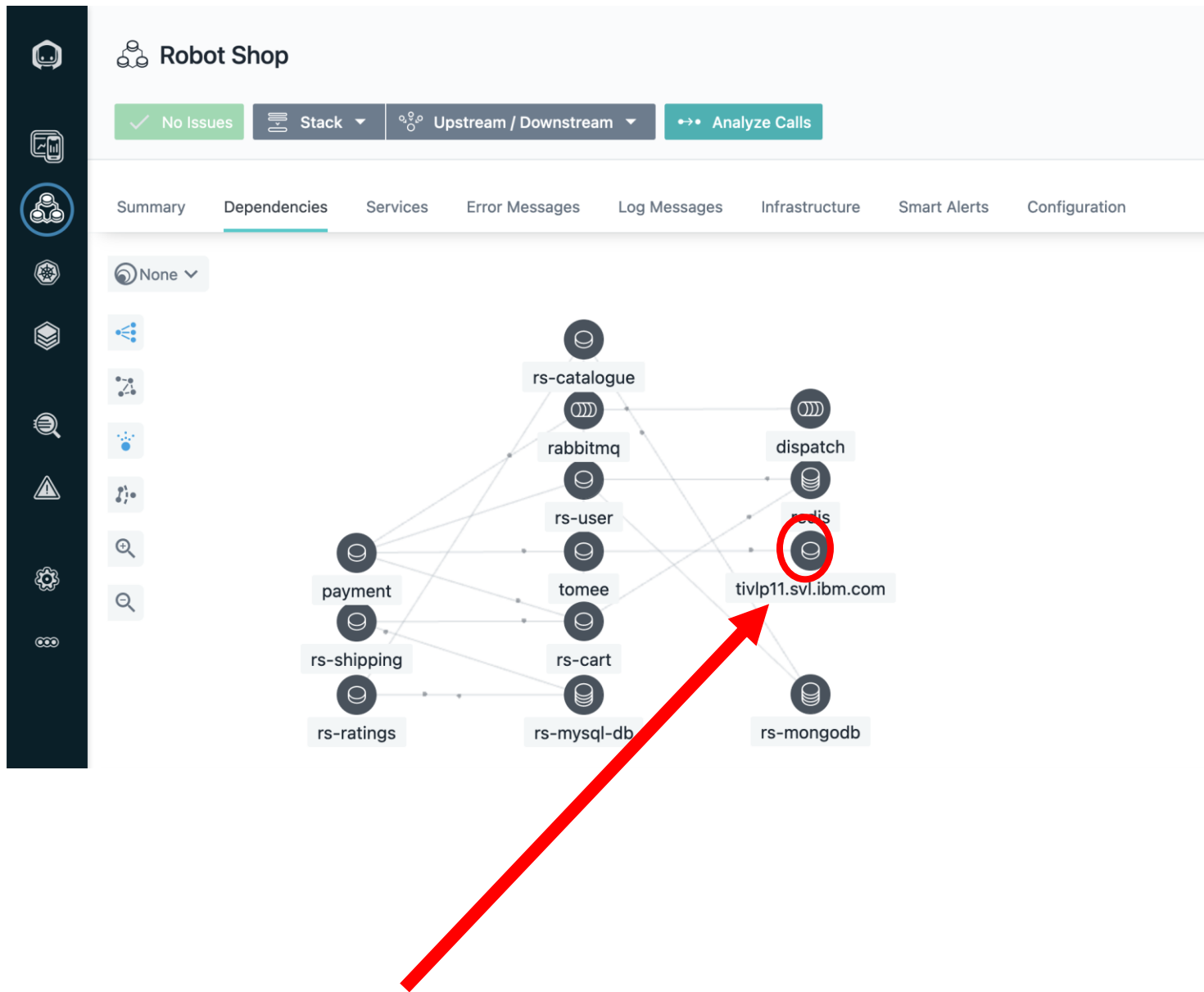


The absence of end-to-end observability...

The response time of our principal customer-facing application has increased significantly over the past 30 minutes...**it looks like the mainframe is where the slowdown is occurring, but I can't see any details.**



Application Owner



MQ SME

MQ is looking good according to my dashboards. Not our problem. Have you spoken to the IMS team?



IMS SME

No problems with IMS. I don't think IMS is part of this application.



CICS SME

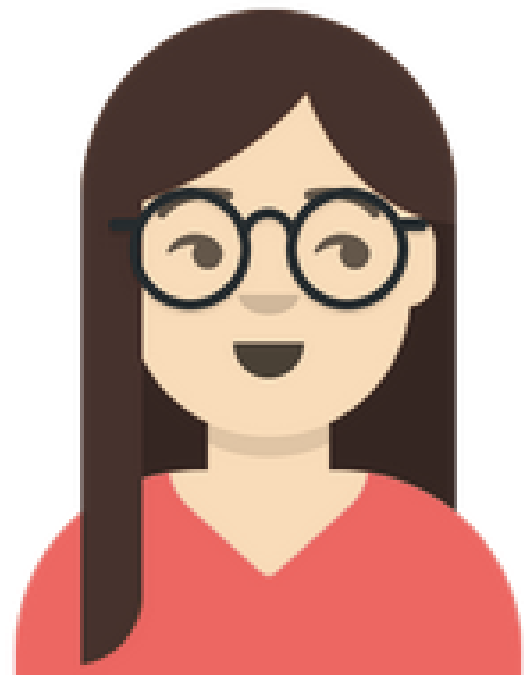
Uh-oh. One of our CICS regions is experiencing a slowdown. I'll fix it right now

Improved experience with enterprise observability

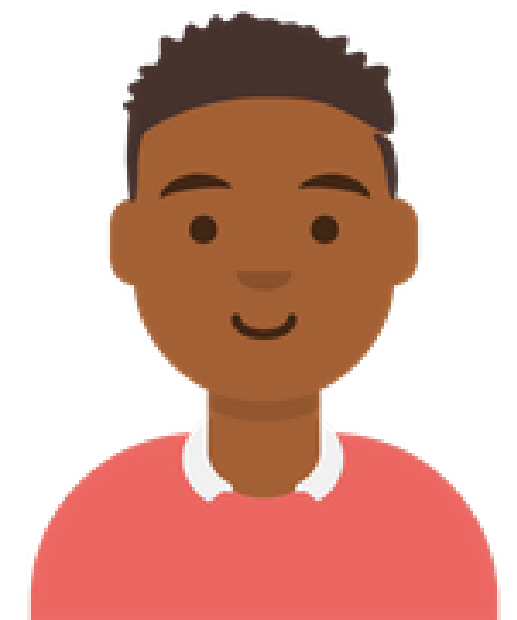
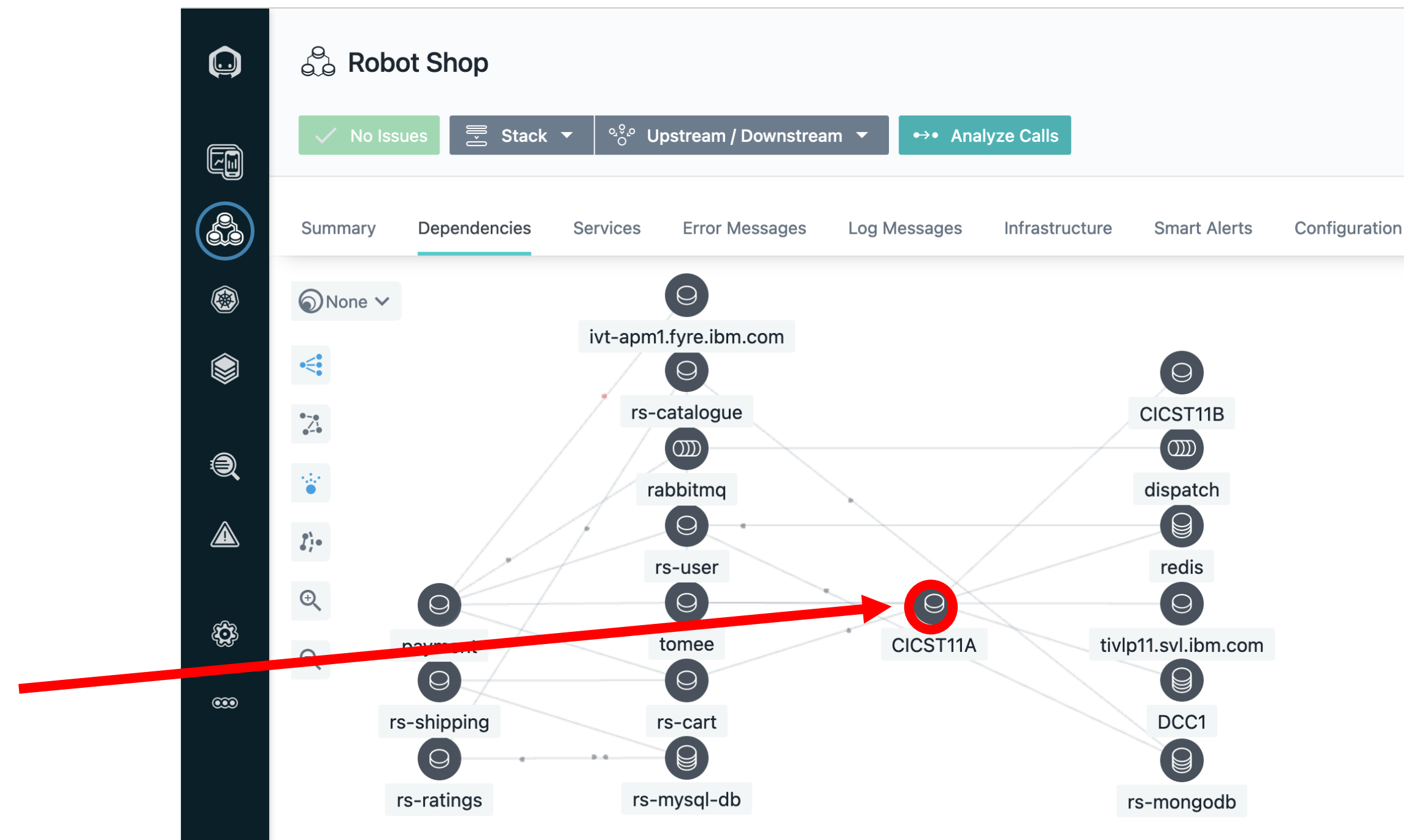
The response time of our principal customer-facing application has increased significantly over the past 30 minutes...**it seems there is a slowdown coming from CICS. It appears to be stemming from *CICST11A* and task *56177* is associated.**

Thanks for the heads up.

I'm going to look at that CICS region in OMEGAMON, review the CICS task history, and take action immediately.



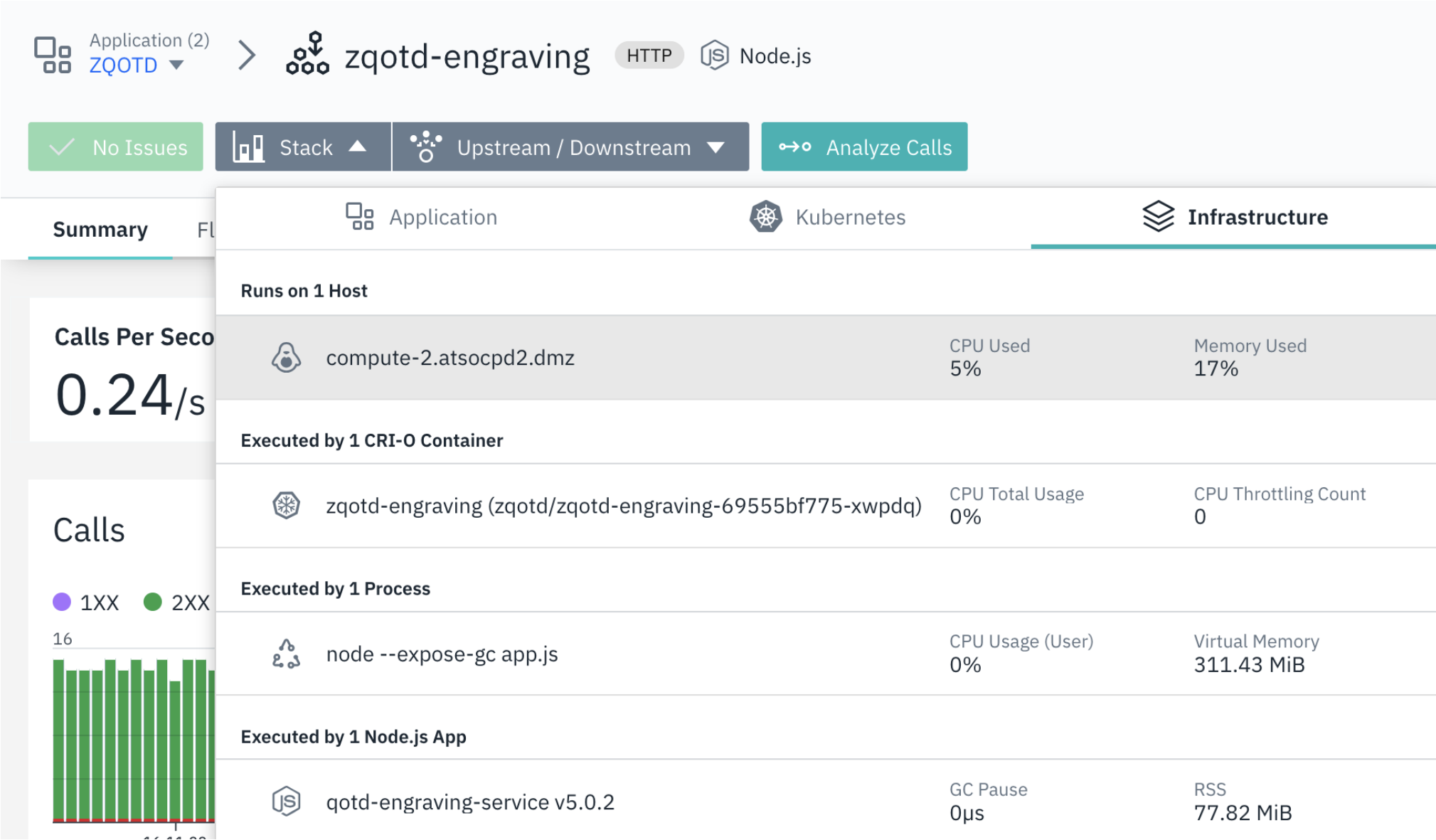
Application Owner



CICS SME

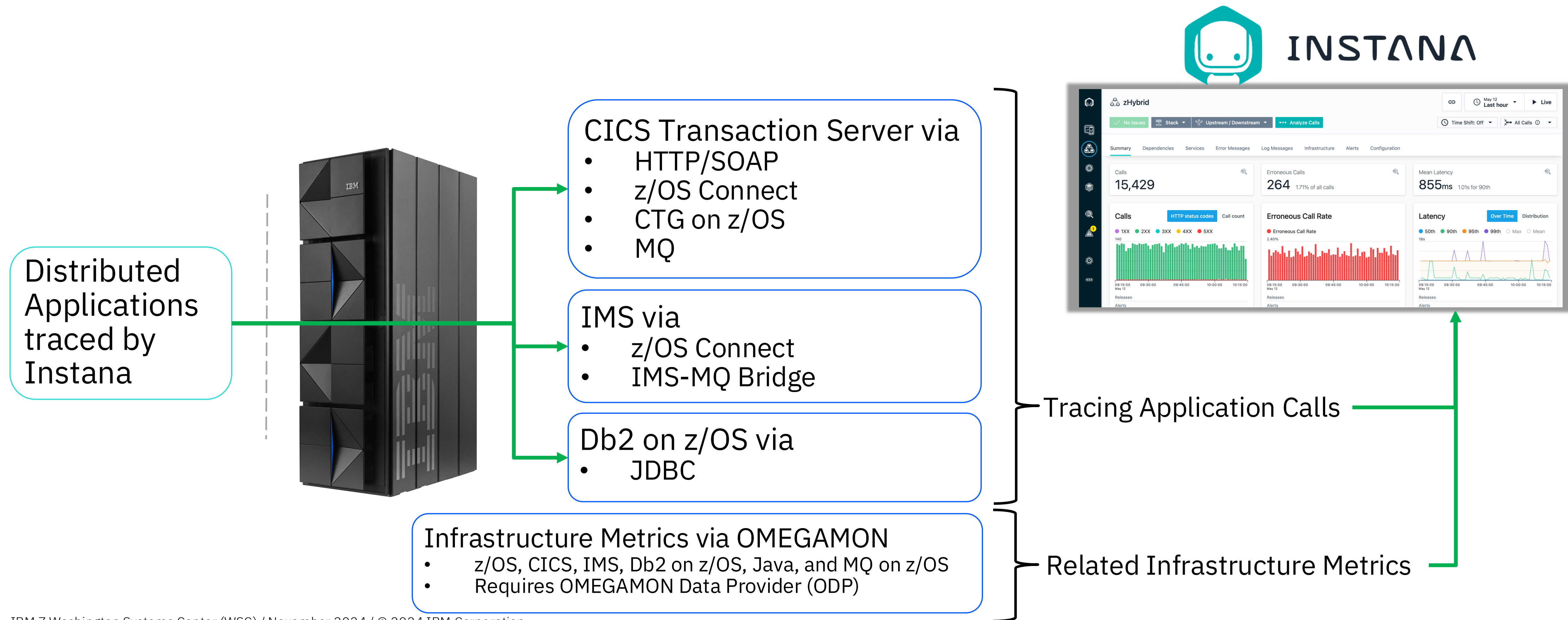
Collect accurate data in context

Real-time detection and mapping of all interdependencies reduces risk and decreases MTTR (Mean Time to Restore) by ensuring that you’re always looking at accurate information.



Instana Capabilities on z/OS

- Designed to observe hybrid applications that start on distributed systems and call into z/OS transactions
- Instana tracing isolates the location of the problem and provides data about the likely cause
- Integration with OMEGAMON shows correlated metrics related to the problem in Instana (Optional)



IBM Cloud Pak for AIOps

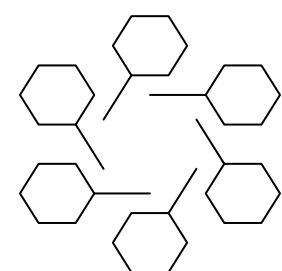
IBM Cloud Pak for AIOps

Proactive problem determination, remediation and avoidance



Proactive incident resolution using AI to eliminate unnecessary down time

Cross Domain Data Ingestion



Events, metrics, alerts, topology, CMDB

Tickets, defects, CI/CD events

On-Prem, Cloud, SaaS, VM's and containers, systems, apps, network

Event Correlation



Correlate across all relevant data sources

Detect hidden anomalies, group based on patterns

Find deviations in performance metrics

Proactive Incident Management



Prioritize incidents based on business criticality

Dynamically update application topologies

Recommend fixes based on analysis of past tickets

Runbook Automation



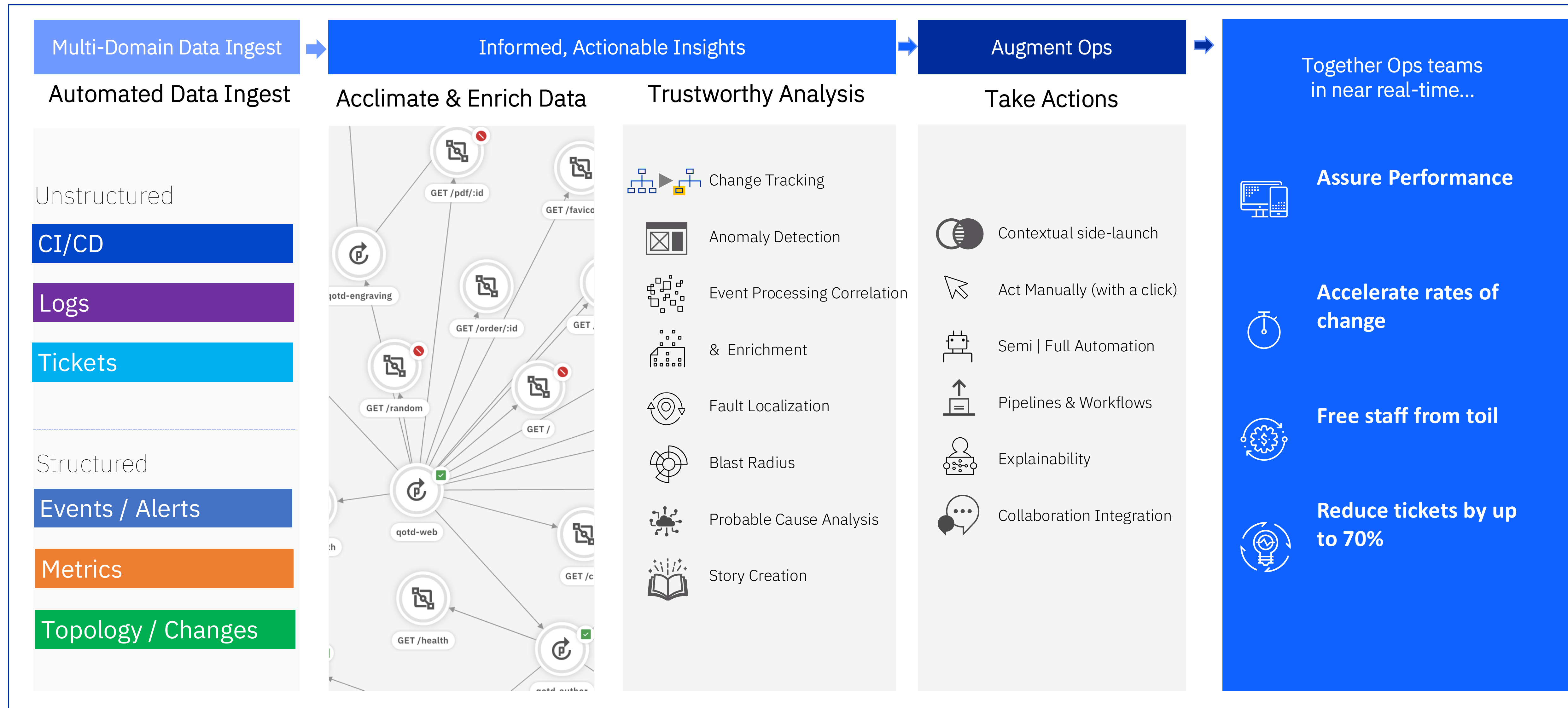
Create runbooks to automate recurring remediations

ChatOps and prescriptive next best actions

Centralize policies across cloud and VM environments



Comprehensive AIOps approach to Real Business Outcomes



Environment and Tooling Data Connectors

IBM Cloud Pak | Automation

Data and tool connections

Add connection +

Connect to your tools to provide data that will help gather insights for your environment.

Learn more

Manage connections

Schedule connections

Search

Connection type	Total connections	Connection status	Categories
ELK	1	1	Logs
Instana	2	2	Events Metrics ...
ServiceNow	1	1	Tickets Topology
Slack	1	1	ChatOps
SSH	1	1	Runbooks

Add connections

Category

All connections

Alcatel-Lucent 1300 SMC	Alcatel-Lucent 1520 SMC	Alcatel-Lucent 1520 SMC v1	Alcatel-Lucent 1520 SMC v2	Alcatel-Lucent 1520 SMC v3	Alcatel-Lucent 1520 SMC v4	Alcatel-Lucent 1520 SMC v5	Alcatel-Lucent 1520 SMC v6	Alcatel-Lucent 1520 SMC v7	Alcatel-Lucent 1520 SMC v8	Alcatel-Lucent 1520 SMC v9	Alcatel-Lucent 1520 SMC v10	Alcatel-Lucent 1520 SMC v11	Alcatel-Lucent 1520 SMC v12	Alcatel-Lucent 1520 SMC v13	Alcatel-Lucent 1520 SMC v14	Alcatel-Lucent 1520 SMC v15	Alcatel-Lucent 1520 SMC v16	Alcatel-Lucent 1520 SMC v17	Alcatel-Lucent 1520 SMC v18	Alcatel-Lucent 1520 SMC v19	Alcatel-Lucent 1520 SMC v20	Alcatel-Lucent 1520 SMC v21	Alcatel-Lucent 1520 SMC v22	Alcatel-Lucent 1520 SMC v23	Alcatel-Lucent 1520 SMC v24	Alcatel-Lucent 1520 SMC v25	Alcatel-Lucent 1520 SMC v26	Alcatel-Lucent 1520 SMC v27	Alcatel-Lucent 1520 SMC v28	Alcatel-Lucent 1520 SMC v29	Alcatel-Lucent 1520 SMC v30	Alcatel-Lucent 1520 SMC v31	Alcatel-Lucent 1520 SMC v32	Alcatel-Lucent 1520 SMC v33	Alcatel-Lucent 1520 SMC v34	Alcatel-Lucent 1520 SMC v35	Alcatel-Lucent 1520 SMC v36	Alcatel-Lucent 1520 SMC v37	Alcatel-Lucent 1520 SMC v38	Alcatel-Lucent 1520 SMC v39	Alcatel-Lucent 1520 SMC v40	Alcatel-Lucent 1520 SMC v41	Alcatel-Lucent 1520 SMC v42	Alcatel-Lucent 1520 SMC v43	Alcatel-Lucent 1520 SMC v44	Alcatel-Lucent 1520 SMC v45	Alcatel-Lucent 1520 SMC v46	Alcatel-Lucent 1520 SMC v47	Alcatel-Lucent 1520 SMC v48	Alcatel-Lucent 1520 SMC v49	Alcatel-Lucent 1520 SMC v50	Alcatel-Lucent 1520 SMC v51	Alcatel-Lucent 1520 SMC v52	Alcatel-Lucent 1520 SMC v53	Alcatel-Lucent 1520 SMC v54	Alcatel-Lucent 1520 SMC v55	Alcatel-Lucent 1520 SMC v56	Alcatel-Lucent 1520 SMC v57	Alcatel-Lucent 1520 SMC v58	Alcatel-Lucent 1520 SMC v59	Alcatel-Lucent 1520 SMC v60	Alcatel-Lucent 1520 SMC v61	Alcatel-Lucent 1520 SMC v62	Alcatel-Lucent 1520 SMC v63	Alcatel-Lucent 1520 SMC v64	Alcatel-Lucent 1520 SMC v65	Alcatel-Lucent 1520 SMC v66	Alcatel-Lucent 1520 SMC v67	Alcatel-Lucent 1520 SMC v68	Alcatel-Lucent 1520 SMC v69	Alcatel-Lucent 1520 SMC v70	Alcatel-Lucent 1520 SMC v71	Alcatel-Lucent 1520 SMC v72	Alcatel-Lucent 1520 SMC v73	Alcatel-Lucent 1520 SMC v74	Alcatel-Lucent 1520 SMC v75	Alcatel-Lucent 1520 SMC v76	Alcatel-Lucent 1520 SMC v77	Alcatel-Lucent 1520 SMC v78	Alcatel-Lucent 1520 SMC v79	Alcatel-Lucent 1520 SMC v80	Alcatel-Lucent 1520 SMC v81	Alcatel-Lucent 1520 SMC v82	Alcatel-Lucent 1520 SMC v83	Alcatel-Lucent 1520 SMC v84	Alcatel-Lucent 1520 SMC v85	Alcatel-Lucent 1520 SMC v86	Alcatel-Lucent 1520 SMC v87	Alcatel-Lucent 1520 SMC v88	Alcatel-Lucent 1520 SMC v89	Alcatel-Lucent 1520 SMC v90	Alcatel-Lucent 1520 SMC v91	Alcatel-Lucent 1520 SMC v92	Alcatel-Lucent 1520 SMC v93	Alcatel-Lucent 1520 SMC v94	Alcatel-Lucent 1520 SMC v95	Alcatel-Lucent 1520 SMC v96	Alcatel-Lucent 1520 SMC v97	Alcatel-Lucent 1520 SMC v98	Alcatel-Lucent 1520 SMC v99	Alcatel-Lucent 1520 SMC v100
-------------------------	-------------------------	----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	------------------------------

IBM Washington Systems Center (WSC) / March 20, 2024 / © 2024 IBM Corporation

Over 160 industry standard connectors out-of-the-box

Ingest **Events & Alerts, Metrics, Topology and Logs** from across your estate and tooling

Create your own custom connectors using generic connectors and SDKs

Leverage your existing **Netcool Probes**

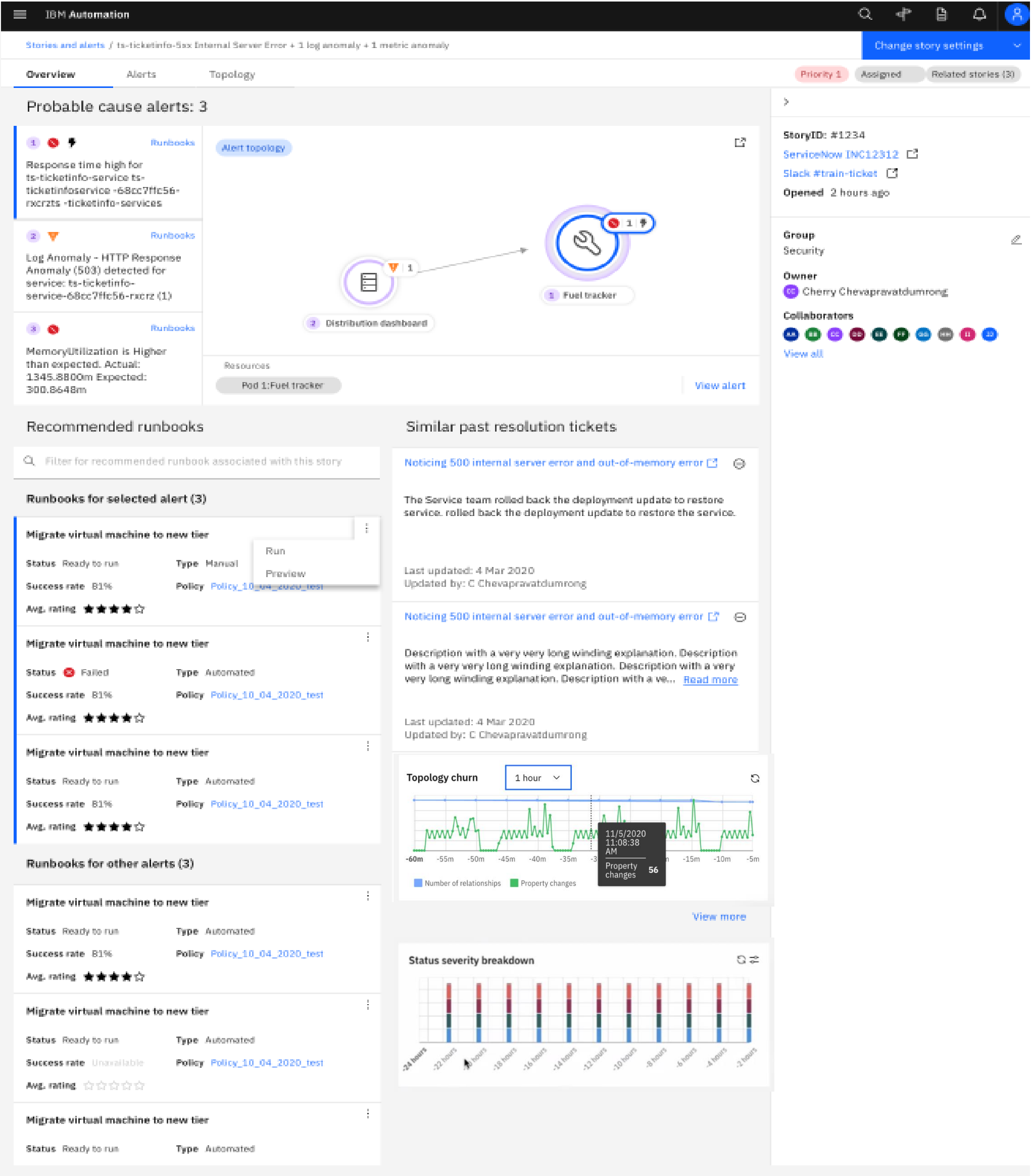
Easy configuration and management

AIOps Incident View

Probable Cause alerts are prominently displayed and ordered by likelihood, with additional details only one click away.

Topology view of affected and associated resources, and historical change tracking to quickly pinpoint the source of an incident and its impact

Recommended runbooks based on incident context and user feedback.



Access to ChatOps for team coordination and shortcuts to actions

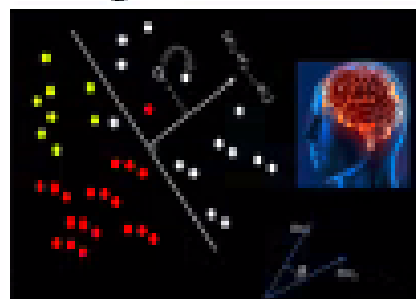
Direct link to ServiceNow ticket or other ITSM systems

Similar incident tickets, to inform operators of rapid resolution steps as well as tracking recurring types of incidents.

AI Analytics in Cloud Pak for AIOps



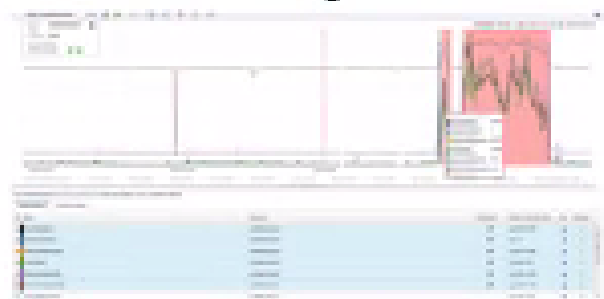
Log Anomaly Detection



Detect anomalies from log messages

- Anomalous time period prediction
- Entity mentions in error logs
- Explanation & Pointer to log messages from anomalous time periods

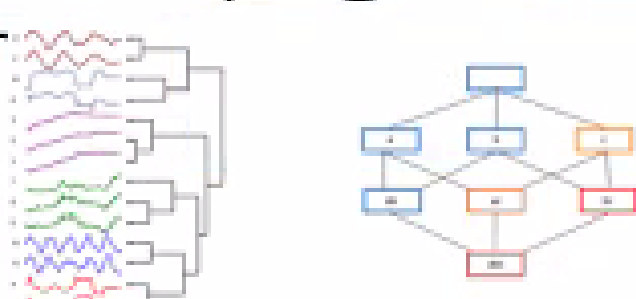
Metric Anomaly Detection



Detect anomalies from time series metrics

- Deviation from normal operating range
- Change from variable to flat
- High & low range changes
- Exceed previous range
- Exceed normal range variance

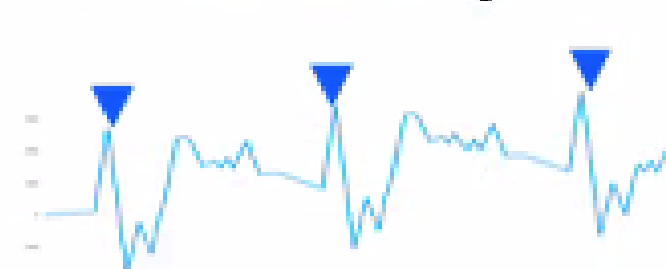
Event Grouping with Entity Linkir



Group events, alerts, anomalies to reduce tickets

- Topological: Group events that are related and/or connected (e.g. "runs on").
- Temporal: To automatically discover events that tend to co-occur
- Scope: Automatically group events based on scope
- Super-Group: Group of Groups

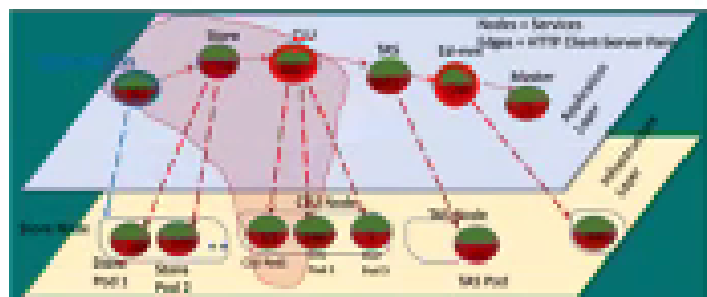
Event Seasonality



Automatically discovers events that occur with a regular pattern

- Identify chronic issues that may go un-detected
- Provide valuable insights into problem solving
- Continual learning over days, weeks, months, and years

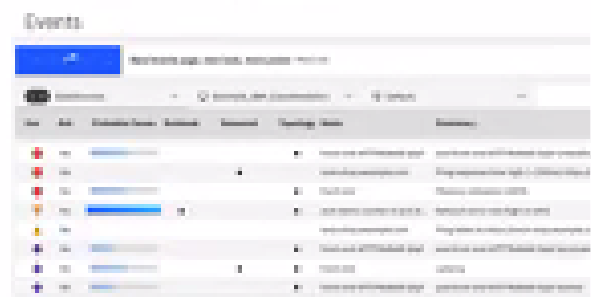
Fault Localization & Blast radius



Derive full scope of components using vertex-weighted topology graph traversal and a Reasoning engine to understand the meaning of the topology relationships

- Blast-radius via directional dependency analysis of the related components that interact with the localised source of the issue.

Probable Cause



Derive probable fault component using vertex-weighted topology graph traversal and a Reasoning engine to understand the meaning of the topology relationships

- Probable Cause localisation to the most likely source of an issue within the application topology

Incident Similarity



For a given problem description, find top k ranked similar incidents from the past. Helps understand the current issue and previous successful resolve actions. Consumes tickets and any data from the ticket progression to closure including human written investigation and resolution actions. Uses Entity-Action extraction and Action sequence mining to understand tickets and summarize what was done.

Change Risk Prediction



Assess the risk for each proposed change based on issues caused by historical changes.

- Harvest and analyse the change ticket history to identify changes that implicitly failed when applied.
- Identify changes that resulted in subsequent issues if they rolled out

AI Management



AI model management

TrainingApplication coverageData assets

Models-generating algorithms

Change risk

Training started: 8/4/2022 8:38:54 PM

Version trained
v10

Data quality
● No tickets data available

Error

Log anomaly detection - natural language

Last trained: 7/17/2022 1:47:46 PM

Version trained
v4

Data quality
● Good

Complete

v3 deployed

Metric anomaly detection

Last trained: 6/28/2022 6:13:19 AM

Version trained
v5

Data quality
● -

AI model management / Training /

Similar incidents

Discovers details about similar messages, anomalies, and events that occurred in the past and are impacting the current application.

Tickets

Temporal grouping

Last trained: 7/5/2022 4:06:39 AM

Version trained
v2

Data quality
● -

Complete

Deployed

Online algorithms

Log anomaly detection - statistical baseline

Discovers abnormal behavior in log data using a statistical moving average.

Logs

On

Probable cause

Analyzes across domain and application boundaries to determine the likelihood of an alert being the cause of an incident.

Events, topology

Enabled

Log anomaly detection - natural language

OverviewVersionsCoverage

Training status

3 of 3 complete

Models created

Training started: 7/17/2022, 01:47 PM

Queued

Preparing data

Training

Jobs: 9 jobs View

Data quality

Good

3 recommendations

Your data was inspected and looks good for training.

We have detected that a portion of this data is in an unsupported language and could impact the quality of this model.

We recommend that you remove any data containing unsupported languages. Then, run training again.

Log data

Name
OGvqDYIBVPLMfCLDWy1F

Start date
07/16/2022 4:00 PM UTC

End date
07/17/2022 8:00 PM UTC

Models

9 Resources

Resources with models

Resources without models

AI model management

AI algorithmsManageCoverageData assets

Trained AI algorithms

These are your most recently trained AI algorithms.

Name	Version	Deployed version	AI algorithms	Schedule	Last trained	Status
similar_incidents_configuration	v1	v1	Similar incidents	Run manually	3/24/2022 9:50:32 AM	Training complete
change_risk_configuration	v1	v1	Change risk	Run manually	3/24/2022 9:52:44 AM	Training complete
metric_anomaly_detection_configuration	v2	v2	Metric anomaly detection	Run manually	3/25/2022 10:10:44 AM	Training complete

Items per page: 10 1-3 of 3 items

Start training

Deploy v4

Delete configuration

Overview details

AI type

Log anomaly detection - natural language

Version

v4

Version deployed

v3

Created on

6/21/2022, 9:35:26 AM

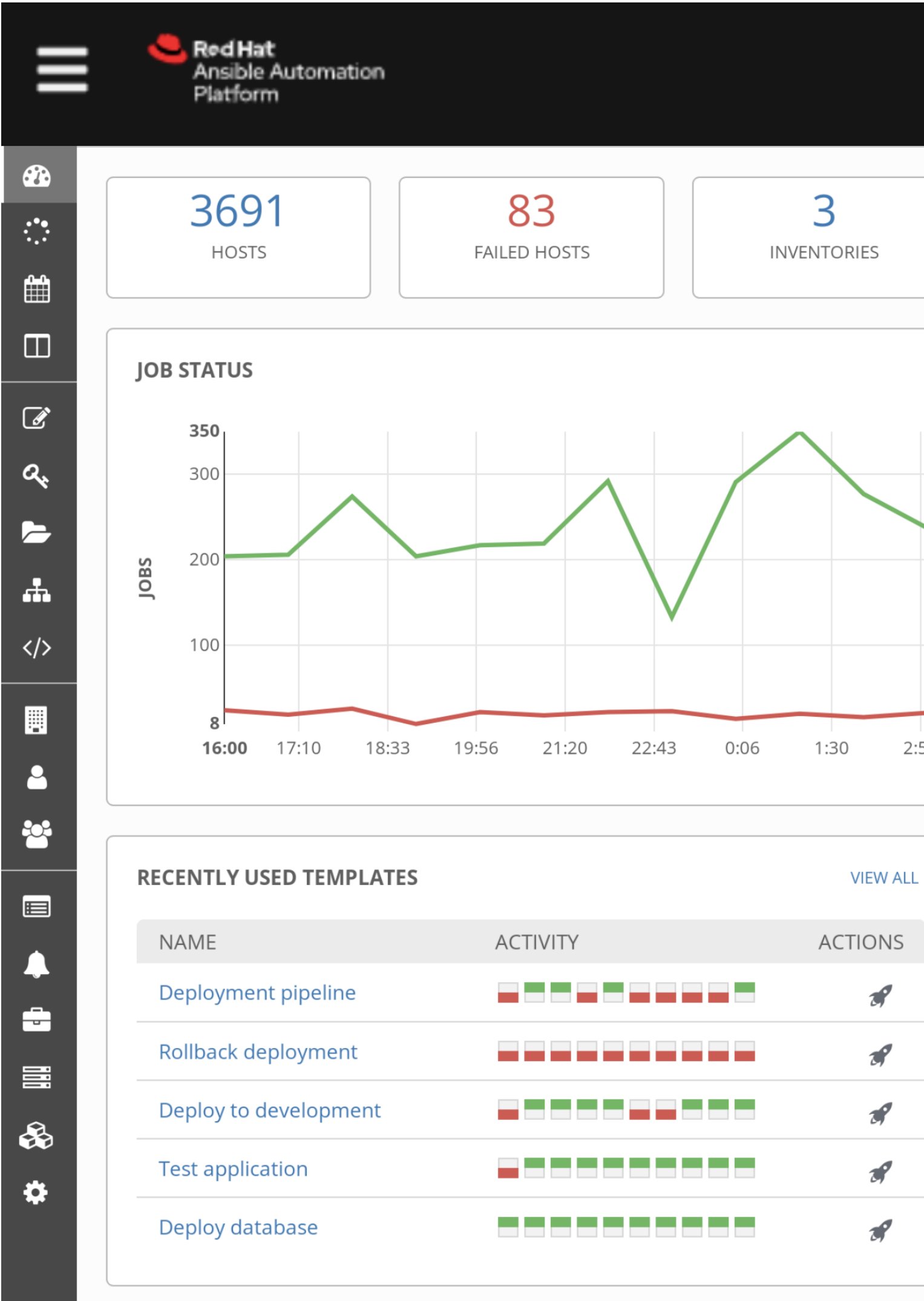
Created by

jconallen

Ansible Automation Platform & Cloud Pak for AIOps



Accelerate IT Transformation & use of Automation. Improve Scalability and tolerance of Change.



Direct Integration

Register & Invoke Job and Workflow Templates into actions



Provenance of Automation

Track actions when & where they occur



...*this* action occurred on *these* elements...

- Step 1: Check if puts are disabled on queue**
Navigate to the queue here: <https://esysmvs.ztec.dmz:1419/ibmmq/console/#/1>
Check if puts are disabled in the configuration.
If they are, run the following runbook step to enable puts with Ansible.
If they are not, End
- Step 2: MQ Patch**
Automated step
MQ Patch
- Step 3: Check Instana Application Perspective**
If the issue is fixed, error rate should return to normal in the ZQOTD Instana app
<https://instana.io/s/BX9rkEQ9TBKRqx4Bs2d4YQ>
- Step 4: Check that the engraving function of the QOTD application is working**
If you can order an engraving on the [ZQOTD application](#), this runbook worked and
Log a ServiceNow ticket with the relevant information.

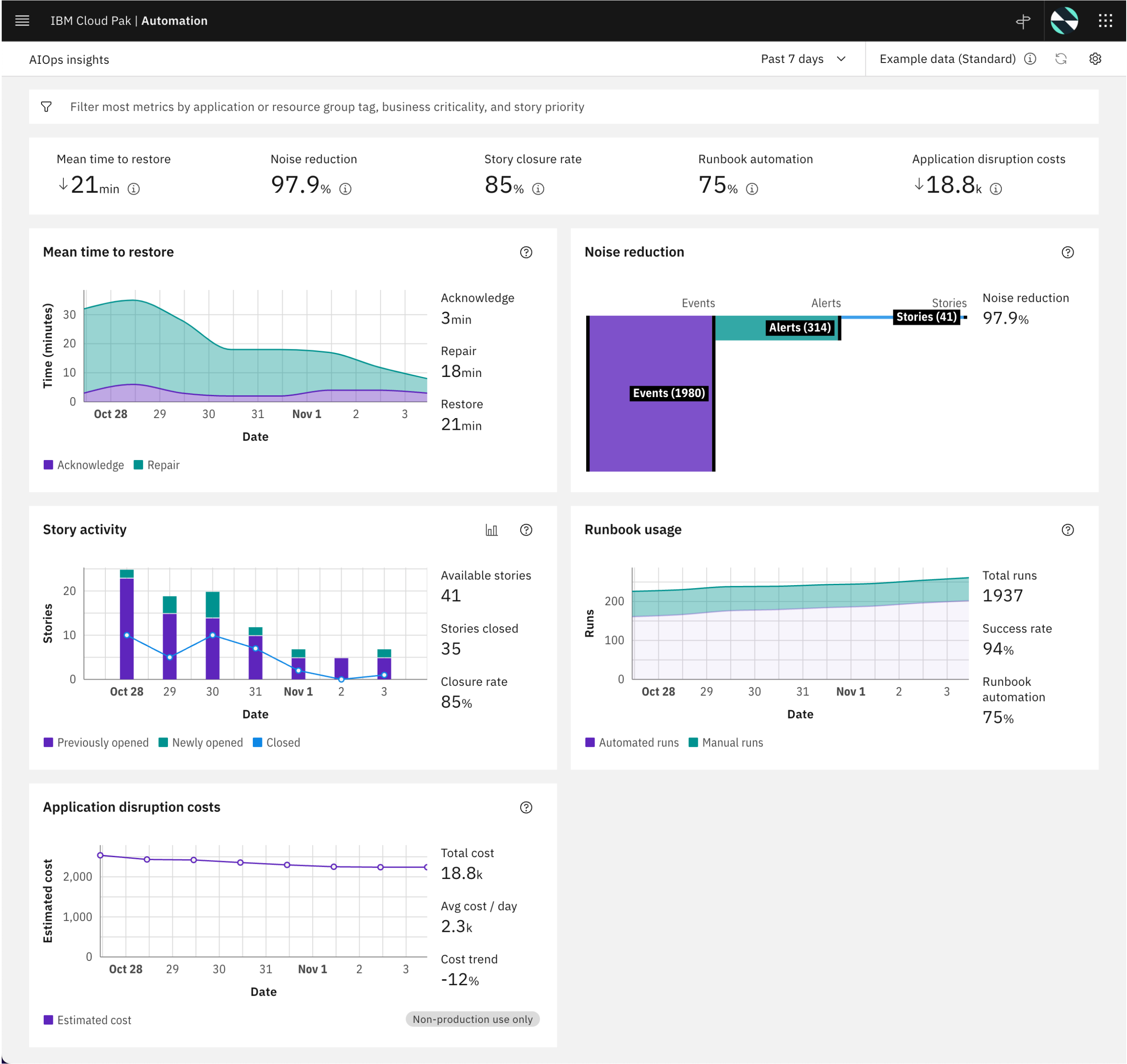
AIOps Insights Dashboard

Understanding Operations Performance

Track KPI's and automation utilization to ensure operations teams are benefiting from AIOps and identify new opportunities for automation.

Observe trends and understand application and service performance over time.

Analyze cost impacts of outages, and savings realized with AIOps (Tech Preview)



Next steps/more information

- Want to learn more?
 - Reach out to me for a live demo or deep-dive presentation (matt.mondics@ibm.com)
- Interested in a POC of CP4AIOps running on the IBM Z platform?
 - Reach out to me
- Join the IBM AIOps for IBM Z community ([Link](#))

Thank you

© 2024 International Business Machines Corporation IBM and the IBM logo are trademarks of IBM Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on ibm.com/trademark.

This document is current as of the initial date of publication and may be changed by IBM at any time. Statements regarding IBM’s future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

THIS DOCUMENT IS DISTRIBUTED “AS IS” WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IN NO EVENT, SHALL IBM BE LIABLE FOR ANY DAMAGE ARISING FROM THE USE OF THIS INFORMATION, INCLUDING BUT NOT LIMITED TO, LOSS OF DATA, BUSINESS INTERRUPTION, LOSS OF PROFIT OR LOSS OF OPPORTUNITY.

Client examples are presented as illustrations of how those clients have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.

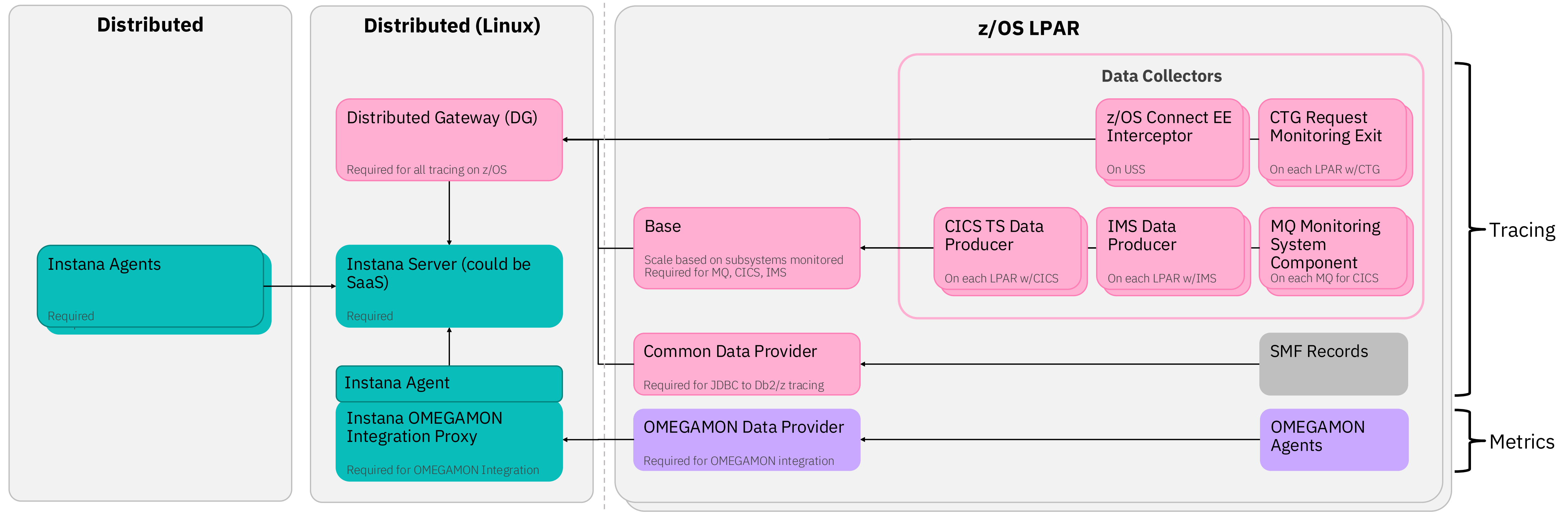
Not all offerings are available in every country in which IBM operates.

It is the user’s responsibility to evaluate and verify the operation of any other products or programs with IBM products and programs.

The client is responsible for ensuring compliance with laws and regulations applicable to it. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the client is in compliance with any law or regulation.



Basic architecture for ingesting z/OS telemetry into Instana



What's in the Box?

The Instana on z/OS PID includes the following components:

- Instana self-hosted server
- “Z APM Connect” components
 - Distributed Gateway
 - Base
 - Data Collectors
- Common Data Provider
- [Instana on z/OS prerequisites](#)

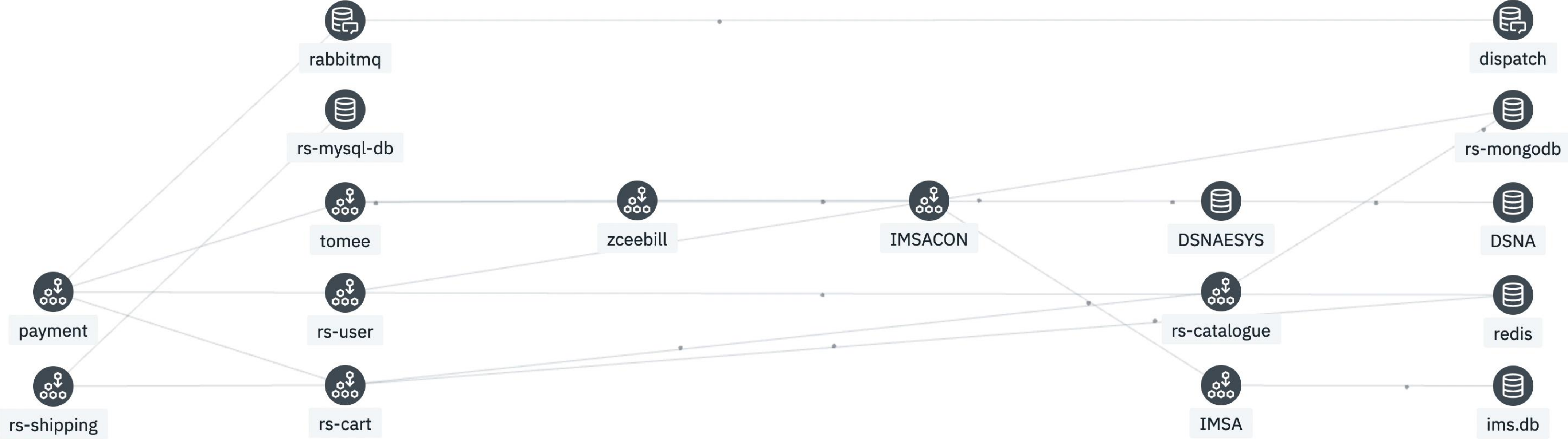
For OMEGAMON integration, the following additional components are required:

- OMEGAMON agents
 - OMEGAMON Data Provider
 - Instana Integration Proxy
- NOT provided by Instana on z/OS

Delivered with:

- Instana on z/OS
- Instana
- OMEGAMON
- Existing

Monitor your: End-to-end application with distributed (x86) Linux services & z/OS



Monitor your: End-to-end application with distributed (x86) Linux services & z/OS

IBM Instana

Get answers ?

Robo Z Shop

No Issues

Stack

Upstream / Downstream

Analyze Calls

May 08

Last hour

Live

Time Shift: Off

All Calls

Summary

Dependencies

Services

Error Messages

Log Messages

Infrastructure

Synthetic Monitoring

Smart Alerts

Configuration

Services

Analyze Services

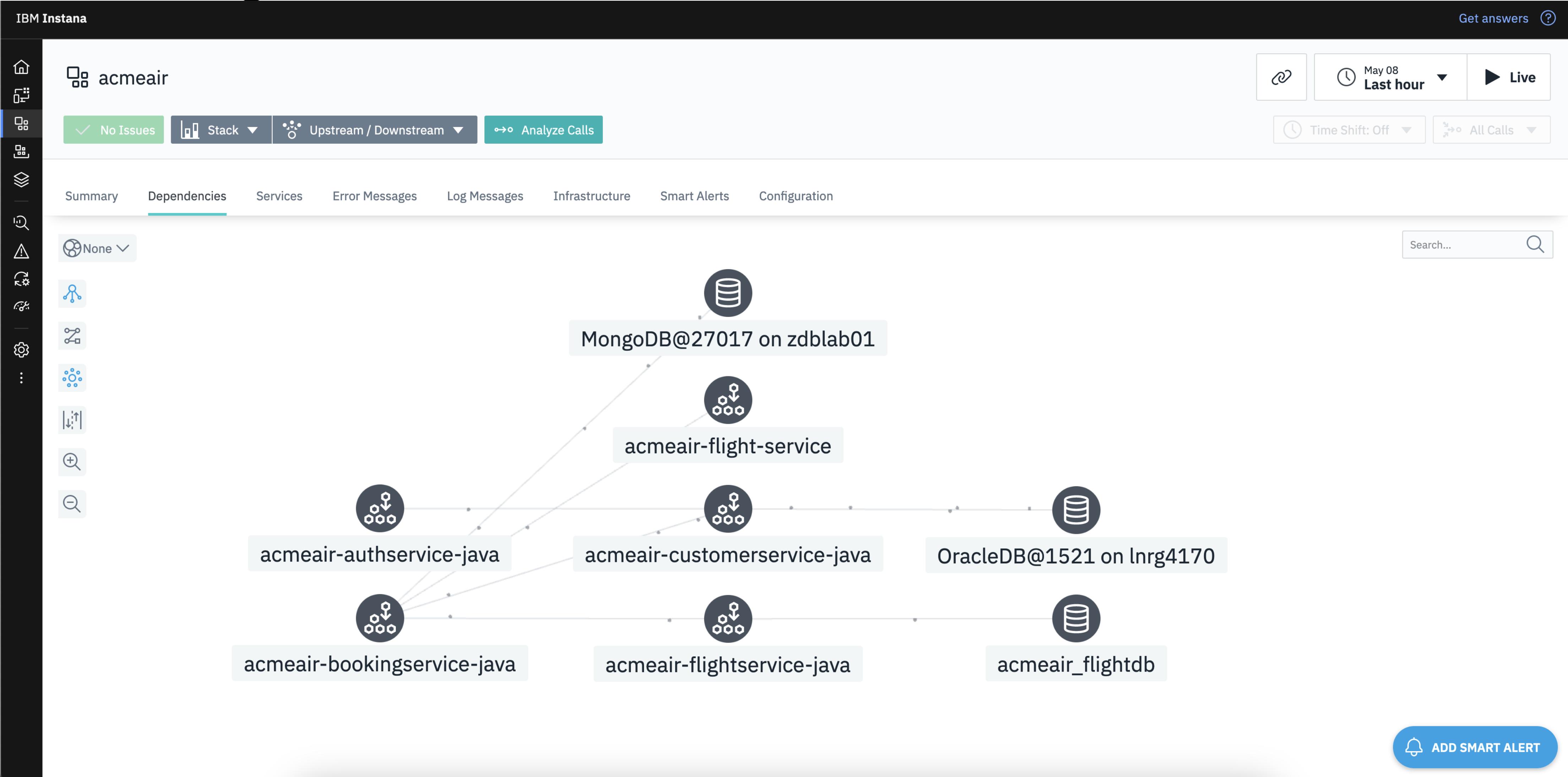
Type...

Technology...

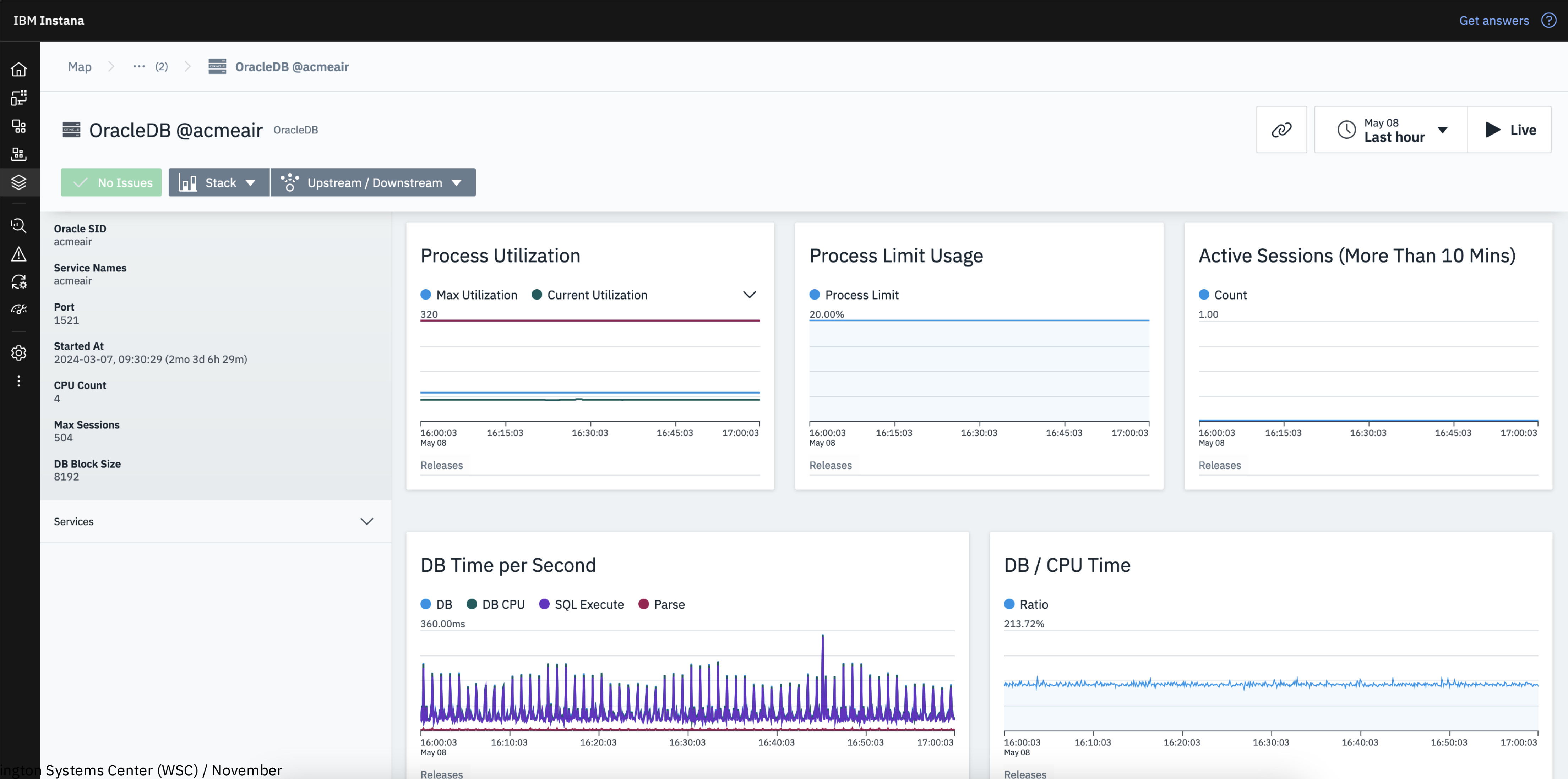
Name	Types	Technologies ↑	Endpoints	Calls	Erroneous Calls	Erroneous Call Rate	Latency	Health
DSNAESYS	DATABASE	DB2 DB2	2	356	0	0.00%	1ms	✓
DSNA	DATABASE	DB2 DB2	1	337	0	0.00%	< 1ms	✓
dispatch	MESSAGING	Go	1	60	0	0.00%	120ms	✓
ims.db	DATABASE	IBM IMS	1	53	0	0.00%	0ms	✓
IMSACON	RPC	IBM IMS	1	53	0	0.00%	0ms	✓
IMSA	RPC	IBM IMS	1	53	0	0.00%	0ms	✓
zceebill	HTTP	IBM z/OS Connect	1	60	0	0.00%	9ms	✓
rs-shipping	HTTP	Spring Boot	4	243	0	0.00%	105ms	✓

ADD SMART ALERT

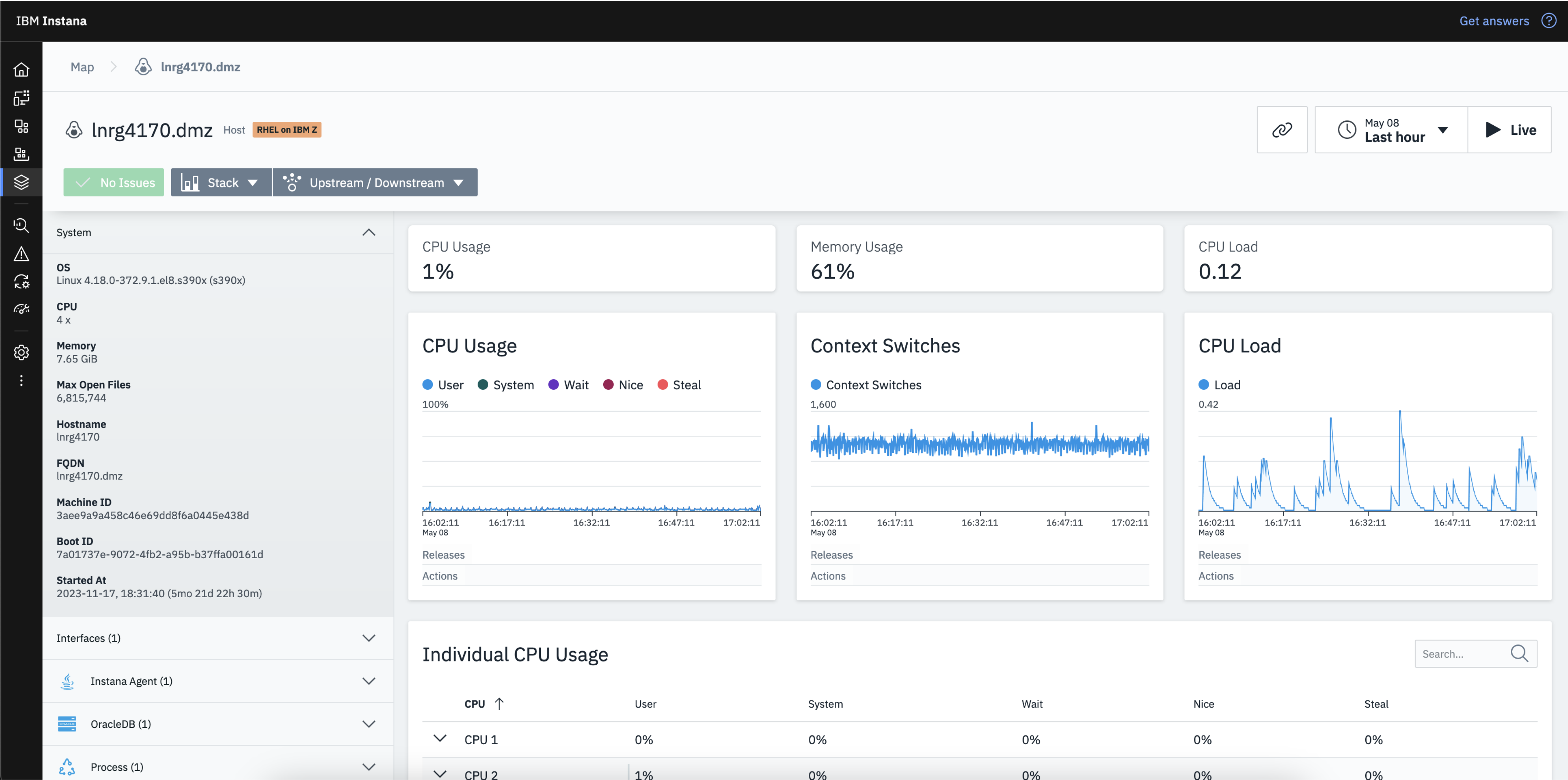
Monitor your: End-to-end application with OpenShift on IBM Z containers, MongoDB on LinuxONE, and OracleDB on LinuxONE



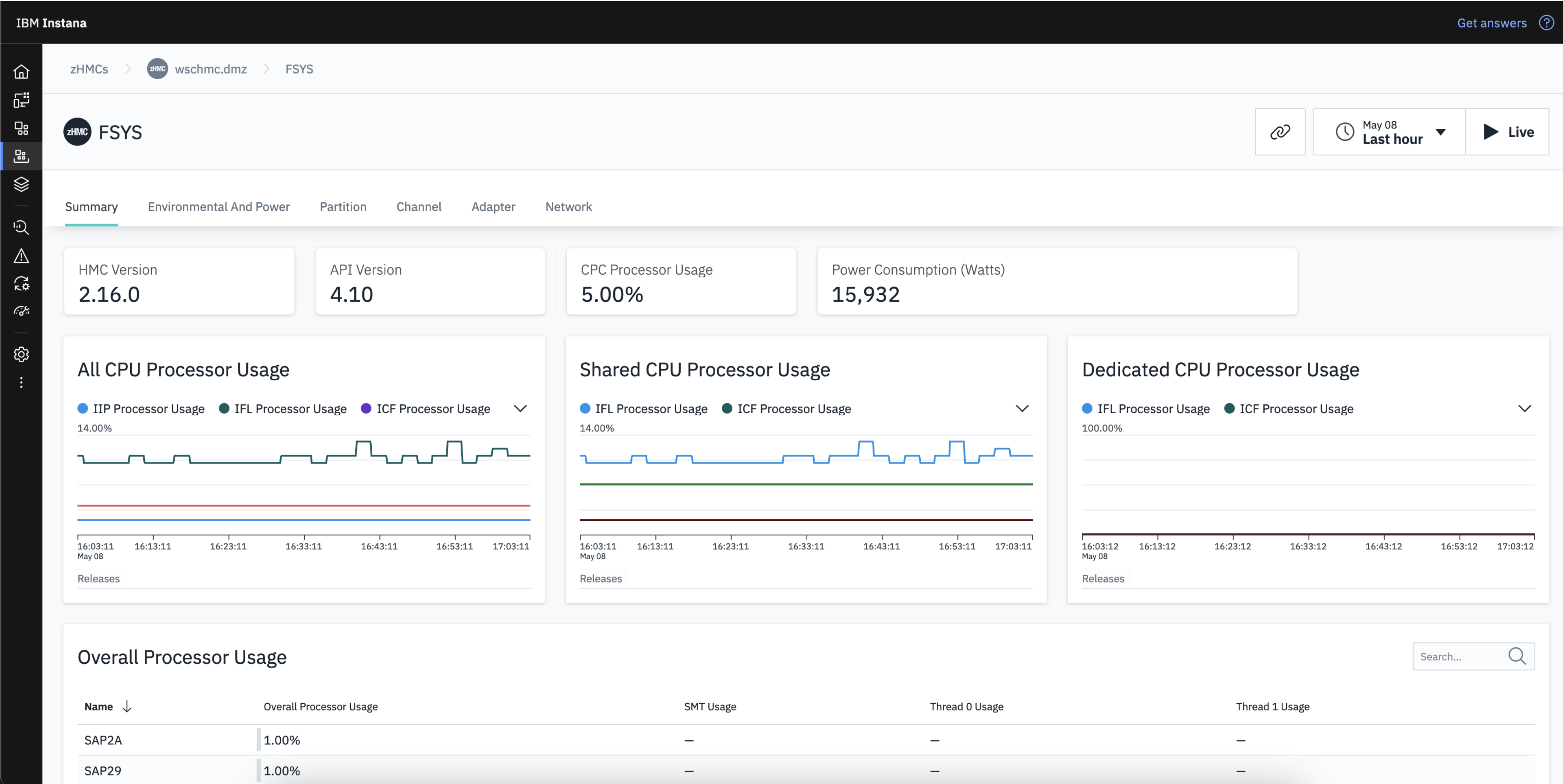
Monitor your: OracleDB



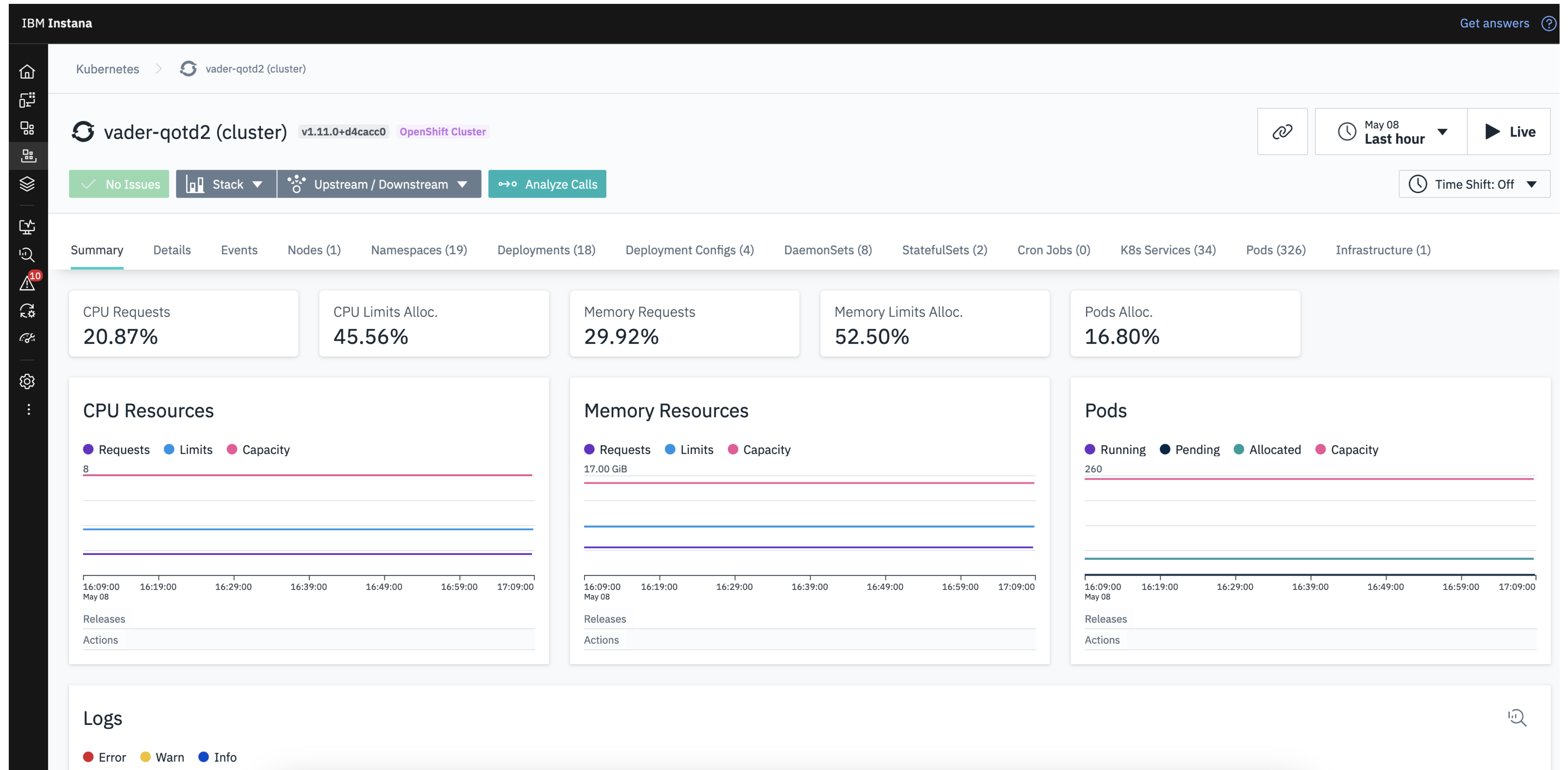
Monitor your: Linux on IBM Z/LinuxONE virtual machine



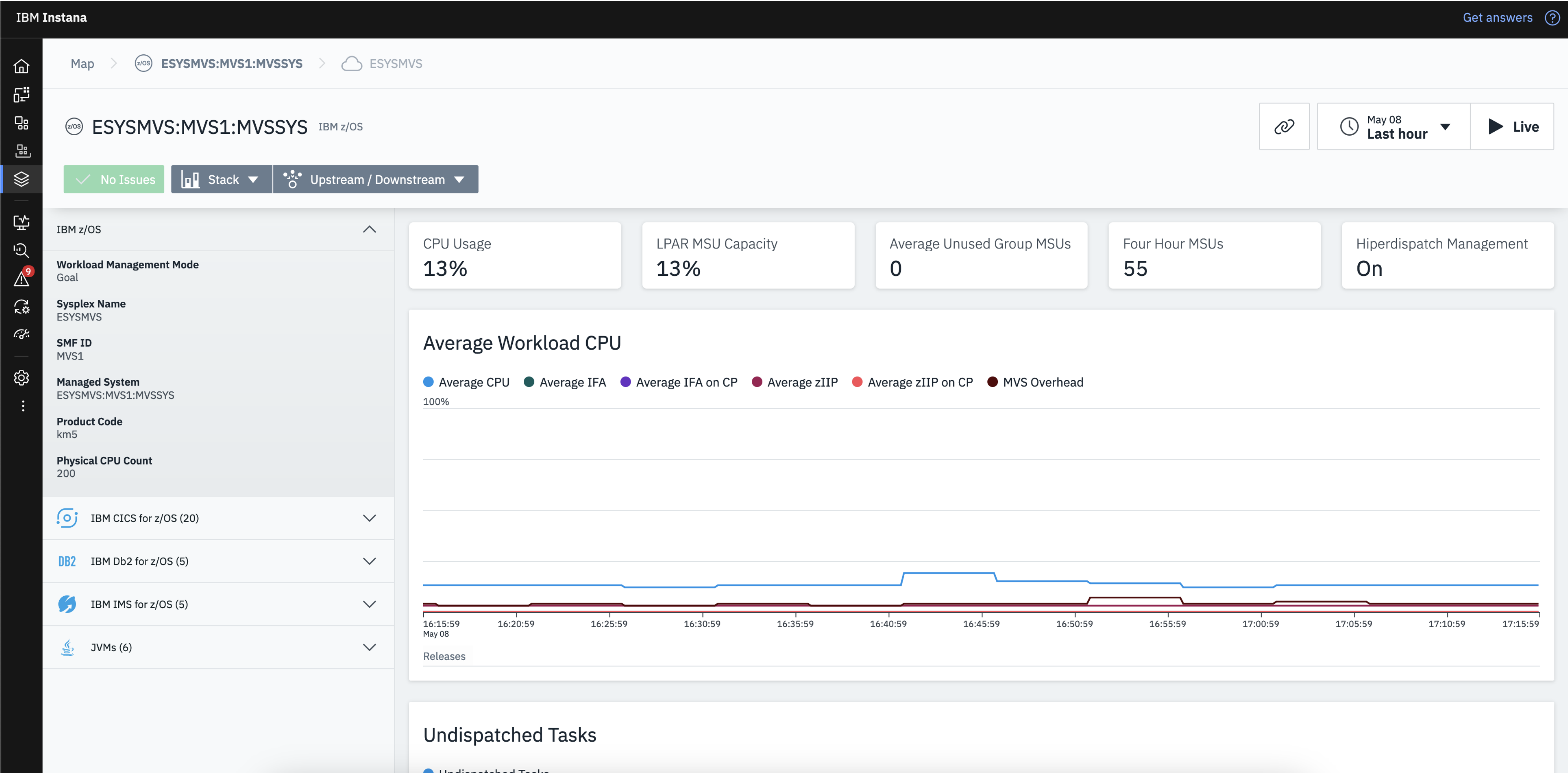
Monitor your: IBM Z Hardware (from HMC API)



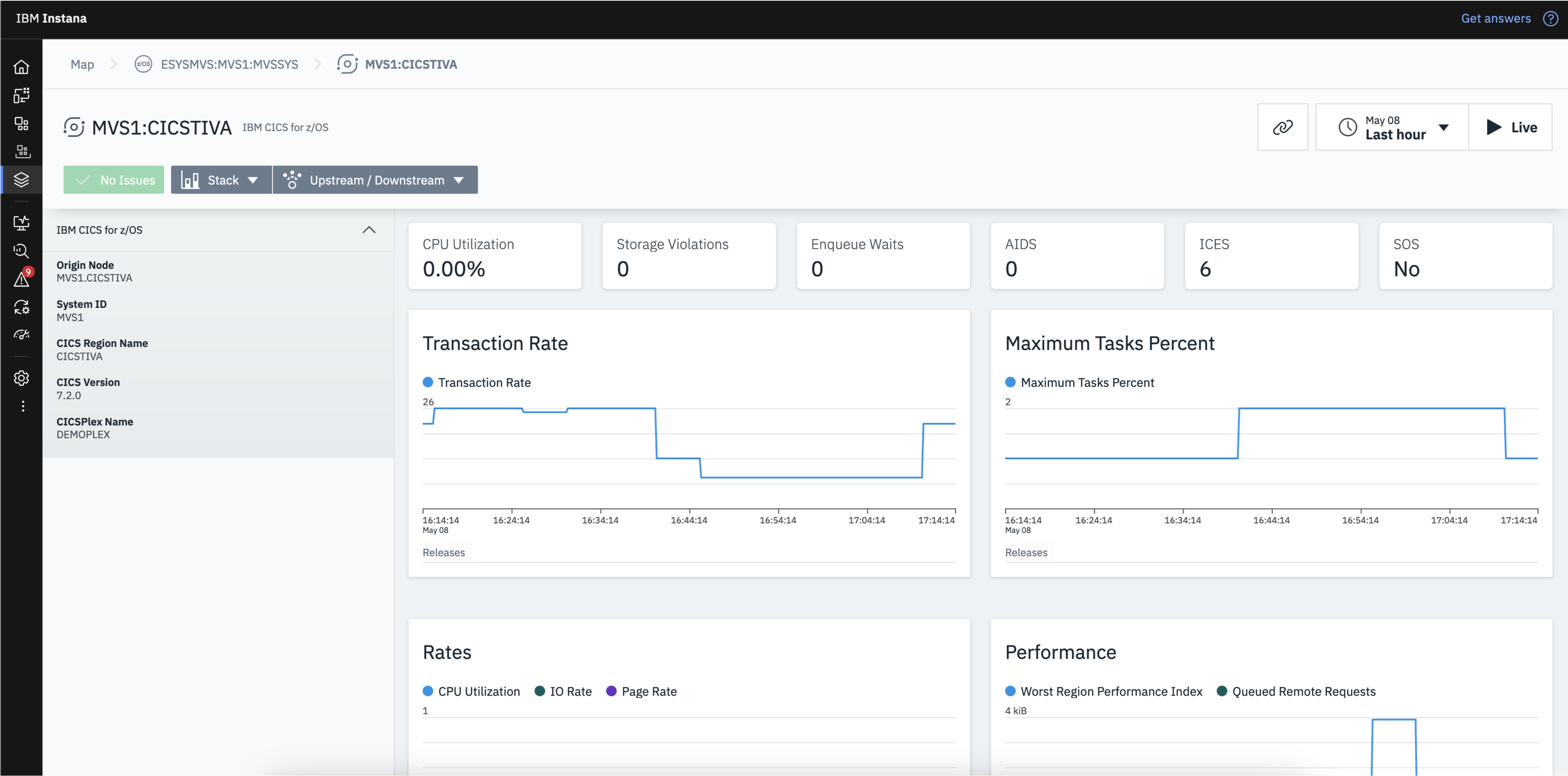
Monitor your: OpenShift cluster



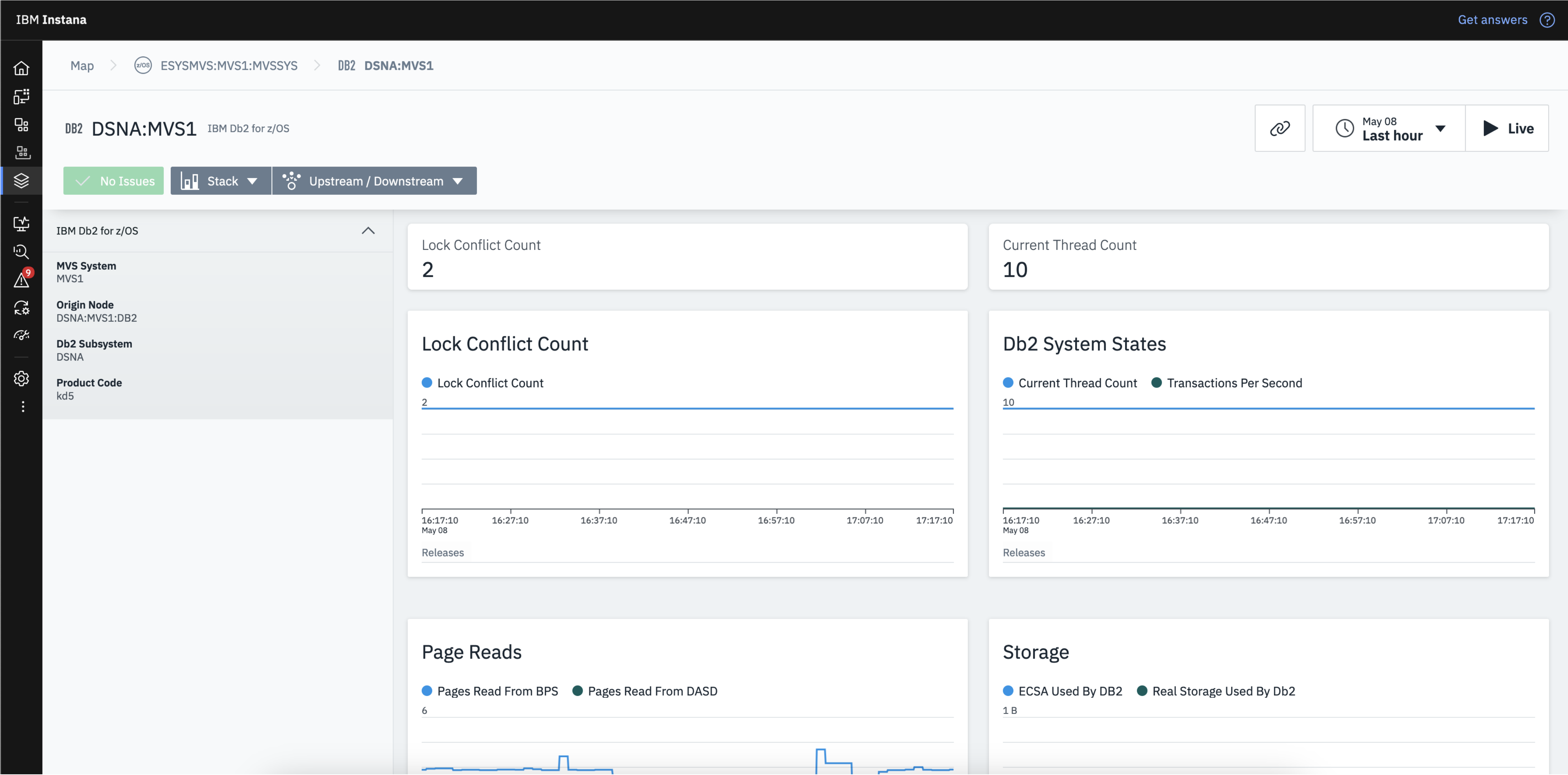
Monitor your: z/OS LPAR (via OMEGAMON)



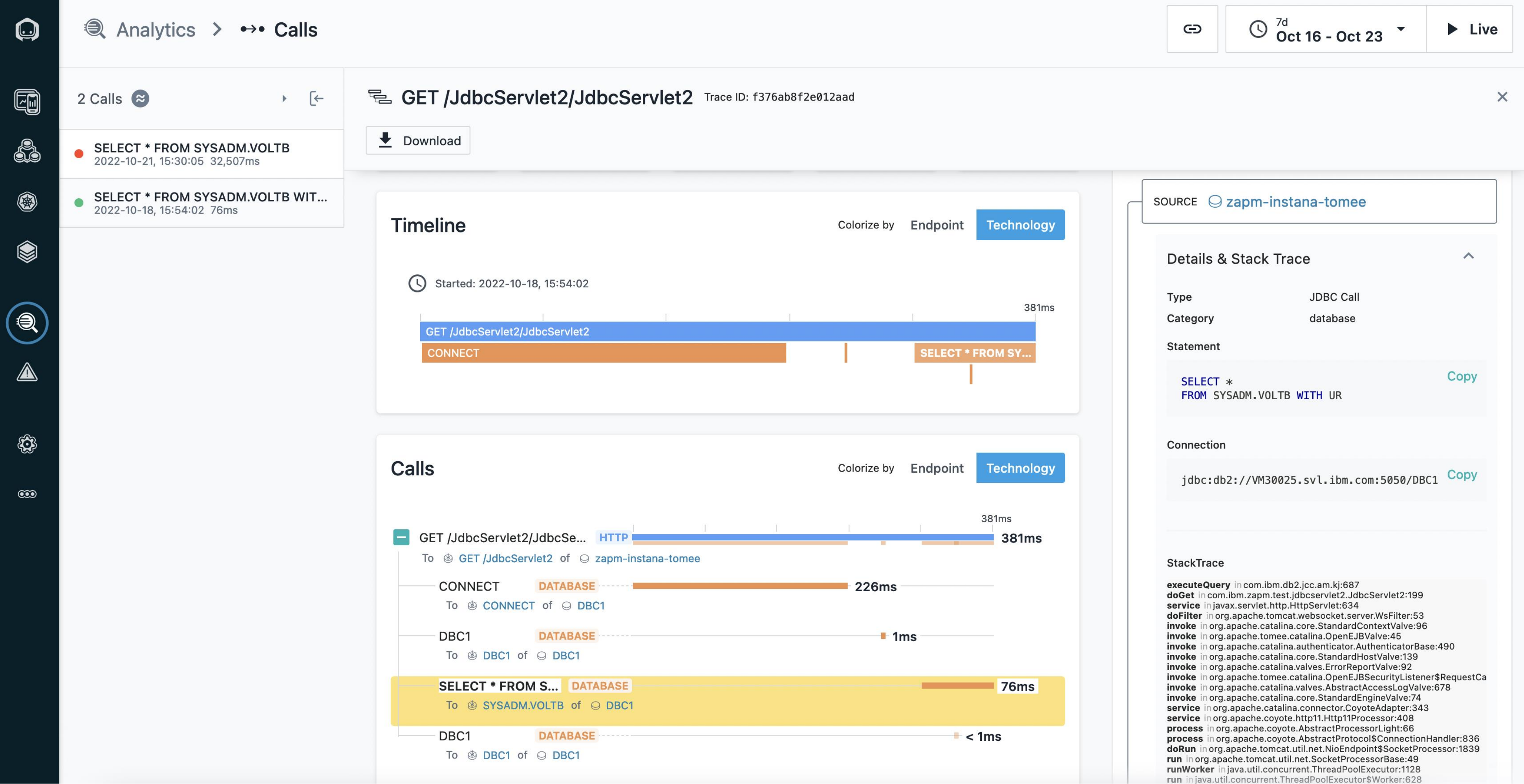
Monitor your: CICS region (via OMEGAMON)



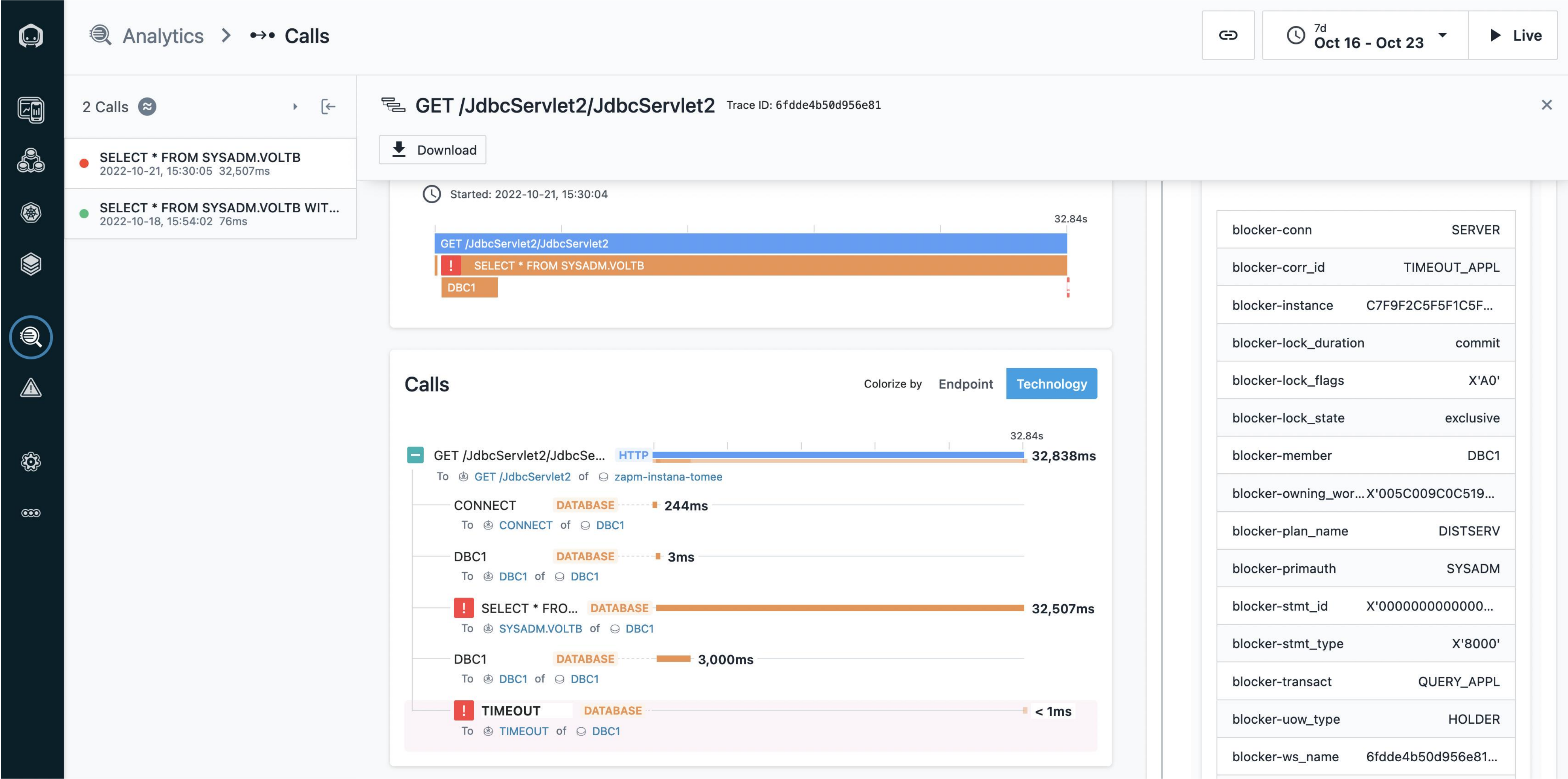
Monitor your: Db2 on z/OS database (via OMEGAMON)



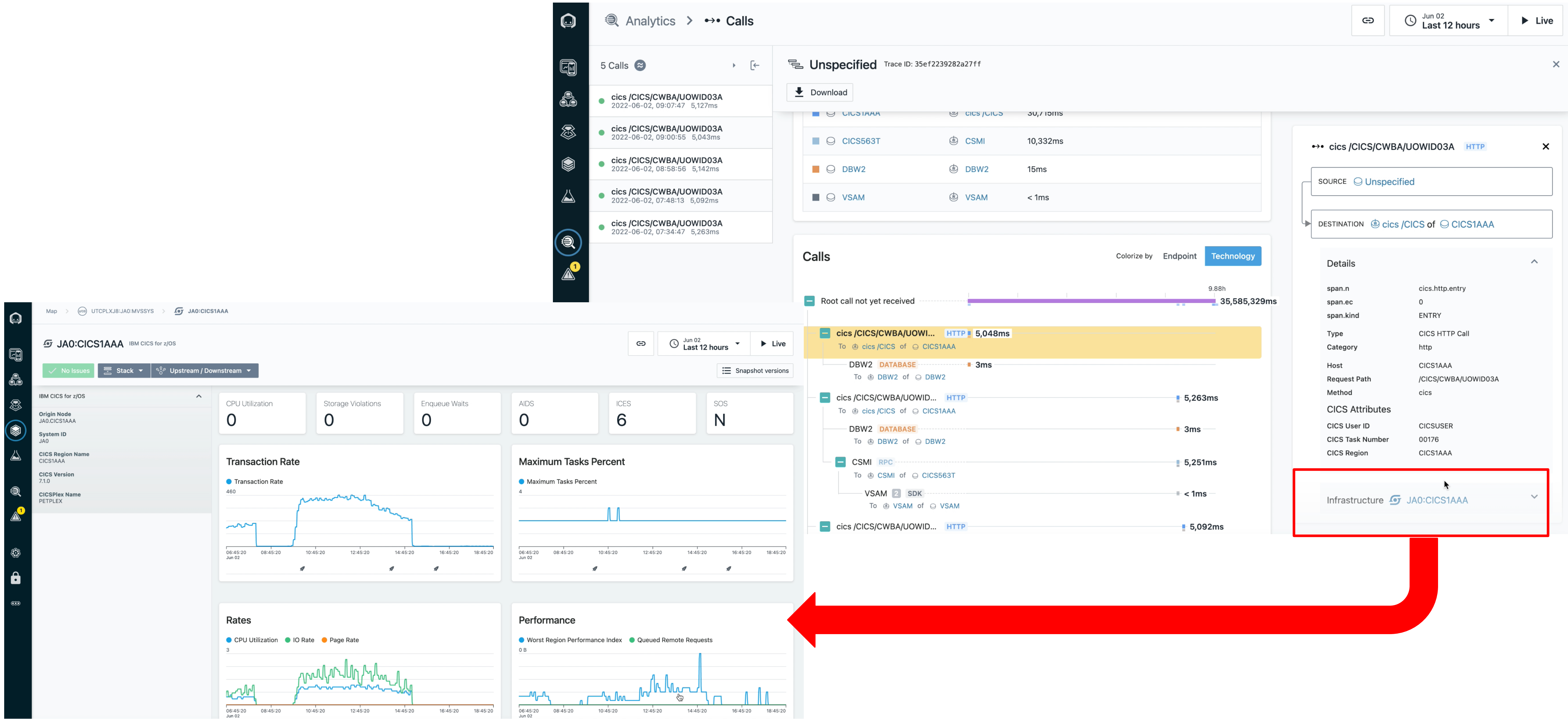
Example tracing into Db2 on z/OS



Example timeout delay in Db2 on z/OS



Link from transaction trace to infrastructure

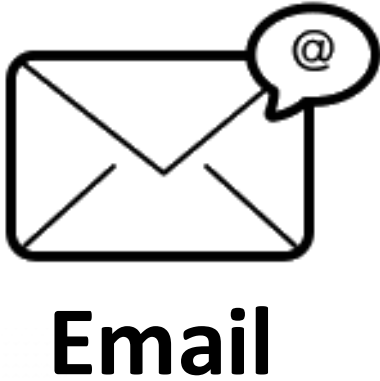


When there are issues, integrate with your existing platforms to notify the team or remediate the problem

Custom Dashboards



Alerting Integrations



Email



Webhooks



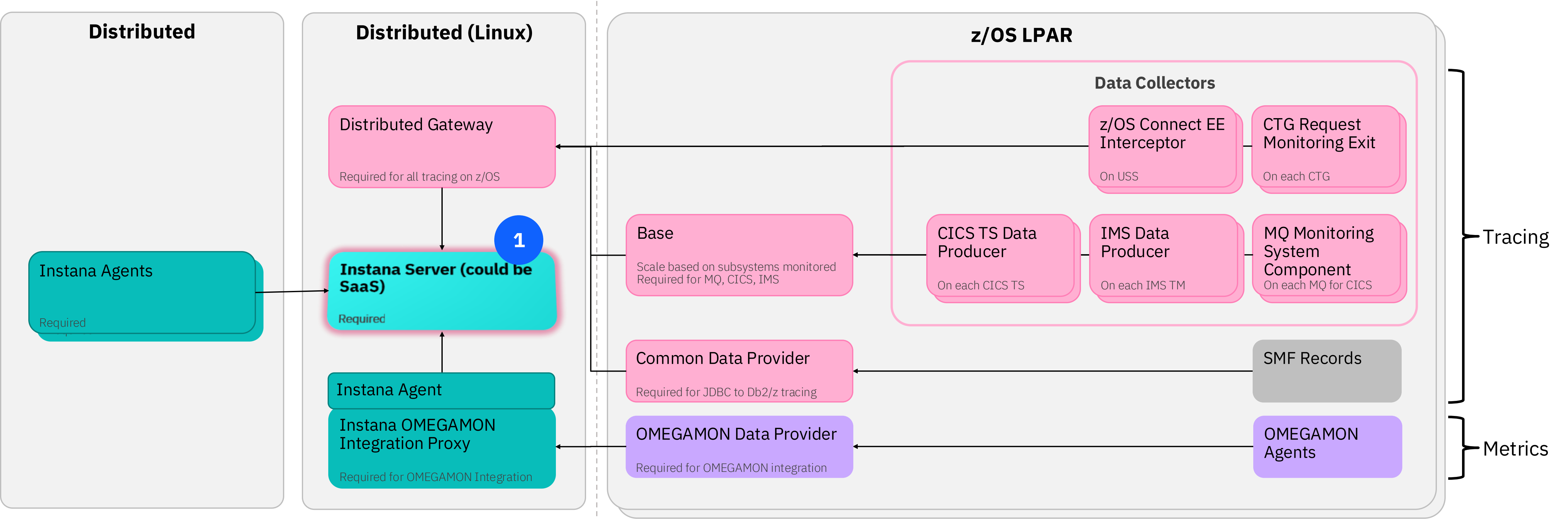
Events and Metrics



Logging Integrations



Instana Server



What is it?

- The backend server that consumes all telemetry data from all sources, including z/OS
- Stitches together tracing spans received from host agents on distributed platforms with related spans and metrics from z/OS for a cohesive end-to-end view

Is it Required? Where is it deployed?

Required: Yes, for all Instana on z/OS deployments

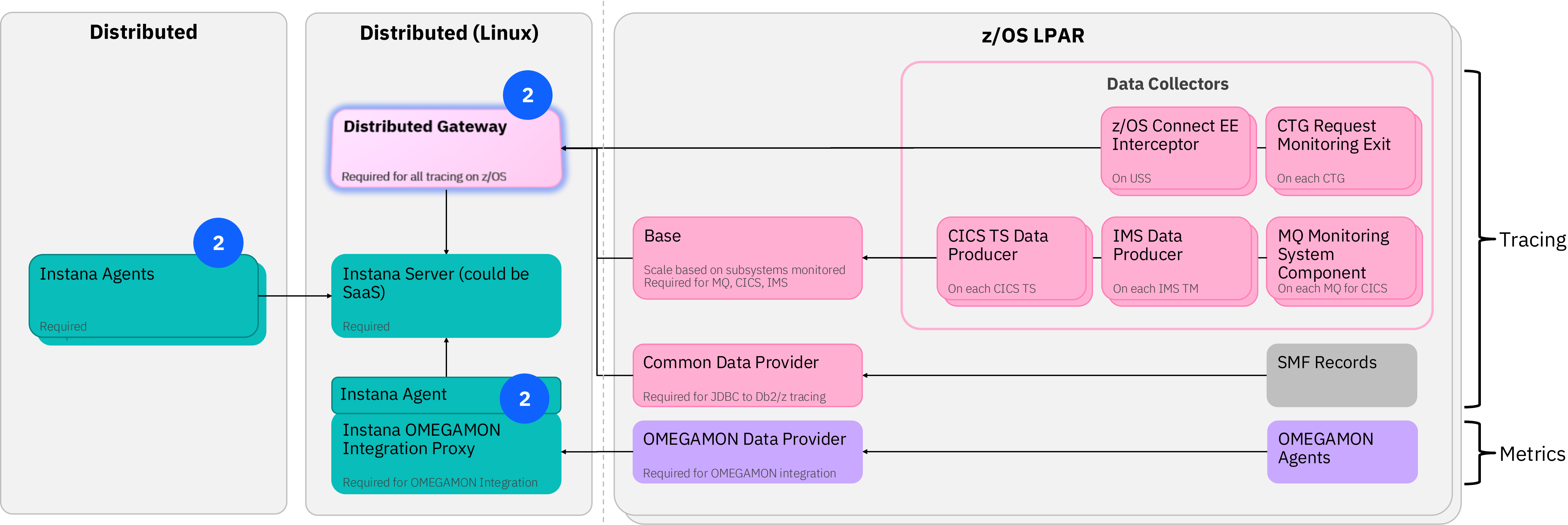
Deployment:

- SaaS based tenant/units are available to collect telemetry
- Can also be deployed for self-hosted scenarios on Linux (x86)
- [deployment of Instana self-hosted to zLinux is expected later in 2023]
- [Installing the Instana backend](#)

Delivered with:

-  Instana on z/OS
-  Instana
-  OMEGAMON
-  Existing

Distributed Gateway



What is it?

- Bridge between the tracing components and the Instana Server
- Receives trace data from tracing components
- Formats the data into proper Instana tracing “spans”
- Sends spans to the Instana backend

Is it Required? Where is it deployed?

Required: Yes, for all Instana on z/OS deployments

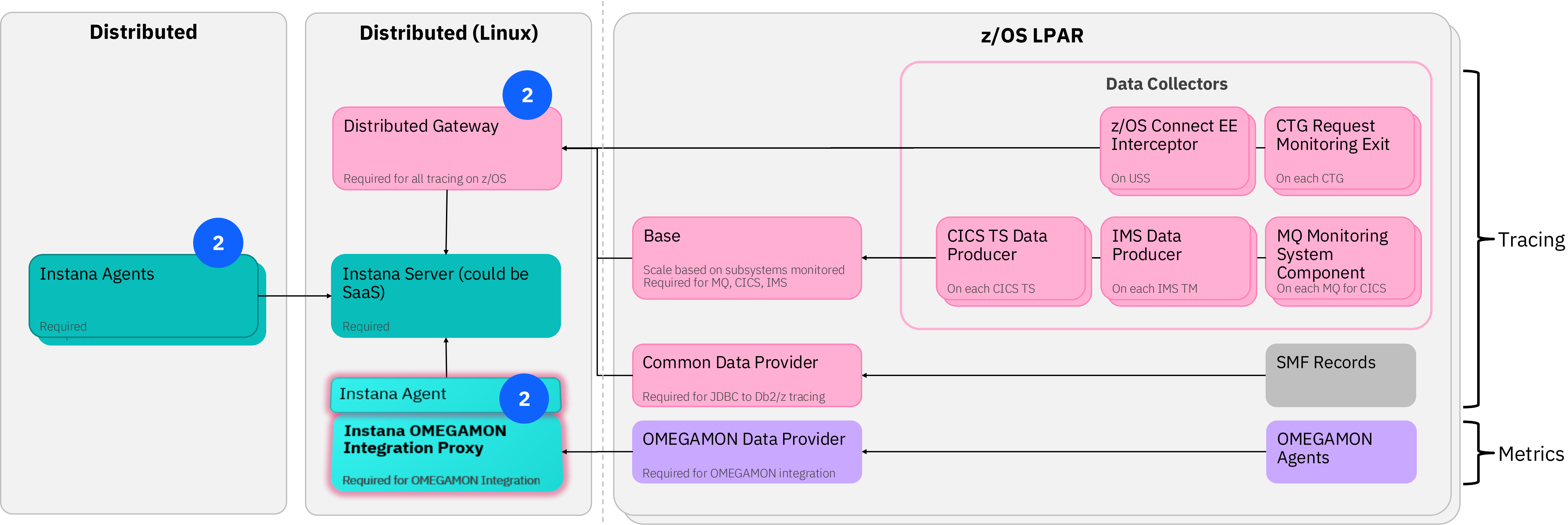
Deployment:

- On a Linux server – this offloads processing from z/OS
- Recommend a Kubernetes based deployment (like OpenShift) for scalability
- [Distributed Gateway installation prerequisites](#)
- [Deploying the Distributed Gateway](#)

Delivered with:

- Instana on z/OS
- Instana
- OMEGAMON
- Existing

OMEGAMON Integration Proxy



What is it?

- Collects metric data from the OMEGAMON Data Provider
- Transforms it into a format that Instana can consume
- Sends metrics to a sensor in an Instana host agent named: *com.instana.plugin.ibmmapmproxy*
- The Instana host agent then sends the payloads to the Instana server where entities are created and metrics saved.

Is it Required? Where is it deployed?

Required: Only if planning to integrate OMEGAMON metrics within Instana. OMEGAMON is not a pre-req for transaction tracing.

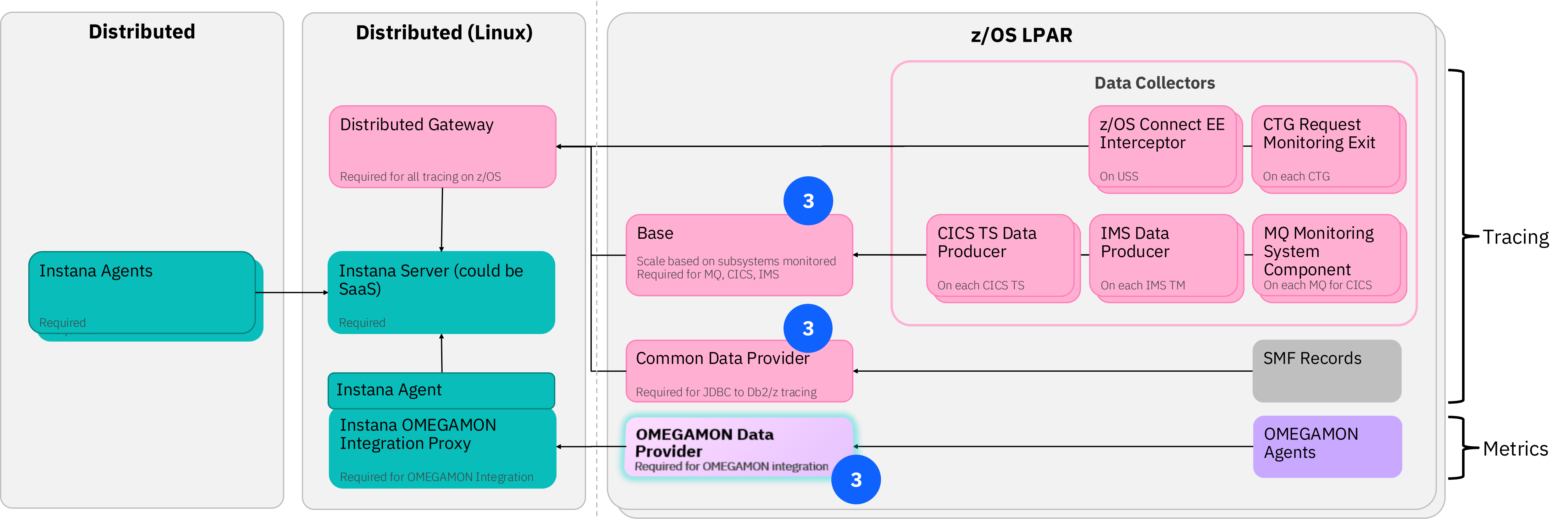
Deployment:

- The proxy is downloaded from Instana's GitHub repository (<https://github.com/instana/ibm-monitoring-integration>) and is deployed into a Kubernetes or OpenShift cluster
- [OMEGAMON Integration Proxy Prerequisites](#)
- [Integrating with OMEGAMON](#)

Delivered with:

-  Instana on z/OS
-  Instana
-  OMEGAMON
-  Existing

OMEGAMON Data Provider



What is it?

- Streams selected metrics for key z/OS subsystems that OMEGAMON is collecting – selected to compliment Instana’s transacting tracing
- Metrics are streamed simultaneous to OMEGAMON and Instana’s Server

Is it Required? Where is it deployed?

Required: Only if planning to integrate OMEGAMON metrics within Instana. OMEGAMON is not a pre-req for transaction tracing.

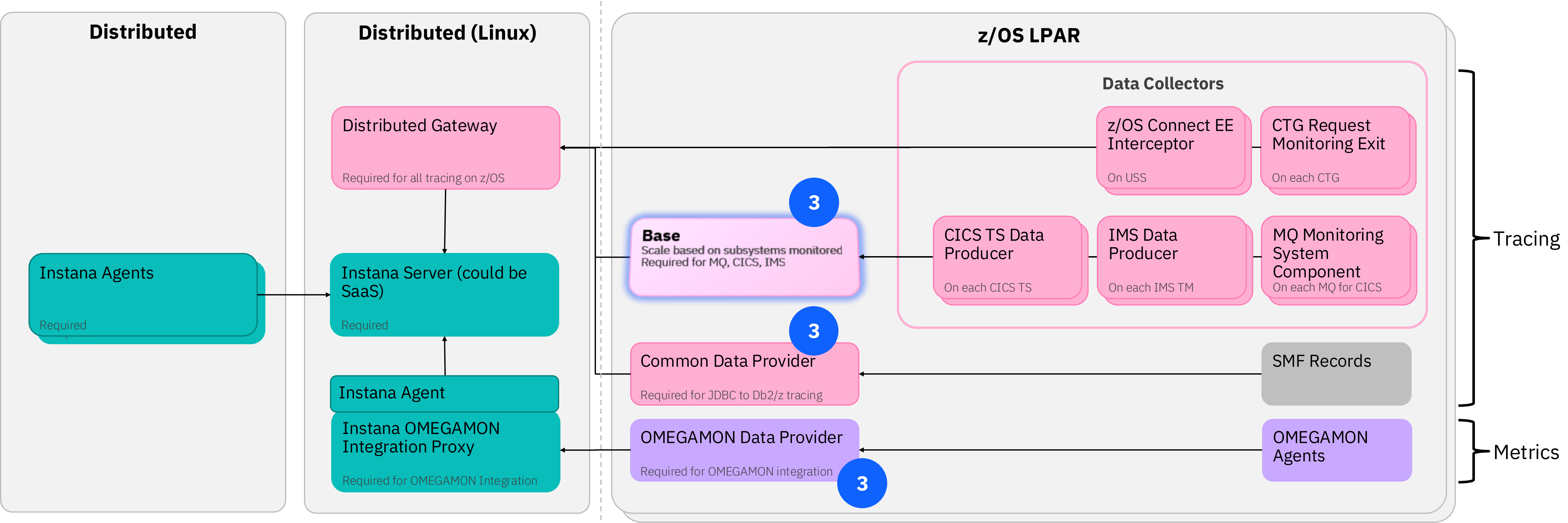
Deployment:

- Each LPAR to get data from OMEGAMON agents running on that LPAR
- A YAML file related to OMEGAMON’s Data Connect Process specifies which attributes will be streamed to Instana
- [OMEGAMON Data Provider Prerequisites](#)
- [Integrating Instana with OMEGAMON Data Provider](#)

Delivered with:

- Instana on z/OS
- Instana
- OMEGAMON
- Existing

Base



What is it?

- Receives trace data from potentially high-volume subsystems like CICS, IMS, and MQ
- Internal architecture made up of “couriers” – number of couriers can be increased to handle more volume
- Is a z/OS “Started Task”

Is it Required? Where is it deployed?

Required:

- Yes – when tracing CICS, IMS or MQ
- No – when tracing distributed calls via JDBC into Db2 on z/OS

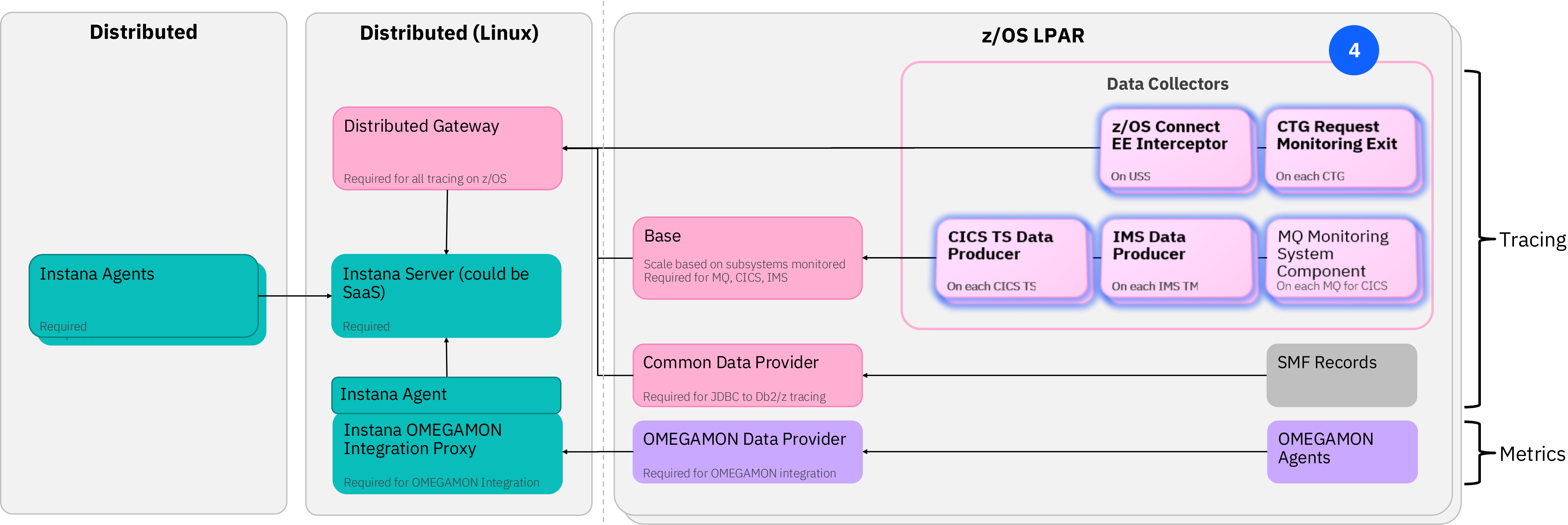
Deployment:

- To each LPAR where a CICS or IMS Data Collector is being used
- For high volume environments, multiple Bases may be started
- [Instana on z/OS Base prerequisites](#)
- [Installing Instana on z/OS Base](#)

Delivered with:

-  Instana on z/OS
-  Instana
-  OMEGAMON
-  Existing

Data Collectors



What is it?

- Data Collectors gather trace data for all calls through the various z/OS subsystems supported
- Minimal data is captured for each call
- Data is sent to the DG for processing into Instana Spans

Is it Required? Where is it deployed?

Required:

- Yes – when tracing calls into CICS, IMS, or MQ via z/OS Connect or CTG
- No – when tracing distributed calls via JDBC into Db2 on z/OS

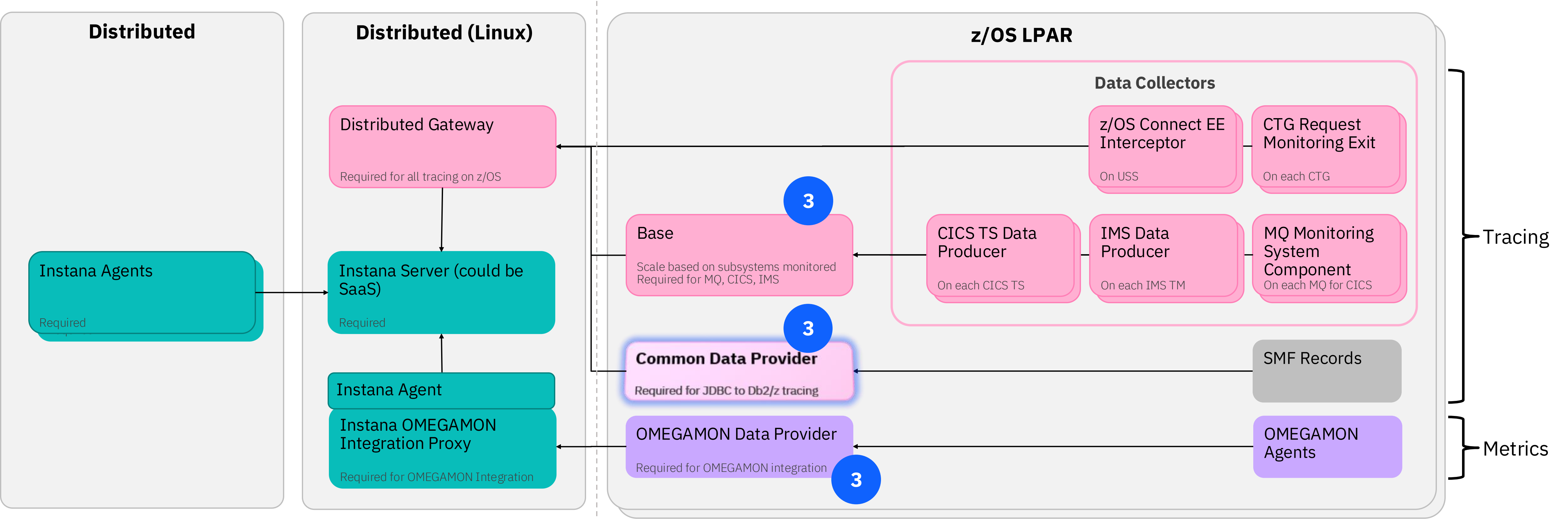
Deployment:

- In z/OS LPAR's, into the subsystems being observed
- One data collector will be deployed to each environment
- Prereqs: [CICS](#); [IMS](#); [z/OS Connect](#); [CTG 1](#); [CTG 2](#)
- Install: [CICS](#); [IMS](#); [MQ](#); [z/OS Connect](#); [CTG](#)

Delivered with:

-  Instana on z/OS
-  Instana
-  OMEGAMON
-  Existing

Common Data Provider



What is it?

- Accesses operational data from z/OS systems stored in SMF
 - SMF records have Instana’s trace context for filtering
- Collects, formats and filters transaction data related to JDBC requests to Db2 on z/OS
 - Performance metrics for SQL calls
 - Db2 timeouts and Db2 deadlocks
- Sends the filtered SMF data to the Distributed Gateway

IBM Z Washington Systems Center (WSC) / November 2024 / © 2024 IBM Corporation

Is it Required? Where is it deployed?

Required: Only when tracing distributed calls via JDBC into Db2 on z/OS

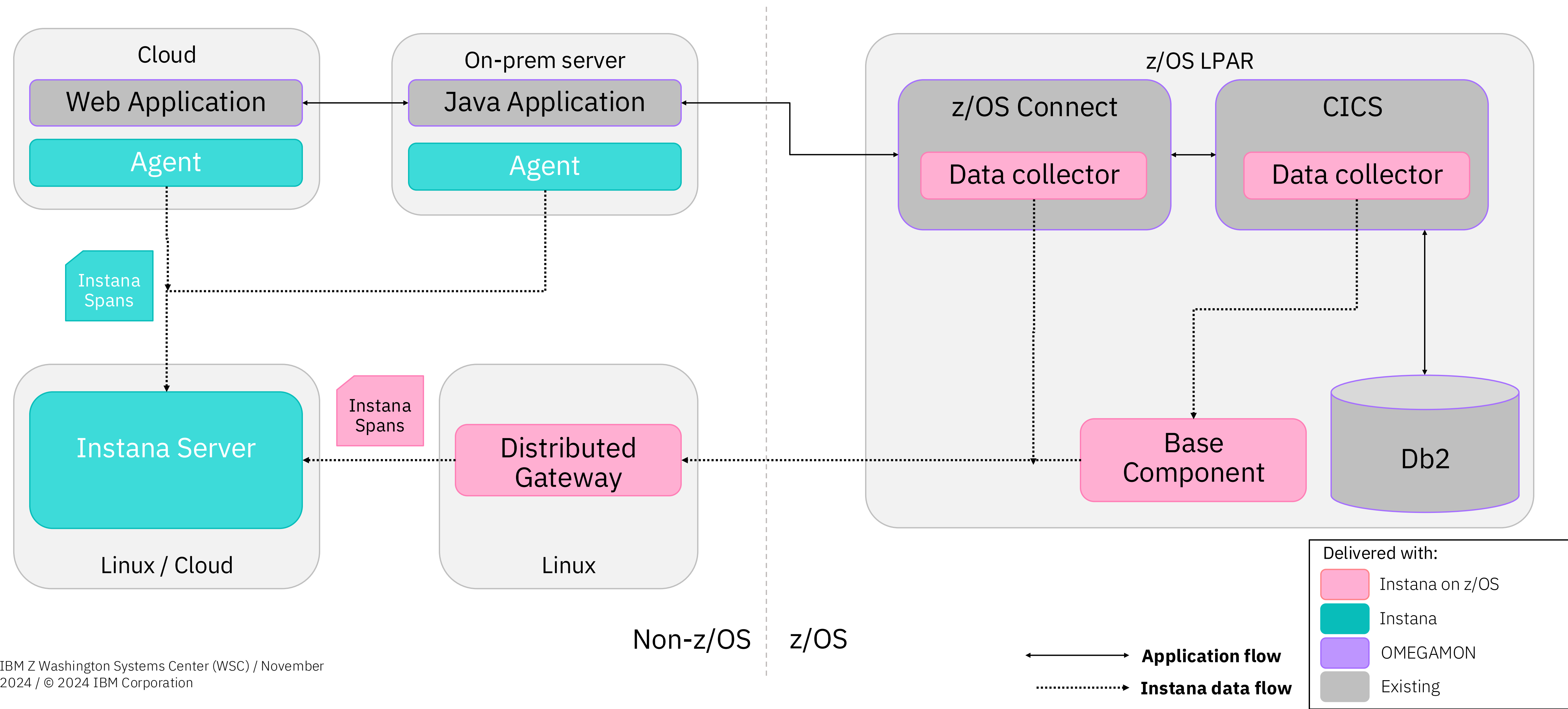
Deployment:

- In each LPAR where SMF 101/102 records will be needed to help provide details on Db2 on z/OS traces
- Already deployed CDP may be leveraged
- [Common Data Provider prerequisites](#)
- [Deploying Common Data Provider](#)
- [APAR/PTF requirements](#); [Db2 for z/OS prerequisite](#)

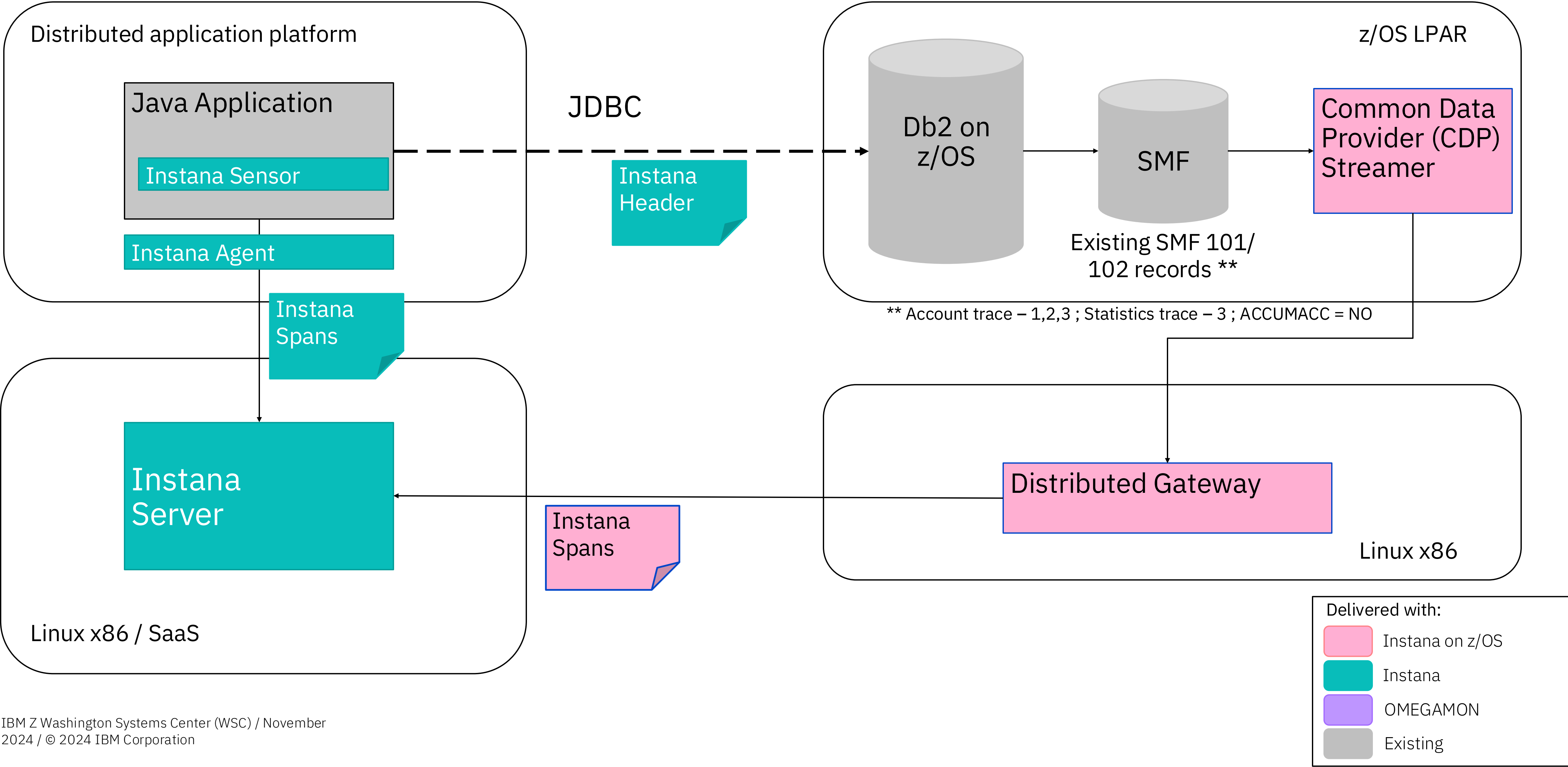
Delivered with:

-  Instana on z/OS
-  Instana
-  OMEGAMON
-  Existing

Example Instana on z/OS flow for tracing



Flow for Db2 on z/OS via JDBC tracing



Instana + OMEGAMON flow

